CHANGING NOVA SCOTIA'S HEALTHCARE SYSTEM: CREATING SUSTAINABILITY THROUGH TRANSFORMATION

SYSTEM-LEVEL FINDINGS AND OVERALL DIRECTIONS FOR CHANGE FROM THE PROVINCIAL HEALTH SERVICES OPERATIONAL REVIEW (PHSOR)

FINAL REPORT
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Submitted to:

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Deputy Minister
Department of Health
Province of Nova Scotia

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The Board Chairs are:

- DHA 1: Roxanna Smith
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- IWK: Jim Mills (current); Wendi Bacon (until September 2007)

The CEO Council includes: Cheryl Doiron, Deputy Minister; Allan Horsborough, Chief Financial Officer, Department of Health; Janet Knox, CEO, DHA 3; Pat Lee, CEO, DHA 6; Peter MacKinnon, CEO, DHA 4; Blaise MacNeil, CEO, DHA 2; John Malcom, CEO, DHA 8 and Interim CEO DHA 9 (May to October 2006); Kevin McDonald, CEO, DHA 7; Anne McGuire, CEO, IWK; Kevin McNamara, CEO, DHA 1; Jim Merkley, Interim CEO, DHA 8 (May to December 2006); Jim Millar, Chief, Program Delivery, Department of Health; Brenda Payne, Executive Director, Acute & Tertiary Care, Department of Health; Chris Power, CEO, DHA 9; and Bruce Quigley, CEO, DHA 5.

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To those who participated, we hope you recognize the value of your contribution to the ultimate goal of providing improved health services to the people of Nova Scotia, through the transformation of the Province's system of healthcare delivery.

Sincerely,

Bradley J. Campbell, President, Corpus Sanchez International (CSI) Consultancy Inc.

EXECUTIVE SUMMARY

The healthcare system in Nova Scotia, not unlike others all across Canada, is at a crisis point. While the issues are more serious for some components than for others, overall the system is stressed to capacity and at the same time, is not contributing as well as it could to the health status of Nova Scotians.

There are serious and significant concerns that the Province cannot afford to continue to fund the healthcare system, given its growth at a rate that outstrips the increase in provincial revenues. When the consequences of an aging population are added into the mix, with the attendant increases in resource utilization and the accompanying need for a shift away from acute to chronic care and to diseases and conditions of the elderly, even massive infusions of money would not provide the services needed, were the status quo maintained.

There are other stressors on the healthcare system as well. Nova Scotia is not alone in facing extreme shortages of professional staff. There is an international deficit for most professions that will only increase in the next 10-15 years, as a large percentage of healthcare providers retire. Inadequate staffing levels, accompanied by earlier staffing pattern changes that reduced non-professional and support staff levels to low or non-existent levels, create a vicious cycle for remaining staff. Professionals, and particularly nurses, have taken up the slack and are performing non-professional duties to the detriment of their professional training; staffs are demoralized and employee satisfaction is low. Once again, finding more people, whether nurses or physicians or other professionals, would not solve the problem; it would only continue the underutilization of licensure skills. The human resource challenge is to ensure that all professionals work at the appropriate scope of practice, recognizing that the changing demands for healthcare services may require that the scope be altered to reflect the realities of an emerging range of healthcare services different from what exists today. Again, the solution is not somehow finding more nurses or more physicians; it is a question of finding the appropriate range and mix of professional (and support) staff and giving them the scope to provide the healthcare services that the Province's population will need.

The drivers of health status, health human resources and fiscal imperatives are not unique to Nova Scotia. What is somewhat unique is the Province's willingness to recognize the issues. Over the past several years, the Province has commissioned numerous studies on a variety of healthcare-related topics. The findings reflect studies in other Canadian jurisdictions, including the 2002 Romanow report, *Commission on the Future of Healthcare in Canada.* In short, these reports reflect the national concern that the healthcare system is no longer sustainable – unless serious and urgent attention is paid to a complete transformation.

Transformation is not another word for change. It is neither a piece-meal nor an incremental approach to fixing a particular aspect of the healthcare system. Rather, it is an overall review and restructuring of the healthcare system that is patient-centred and health policy-based, rather than supply-driven. With transformation, no part of the healthcare system is immune to change. Rather, the entire healthcare system is redesigned; then, existing components are assessed to determine the extent to which they contribute to the new paradigm.

In Nova Scotia, the PHSOR determined the health status of the population to be the benchmark for transformation. Every component of the healthcare system must contribute to measurable improvements in health. Every service, every program, every facility and every system must be reviewed from the perspective of what the population needs – at times quite different from what the population wants. Every healthcare expenditure must aim to ensure a continuity of care and an ease of access for all services, from preventive and primary through emergent and ambulatory; from acute through chronic and continuing; from in-home to community-based to institutional.

The PHSOR Team conducted extensive fact-finding on virtually every aspect of the Province's healthcare system. It interviewed or met with hundreds of people, in every region of Nova Scotia. And although there was not uniformity in suggestions for change, the Team found a consensus of understanding that nothing short of transformation of the entire healthcare system is required to achieve sustainability and to keep the population as healthy as possible.

The PHSOR Team worked extensively with the DHAs/IWK and the DOH; it consulted with Community Health Boards and with provincial programs. It met with facility personnel at governance, management, professional and staff levels. The Team reviewed previous reports prepared in Nova Scotia and contributed highlights from the literature on other jurisdictions. The fact-finding and analysis, the discussions and compromises, lead to the following conclusions:

- Nothing short of total transformation can build a sustainable healthcare system for the future.
- The challenges and difficulties of undertaking such a widespread change cannot be underestimated; however, leadership, cooperation and collaboration at all levels can facilitate a smoother transition.
- The starting point for transformation must be a renewed emphasis on primary and, to a somewhat lesser extent, continuing care. This must include the difficult decision to shift everything other than acute care out of acute care hospitals, even when doing so upsets traditional patterns of service for smaller and rural communities. To mitigate the effect on residents of communities where hospitals are affected, significant developments in community-based care and practice patterns must be supported. The goal is not to deprive residents of access to primary and urgent care; it is to provide such care more appropriately in settings other than hospitals and emergency rooms. Similarly, the objective is not to deny residents access to alternate levels of care close to home; it is to create care options in private homes and dedicated facilities geared to long-term and chronic healthcare conditions.
- Changing the roles of hospitals is not limited to smaller and rural facilities. Acute care hospitals of all sizes, including academic health sciences centres, must also expect and accept changes in the range of services they provide. One reason is the shift in emphasis away from acute and episodic care, as the population ages. Another is the requirement for critical mass to ensure high-level skills, particularly for specialty and sub-specialty services. Still another is the necessity to review the scope of practice of nursing and other non-physician professionals, e.g., laboratory technologists and pharmacists, to find innovative means to provide services previously the exclusive purview of physicians.
- Even those services that remain hospital-based face scrutiny under transformation. Some, like pharmacy and laboratory, can benefit from restructuring, newer technology, consolidation and a shift to cost-saving and safer and more efficient modalities like unit dosage and point-of-care testing. As in other areas of the healthcare system, the solution is not to add resources to existing patterns, but to investigate more appropriate service delivery mechanisms and fund them accordingly. Again, this may entail radical realignment of services, as in combining the laboratories of the IWK and the QEII; if this contributes to better health outcomes with fewer resources, the change is justified.
- Other services ranging from technology-oriented (e.g., computerized patient records) to administrative (e.g., business office functions, human resources and occupational health & safety) and support (e.g., food services and housekeeping) should also be subject to review and reassessment. The functionality of the entire healthcare system can be positively affected by changes in these areas, and ensure the smooth functioning of more direct care services.

The PHSOR represents only the first step in transformation of Nova Scotia's healthcare system; the report provides over 100 recommendations. Responding to the recommendations and implementing the transformation within the projected timeframe of three years is an ambitious goal. Fortunately, there appears to be the political and leadership will to move forward.

The ultimate challenge for transformation is to maintain the impetus for change and not to revert to the belief that the status quo is acceptable if only more money and more resources are provided. The ultimate goal is to create a transformed healthcare system that always takes the health status of the population as the gold standard for all aspects of programming, service delivery and resource allocation. The status quo may have served Nova Scotians well in the past, but the realities of the early 21st century dictate that system-wide transformation is now a necessity, and an urgent one at that.

CHAPTER 1: MANDATE & SCOPE OF PROJECT; REPORT OUTLINE

MANDATE

In mid-2005, the Department of Health, working collaboratively with the District Health Authorities and the IWK Health Centre, issued a Request for Proposals for a study entitled The Provincial Health Services Operational Review (PHSOR). The document states the rationale behind the work: "The health system in Nova Scotia, similar to other jurisdictions, consumes a substantial portion of provincial revenues - 47.9% for Fiscal 2005-06 compared to 36.35% in 1995-96. Given the recent experience and projected rates of expenditure growth, the health system expenditures are not sustainable. Government is therefore undertaking an initiative aimed at improving organizational responsiveness and enhancing overall effectiveness of the healthcare system."[1]

Effectiveness is not measured solely in financial terms. The PHSOR takes as a given that **positively impacting the health of Nova Scotians must be the underlying priority at all times**. Moreover, given the demographics of the Province's population, the PHSOR Team was given an urgent mandate to conduct a comprehensive study in a brief period of time, covering virtually all aspects of healthcare delivery in the Province.

SCOPE OF PROJECT

Nova Scotia is a leader in its willingness to review broad areas of its healthcare system. Since 2003, several Province-wide studies have reported findings on public health, continuing care, hospice/ palliative care and primary healthcare.

Building on these and other initiatives, the PHSOR was to be a comprehensive, Province-wide operational review. Only one other Province has ever initiated as extensive and wide-ranging an initiative. In short, the PHSOR was to provide advice and recommendations around the following defined goals and deliverables:

- To confirm that resource allocation across and within the system is consistent with the health needs of Nova Scotians;
- To enable greater integration and consolidation of services and programs; and
- To make recommendations for change that ensures a sustainable healthcare system for all Nova Scotians.

REPORT OUTLINE

This **Chapter 1** defines the purpose of the project, detailing the official mandate and scope. It begins by emphasizing the financial projections for expenditures in healthcare in Nova Scotia and acknowledges that the growth in the healthcare budget is simply not sustainable. It also recognizes that the issue of how much to spend on healthcare must be accompanied by a clear connection to the value received from the expenditure. In this way, Chapter 1 sets the stage for focusing on health status and health outcomes.

Chapter 2 provides the basis for the concept of sustainability. Based largely on the recent Romanow report, Building on Values: The Future of Healthcare in Canada2, the chapter transposes the call for sustainability of the healthcare system from Canada as a whole to the Province of Nova Scotia. The goal must be nothing less than making Nova Scotians the healthiest people possible. The chapter then defines transformation and addresses three related questions: What is transformation? Is it viable in the Nova Scotia context? And, is there support for transformation in the Province? The

[1] *Request for Proposals No. 60128148 - Provincial Health Services Operational Review for the Nova Scotia Department of Health and the District Health Authorities and IWK*. Halifax: 2005, page 2.
[2] Romanow, Roy. *Commission on the Future of Healthcare in Canada.* Ottawa: 2002.

chapter concludes with an explanation of the link between sustainability and transformation. It stresses that only complete transformation – not piecemeal or incremental changes – can ensure a comprehensive and affordable healthcare system in Nova Scotia. It also acknowledges that, while such massive restructuring and rethinking will not be easy and may not be readily or eagerly accepted by all stakeholders, the PHSOR Team is confident that there is consensus indicating a widespread willingness to move forward.

Chapter 3 starts to build the case for transformation by naming the drivers of a sustainable healthcare system: demand, health human resources and fiscal imperatives. Significantly, the drivers are externally imposed in the sense that they are not issues that could have been "solved" by politicians, the Department of Health, the DHAs/IWK, other providers or even the public at large. They are drivers that are affecting healthcare delivery all over the world, despite the best efforts of many jurisdictions to keep ahead of the challenges. What is also important is that no one of these drivers can be resolved independently of the others.

Each of these drivers is discussed in detail. Demand is reviewed from the perspective of demographics, health status and patient safety and quality. The case is made that the aging of the population is placing previously unseen stresses on the entire healthcare system. Already, Nova Scotia could improve many areas of health status. With an increasing percentage of the population over 65, improving the health of Nova Scotians becomes at once more pressing and more difficult. The over 65 age group has traditionally used more healthcare resources than younger citizens. Now, this group is living longer, is utilizing ever-increasing proportions of healthcare resources and at the same time is requiring a shift in emphasis from acute to chronic and continuing care. Moreover, this group represents a large percentage of the healthcare system workforce, suggesting that caregivers will become care-users, thus exacerbating the challenge of providing comprehensive services. The contributing factor of patient safety and quality further complicates the overriding goal of helping Nova Scotians lead healthier lives.

Health human resources is similarly discussed in detail. While HHR is only one resource issue, it is highlighted because without healthcare professionals and other staff, issues of service definition, facilities, technology and so on become almost moot. All of these other resource issues assume that there will be staff to carry out the services in the designated programs and facilities. The data show, however, that there are not going to be enough skilled and trained workers to sustain the healthcare system if the Province continues to utilize them in traditional and current ways.

The final driver is the fiscal imperative. This discussion covers other resource issues, such as the increasing proportion of healthcare spending directed towards pharmaceuticals. It also touches, albeit briefly, on the tremendous need for investment in healthcare infrastructure. Most importantly, however, it reiterates the overall argument that healthcare expenditures in Nova Scotia, as elsewhere in Canada, are increasing at a rate that outstrips revenues – a situation that is simply not sustainable.

Chapter 4 outlines the last piece of the sustainability➔transformation relationship. It reviews previous studies in Nova Scotia that support the movement towards a complete overhaul of the Province's healthcare system. Together, the previous reports have summarized a series of benchmarks by which transformation can be measured. These include a focus on population health (corresponding to the driver of improved health status) that entails a reorganization and changing emphasis on primary, community-based, and hospital-based services. Significantly, the benchmarks support the concept of redirecting resources from acute care to primary care, when doing so can contribute to the improved health status of the population. The chapter acknowledges that this shift will necessitate some major changes in the roles of all hospitals, from small/rural to academic health sciences centres; however, it reiterates that such transformative changes are not changes for changes' sake. They are changes that must be made within the context of the drivers of sustainability, i.e., demand, health human resources and fiscal imperatives.

Chapter 4 concludes with a discussion of the need for strong and committed leadership at all levels. Without the buy-in of elected officials, the DOH, the DHAs/IWK, the professions, other service providers (organizations and individuals), the transformation cannot happen. Chapter 4 thus ends with

the first group of recommendations, focusing on the need for formal acceptance and support of the drivers of sustainability and the benchmarks for transformation.

Having established the case for sustainability and transformation, **Chapter 5** outlines the starting point for the transformation process: focusing on primary and continuing healthcare in the community. Primary care is defined by both the Fyke Commission[3] and the DOH as the initial and ongoing point of contact between individuals and the healthcare system. It encompasses a wide range of services and chapter 5 asserts that the single defining common element of these services is that they do not have to be provided in traditional acute care hospitals. This reiterates the findings of the report on primary healthcare prepared for the DOH in 2003. The chapter acknowledges that some recommendations of this report have been implemented; it discusses the concept of community health centres in several DHAs. Nevertheless, the chapter maintains that, some four years later, few of the major changes have been implemented. Where they have been, examples from individual DHAs are provided in Supplementary Report #1.

The remainder of chapter 5 is devoted to discussions of individual components of primary healthcare, including general medical care, Public Health, mental health, addictions and palliative care. Similarly, sections are devoted to the component services of continuing care, with particular attention to seniors' health and rural health. Recommendations are made for individual services and for the development of strategies that cut across several care components.

Following the discussion on those services that do not have to be provided in acute care hospitals, **Chapter 6** deals with the services that should and must be provided in these facilities. It discusses the concept of foundational services, always referring back to the drivers of health status, health human resources, and fiscal imperatives. This leads to a recommendation for a Clinical Services Task Force to review both primary and acute care services in order to allocate the appropriate services to the appropriate sites, affording the best access for the population. The chapter pays particular attention to the role of academic health sciences centres, recognizing that these facilities have roles to play beyond the traditional provision of services and that there is a documented additional cost to doing so. The chapter concludes with sections on data (making the case for significant improvements in utilization management and decision support services) and on staffing models. These discussions lead to a recommendation for a Redesign Team, to establish an Integrated Model of Care that challenges traditional scope of practice for professionals and reintroduces the participation of non-professionals in appropriate support roles in hospitals.

Chapter 7 deals specifically with the role of small and rural community hospitals, with particular attention to emergency departments. Data on acuity are presented to make the case that not all small hospitals should be providing emergency care and that in many cases, the care provided is not truly emergent. Again, the drivers of health human resources and fiscal imperatives support this position; however, the chapter acknowledges that there are few community-based resources to provide the care that residents seek in their local emergency departments. This leads to a recommendation for the establishment of an ambulatory care advisory group charged with finding solutions to fill this gap in service.

In **Chapter 8,** the major ancillary services of laboratory, pharmacy, diagnostic imaging and perioperative are reviewed. In each case, discussions of the existing challenges highlight concerns about adequate health human resources and sufficient investment in technology and infrastructure, all of which affect quality of care. Recommendations call for increased integration of services. The discussion recognizes that historical differences may be difficult to change and that organizational cultural approaches may be difficult to blend. Still, the reality is that continuing to provide these

[3] Commission on Medicare, *Caring for Medicare, Sustaining a Quality System*. Government of Saskatchewan, 2001.

ancillary services as currently configured is not possible. There are not enough staff to fill even current positions, let alone the increased numbers that will be required in the next few years.

Chapter 8 concludes with a brief discussion of non-clinical support services, suggesting that the DOH investigate new models to streamline and consolidate such services as food services, housekeeping and laundry. Experience in other jurisdictions indicates that doing so could increase efficiencies and quality while decreasing overall costs.

Chapter 9 focuses on the leadership requirements for the sustainability➔transformation paradigm. Like the previous chapter, it reviews several management functions that offer opportunities to facilitate the transformation. Discussions pertaining to business office consolidation, information management / information technology, and health human resources management lead to recommendations made with a view towards development of a better healthcare system overall that continually measures outcomes in health status relative to resources expended.

There are seven provincial programs, discussed in some detail in Supplementary Report #6. **Chapter 10** reviews the commonalities of these programs, starting with their mandates and operational responsibilities. While these programs are fairly independent, they must also be part of the transformation of the healthcare system, and to this end, chapter 10 makes recommendations to clarify their roles and to ensure that patient access to these programs is seamless.

Chapter 11, the last of the fact-finding and reporting chapters, focuses on governance and system leadership. Here, discussions are presented not only about governance of the DHAs, but also about the overlapping roles of foundations and auxiliaries. The relevance of governance structures relates to the required commitment of leadership at all levels to follow through on transformation. The chapter goes on to discuss accountability frameworks, with particular emphasis on funding formulae and performance agreements. The chapter concludes with an efficiency analysis, presented to bolster the argument that significant savings could have been achieved were different staffing models utilized in recent fiscal years.

Chapter 12 lays out a roadmap for implementation of a transformed healthcare system in Nova Scotia. The timeframe is presented as up to three years, with various steps outlined, accompanied by suggested timeframes. Questions for the CEO Council are provided, to facilitate the complex processes that will be required for the overall implementation plan. As elsewhere in the PHSOR, the topic of leadership is discussed in some detail, with the recommendation that a specific Project Strategy and Management Office be established and staffed as a Secretariat to oversee the transformation implementation.

CHAPTER 2: SUSTAINABILITY & TRANSFORMATION

SUSTAINABILITY

Canada's healthcare system has been repeatedly reviewed by Royal Commissions, Special Committees and Consultants. Whether the studies have been national, provincial or regional scope, all call for an agenda for change based on the need to ensure that the healthcare system is sustainable.

The Honourable Roy Romanow, in his report entitled *Building on Values: The Future of Healthcare in Canada,* asserts that the healthcare is sustainable "if we are prepared to act decisively."[4] Romanow continues: "while [the system] is as sustainable as Canadians want it to be, we now need to take the next bold step of transforming it into a truly national, more comprehensive, responsive and accountable healthcare system. Making Canadians the healthiest people in the world must become the system's overriding objective."[5]

Romanow's statement applies equally to Nova Scotia, where a multitude of studies, dating back to a Royal Commission in 1989, have called for change to create a sustainable system. While the call for sustainability is not new in the Province, the more challenging recommendations of the reports, i.e., those calling for significant transformation, have not been implemented. It is true that some decisions have been made, and these have had positive effects, but overall, the system has changed only piecemeal and incrementally, when system-wide transformation was prescribed. System-wide transformation is still prescribed.

TRANSFORMATION

Transformation appears to be the new mantra for the provision of healthcare. What is it? Is it viable in the Nova Scotia context? Is there support for transformation in the Province?

Change implies a piecemeal process that does not significantly affect the whole. Transformation requires that the system as a whole be restructured. It recognizes that no component is any more entrenched than any other.

The PHSOR Team believes there is no choice but to accept the need for transformation and to work toward implementation of a radically altered healthcare system in Nova Scotia. To do otherwise is not just short-sighted, it also ensures the further disintegration of the current healthcare system, putting its strengths at risk and only exacerbating its weaknesses. The urging for transformation does not lay blame: no single part of the system, whether political, DOH, DHAs/IWK or other providers, is more responsible than any other for the current problematic situation. The drivers for sustainability, discussed in Chapter 3, are broad and overlapping and largely external. Each healthcare provider and stakeholder must accept that it must be part of the transformation. Collaboration and cooperation must be demonstrated, with political will and government resources supporting the healthcare decision-makers at the service delivery and community level.

The PHSOR Team reports that people appear to be embracing the concept of complete change when they say that the system needs to be transformed. It is not about minor changes designed to essentially maintain the status quo. It is about a complete new design. The PHSOR Team heard repeatedly that people feel strongly that the system in its current form is not sustainable. People recognize that demand is increasing both quantitatively and qualitatively. They are familiar with the impact of the shortage of healthcare providers and professionals and they accept that there is a limit to the funding that the system can expect from the provincial coffers.

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[4] Romanow, Roy. *Commission on the Future of Healthcare in Canada.* Ottawa: 2002, p. 17.
[5] Romanow, Roy. *Commission on the Future of Healthcare in Canada.* Ottawa: 2002. p. xv.

While there may not be universal agreement on what those changes should be, it is evident that the status quo is not an option. This is as true in 2007 as it was in 2001 when Dr. David Rippey noted that: "It is clear that the health system and people's health needs are changing with or without the involvement of government or decision-makers. There is a need to get a handle on what's happening in order to make better decisions."[6]

THE LINK BETWEEN SUSTAINABILITY AND TRANSFORMATION

Putting more money into the Province's healthcare system as it is currently configured is not an option. Looking at solutions strictly from the perspective of supply and demand highlights the impracticality of this viewpoint, if for no other reasons than the shortage of staff and a finite amount of money. The PHSOR clearly highlights that there are other key elements to be considered, not the least of which is that the health outcomes that are generated by the current system are not good enough.

The factors underlying the issue of sustainability, including improved health outcomes, increasing needs and demand, health human resources, other fiscal demands and cost effectiveness can only be addressed through a complete transformation of Nova Scotia's healthcare services system, always guided by the goal of having the healthiest population possible.

Every component of transformation towards a sustainable healthcare system must contribute to improving and maintaining the health of Nova Scotians. Improved healthcare status must become the gold standard that determines the involvement and viability of each participant in the Province's healthcare delivery system. Government and system leaders, healthcare professionals and providers, patients and the population as a whole must adopt this viewpoint to be successful. Fortunately, based on discussions with leaders at all levels, the PHSOR Team is confident that there is unequivocal acceptance that transformation is the right decision for Nova Scotia.

The following chapters build the case for transformation, starting with the drivers of the sustainability debate and then identifying benchmarks for evaluating the extent of needed changes, reviewing the current situation and building a new paradigm – a transformed system – for the provision of healthcare services across the Province.

[6] Rippey, David, Chair, Clinical Services Steering Committee. Halifax: February 2001.

DRIVERS

The PHSOR Team believes that a sustainable system requires the careful balancing of a number of key factors:

- **Demand:** As the population ages, the demand for services increases disproportionately. In addition, in terms of health outcomes, the demand is also for better and different services. A safe and reliable health system is the fundamental cornerstone for any future change agenda. People deserve, and are demanding, a system that is safe and leads to improved health, high quality care and better outcomes;
- **Health Human Resources:** As the population ages, so too do the healthcare providers and health service workers. Who will provide the services to the population?
- **Fiscal Imperatives:** Resources of all types – money, human resources, infrastructure and capital development – are either at or approaching a crisis state. If more resources are not an option, how will the system respond?

DEMAND

There are two contributors to increasing demand on Nova Scotia's healthcare system: demographics and health status, a key component of which is quality patient care and patient safety.

DEMOGRAPHICS

In Nova Scotia, as elsewhere across the country, demographics highlight the effect of aging baby boomers. Both the total number of people over 65 and their proportion of the total population are increasing.

	POPULATION BY YEAR			PERCENT BY YEAR		
AGE GROUP	**1986**	**2001**	**2021**	**1986**	**2001**	**2021**
0-19 years	266,120	233,058	168,346	30.2%	25.1%	18.1%
20-64 years	513,948	570,414	555,920	58.4%	61.4%	59.9%
65-74 years	60,908	65,267	119,564	6.9%	7.0%	12.9%
75-84 years	28,527	41,763	59,915	3.2%	4.5%	6.5%
85+	11,062	18,105	23,967	1.3%	1.9%	2.6%
TOTAL	**880,565**	**928,607**	**927,712**	**100.0%**	**100.0%**	**100.0%**

The 65+ age group represented 11.4% of the population in 1986, is currently at 13.4% and will grow to 16% by 2011. By 2021, the percentage will be 22.0%. This age cohort currently consumes almost 50% of hospital-based care, a pattern that mirrors utilization across the country. The projected increase in the number of people over 65 will place unprecedented demands on acute care utilization patterns and, without change, will lead to cost structures that cannot be maintained.

A study conducted by the Halifax Chamber of Commerce in 2006 suggests that at present Nova Scotians draw from the system at the following average rates:

- Those under the age of 65 consume resources at a rate of $1,550 per person per annum
- Those between the ages of 65 and 74 consume resources at a rate of $6,598 per person per annum
- Those between the ages of 75 and 84 consume resources at a rate of $12,738 per person per annum
- Those 85 and over consume resources at a rate of $23,512 per person per annum.

Assuming an increase of 7% per year to take into account both basic inflationary growth and increased costs of new pharmaceuticals and technological advances, these rates will increase to

$6,002, $25,534, $49,293, and $90,984 respectively over the next 20 years.[7] This implies that the cost of delivering care to people over the age of 65 will more than double (in today's dollars) during the same time.

Such financial projections make it clear that the system needs to be changed. Without a transformation in the way that care is delivered, the projected impact on hospitalizations is equally as dramatic, suggesting an increase of more than 60% in ten years. With a status quo of today's length of stay patterns, up to 1300 additional acute care beds with appropriate professional staff would be required to meet the demand. Clearly, this is not sustainable and a transformation involving major changes in length of stay, scope of practice and a significant shift of services into the community must occur.

While hospital-based care is only one component of the healthcare delivery system, it is not unique in the pressure it will experience for increased demand for services; all aspects of the system will be significantly affected. An aging population will shift disease patterns, reflecting the so-called diseases of the elderly such as Alzheimer's disease and other dementias, cancer and cardiac problems, joint replacements, etc. Further, as people's healthcare needs shift even more to managing and coping with later-life diseases, the system must adapt to an emphasis on chronic, rather than acute care.

Management of chronic disease already consumes an estimated 60-70% of total healthcare spending. Given the aging of the population and the concurrent increase in life expectancy, the system must help the population remain as healthy as possible for as long as possible. This suggests a renewed focus on Primary Healthcare and Chronic Disease Management, using more cost effective models of care. Beginning now to invest in community-based services is an essential first step to prepare the system to respond to the pressures that are inevitable in five to ten years.

HEALTH STATUS

The need to realign healthcare services is even more evident in light of the health status of Nova Scotians. Despite a multi-faceted approach to healthcare delivery and increased spending over time, health status has not improved significantly over the past decade and the Province continues to compare less than favourably with the rest of Canada. The Department of Health Business Plan for 2005-2006[8] cites the following examples.

Health Status of Nova Scotians

	Nova Scotia ranking	Factor	Canadian average
life expectancy	3rd lowest	78.9 years of life	79.9 years
lung cancer mortality	2nd highest	56.2 per 100,000 population	47.3/100,000
breast cancer mortality	3rd highest	25.8 per 100,000 population	24.8/100,000
primary site cancer	highest rate	439.3 per 100,000 population	397.1/100,000
self-reporting of probable depression	2nd highest	8.7% of population	4.6%
self-reporting of health as fair or poor	2nd highest	13.8% of population	11.3%

[7] Halifax Chamber of Commerce, *Health Monitor*, February 21, 2006
[8] Department of Health Business Plan, 2005-2006.

These health indicators reinforce Romanow's statement, applied to the Nova Scotia context: "Making [Nova Scotians] the healthiest people in the world must become the system's overriding objective."[9] Addressing the issues of health status places incredible pressure on the system, particularly in combination with changing demographics. Maintaining the status quo is not an option. System transformation is essential to improve the health of Nova Scotians.

PATIENT SAFETY AND QUALITY

A key component to the demand issue is patient safety and quality. Quality patient care and the emerging patient safety agenda represent a fundamental cornerstone in the sustainability debate. Internationally, the Institute for Healthcare Improvement and the Institute of Medicine (IOM) have clearly argued and articulated a compelling case for change:

> Healthcare around the world is in need of revolutionary change. We are not performing at the level our patients deserve. There are huge gaps between knowledge and practice. Adverse events harm patients far too often. Too many people don't get the care they need. And the system propagates waste: waste of time, resources, and good will. Healthcare is characterized by fragmentation — among disciplines, among organizations, and among geographic locales — while those it serves depend on coordinated effort.[10]

Pursuing these opportunities requires a shift away from "our fragmented, provider-focused healthcare system (in which patients must adjust to their providers' time and practice patterns), will require changes in how we assess and monitor the quality of healthcare, pay for health and for healthcare, monitor health and health needs, define optimal health, and prioritize health needs."[11]

The IOM helped to shape the call for change in its landmark reports *To Err is Human: Building a Safer Health System* and *Crossing the Quality Chasm: A New Health System for the 21st Century.* The first report began to frame the safety issues, showing the many ways that the current system can lead to harm to patients. The clear conclusion in *To Err is Human* is that the status quo is not acceptable.[12]

Canada is not immune to the safety issues found by the IOM. As the Health Council of Canada notes, "there can be little doubt that when it comes to patient safety, Canada can and should be doing a lot better."[13] A 2004 study by Baker et al found that 7.5% of patients admitted to hospitals in Canada experience one or more adverse events (AEs)[14]. While the study does not identify specific causes for the AEs, it does note that surgical services have the largest numbers of AEs, followed by pharmaceutical errors. The consequences of AEs are defined and include preventable/avoidable deaths as well as increased morbidity that leads to longer lengths of stay and attendant higher costs. Healthcare staff and professionals cannot shoulder the entire blame for AEs; however, shortages of staff are likely to exacerbate the problem.

Patient safety issues lead to questions of critical mass and issues related to core competencies. So while some people might suggest that the solution lies in spending more money, more money invested in the same processes and same models of care, is not the solution. Transformation must include a consolidated approach to the appropriate use of all resources.

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[9] Romanow, Roy. *Commission on the Future of Healthcare in Canada*. Ottawa: 2002.
[10] Institute for Healthcare Improvement, *The Case for Improvement,* from the website www.ihi.org, 2007
[11] Lynn, Joanne et al. *Using Population Segmentation to Provide Better Healthcare for All: The "Bridges to Health" Model,* The Milbank Quarterly, Volume 85, Number 2, 2007.
[12] Kohn, LT et al. *To Err is Human: Building a Safer Health System,* National Academies Press, 1999.
[13] Health Council of Canada, *Accelerating Change,* 2005
[14] Baker, Ross, et al. *The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada*. Ottawa: CMAJ, May 25, 2004.

HEALTH HUMAN RESOURCES

Many factors contribute to the increasing challenges of delivering healthcare to Nova Scotians. The examples of pharmaceuticals and infrastructure are key and are discussed in some detail under fiscal imperatives. Still, if health human resources are not addressed, other strains on the system become moot, as without healthcare professionals and healthcare workers in general, there can be no system at all. Thus, no review of a health system can ignore the subject of Health Human Resources (HHR). Nova Scotia is not unique in experiencing critical shortages of professional and support staff; the same is true nationally and internationally. At the same time as there are increasing demands for service by an aging population, the number of healthcare providers due for imminent retirement is huge and will not be replaced by younger staff.

Data from the NSAHO Pension Plan database shows that of the 11,068 staff in key professional groups today, 2,158 or 20% will be eligible for retirement in 2010. By 2015, that number increases to 4,834 or 44% (see table below).

In some groups the numbers are even higher. For laboratory technologists, it is projected that 56% of all current staff will be eligible for retirement by 2015. This group represents a "hard to recruit" staff group and the healthcare system will need new strategies to deliver these services.

Retirement Eligibility of Select Health Human Resources to 2010 and 2015,

All District Health Authorities and IWK, Nova Scotia , 2005

Classification	Currently Employed	Eligible to Retire by 2010*		Eligible to Retire by 2015*	
		#	%	#	%
Dietitian	150	25	16.7	50	33.3
EKG Technician	107	21	19.6	47	43.9
Health Records Technologist	90	25	27.8	54	60
Laboratory Technologist[1]	724	248	34.3	405	55.9
Licensed Practical Nurses	1637	290	17.7	576	35.2
MRI Technologist**	14	1	7.1	6	42.9
Nuclear Medicine Technologist	44	6	13.6	14	31.8
Registered Nurse	6628	1299	19.6	3125	47.1
Occupational Therapist	179	9	5	29	16.2
Personal Care Worker	144	13	9	37	25.7
Pharmacist	138	14	10.1	43	31.2
Physiotherapist	251	32	12.7	87	34.7
Psychologist	123	18	14.6	35	28.5
Radiation (X-Ray) Technologists	312	75	24	129	41.3
Respiratory Therapist	172	17	9.9	48	27.9
Social Worker	287	53	18.5	122	42.5
Ultrasonographer	68	12	17.6	27	39.7
Total	11068	2158	19.5	4834	43.7

Source: Projected Health Human Resources Requirements, Nova Scotia Acute Care Health Sector District Health Authorities & IWK, Recommendations of the Senior Human Resources Group, February 23, 2006 (based on NSAHO pension plan data)

Looking forward, there simply are not going to be enough skilled and trained workers. For example, Nova Scotia only trains 318 RNs each year and retains approximately 80% in the Province. With the potential retirements of 1300 RNs by 2010, Nova Scotia will have a gap of more than 500 RNs that will need to be recruited from outside or persuaded not to retire. This is a global trend that may be best summarized in a recent American report: "Just as the baby boom demand for health services peaks, hospitals will experience a shortage of healthcare workers at all levels. Hospital leaders need to realize

that this shortage will be of an unprecedented magnitude and is not cyclical."[15] Although the report refers specifically to hospitals, the shortages are pervasive throughout the system. Every District Health Authority (DHA) in Nova Scotia reports vacancies and/or staffing levels that are less than optimal.

Vacancies and absenteeism in key groups such as nursing lead to increased use of overtime to cover staffing requirements. The Canadian Nurses Association suggests that absenteeism among RNs remains very high – in fact nearly 10,000 full time equivalent positions were taken up with absenteeism in 2005 – a rate 58% higher than the average full time Canadian worker.[16] This suggests that we need to do a better job at creating work settings that focus on good practice environments, that value our staff, that result in jobs that they enjoy doing and that lead to an overall healthier workplace.

Vacancies in other staff groups, e.g., pharmacy, can lead to reduced services. In turn, this places a strain on the care delivery processes and other staff.

Finally, in medicine, the survival of core programs is threatened due to the lack of physicians, surgeons and anaesthetists. The end result is a vicious cycle that has a negative overall impact on the staff and the entire system. A transformation is needed to achieve healthy workplaces, where staff is valued and patient care can be enhanced.

FISCAL IMPERATIVES

The debate on fiscal sustainability of the healthcare system is almost as old as provincial medical and hospital insurance plans themselves. Healthcare costs have consistently grown at a rate that outpaces the growth of provincial treasuries. In the last 10 years alone, the average portion of provincial and territorial budgets spent on healthcare has risen from 33.2 to 38 percent. Canadians are healthy overall, but our good health comes at a high and ever-increasing cost. At 9.3 percent, Canada spends more of its gross domestic product (GDP) on healthcare than most other industrialized nations (although we are about in the middle of the pack when it comes to spending per person). In 1974, it was only 6.7 percent of GDP.[17]

Health spending as a percentage of total government spending in Nova Scotia has grown from 37.83% of the Provincial Budget in 1996/97 to 46.7% in 2006/07. Healthcare spending has grown at an average rate of 11%, while provincial revenues only grew by an average of 8%. If these trends continue, health will continue to consume a disproportionate share of new monies and will continue to grow as a percentage of the provincial budget. Various projections can be made, but it is not unreasonable to assume that DOH expenditures could be at or above the 60% level in as early as five years. This will mean that other departments will have spending levels frozen or reduced to offset the growth in spending in health. Alternatively, the government will incur a deficit.

A recent report from Deloitte confirms this projection, suggesting that DOH will consume 66% of the provincial budget by 2013. Deloitte's projections go on to suggest that the cost of the health system per working aged citizen will increase by almost 400% from 2006 to 2020, growing from $4700 in 2006 to more than $16,400. If Deloitte is correct, this suggests that Nova Scotia's healthcare system will cost more than $9 billion in 2021 (up from the approximate $3 billion today).[18]

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[15] American College of Healthcare Executives. *FutureScan: Healthcare Trends and Implications 2007-2012*. Chicago: Health Administration Press and Society for Healthcare Strategy and Market Development, 2007.
[16] Canadian Nurses Association, 2006
[17] Commission of the Future of Healthcare in Canada, Issue/Survey Paper – *Sustainability of Canada's Health System,* June 2002
[18] Population projections from Statistics Canada suggest that there will be 555,000 Nova Scotians between the ages of 20 and 64 in 2021. At $16,400 per working age citizen, that equates to $9 billion in cost.

PRESCRIPTION DRUGS

In addition to staffing costs and hospital budgets, two other cost centres are placing increasing demands on provincial healthcare budgets. Prescription drugs constitute the fastest growing and second largest category of healthcare expenditure in Canada. Like governments around the world, Canada is faced with the challenge of optimizing the benefits of prescription drugs for Canadians while managing the risks and complexities associated with this rapidly evolving sector. After hospital care, Canada spends more on drugs than any other major category of the healthcare system. Since 2000, the total public and private expenditure on prescription drugs has grown by approximately 12 per cent annually[19]. At this rate of growth, Health Canada suggests that there is a clear threat to the sustainability of publicly funded drug programs. This is a major issue that Romanow, in a speech to the National Leadership Conference to Health Leaders in Toronto, in June 2007, argues must be addressed. He reiterates his call for a publicly funded plan to pay for catastrophic drugs and a national formulary, without which additional costs will simply be transferred from public plans to private citizens.

INFRASTRUCTURE INVESTMENT

This is another particularly significant area of expenditures. It is a national issue and all provinces are facing a mounting challenge to address the current state of disrepair of healthcare facilities. Following years of deferring costs to future budgets, experts now predict that the country needs to spend a collective $120 billion to improve and build required infrastructure for everything from roads and bridges, transit systems, hospitals, universities, schools, water and waste treatment facilities, cultural and recreational facilities.[20] In Nova Scotia, it is estimated that healthcare requires an infusion of more than $2 billion to address the infrastructure challenge, including the following projects:

- At the beginning of the PHSOR, the DOH provided a then current summary of capital equipment requests. The total estimated cost of the items on this list was $40Million, and all DHAs and the IWK note that their request lists are grossly understated as the available annual funding for equipment funding is typically less than $2Million. Given this reality, DHAs and the IWK only prioritize the most urgent issues, leaving other needs off the list. Conservatively, it can be estimated that the actual equipment needs exceed $150Million;

- Capital building projects identified in 2006/07 business plans called for an additional need for almost $200Million, and this listing estimated $109Million for the new hospital at Colchester – a project with a current budget projected at more than $125Million. The redevelopment of the Victoria General site of the QE II, a critical project for the future estimated at $500Million, is not on this list. Other projects are estimated at approximately $250Million; and

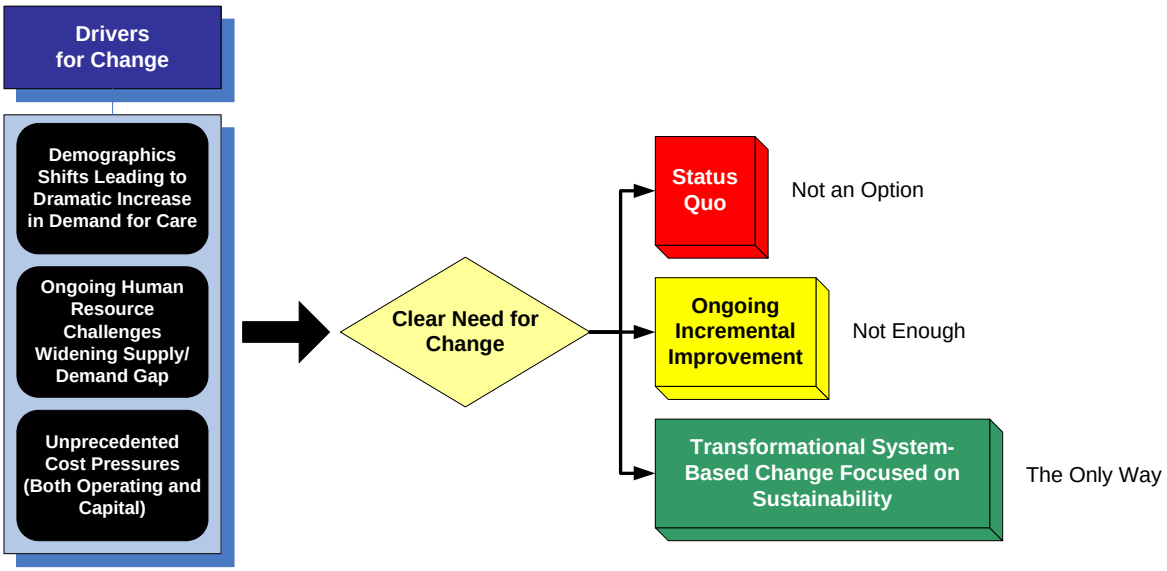
- Continuing Care investments are projected to be approximately $1Billion.

[19] *National Pharmaceuticals Strategy: Progress Report*, Federal/Provincial /Territorial Ministerial Task Force, June 2006

[20] Deloitte, *Provinces in Transition: Tackling Canada's toughest Policy and management challenges*, 2007

A ROADMAP FOR TRANSFORMATION

The PHSOR identified the drivers for sustainability: demand, health human resources and fiscal imperatives. It showed how the combined impact of these drivers leads to the conclusion that only transformation of the healthcare system can foster sustainability. How can the process continue, recognizing the immediacy of the challenge?



BACKGROUND STUDIES SUPPORT TRANSFORMATION

From the discussions held during the PHSOR, a set of images emerges that describe a transformed system of care delivery. These suggest a system that leverages local resources and services to respond to the issues that directly affect health status. At the same time, they suggest a system that relies on the acute care setting to respond to the episodic healthcare issues efficiently and effectively when needed.

Background studies to inform this transformation are already available. Various planning initiatives in Nova Scotia provide essential building blocks for transforming the emerging vision into an action plan for sustainability. Among them, the following studies are particularly relevant:

- *Department of Health Business Plan (2006-2007)*
- *Individual DHA Strategic Plans and Business Plans (various dates)*
- *The Renewal of Public Health in Nova Scotia: Building a Public Health System to Meet the Needs of Nova Scotians* (2006)
- *Continuing Care Strategy* (2005)
- *Framework for a Provincial Hospice Palliative Care Program for Nova Scotia* (2005)
- *Healthcare Cost Drivers (2004)*
- *Primary Healthcare: Action for Healthier Nova Scotians* (2003)
- *A Study of Health Human Resources in Nova Scotia (2003)*
- *The Cost of Chronic Disease in Nova Scotia (2002)*
- *Clinical Services Steering Committee Report (2001)*
- *Blueprint for Change (1994)*

IDENTIFYING THE BENCHMARKS OF TRANSFORMATION

Reviewing the various studies in light of the drivers for sustainability helps to identify the benchmarks of the transformed system for health and healthcare in Nova Scotia:

- A focus on population health;
- Improved local access to a variety of primary care providers, not limited to general practitioners;
- Expansion of public health services;
- A strengthened core set of community-based services, including, but not limited to primary healthcare, palliative care and mental health and addictions services;
- Enhanced services and streamlined access to continuing care, including long term care and home care;
- Reinforcing the role for many of the small and rural hospital sites;
- Ensuring appropriate access to high quality acute care services through a renewed acute care service delivery network of community, regional and referral hospitals; and
- Leveraging knowledge development and dissemination through the academic health sciences centres, the universities that train providers and the care delivery sites that provide the locations for training to occur.

The PHSOR confirmed a broad understanding and general commitment to primary healthcare and community-based solutions. This includes the need for practical action plans designed to encourage accomplishment of previously developed initiatives that support the health policy approach.

The PHSOR also supports a consensus to contain acute care cost structures to help pay for the transformation. This includes the realization of the need to redeploy not only financial, but also health human resources to primary healthcare.

Finally, the PHSOR Team is encouraged by the support for a core services framework for all care delivery sites, recognizing that this leads to role changes for many of the existing hospitals. For example, a core services framework might suggest a more limited set of core services to be provided at all regional sites; a specialty-based care plan to rationalize or consolidate such services across DHA boundaries into a model similar to the *centres of excellence* models used elsewhere; and fundamental changes to the role of small hospitals and health centres.

Moving from the benchmarks to the implementation can only be accomplished through fundamental transformation, always within the framework of demand, health human resources and fiscal imperatives.

LEADERSHIP: CRITICAL FOR SUCCESS

A complete new design requires an unwavering and ongoing commitment to leadership. Change is never easy or universally accepted; however, to successfully transform the healthcare system and the health status of Nova Scotians, strong leadership is absolutely essential.

Alignment between the various levels of leaders is also critical and goes well beyond governance and management of the DHAs. Given the political nature of the healthcare system, this alignment must encompass elected legislators, the Department of Health, the DHAs/IWK and beyond. All of the DHAs are prepared to lead their organizations through the necessary changes, if, and only if, government allows them to do so. Conversely, elected officials and civil servants in the DOH are prepared to support the transformation of the system if they are confident that DHAs/IWK CEOs and Boards will co-operate.

This significance of this conundrum is not unique to Nova Scotia. Perot Systems, a US management consulting company founded by H. Ross Perot, notes that the "experience in other industries, i.e., airlines, financial services, suggests that, ultimately, the transformational change is usually initiated

from outside the mainstream of the affected industry."[21] In Nova Scotia's case, it is demand, health human resource and fiscal imperatives that drive the necessity for transformation.

Perot continues, "Furthermore, the process of transformation tends to marginalize many, if not most, of the traditional players in the industry during the process of change. The same will be true for the delivery of healthcare services unless management and governance take charge of the clinical transformation efforts within their organizations."[22]

The changes required in Nova Scotia, and some of the options recommended in this report, are likely to face opposition from some groups. Some of this conflict revolves around the clash that exists between what is required to ensure that that the system is fiscally stable and sustainable, which is ultimately in the best interest of all citizens and all communities, versus the perceived sense of loss that citizens and communities may feel as some of the changes are implemented. If communities react negatively, and some ultimately will, the concern is that government will withdraw support for transformation and force the system to return to the existing models. This cannot be allowed to happen. It would set back, if not paralyze, the change agenda for years to come, years that the system does not have and can ill afford.

Fortunately, the basis for the political will to support transformation already exists in the mission of the DOH: "Through leadership and collaboration to ensure an appropriate, effective and sustainable health system that promotes, maintains and improves the health of Nova Scotians."[23] Rephrased, the mission reinforces the twin themes of health status and fiscal responsibility. These themes are also reflected in the individual vision/mission statements of the DHAs.

RECOMMENDATIONS:

1. That the Government of Nova Scotia confirm its ongoing commitment to pursue healthy public policy opportunities to further enable the population health focus and lead to improved health in the longer term.

2. That the CEO Council undertake a process to translate existing visions/missions into one overall shared vision, mission and values statement for the future of the healthcare system that will guide the essential transformation of the healthcare system in Nova Scotia.

3. That this new health status mission be presented to, and endorsed by, the Minister of Health by the end of calendar 2007.

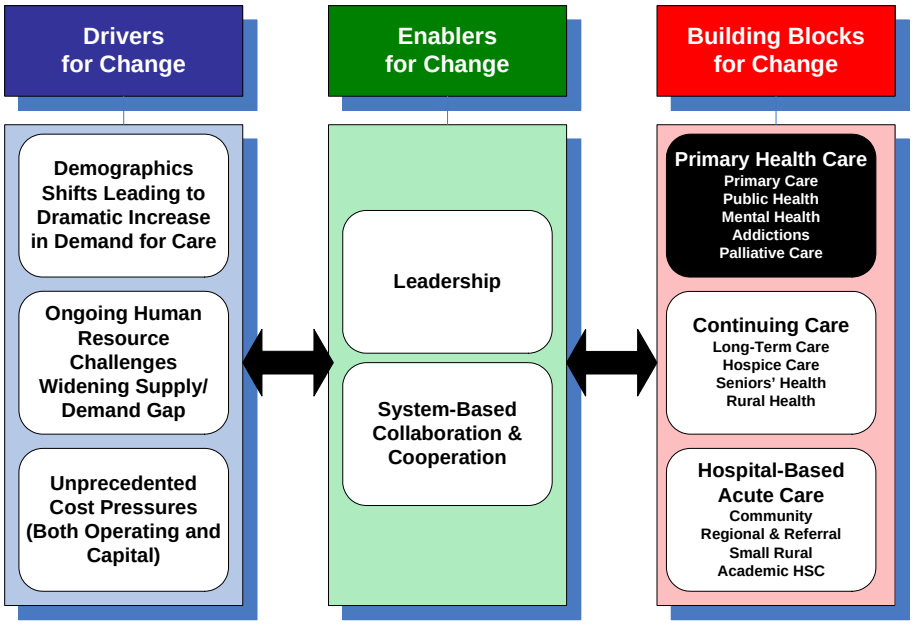
4. That the leaders of the health system, including the Government of Nova Scotia, DHAs/IWK Boards, and the CEO Council then formally commit to supporting the transformation of the health system through the implementation of the transformation action plan outlined in this report.

[21] Perot Systems, White Paper on Transformation, 2005
[22] Perot Systems, White Paper on Transformation, 2005
[23] Department of Health Business Plan, 2005/06

CHAPTER 5: BEGINNING THE TRANSFORMATION BY FOCUSING ON HEALTHCARE SERVICES IN THE COMMUNITY

DRIVERS AND BENCHMARKS

Committed leadership at all levels is needed to transform the existing healthcare system into one that can respond to the drivers for sustainability and achieve the benchmarks of transformation simultaneously. This is a tall order; however, there is no other option. The PHSOR Team believes that the starting point is to first realign the system to focus more on community-based primary healthcare.



PRIMARY HEALTHCARE SERVICES

The Fyke Commission offers the following definition of primary healthcare services:

> Primary health services are generally the first point of contact and provide the basis to address the main health needs of individuals and communities. They:
>
> - Serve to enhance people's physical, mental, emotional and spiritual well being;
> - Address the factors which influence health, i.e., determinants of health;
> - Encompass preventive, promotive, curative, supportive, and rehabilitative and palliative services;
> - Are provided by a range of providers; and
> - Are designed and delivered in conjunction with other community service providers and the public.[24]

THE NOVA SCOTIA CONTEXT

The Department of Health in Nova Scotia mirrors the Fyke definition. It notes that primary healthcare "is the first and continuing point of contact for Nova Scotians with the healthcare system. It focuses on promoting health, preventing illness, managing chronic diseases and treating people when they are sick. Primary healthcare also serves as a vehicle for ensuring continuity of care across the healthcare

[24] Commission on Medicare, *Caring for Medicare, Sustaining a Quality System.* Government of Saskatchewan, 2001.

system. By partnering with individuals, communities, health professions and government, primary healthcare is able to address the factors that affect health such as family, education, job, income and social economic situation. Primary healthcare is developed with full participation of the people it serves."[25]

The Advisory Committee for Primary Healthcare Renewal was established in September 2001. In May 2003, the resulting report, *Primary Healthcare: Action for Healthier Nova Scotians*, advised the Department of Health on the development of a community-based primary healthcare system. Since that time, the DOH and DHAs/IWK have been working collaboratively to implement the extensive recommendations of the report. The PHSOR Team views this is a solid plan that should be revitalized and fast-tracked for rapid implementation. Some of the key messages from the Advisory Committee are:

- No single model of primary healthcare delivery meets the needs of all communities in Nova Scotia;
- Communities must collaboratively develop primary healthcare service delivery models that best reflect their assets and meet their needs;
- Participation in these models by providers and communities must be voluntary, allowing gradual movement toward models that reflect the broader primary healthcare approach; and
- Support for change management must be provided.

There is progress; several DHAs have successful local strategies to advance the primary healthcare agenda, as summarized in **Supplementary Report #1**. Still, the PHSOR Team recognizes the delay and inconsistent implementation of the 2003 report recommendations. Four years have passed and there remains a general lack of appreciation of the significance and urgency surrounding this issue. This is not a criticism exclusively of the DHAs. Their work is more difficult without designated funding to implement the vision, model and recommendations and the voluntary nature of the changes results in inconsistent accountability, implementation and evaluation. Implementation is hampered further by the fact that the technology and systems for sharing information among providers and health centres is in the early stages of implementation and is still unproven.

The result is that primary healthcare is not yet integrated and coordinated within the broader healthcare system. Not surprisingly, primary healthcare needs significant, broad-based and co-ordinated attention if it is to play an even greater role in improving the health status of Nova Scotians. Providers at all levels, both private and public, must work together on this initiative. The public must also buy into this shift: it is every Nova Scotian's responsibility to be as healthy as possible and it is community-based primary healthcare services that must support and facilitate this health consciousness.

EXAMPLES OF PRIMARY HEALTHCARE INITIATIVES

Many DHAs now have collaborative practice models with family physicians and nurse practitioners. The goal of these models is to provide essential services to the population within specific communities. As these models evolve, they reiterate the importance of responding to increased demand, paying close attention to health human resources, and being fiscally responsible, all under the umbrella goal of improving health status.

In addition, some DHAs now have new models to deliver primary healthcare to more remote communities. For example, the Long Briar initiative involving community paramedics may well be a model that could be deployed in other parts of the Province.

As another example, Capital Health recently released its plan entitled *Capital Gains.* This plan lays out an impressive model that will help to solidify primary healthcare across the district, in both more

[25] Government of Nova Scotia, Department of Health website, 2007.

densely populated urban areas and more rural parts of this DHA. The report that outlines the Capital Gains strategy describes the current system as one that is marked by:

- Fragmentation of services - services in silos
- Lack of coordination across the healthcare system
- Acute, episodic model to care with limited capacity to respond to high burden of chronic disease
- Access to specialists: high wait times
- Access to primary care: limited 24/7 coverage
- Services gaps:
  - Across the continuum of care from health promotion, prevention and disease management
  - Limited secondary care in facility or community-based settings
- Lack of screening tools to assess health risk and health behaviours
- Limited capacity to support patient/family empowerment to manage their own health
- Limited interdisciplinary & collaborative team-based approaches
- Limited dedicated resources to inform population health planning
- Limited focus on outcomes.

The proposed model focuses on ensuring every citizen has access to a primary care provider, that services are delivered through multi-disciplinary family practice teams, that these teams are grouped to ensure 24/7 coverage, the groups are supported by larger multi-disciplinary community health teams and these teams form a community health network. The intent is to fill in the gaps and voids that currently exist, deliver care where it is needed, resulting in a system that functions across the continuum. While this model may not work in all parts of Nova Scotia, it is worthy of consideration as another important piece of the primary healthcare model in the future.

Finally, the Community Health Centre model now in the Annapolis Valley DHA deserves particular mention. There, the Annapolis Royal, Eastern Kings and Western Kings Memorial Health Centres highlight new, vibrant and more importantly, sustainable roles for smaller hospitals that otherwise struggle to provide services around the clock. As well, the Cumberland DHA has had strong success with the South Cumberland Rural Health Practice – a model that has shifted the focus of the hospital in Parrsboro and provided a sustainable primary health service delivery model for years to some. Similar examples exist throughout the Province.

These excellent examples demonstrate how new roles for these smaller hospitals, focused on primary healthcare, can be a critical enabler of change. Changing the role of small hospitals to provide primary healthcare may complete the continuum of primary healthcare services, both in and out of facilities.

This paradigm is a familiar and recurring one. In New Brunswick, The Health Services Review Committee recommended the creation of community health centres as the predominant, although not exclusive, focus for community-based service development. Their role is to: "provide the appropriate service from the most appropriate provider both in terms of quality and cost. Doctors are often on salary, and there is an expanded role for the nurse. The Centres locaux de services communautaires in Quebec and the Community Health Centers in Saskatchewan are working models of this approach. A good start in New Brunswick is the implementation of the shared practice model in McAdam [southwest of Fredericton]. Inclusion not only of the variety of healthcare workers, but also of social service providers, is a key element of this approach."[26]

[26] Province of New Brunswick, *Final Report of the Health Services Review Committee,* 2001.

The PHSOR Team believes that a similar community health centre model throughout Nova Scotia would enable more consistent development of a core set of services in communities across the Province.

RECOMMENDATIONS:

5. That the DOH work collaboratively with the DHAs/IWK to establish a Primary Healthcare Leadership Task Force to confirm system-wide priorities to provide primary healthcare through new and innovative models across the Province and in particular in rural Nova Scotia.

6. That funding be identified as a critical investment in the established priorities, acknowledging that this may entail a shift from acute care hospital funding.

7. That the individual DHAs and the IWK develop frameworks for assessing and prioritizing local initiatives for expansion of Primary Healthcare Services and that discretionary funding be preferentially directed to these services.

COMPONENTS OF PRIMARY HEALTHCARE

As Nova Scotians go through life, they require various healthcare services to promote health, prevent illness, manage chronic diseases and treat them when they are sick. Some of these fall under the purview of Public Health; others such as mental health, addictions, continuing care and palliative care are more targeted. Still others have a more geographic or population-specific focus, such as rural health. The PHSOR Team met with many people involved in each of these initiatives.

PUBLIC HEALTH

A review of the Public Health System in Nova Scotia was compiled in an April 2006 report, *The Renewal of Public Health in Nova Scotia: Building a Public Health System to Meet the Needs of Nova Scotians.* It outlines 21 actions for strategic renewal and a new Department of Health Promotion and Protection was created to lead their implementation.

There appears to be widespread support of the recommendations by Public Health administration and staff. Still, successful follow-through of the recommendations requires prioritization and timely implementation as well as participation in collaborative efforts at the provincial and local levels. The improvement opportunities identified through the PHSOR are intended to support and enhance the public health report; examples are:

- Creation of the Department of Health Promotion and Protection is a positive step; however, the new Department must also embrace and contribute to the transformation of healthcare delivery across the Province.
- The new Department can play an active role in population health assessments and the development of health public policy, focusing on vulnerable populations and health disparities.
- Public Health, both provincially and locally, requires information systems to support evidenced-based decisions, enhanced public practice, effective surveillance, and monitoring and evaluation of programs.

More generally, the PHSOR identifies inconsistencies regarding the need for better integration between Public Health programs and hospital-based services. For example, there are some maternal-child health services provided in hospitals that more commonly are provided by Public Health and/or primary healthcare providers in the community. The PHSOR Team recognizes the history behind these duplicated services; however, duplication leads to sub-optimal use of limited resources and should be eliminated. Similarly, the DHAs report varying levels of success with immunizations and some

inconsistencies between Public Health and primary healthcare providers. These overlaps should also be reviewed and assigned to Public Health, the service best equipped to undertake such programs.

RECOMMENDATIONS:

8. That the Department of Health work collaboratively with the Department of Health Promotion and Protection and the DHAs/IWK to confirm the organizational frameworks and structures for Public Health.

9. That DHAs/IWK be active participants in the ongoing implementation of the Public Health Renewal strategy

MENTAL HEALTH

Mental health services are delivered throughout the Province either in a combined district model or through individual DHAs. This service is handicapped by limited resources and a provincial mental health response that is in development, but remains disjointed. Efforts to improve mental health services are underway. The PHSOR identifies a number of themes that support the need for extensive redevelopment of mental health services, including:

- **Access to both community-based supports and acute inpatient services** is limited. Shortages of community-based services increase the reliance on acute services. Conversely, bed utilization and inability to discharge are common issues due to limited community programs and hospitalization. There is insufficient community housing, few community groups and resources, little long term rehabilitation and a lack of geriatric assessment units and senior mental health programs. These issues are particularly difficult for patients who cannot access services within their own DHA.
- **Access to mental health professionals** is limited. There are few psychiatrists outside the larger urban centres. The same is true for many other mental health professionals, e.g., psychologists. Emergency response teams are inadequate to compensate for and meet crisis care needs for most communities. The issues are exacerbated by transportation challenges between healthcare providers and patients, reflecting the geographic realities in Nova Scotia.
- **Pharmaceutical interventions** are often costly and limited Pharmacare coverage for prescription drugs encourages non-compliance to prescribed treatments.
- **Limited integration and communication** between government departments and within the DOH interrupts the continuum of care. There is a need for greater planning with the Department of Community Services to provide appropriate supported housing. In addition, patients with concurrent disorders are not well supported due to infrastructure and long-standing stigmas attached to service providers, e.g., mental health and addiction services. Finally, the mental health needs within aboriginal communities are not being addressed adequately and require stronger linkages between provincial and federal jurisdictions.

RECOMMENDATIONS:

10. That the Department of Health lead a process with the DHAs/IWK to complete a focused review of mental health services including, but not limited to: a health human resource strategy for mental health professionals; a provincial bed analysis to determine how many beds are needed in the Province and where those beds should be (fewer sites for inpatient programs may need to be considered to alleviate the pressure that is currently being experienced regarding recruitment and retention of staff to support the inpatient units); necessary linkages across the continuum; and Province-wide strategies for program prioritization, growth and development (e.g., seniors' mental health services).

11. That the Department of Health work with the DHAs/IWK to identify options to increase available funding for community and outpatient mental health services, to reduce unnecessary inpatient stays.

12. That the Department of Health continue to enhance collaboration across government departments by engaging the Department of Community Services and other governmental partners as appropriate in transformation activities related to mental health, at both the provincial and DHAs/IWK levels.

ADDICTIONS

Addiction services across Nova Scotia have historically been organized in shared services models. DHAs 1, 2 & 3 and DHAs 4, 5 & 6 have tri-partite models; DHAs 7 & 8 have a dual-district model; and DHA 9 provides services alone. Some DHAs are in the process of revisiting these models and creating shared leadership structures for mental health and addictions at the local level, recognizing the emerging evidence that the concurrent disorders population is not well served by existing structures.

Concurrent disorders are defined as a condition in which a person has both a mental illness and a substance use problem. This term is a general one and refers to a wide range of mental illnesses and addictions. For example, someone with schizophrenia who abuses cannabis has a concurrent disorder, as does an individual who suffers from chronic depression and who is also an alcoholic.[27]

It is challenging to determine conclusively how many people have a concurrent disorder because existing studies examine different populations and utilize differing screening tools. Further, people with concurrent disorders are frequently misidentified, as diagnosis can be more difficult because one disorder can mimic another. Relapse rates for substance use are higher for people with a concurrent mental disorder, as are the chances that symptoms of mental illness will return for those with a concurrent substance use problem. Depending on the setting, prevalence rates for concurrent disorders have been found to range from 20 to 80 percent.[28]

What is known conclusively, however, is that people with mental illness have much higher rates of addiction than people in the general population. Similarly, individuals with an addiction have much higher rates of mental illness than people in the general population. One large US study found that approximately one-third of people with a mental or alcohol disorder had a concurrent disorder, and half of the people with drug problems had a mental disorder. A smaller study in Edmonton, Alberta had similar findings. In this study, almost a third of mentally ill individuals also had a substance use problem, almost a third of those with alcohol dependency also had a psychiatric diagnosis, and among illicit drug users, almost half had a mental illness.[29]

The issue of concurrent disorders has led a number of jurisdictions to combine mental health and addictions under a single organizational umbrella. The Centre for Addictions and Mental Health in Toronto is just one example of a combined entity and at a provincial level virtually every province has either created a single structure to address these services or has developed clear strategies to address the needs of people with concurrent disorders. Locally, DHA 2 has recently hired a Director for Mental Health and Addictions – a move that appears to be supported in other DHAs.

Beyond the concurrent disorder issues, there are a number of other common issues and some key opportunities that need to be considered in the context of healthcare transformation. These include:

- **Detox Services** are insufficient and not always appropriate to meet population needs. Home detox is a model that is in place in some parts of the Province and this may need to be expanded.
- **Information management** for addiction services is almost non-existent. Service is data rich and information poor. Data reporting systems across the Province are ad hoc and insufficient for planning purposes. Individual DHAs, even when part of a shared service model, may not have integrated reporting systems or formats across the shared service. Information

[27] Canadian Mental Health Association, 2007.
[28] Centre for Addiction and Mental Health, "People with Concurrent Disorders," in Virtual Resource for the Addiction Treatment System, Section 3: Special Populations.
[29] Centre for Addiction and Mental Health, "Answers to Common Questions on Concurrent Disorders"

management and planning successes of some DHAs have not been implemented across the Province.

- **Services for youth and adolescents**: Adolescents frequently are not well served because their age renders them ineligible for adults or children services. This gap needs to be addressed.

RECOMMENDATIONS:

13. That the Department of Health and the Department of Health Promotion and Protection confirm the process that will be used to define organizational structures and frameworks for Addictions Services, both at provincial and DHAs/IWK levels, noting that the decision on local structures is a DHAs/IWK responsibility.

14. That individual DHAs and the IWK confirm the management/leadership structure for addictions services, which could include a hybrid of separate or combined leadership models.

15. That the Department of Health work with the DHAs/IWK to identify options to support implementation of new models and services (e.g., expansion of non-residential detox services).

16. That the Department of Health continue to enhance collaboration across government departments by engaging the Department of Health Promotion & Protection and other governmental partners as appropriate in transformation activities related to addictions, at both the provincial and DHAs/IWK levels.

PALLIATIVE CARE

The role of palliative care in the spectrum of healthcare services is often misunderstood. Many people assume that palliative care focuses exclusively on end-of-life care. Palliative care serves a much broader role in the health services continuum. The Public Health Agency of Canada[30] defines palliative care more broadly, noting that palliative care "is a special kind of healthcare for individuals and families who are living with a life-threatening illness, usually at an advanced stage."

Embracing this broader definition, palliative care is appropriate for any patient, regardless of age, at any stage of a life-threatening illness. Palliative and end-of-life care touches all parts of the healthcare system, from hospital to hospice to community to home. It usually involves an interdisciplinary team of caregivers to deal with the medical and psycho-social, spiritual and economic needs of the patient and the family.

In 2005, a *Framework for a Provincial Hospice Palliative Care Program for Nova Scotia* was completed for the Department of Health. At the time of the PHSOR, this report had yet to be released, however in March 2007, the Minister of Health announced additional resources for people requiring palliative care. The focus of the announcement was an increase in the amount of home support services that palliative care patients could access to help them remain in their own homes in the last three months of their lives.

> Nova Scotians who need palliative care, and their families and friends, are facing a very difficult time in their lives. They need, and deserve, a level of support that improves the quality of their life and enables them to stay close to their loved ones.[31]

Increased entitlements are intended to allow patients to access more concentrated home support services including nursing, personal care, home support, and respite support for families. This

[30] Public Health Agency of Canada, Palliative Care Information Sheet for Seniors, www.phac-aspc.gc.ca/seniors-aines/pubs/info_sheets/palliative_care/pall_e.htm, 2007.
[31] Department of Health Press Release, March 1, 2007.

expansion of services is the first phase of a three-phase expansion of palliative home care services across the Province:

- Phase 1 focuses on improving the quality of patients' lives and providing the support they need to remain in their own homes;
- Phase 2 will focus on what medications will be covered under the program; and,
- Phase 3 will focus on the development of an integrated palliative care team that can most effectively respond to the needs of patients.

The PHSOR Team applauds the Minister's announcement and generally supports the three phase program suggested. We also note that the *Strategic Framework for Continuing Care Services* includes palliative care as a component and identifies a Provincial Palliative Care Program as a year 1 priority. We strongly support a provincial program model.

The PHSOR Team also notes other issues relating to palliative care:

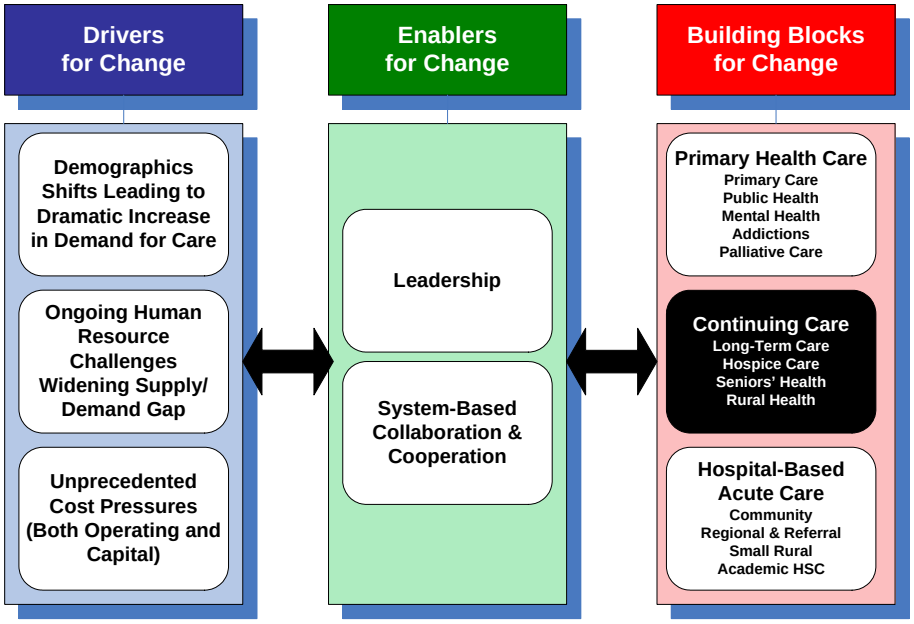
- There is a Nova Scotia Hospice Palliative Care Association. Some communities in the Province have a hospice society while other communities do not.
- Palliative care services are provided in each DHA at the institutional and the community levels; however the services are fragmented, inconsistent, not easily accessed and suffer from a lack of standards.
- Paediatric palliative care services and consultations are provided provincially through the palliative care team at the IWK. DHAs state they are well served by this team.
- There is a high level of agreement that a provincial system of care should be developed.

RECOMMENDATIONS:

17. That the Department of Health and the DHAs/IWK confirm an overall process to implement the framework that has been developed for coordinating palliative care services.

18. That individual DHAs and the IWK confirm the scope of local programs for the palliative population within the communities they serve.

CONTINUING CARE



Continuing care is a range of services delivered directly by the Department of Health. This is an issue for all DHAs; they cannot be responsible for the full continuum of care without complete integration of this component into their portfolio. The PHSOR Team believes that the DOH should not be directly involved in the delivery of programs. This is consistent with the New Brunswick Health Services Review Committee's findings that determined that "Government's prime role should be to 'steer' not to 'row'." The Department of Health and Community Services' responsibility is to set goals and objectives and to monitor progress towards their achievement. Its task is not, with few exceptions, to manage the delivery of programs and services."[32]

Despite the historical rationale for the DOH role in providing continuing care, the PHSOR Team feels that this responsibility should be devolved to the DHAs. Transformation provides the ideal opportunity to do so. At the same time, the PHSOR Team notes that there is no consistent approach to either programs and services or access across the Province. There is an opportunity to create a unified provincial approach. A fragmented system and lack of equity for patients should be avoided.

RECOMMENDATIONS:

19. That the Department of Health work collaboratively with the DHAs/IWK to implement a process that will ensure that responsibility for continuing care is devolved to the DHAs/IWK, no later than the end of fiscal 2008/2009.

In June 2006, the Continuing Care Strategy was unveiled, outlining expansion plans and investment strategies for the next decade. The Continuing Care Strategy is supported by Cabinet and there is very strong support for the strategy throughout the system. Staff are also excited about the possibilities. The report identifies four strategic action areas and maps out broad implementation strategies over a 10-year period. Priorities for the first three years include support for individuals and families; support for community solutions; strengthening continuing care services; and investing in the required infrastructure. The longer term strategies address key issues that must be addressed and cannot be lost during any transition or devolution process.

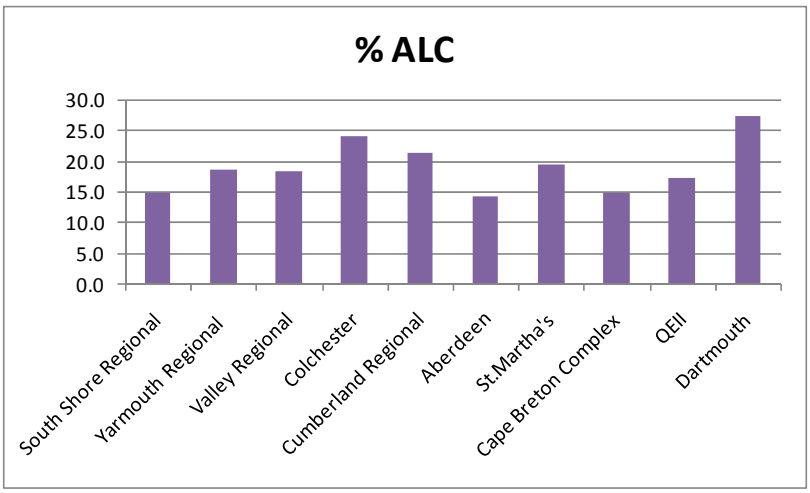
RECOMMENDATIONS:

20. That the Department of Health work collaboratively with the DHAs/IWK to establish a Continuing Care Task Force to provide system-wide leadership to the ongoing deployment and implementation of the Continuing Care Strategy while devolution planning is moving forward in parallel.

In addition to supporting the overall strategy, in February 2007, the Minister of Health announced immediate plans to provide 832 new continuing care beds. This plan includes replacement of nine aged facilities and fast-tracking of 46 beds in the Capital Health District to relieve immediate pressures. These beds are viewed as filling a critically important need in the system and are expected to help alleviate some of the pressures in each DHA regarding the current Alternate Level of Care (ALC) patient population. These patients are awaiting placement in an alternate setting, most commonly a long term care bed. Admittedly, however, construction takes time and DHAs are feeling the pressure now to address this issue.

On this point, it is critical that some interim solutions to the ALC issue be found. During the review, the DHAs reported that up to 42% of the beds in regional hospitals are now occupied by people who require care in a different setting. Analysis of available data reported in the DOH database from 2006/07, shows that the percentage of ALC days ranged from a low of 14.2% at the Aberdeen Hospital to a high of 27.2% at the Dartmouth General Hospital (see chart on next page). *Note: DHAs have stated that these numbers may be understated.*

[32] Province of New Brunswick, *Final Report of the Health Services Review Committee,* 2001



ALC days in acute care leads to real challenges as patients who require access to acute care can be delayed in receiving care and people who are ALC may not be getting the care that they need. DHAs have developed some interim plans (e.g. additional beds) and these have been supported by the DOH. Additional options need to continue to be pursued.

RECOMMENDATIONS:

21. That the DHAs/IWK work with the Department of Health to continue to identify interim solutions to address the ongoing ALC issue.

SENIORS' HEALTH

Each month, 700 Nova Scotians turn 65. With seniors now numbering approximately 131,000 and expected to nearly double by 2026, it goes without saying that Nova Scotia is undergoing a demographic shift that will have a far-reaching impact on every facet of society.[33]

Given these demographic projections, Nova Scotia must pursue more focused efforts on seniors' health and the development of appropriate programs for the elderly as a key underpinning of the primary healthcare agenda.

Key directions outlined in reports such as *The Strategy for Positive Aging* (2005) and the Continuing Care Strategy (2006) provide a blueprint for moving forward. While the PHSOR Team did not undertake a formal review of these strategies, we strongly endorse the directions outlined and commend the government for its work in this area to date. By continuing to implement these strategies, and further considering innovative examples from other countries such as Australia and Scotland, we believe that seniors' health will be improved and the overall system will be strengthened. Opportunities to fast-track any of the solutions surrounding seniors' healthcare should be considered.

One point of potential concern is that the devolution of continuing care could lead to distraction and divert energy away from the implementation of the strategy. This cannot be allowed to happen.

RECOMMENDATIONS:

22. That the Department of Health, the DHAs/IWK and other governmental departments and agencies work collaboratively to ensure that seniors' health is prioritized within the primary healthcare renewal process and that the priorities outlined in Positively Aging and the

[33] Government of Nova Scotia, Senior's Secretariat, June 2007

Continuing Care Strategy continue to be implemented in accordance with the defined timelines, if not sooner.

RURAL HEALTH STRATEGY

Primary healthcare services are generally community-based and reflect non-acute services. The challenge is to provide primary healthcare consistently, throughout the Province. This is particularly difficult in rural areas, where small numbers of people are spread over large geographic areas. This challenge is not unique to Nova Scotia. Rural healthcare is a national issue, leading to the development of a national Rural Health Strategy in 2000. Quoting from Health Canada:

> Rural Canada comprises all territory outside of major urban centres and constitutes 95 percent of the country's land mass; Canada's north occupies half of that land mass. Rural economies are diverse, ranging from mixed-economy communities to single-industry communities that depend solely on agriculture, forestry, fishing, hunting and trapping, oil and gas, mining or tourism. In terms of economic status, there are prosperous communities located near urban centres and small, remote communities with high unemployment levels and few prospects for economic growth. Depending on which definition of rural is used, between 21 and 30 percent of Canada's population lives in rural, remote and northern areas in 2001. Most rural communities have large populations of older people and children, with relatively small populations of people of working age (those between 20 and 50 years old). This age distribution is a result of the aging of the rural population, the tendency of retirees to move to rural areas, large family sizes and the migration of rural youth to urban centres.
>
> Generally, the health of people living in rural, remote, and northern communities is poorer than that of their urban counterparts. Somewhat limited evidence suggests that rural populations may have specific health vulnerabilities. Compared with urban residents, people living in rural communities have shorter life expectancy, higher deaths rates, and higher infant mortality rates. The poor health status in rural areas is linked to a broad range of personal, social, economic and environmental factors and conditions that influence health, such as income, employment and working conditions, education and personal health practices. Most rural areas have lower personal incomes and higher unemployment rates than urban areas. As well, rural workplace conditions often pose serious health hazards.
>
> Rural realities and rural health needs are different from those in urban areas, and people throughout rural Canada have expressed serious concerns about their inability to obtain health services they need in a timely fashion and closer to home. A major problem for rural people is the distance they must travel to reach health services. The availability of healthcare providers and services is also reduced for residents of rural communities as physicians, nurses and other healthcare providers are concentrated in urban centres.[34]

Nova Scotia's rural communities likely represent an even more significant proportion of the Province's population than the Canadian averages would suggest. Assuming the national average is 21-30% of all citizens live in rural areas, estimates in Nova Scotia suggest that that number could be as high as 50% (assuming that all counties outside of Halifax and Cape Breton would meet the definition of rural).

Further, in Nova Scotia, the population in rural communities is shrinking. Of the 18 counties in Nova Scotia, 12 have experienced a decrease in population over the past decade, while three have essentially remained unchanged and three others have experienced modest increases. More

[34] http://www.phac-aspc.gc.ca/ccdpc-cpcmc/topics/rural_e.html

importantly, these communities are experiencing loss in the younger age cohorts, as people are moving to larger centres to work and live. Rural areas are thus becoming even older than the population as a whole.

But there is a reason to be optimistic. Canada is not the only country facing this issue, and Nova Scotia is not the only province. Much has been done in other jurisdictions to tackle the challenges surrounding rural health and much can be learned from these examples. The PHSOR Team also acknowledges a number of examples of successful rural health initiatives and service models within the Province and feels confident that these and other innovative models can be leveraged and implemented on a broader scale, thus protecting rural communities form the further erosion of services.

Examples of innovative initiatives abound, some of which are already in place in communities in Nova Scotia. The Ottawa Office for Rural Health[35] is one initiative that bears further investigation for the Nova Scotia context. Another is the Illinois Center for Rural Health[36], formed in 1989; a third example is the Department of Health and Aging in Australia[37], which has developed a multi-faceted Rural Health Strategy.

Each of these jurisdictions has created a model based on its particular needs and resources. While none is easily or totally transplantable to the Nova Scotia context, each has aspects that are important. What is needed is a focused effort to confirm priorities for Nova Scotia in order to develop a plan to redeploy current resources to meet different needs and provide new services. Stakeholders from within and outside the health sector should be involved, to focus on broad issues that face rural Nova Scotia. The options should consider the range of services that are required locally as well as options for facilitating and enabling access to services that require travel.

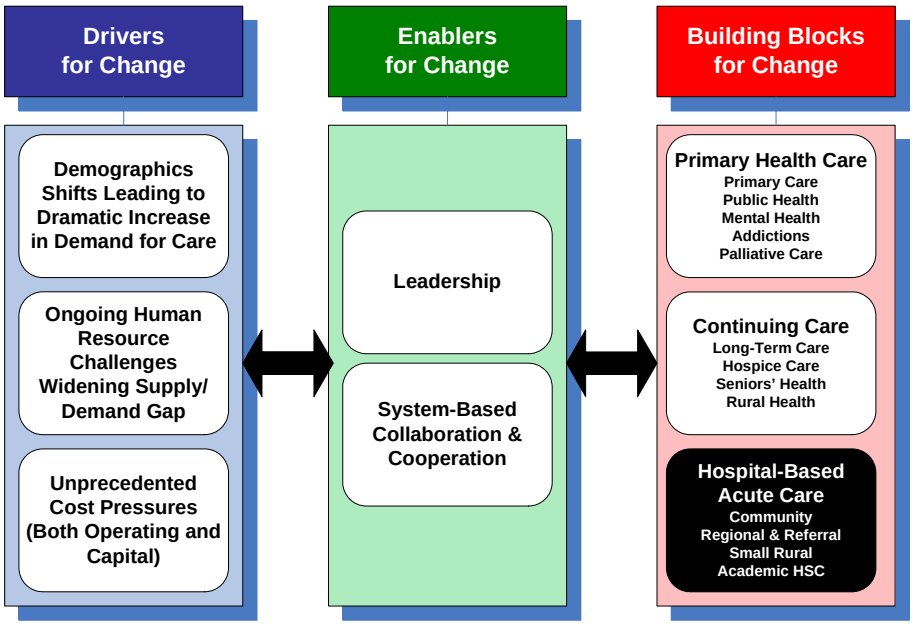
RECOMMENDATIONS:

23. That the DOH establish a Rural Health Task Force made up of individuals from Community Health Boards (CHBs), DHAs, business people and private citizens to develop a Rural Health Strategy for Nova Scotia that includes a framework for prioritizing programs and services for rural communities. This strategy should be influenced by innovative models and experiences already in place in Nova Scotia, in other parts of Canada, and in other countries. The end goal should be to define a baseline set of services that should be available as close to home as possible, to reduce the further erosion of programs and services in rural Nova Scotia.

24. That the DOH pursue a broad-based citizen engagement strategy, building on process already in place, to ensure that people living in rural communities have an opportunity to inform the development of the Rural Health Strategy.

[35] City of Ottawa, 2007
[36] Illinois Department of Public Health, IDPH home page, 2007.
[37] Government of Australia, Department of Health and Aging in Australia home page, 2007.

CHAPTER 6: CONTINUING THE TRANSFORMATION BY REALIGNING ACUTE CARE



DEFINING ACUTE CARE

Focusing on primary healthcare in the community means realigning acute care, primarily in hospitals. Historically, each DHA has had a regional site with a core set of services:

- 24/7 Emergency Care
- General medical beds (managed by family medicine and internal medicine)
- General surgical beds (managed by general surgeons and other specialties as available within the DHA)
- Obstetrical beds (managed by gynaecologists/obstetricians and/or family physicians)
- Paediatric beds (managed by paediatricians and/or family physicians)
- Mental health beds[38] (managed by psychiatry and family physicians)
- Critical care beds (managed by internal medicine and surgeons).

LOCATION OF ACUTE CARE: FOUNDATIONAL SERVICES AND CONSOLIDATION

In 2001, the Clinical Services Steering Committee, chaired by Dr. David Rippey, tabled its final report,[39] focusing on acute inpatient care in Nova Scotia. The PHSOR Team strongly endorses the

[38] Cumberland Health Authority is the exception in that it has no formally designated inpatient mental health beds.
[39] Clinical Services Steering Committee, *Making Better Healthcare Decisions for Nova Scotia,* February 2001, p. 5.

concept of a clinical services planning framework as a means of distinguishing between programs and levels of inpatient care; extensive comments on the report are found in **Supplementary Report #2.**

The starting point for realigning acute care services requires a definition of core or foundational programs for each of the regional hospital sites outside of Halifax and Sydney. At a minimum, core services should include:

- Safe and reliable emergency care;
- Family Medicine, General Internal Medicine, General Surgery and Anaesthesia; and
- Critical care capability involving nursing and allied health personnel to support emergency care, medical and perioperative services.

The Department of Health has initial projections for foundational services that suggest each requires a minimum of four or five specialists in each program to be sustainable in the long term. Given the HHR challenges that DHAs are already experiencing in recruiting specialists, it is highly unlikely that the 7 DHAs outside of the Capital District and the Cape Breton DHAs and will be able to collectively recruit and retain 28-35 general surgeons and 28-35 general internists. Moreover, for the surgical program, it is even more unlikely that they will be able to successfully recruit and retain 28-35 anaesthetists. Alternatives to current human resource models (e.g., utilizing nurse anaesthetists) may need to be considered.

There is some support for including maternal/newborn services and mental health in the list of core services. This report has previously suggested that inpatient mental health services should be delivered on fewer sites to deliver appropriate care at a primary healthcare level, while supporting these services through a rationalized inpatient care delivery model. Given this, the PHSOR Team does not support the inclusion of mental health beds as a core service at each regional site.

The PHSOR Team also has noted that maternal/newborn care is currently delivered in all regional sites and two non-regional sites. While issues such as declining birth rates and reduced availability of family physicians to support maternity care may lead to long-term issues of sustainability, it is also noted that alternate provider models (e.g., use of midwifery) may support future sustainability. For these reasons, maternal/newborn care should be included in the list of core services, with the proviso that it be reviewed as other options become available.

The PHSOR Team also questions the existing deployment model for other specialty/sub-specialty services. Currently, surgical services such as Orthopaedics, Urology, Vascular Surgery, Plastic Surgery, Ophthalmology and ENT, as well as medical services such as Neurology, Cardiology, Respirology, Gastroenterology, and Paediatrics, are delivered on multiple sites, although some rationalization has occurred. This is a distributed service delivery model whereby each regional site may have at least one service over and above the core services noted previously. The PHSOR Team believes that this model raises some potential quality issues as well as sustainability questions as the infrastructure required to support safe and appropriate care for these specialized services can be significant and may need to be consolidated onto fewer sites.

The PHSOR Team concludes that the Province should shift away from the current distributed model and identify a maximum of two sites, in addition to Sydney and Halifax, to serve as cross-DHA referral centres for services. Criteria for choosing the sites should include travel distance to a referral centre and some historical ability to attract and maintain a core number of specialists in services that have a significant on-call burden/requirement. Linkages to provincial trauma planning should also be considered; the guidelines for District Trauma Centres versus Primary Trauma Centres should be helpful in the designations.

Finally, enabling systems and processes to support a new clinical services model should be considered. These include provincial bed management systems and protocols, access and flow, clinical pathways and post-acute transfer protocols, and outreach services models.

RECOMMENDATIONS:

25. That the DOH establish a Clinical Services Task Force to design a framework and priorities for configuring primary health and acute care service scope and mix at different hospitals/sites in the Province, based on updated population, HHR and financial analysis in general, and on clinical services planning in particular.

26. That the Clinical Services Task Force revisit the definition of hospitals with the potential goal of redefining specific facilities as Provincial Centre, Major Referral Centre, Regional Site, Community Hospital and Primary Care Hospital/Community Health Centre, acknowledging that the latter need not have inpatient beds or 24/7 Emergency Department services as a core service, but rather would have a robust set of primary healthcare responsibilities.

27. That the Clinical Services Task Force confirm foundational services that are to be delivered at each of the regional sites, which at a minimum should be those that enable safe and reliable emergency care at the regional sites. From a medical standpoint, this should include Family Medicine, General Internal Medicine, General Surgery, Maternal/Newborn Care and Anaesthesia. From a nursing perspective, they include Emergency Care, Critical Care, Medical and Perioperative services.

28. That the Clinical Services Task Force confirm the services that should be considered non-core and rationalized/consolidated on fewer sites.

29. That the Clinical Services Task Force define criteria for determining whether the Province should maintain its current decentralized model for these specialty services or should consolidate the services in a maximum of two sites outside of Sydney and Halifax. The criteria for site selection should pay particular attention to critical mass/volume for high quality care, geographic factors and travel time, health human resources, and availability of complementary community services.

30. That the Clinical Services Task Force identify the enabling systems and structures that will need to be developed to support the changes recommended.

31. That the Clinical Services Task Force be charged with a mandate to deliver its recommendations no later than April 1, 2008.

PRESERVING THE ROLE OF ACADEMIC HEALTH SCIENCES CENTRES

The Commonwealth Fund defines an Academic Health Sciences Centre (AHSC) as "a medical school and one or more health professional schools, such as dentistry, nursing, or public health. These schools are joined to one or more affiliated teaching hospitals that are… closely aligned with the medical school.[40]" Using this definition, the Queen Elizabeth Health Sciences Centre in Capital Health and the IWK Health Centre are academic health sciences centres. Other organizations may play similar roles, but no others in Nova Scotia encompass the entire definition as do the QE II and the IWK.

The Commonwealth Fund goes on to note that the societal benefits associated with AHSCs include:

- AHSCs improve the health and healthcare of their communities and of the larger society in which they reside.

[40] Adapted from Ginzberg, Eli, *Teaching Hospitals and the Urban Poor*, Yale University Press, 2000.

- AHSC missions — teaching, research, provision of rare and high technology services, continuous innovation in patient care, — are significant contributors to public welfare, and are likely to grow more important in the foreseeable future.
- AHSCs ensure that the healthcare system is open to experimentation with new methods of pursuing these missions.
- AHSCs demonstrate leadership within the healthcare system by seeking continually to analyze and improve their performance.
- AHSCs simultaneously strengthen their academic ties with their parent universities and maintain sufficient freedom of action to compete successfully in an increasingly challenging clinical environment.
- AHSCs demonstrate their value by measuring their own performance, sharing those data openly, and providing evidence of continuous improvement.[41]

Everything described in the transformational plan for Nova Scotia's healthcare system requires that the academic centres step up and deliver on their mission:

- advancing knowledge,
- participating in the training of tomorrow's healthcare providers, and
- delivering the complex care that only they can provide.

The QEII and the IZK have leadership roles that must be first acknowledged and then supported. The Clinical Services Planning Framework described previously is an important enabler of their role as it will help to build clinical capacity (as well as educational and research forums) outside of the centres in Halifax, so that these centres can excel at what they do best, in partnership with other DHAs.

From an educational standpoint, the challenge will be to transform training to ensure that we have the right healthcare provider available to deliver care in communities throughout Nova Scotia. "Clinical placement capacity… across Canada is under pressure. That pressure will increase dramatically in the next few years. Our challenge is to fix clinical education bottlenecks so that future health science graduates will flow smoothly into the healthcare system. This flow is required to replace the retirement wave of healthcare workers and meet the expanding demand for healthcare services. Creating a clinical education system that supports this smooth flow will require different approaches and investments of resources."[42] The AHSCs in Nova Scotia, in partnership with the medical school, nursing programs both at the University and the Community College level, all educational providers and DHAs need to be actively involved in defining new models of teaching that support the goals of sustainability. These teaching models must recognize and respond to new innovative models of care that are collaborative and multi-disciplinary.

From a research perspective, knowledge creation through applied research and knowledge dissemination are clear priorities for the Province's AHSCs. Both have strategic plans around research and the QE II is developing a formal research institute to attract and retain the clinical scientists necessary to create a viable and sustainable research enterprise. This needs to be viewed as a necessity for the future and supported and nurtured on a go-forward basis as a provincial resource.

The above noted roles are important, but they come at a cost. While everyone acknowledges that AHSC costs are higher, there is considerable debate about the legitimacy of these extra costs and what amount is appropriate versus an efficiency issue.

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[41] Commonwealth Fund, *Envisioning the future of academic health centers:Final Report of the Commonwealth Fund Task Force on Academic Health Centers,* February 2003

[42] Saskatchewan Academic Health Sciences Network, *Clinical Placement Capacity Review: Final report and recommendations*, May 16, 2005

Some of the most extensive research on the topic was undertaken by the Lewin Group on behalf of the Commonwealth Fund. The Lewin Group's research demonstrates that the cost per case for AHSCs ($8,548) was higher than the cost per case for other teaching hospitals ($6,047) and for other urban, community hospitals ($5,238) in fiscal year 1998. The Lewin Group analysis decomposed these total cost per case estimates to provide separate cost estimates for each of the mission-related categories for fiscal year 1998. After accounting for differences in wages, case mix, and other factors that influence cost per case, mission-related costs averaged $2,360, or 28 percent of total costs, for AHSC hospitals.

If one assumes that stand-by capacity is less of a cost driver in Canada (where overall surplus capacity is less), the overall impact may be less than the 28% suggested by the Lewin Group, but it is clear that there is a real cost impact. Discounting the stand-by capacity issue, the Lewin Group research suggests that mission-related costs contribute some 15% more (11.8% for teaching and 3.6% for research) than their non-academic counterparts. This is similar to the international experience that shows academic centres cost more:

- Research from Spain shows that costs in teaching hospitals are 15% higher[43]
- The National Health Service in the U.K. estimates that the cost differential is between 12-16%[44]
- Australia estimates the cost differential to be approximately 15%.

RECOMMENDATIONS:

32. That the Clinical Services Task Force confirm/articulate the unique service delivery, educational and research role played by Academic Health Sciences Centres.

33. That future funding models recognize the reality that AHSCs require additional resources to serve as provincial resources and support their tri-partite mandates of care delivery, teaching and research.

34. That CDHA and the IWK continue to pursue funding for the implementation of their research strategies and continue to pursue the goal of advancing knowledge through AHSC leadership models.

DATA ON ACUTE CARE: UTILIZATION MANAGEMENT AND DECISION SUPPORT SERVICES

Utilization management (UM) and decision support (DS) are approaches to measure, understand and, when appropriate, reduce hospital use. Over the past several years, interest in these tools has grown as the healthcare system has reached capacity from both space and human resource perspectives. However, this interest has not always been matched with an appropriate investment in resources to ensure timely access to high quality data, expertise to analyze and identify solutions, and the fortitude to implement recommendations into day to day operations.

In the current Nova Scotia context, with the need to ensure limited resources are used efficiently and effectively in order to improve the health of the population, a focus on performance must be established. As part of the PHSOR, utilization management and capacity were reviewed in all DHAs. There are several key findings:

- **Generally limited investment in utilization management** among DHAs. Only a few DHAs have made significant investments in the process. These are Capital District Health Authority,

[43] Guillem López-Casasnovas, Fomamce versus costs for teaching hospitals in Spain.
[44] Conversation with Mr. Giles Wittmore of the NHS, documentation to follow

IWK, Colchester District Health Authority and Cape Breton District Health Authority. In each of these cases, individual models for UM have been developed, often resulting in stand-alone support systems and tools to support the need, with little planned consistency in definitions of UM and DS.

- **Focus on transactional processes.** Currently, much of the focus on UM is on transaction processes to collect, manipulate and store data to support standardized analysis. With the significant volume of data, these transactional processes overshadow any potential analysis work to review data and identify key findings.
- **DOH investments focused on analysis silos.** The DOH has made investments in utilization management; however, this has followed the more traditional analysis streams – financial and clinical. While both of these streams are important, a greater value of information is often created by analyzing the relationship between financial and clinical information to determine their impact on health status outcomes.
- **Analysis – Paralysis.** Across the system, there is a need to build a culture that uses data to support care and financial decisions. Currently, data are not leveraged to support key operational and strategic decisions. A strong education focus must be supported and invested in to ensure administrative leadership, medical leadership, management and front-line staff understand and appreciate how data can be used.

To best prepare the Province for developing a Utilization Management/Decision Support capacity, a number of areas of investment should be considered. These include:

- **Establishing a Province-wide utilization management strategy.** The Province-wide focus is important to ensure selection of standardized tools, datasets, common data definitions, and agreed upon standardized performance metrics that are both clinical and financial in nature.
- **Developing viable implementation models.** With the limited availability of trained health informaticians, Nova Scotia must leverage available resources and build a model for training new expertise. For example, an implementation model may include developing a UM/DS team at each DHA, or a shared UM/DS team among two DHAs, or a centralized UM/DS team. It should be noted that due to the importance of UM and the value of the analysis, UM/DS teams should be located as close to the DHAs as feasible.
- **Building a venerable source of data.** Currently, the most significant challenge to any analysis is agreeing on the accuracy of the data and the appropriateness of the measure. Many organizations can spend so much time in this debate that they are never able to move past the analysis to the implementation of a recommendation. To avoid this stumbling block, stakeholders must work towards building a venerable source of data supported by clearly understood definitions, effective and timely data flow, and mechanisms to catch and update errors.

RECOMMENDATIONS:

35. That the DOH establish a Utilization Management/Decision Support Task Force to oversee the development of both a Province-wide UM/DS strategy and its implementation plan. This plan should include decisions related to business intelligence software, the format of DHA specific UM team models, and identification of DOH-DHA developments for building a venerable source of information.

36. That the UM/DS Task Force oversee the development of an education strategy to ensure key stakeholders, i.e., administrators, physicians, managers, and frontline staff, understand the value and benefits of UM in order to obtain buy-in and support.

STAFFING ACUTE CARE: MODEL OF CARE REDESIGN

The PHSOR Team concludes that despite the relentless pressures to deliver increasingly complex care, models of care in Nova Scotia have not changed appreciably over the last two decades. Nova Scotia, like most jurisdictions in Canada, has significant opportunities to redesign how work is done as well as where work is done. "If we maintain current delivery models and levels of demand, then the shortage of nurses, physicians and other professionals being experienced in 2006 [is] unsolvable."[45] Model of care redesign is intended address this issue and start to solve the problem by establishing new roles and processes that can anticipate and meet the changing demands for care, helping to reduce the cost of delivering care while improving the health status of the Province's population.

How can this be done? The PHSOR Team found that professionals everywhere are performing non-professional work. In the community, professionals report that they are often left to do all of their own clerical and administrative support work, because previous efficiency exercises have eliminated clerical staff. The same is true in hospitals where efficiency reductions in support services, e.g., housekeeping, portering, clerical services, have created work processes where professionals now do tasks previously performed by others. This has the biggest impact in nursing because it is the largest single staff group and because supports are further reduced in the evening and night shifts, leaving nursing to manage additional tasks at these times. The result is that nurses, both RNs and LPNs, are now completing tasks previously done by others; these include:

- Unit clerk duties because support staff are typically only available on the day shift;
- Portering functions, due to reduced numbers of porters during certain shifts;
- Unit Aide functions on the care units to address support needs, e.g., equipment cleaning;
- Dietary functions, e.g., delivering trays to patients, retrieving trays from rooms; and
- Housekeeping functions, due to pressures for more frequent patient turn-over.

The many frustrations of providing care are made more difficult by the fact that many of the work processes are inefficient, necessitating constant make-do attempts to get things accomplished. While in many cases the staff just accept this situation, it results in cost structures that are too expensive and not providing an appropriate return on investment for the money being spent. Examples of the processes that are inefficient and must be fixed include:

- Many of the **documentation processes are manual**, leading to delays and unnecessary workload.
- General **lack of proactive discharge planning** for patients requiring post-acute services and for straight, typical discharges.
- **Lack of pharmacists on the units**. Access to pharmacy on the unit to provide more comprehensive clinical support to the care team is shown in the literature to improve care delivered and to assist in reducing medication errors.
- **Nurses doing ad hoc medication runs** when the proper medication is not available and unit staff are required to visit the pharmacy for medication supplies.
- **Commonly used STAT drugs not available** on the cart, thus necessitating contact with Pharmacy and added workload on the part of unit staff.
- **Prescription clarification.** Nursing staff spend time to validate and check orders to reduce chance of medication errors. In addition, nurses spend a significant amount of time creating Medication Administration Records manually. Pharmacy contacts the unit for assistance in contacting the physician/office to verify a prescription as opposed to a direct communication between the pharmacist and the prescribing physician.

[45] Toward 2020 Visions for Nursing

In response to such workload pressures, additional nurses are often seen as the solution. The efficiency analysis in the PHSOR concludes that current staffing practices lead to excess costs in acute care alone that total more than $10Million per year. Notwithstanding this, there is a general sense that there is limited ability to achieve significant savings without a redesign of the current models of care. Redesign entails:

People

- Role redesign around the broader care team – not nursing only;
- Use of job competencies and agreed upon scopes of practice;
- Integrated and coordinated team structures; and
- Management leadership and support.

Processes

- Patient care processes that link both internally and externally to the hospital along the broader clinical continuum of care;
- Processes and required staff/providers that support the care team; and
- Redesign work processes and patient flow processes.

Information

- Development of standardized measurement tools;
- Outcome-based metrics; and
- Supporting workload data and measures of acuity.

Technology

- Technology innovation, e.g., point of care devices, and technology-enabled processes, e.g., electronic documentation, to change how care is delivered.

A FULLY INTEGRATED MODEL OF CARE

An Integrated Model of Care is designed to leverage resources to provide high quality, safe, efficient and effective care using good work processes, information and available technology. The goal is to improve health outcomes in a cost-effective manner. Ultimately, the fully integrated care model clarifies roles, defines partnerships, and ensures that all of the necessary disciplines are a part of the care continuum. In addition, it is clear that the linkages to the community continuum must be a collaborative process from the moment the patient enters the system. Moreover, the role of the manager and other frontline leaders is also redefined to shift emphasis to one of strategic leadership as opposed to the day-to-day operations and routine coordination.

In the proposed Integrated Model of Care, roles are redesigned within an interdisciplinary framework, covering the entire health service system. The integrated care team model has the following attributes:

- A coordinated approach to ensure safe , error-free care;
- Redesigned roles for the clinical caregivers to ensure practice at their full scope as defined by the appropriate professional colleges and associations;
- Potential addition of unlicensed caregiver roles to support basic patient care, unit-based tasks, and leverage the nurses' time for complex care;
- Inclusion of multidisciplinary care providers into the care team as appropriate;
- Use of technology to enable improved care and worklife;
- Abandoning care processes that prevent nurses from practicing at full scope;
- Improved integration of nursing and physician providers to manage patient outcomes;
- Redefinition of the nurse manager roles to ensure adequate attention to unit-based needs;

- Development and use of outcome measures to track improvements and flag issues; and
- Design of continuum of care processes that span from ambulatory to acute to community.

Implementing new models of care is a major undertaking, but the Vice Presidents of Clinical (Nursing) collectively and individually express overwhelming support for pursuing this work as an immediate initiative following the release of the PHSOR report. They see the benefits as:

- Improved patient clinical outcomes;
- Improved quality of work life for staff;
- Creation of a results-oriented culture focused on improved discharge management and patient flow;
- Improved communication and coordination among all the disciplines involved in patient care;
- Improved linkages to the community and home care resources;
- Reduction of non-value added work that nurses should not be doing; and
- Increasing ability to utilize data for decision-making and outcomes monitoring.

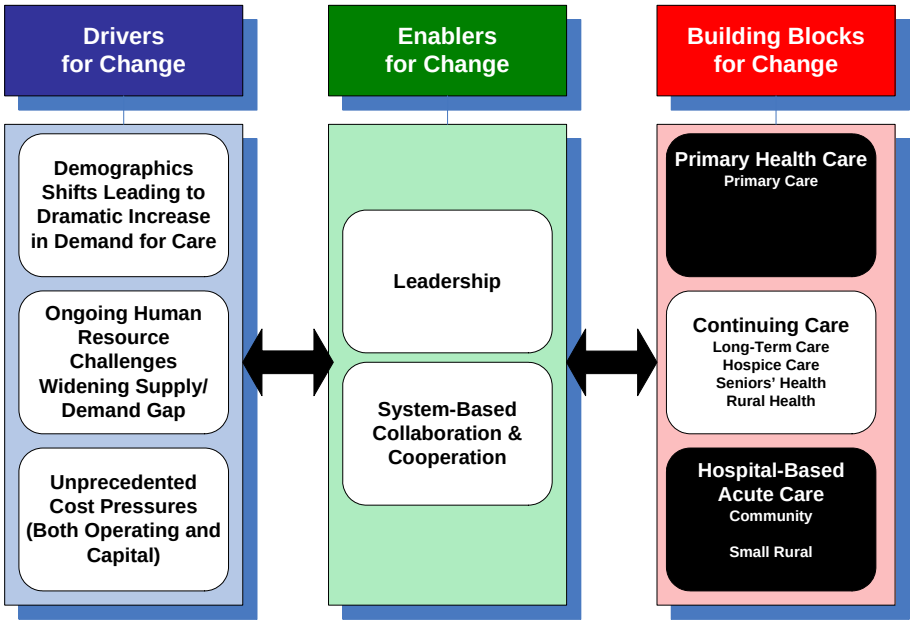
RECOMMENDATIONS:

37. That the DOH establish an Integrated Model of Care Design Task Force to oversee the model of care redesign. Membership should include the VPs of Clinical and VPs of Community Care, and representatives of all members of the care team, including physicians.

38. That the Integrated Model of Care Design Task Force have at least three pilot sites - one academic; one regional hospital and one rural hospital.

39. That the DOH provide the necessary resources to support the redesign as well as implementation, including resources for training and development, change management and team development with other professionals on the care team.

40. That the DOH consider launching a parallel initiative in home care to support improved patient flow as patients move through the healthcare system.



THE SPECIAL CASE OF SMALL COMMUNITY EMERGENCY DEPARTMENTS

With the possible exception of obstetrics, emergency departments (EDs) are considered the most defining element of a local hospital by the population it serves. From the public's perspective, the availability of a local emergency department around the clock represents not just medical services, but a degree of comfort that local help is available. Unfortunately, while Nova Scotians maintain their emotional ties to EDs in their local hospitals, it is not because EDs are used for their stated purpose. Instead, as elsewhere in Canada and beyond, EDs are used as substitutes for primary healthcare clinics and doctors' offices.

The same factors underlying the sustainability of the entire healthcare delivery system apply to the EDs: demand (both demographics and health status), health human resources, and cost-effectiveness. Details are provided in **Supplementary Report #4**. The PHSOR confirms that, as with the entire healthcare delivery system, transformation is the only solution that facilitates improved health status and outcomes within fiscal realities. This is particularly true for smaller and rural hospital EDs.

The PHSOR Team notes that Nova Scotia has one of the best developed Emergency Health Services (EHS) systems in Canada. It is positioned to be responsive and reachable for all areas of the Province; however, it is a greatly underutilized resource.

ACUITY IN EMERGENCY DEPARTMENTS

Emergency Department statistics must be viewed with caution. The number of visits does not provide a measure of acuity, nor does it reflect hours of service or indicate temporary service interruptions or seasonal changes related to tourism. Each of these factors, in turn, affects staffing elsewhere in the facility and may affect other facilities that take up the slack during closures.

The Canadian Triage and Acuity Scale (CTAS) is commonly used across the Province by emergency departments to triage patients; however, reporting based on CTAS is not consistent.

Canadian Triage and Acuity Scale (CTAS)

Level 1	**Resuscitative**	Conditions that are threats to life and limb (or imminent risk of deterioration) requiring aggressive interventions.
Level 2	**Emergent**	Conditions that are a potential threat of life, limb or function, requiring rapid medical intervention or delegated acts.
Level 3	**Urgent**	Conditions that could potentially progress to a serious problem requiring medical emergency intervention.
Level 4	**Less Urgent**	Conditions that are related to patient age, distress or potential for deterioration or complications would benefit from intervention or reassurance with 1 - 2 hours. (E.g., Urinary symptoms, mild abdominal pain, and earaches.)
Level 5	**Non Urgent**	Conditions that may be acute but non-urgent as well as conditions which may be part of a chronic problem with or without evidence of deterioration. The investigation or interventions could be delayed or even referred to other are of the hospital or healthcare system. (E.g., sore throat, menses, chronic problems, and non-life threatening psychiatric complaints.)

The PHSOR Team concludes from interviews and available data that the number of ED visits remains relatively constant for levels 1 through 3 and continues to increase for CTAS levels 4 and 5. This means that the EDs are providing more less-urgent and non-urgent care that could be provided elsewhere, were alternatives available.

In the absence of detailed data for each non-urban ED, the PHSOR developed estimates for acuity levels using data available from the National Ambulatory Care Reporting System (NACRS) sites.

- Estimates for Facility Category 2 EDs were calculated using NACRS data from South Shore Regional Hospital and Colchester Regional Hospital.
- Estimates for Facility Category 3 & 4 EDs were calculated using data from Fishermen's Memorial Hospital and Queens General hospital. Additional data were available from Hants Community Hospital.
- Recognizing that acuity of patients seen in urban EDs differs from that seen in more rural EDs and the patient population seen in tertiary sites can be significantly different from regional EDs, NACRS data from the IWK were excluded.
- Where CTAS levels were reported as unknown, they were excluded from the data as they were below 0.1% of total visits.

Estimated CTAS for ED Visits

		Urban site ED visits	Rural site ED visits
Level 1	Resuscitative	0.2%	0.12%
Level 2	Emergent	5.4%	2.7%
Level 3	Urgent	34.3%	19.9%
Level 4	Less Urgent	48.3%	49.8%
Level 5	Non Urgent	11.8.%	27.3%

Almost 80% of visits to small hospitals EDs are less urgent or non-urgent. This suggests that these visits are for primary healthcare services. Even in larger sites, the CTAS 4 and 5 account for more than 60% of all volume (which is slightly higher than the national average of 57%).

Visits by time of day also trend consistently across days of the week, with the peak times for each day between 0801 and 1700. For times outside of daytime hours, there is a significant drop in the number of visits. This is consistent with trends across Canada. Coupled with acuity level data, the majority of visits after 2000 are for CTAS Levels 4 and 5. These cases could be appropriately served the following day in the primary care provider offices or community clinic settings.

Detailed data of visit volumes, acuity, and time of day for each sites is summarized **Supplementary Report #4**. The analysis and projections clearly suggest that, even in the larger sites, volume at night is low. In the smaller sites, it is extremely low and this is an issue for two reasons:

- Low volume can lead to safety and quality concerns due to insufficient critical mass to maintain skill sets of doctors and nurses, should a real emergency present; and
- The Province currently pays an hourly stipend to physicians to provide coverage at night in many of the smaller hospitals. Given low volumes, this leads to high costs per visit and raises questions about appropriate resource use.

Similar pressures exist nationally and internationally, yet very few jurisdictions have successfully implemented changes. This is not a reflection on the quality of the recommendations, but a realization of the difficulty for leadership to implement changes which can be highly political in nature. This is particularly true for small, rural communities.

LACK OF COMMUNITY-BASED ALTERNATIVES AND SOLUTIONS

In Nova Scotia, little has been done to develop alternatives to ED-based care. Recommendations to expand primary healthcare initiatives are integral to bring change to the system. Until alternatives exist, non-emergent cases will continue to visit EDs.

One key gap noted by the PHSOR Team was the absence of the nurse call service in Nova Scotia. Nova Scotia is one of two provinces (the other being PEI) that have yet to develop and offer this service to its citizens. This service can be a key enabler of access to healthcare professional advice as the system continues to struggle with human resource realities. We urge the Province to address the current gap surrounding this service.

RECOMMENDATIONS:

41. That the DOH establish an Emergency Health Task Force, comprising DHA and DOH management as well as EHS representatives, to ensure that all transformation planning and implementation pay particular attention to issues affecting the delivery of emergency health service delivery.

42. That the Task Force sign off on solutions to refocus EDs on true emergency care through the provision of alternative, non-emergent service mechanisms.

43. That current funding for ED coverage be retained and redeployed into the DHAs for alternative and innovative primary healthcare service mechanisms and recruitment/retention of primary care providers

44. That community involvement be included in the final ED implementation plan, including a public education program to explain how local healthcare needs will be met in the proposed setting away from the ED.

45. That the Rural Health Strategy and other Primary Care Renewal initiatives be leveraged to support development of alternatives to ED use for non-ED care.

46. That the nurse call line service be implemented immediately as an enabler of enhanced local access to appropriate services.

AMBULATORY CARE

> Due to the low priority given to ambulatory care services historically, programs and services evolved not as a result of careful planning but in response to immediate pressures or needs of medical or professional staff members. This has led to fragmented services, crowded facilities, inadequate access for patients, e.g., long waiting times, and operational inefficiency.[46]

This quote is almost 20 years old, but is as true today in most jurisdictions as it was when it was first presented. While most ambulatory care services have grown to address specific needs, typically this growth has not been guided by any plan that balances efficiencies or aligns expansion with organizational priorities. Ambulatory care planning has been fragmented and ad hoc. Moreover, ambulatory or outpatient care centres have not been held to the same degree of utilization management as other patient services, such as perioperative or inpatient services.

Ambulatory care bridges primary and acute, hospital-based care and as such it must be an essential component in the transformation of the Province's healthcare delivery system. The challenges are, again, the sustainability drivers of demand, health human resources and fiscal imperatives. Yet ambulatory care has a critical role to play not just in providing a range of healthcare services to improve the health status of Nova Scotians, but also to help resolve many of the pressures on other areas, such as small EDs.

There is a clear need to find innovative models for ambulatory care that ensure appropriate capacity is available to meet the demands. The transformation must ensure that ambulatory care works in partnership with the other services both within and outside the hospital, to establish seamless care. It must leverage resources efficiently and effectively, utilizing inter-disciplinary models of care; enhance clinical and financial efficiencies and effectiveness; and build capacity to ensure a sustainable ambulatory center of excellence.

Individual DHAs will develop services differently, but provincial models will also be required as ambulatory care is an integral element to develop and deliver outreach services from referral centres to other regional hospitals and primary healthcare hospitals.

RECOMMENDATIONS:

47. That the DOH establish an Ambulatory Care Advisory Group, comprising DHA and DOH management as well as rural and small hospital physicians and other healthcare professionals, to ensure that all transformation planning and implementation pay attention to issues affecting ambulatory care.

[46] Matson T. – Restructuring for Ambulatory Care: A Guide to Reorganization. 1990

CHAPTER 8: ANCILLARY SERVICES TO SUPPORT TRANSFORMATION

LABORATORY SERVICES

Laboratory Services are provided at over 29 facilities at an estimated cost of $80Million per year, based on Fiscal Year 2005/06 Direct Operating Cost data. While most DHAs operate a primary or main lab at the regional hospital, many community hospitals also operate a secondary lab as a means of providing services closer to the patient and care providers.

The PHSOR reiterates the same sustainability issues here as in all other areas of the system.

Demand for laboratory services relates closely to **utilization**, a two-pronged question of ordering the appropriate lab test and the attendant processes to perform the test and deliver the results. The PHSOR did not include an in-depth review of lab operations, leaving the question of efficiency unanswered. On the demand side, the PHSOR Team believes that some labs may be running tests that should not be ordered, e.g., tests that do not have a direct clinical use for the particular case. While lab tests are clearly a clinical decision, the impact of inappropriate ordering could add significant cost and workload to the system. In addition, there is a belief among some labs in DHAs that there is unnecessary and excessive usage of STAT tests. Addressing this requires ongoing education and a communications strategy.

While some DHAs have developed **core lab models**, many operate more traditionally. Core labs models provide increased flexibility for staff and generally result in more efficient work processes.

The lab services industry continues to undergo significant **technological advancement** and change. For example, the field of medical laboratory technology is evolving towards increased computerization with new instruments and new tests being continually developed. Automation in labs could have a dramatic impact on lab technologies as it may leverage more lab assistant support. There is also increasing versatility of new equipment; manufacturers are consolidating instruments so that many types of lab tests can be performed on one instrument. Point of care testing, e.g., glucose meter, at the hospital bed-side, patient's home and physician's office frees up lab resources. As a result of the technology innovations, more cost effective approaches to managing lab tests are available that can free up medical laboratory staff time to focus on quality control initiatives.

"**Recruitment** remains a serious problem in each province."[47] With the cutback in training programs for general Medical Laboratory Technologists (MLTs) across Canada, a system-wide shortage is projected over the coming 10 years.[48] In Nova Scotia, this shortage may be even greater, as there has been no provincial training program since 1995/96. While the Nova Scotia Community College has re-established a MLT diploma training program, requiring six semesters of education, there is general agreement that the demand for MLTs outstrips the supply for the foreseeable future.

For some DHAs, there has been a **rapid turnover** of MLTs, adding to the challenges of both vacancy and immediate retirements (40% of the MLTs were above the age of 45 in 2001, and 20% of MLTs were above the age of 50). Turnover is partly due to the high degree of competition for trained staff, which leads to recruitment of staff by other provinces, e.g., Alberta, and other DHAs. As a result, significant workload to train and mentor less experienced staff is required.

While most labs utilize Medical Laboratory Assistants (MLAs), the PHSOR notes that most MLAs are not used to **full scope**. DHAs would do well to build staffing models and expand the scope of MLAs to better manage lab workload.

[47] Environment Scan of HR Issues Affecting Medical Laboratory Technologists, 2001, Health Canada

[48] In particular, between 1993 and 2001, there has been a 60% decrease in enrolment in MLT programs in Canada, and between 1990 and 2000, there as been a 44% decline in membership in the Canadian Society of Medical Laboratory Science (CSMLS).

To best prepare the Province for upcoming demands for laboratory services and to ensure high quality, efficient, effective, and sustainable services, a number of areas of change should be considered. These include:

- **Review staffing models.** With the current human resource issues facing MLTs including the aging work force, retention and retirement issues, and the expected increase in demand of both volume and complexity of tests, new flexible staffing models should be introduced. Models may employ greater use of MLAs at full scope, integrated into work processes, thereby freeing up MLTs to do only work they can do, and/or leverage training and mentoring programs within hospitals to ensure experienced staff are mentoring less experienced staff. Nationally, the use of technologists and assistants varies quite dramatically. For example, in British Columbia a 1:1 ratio is used; in Saskatchewan (urban) a 1:1 ratio is used with a current rise in assistants; New Brunswick uses a primarily MLT model (10:1); and Alberta uses almost entirely assistants. In addition, opportunities and benefits of leveraging medical laboratory personnel cross-trained in x-ray should be investigated to support smaller and rural area centres.
- **Introduce core lab models.** Core lab models provide organizations with an opportunity to review and re-deploy both human and technical resources through a new delivery model. Through this process, a detailed examination of key requirements of hospital needs, not only for the site, but also within the DHA can be examined to ensure all lab needs are provided. Plans for standardization of technologies can also be introduced through this process.
- **Develop utilization monitoring tools.** To assist clinicians in ordering the appropriate tests, utilization monitoring tools must be developed, including clinical decision support tools and utilization or appropriateness tracking tools. Initially, the tools may focus on ensuring specific tests are ordered only when appropriate and when ordered, tests are carried out by a lab which completes sufficient volumes to result in high quality and efficient management of the test. Appropriate use of the STAT category may also be an early area of review. Over time, the tools will enhance and may provide more timely input into alternative tests or flags when a test is deemed inappropriate, as clinical decision support technologies are integrated into the patient care system.
- **Develop a single lab for the academic centres in Halifax.** Capital Health and the IWK Health Centre continue to operate separate labs on University Avenue despite the obvious fiscal opportunity that could be derived from a consolidation model. The PHSOR Team is aware of the history surrounding this issue and recognizes the significant organizational cultural differences that need to be overcome if a single lab is to be created. Notwithstanding this, the current models lead to a cost and quality structure that, in the opinion of the PHSOR Team, cannot be justified and should not be maintained. Addressing this issue is a critical first step in looking at new laboratory models across the Province.
- **Consider consolidation models for laboratories.** Consolidation of lab services is emerging nationally as a goal, both from a safety and a cost/sustainability perspective. With over 29 labs completing hospital-based tests across the Province, there is some rationale that with current staffing and workload issues all of these labs will not be sustainable in the future. There is also a critical mass and economy of scale argument which supports moving to fewer sites to ensure higher quality and productivity as a result of standardized quality testing. However, consolidation must involve a number of other key decision areas. For example, there is a need to ensure decentralized/community-based access to blood draw stations to ensure the patient is not negatively affected, a need to develop an effective transport system for specimens, a need to build sufficient redundancy in the system, and a need to develop a system-wide quality assurance program to ensure all labs meet provincially defined standards as set by a reference lab. Fortunately, there are a number of developments that will support these initiatives. For example, new technologies can provide STAT testing facilities at small facilities thereby not requiring full lab services; community and decentralized blood collection are established in some areas within the Province; and the need for transport systems extends beyond just labs and may also include medication distribution.

RECOMMENDATIONS:

48. That the DOH conduct a feasibility study of current lab delivery models, in order to develop a consolidated model for future delivery of services.

49. That the feasibility study examine two human resource mandates: first, to report on expected staffing shortages over the coming five years and to identify strategies to mitigate these shortages; and second, to develop guidelines to ensure MLT and MLA staff are operating at full-scope of practice.

50. That the feasibility study identify the preferred location of labs, e.g., core, STAT, specimen collection, specific requirements of small community and rural hospitals, deployment of staff, details of related information systems, specimen transport and other logistical requirements, and the leveraging of technology.

51. That the feasibility study include a detailed, multi-year plan for implementation, covering proposed governance, leadership, quality assurance and utilization management structures to support ongoing management and delivery of services.

52. That the DOH in conjunction with the CDHA and IWK develop an immediate strategy to address the ongoing pressure to maintain two labs on University Avenue in Halifax, giving consideration to establishing a single laboratory service model for these hospitals.

PHARMACY SERVICES

Pharmacy services can be broadly described as two primary activities: the selection of the right drug for the right patient at the right time; and the activities of ordering, dispensing, delivering and documenting the medications administered. While these combined processes can best be described as medication management, the primary focus has historically been on the latter activity.

In Nova Scotia, a majority of the 98 FTE pharmacists and 114 FTE pharmacy techs are focused on the dispensing function. While some DHAs have made great strides in leveraging pharmacists on inpatient units to assist in decision-making, a majority of pharmacists still focus on reviewing prescriptions and overseeing pharmacy technicians.

Medication management has recently received a significant amount of press and focus as a result of the Institute of Medicine's (IOM) "To Err is Human" and "Crossing the Quality Chasm" reports. IOM recommended a number of strategies to improve medication safety including: implementing physician order entry, implementing unit dosing, and leveraging pharmacists on rounds in patient care areas.

Incidence of adverse drug events in Canada is a key issue of safety and quality of care. The Canadian Adverse Events Study (Baker et al, 2004) concludes that adverse events occur in approximately 7.5% of hospital admissions, with drug- or fluid-related adverse events ranking the second most common, following surgical events. Another study, in a Toronto academic health science centre, concludes that medication errors at the time of hospital admission are common and that better methods of ensuring an accurate medication history are required.

Fortunately, Nova Scotia has made some investments to improve pharmacy services. For example, a Province-wide drug purchasing model has been developed, a primary Meditech Patient Care System has been implemented in most DHAs and facilities, some implementation of unit dose systems has been completed, and some facilities are in the process of implementing medication reconciliation.

As part of the PHSOR, pharmacy services were reviewed resulting in the key findings not unlike those for laboratory services.

Shortage of pharmacists. There is a general shortage of pharmacists across Canada. Eli Lilly Survey of Hospital Pharmacy in Canada (March 2000) identifies 150 vacant pharmacist positions in general care hospitals, or roughly 10% of allocated positions. The survey estimates that 22% of

hospitals report vacant pharmacy positions with the average time to fill a position as 6 to 8 months. Some contributing factors include: aging population, shorter stays in hospitals require quicker access to pharmacists, higher reliance on drug therapy, and competition from the retail pharmacy sector. This results in difficulty in getting prescriptions filled, excessive waiting times, increased incidence of dispensing errors, increased vacancy and pharmacist fatigue. As a result, patient care and patient safety can be adversely affected.

Recruitment issues. The PHSOR Team noted many vacancies with difficulties in recruitment, limited pharmacy roles in inpatient areas, no pharmacy role in growing outpatient or primary healthcare areas, limited hours of operation from 0700 to 1630 with generally no evening or weekend coverage, no formal on call schedule, and some evidence of informal medication supplies on nursing units. There is also a general under utilization of pharmacy technicians. While the Province and DHAs have made some important strides at trying to balance salary differentials between public and private pharmacy positions, there still remains a challenge to recruit and retain pharmacists, especially in smaller centres.

Lack of unit dose systems. Outside of Halifax, few areas utilize unit dose systems, where medications are dispensed in a package that is ready to administer to the patient. Unit dose leverages technology and automation to improve both the safety and efficiency of hospital pharmacy operations and drug distribution; however, unit does systems typically involve an increase in pharmacy staff workload with a corresponding reduction in nursing workload. The PHSOR recognizes that any updating of dispensing models is an expensive task and should be done on a Province-wide basis.

Pharmacists spending all time dispensing, not advising. There is a need for pharmacists to be more involved in direct patient care activities, working with the patient and being part of the care teams. The Canadian Society of Hospital Pharmacists supports increased roles for pharmacists, including the potential to prescribe drugs.

Pharmacy technicians are under-utilized in terms of scope of practice. There is a need to leverage the pharmacy technicians. Opportunity to improve the use of technicians to ensure they consistently perform traditional roles and move forward with additional roles (tech-check-tech).

To best prepare the Province for upcoming demands for advanced medication management and to ensure high quality, efficient, effective, and sustainable services, changes should be made to correct the challenges cited. Two additional initiatives are particularly important.

Implement computerized physician order entry. A computer-based order entry system can ultimately lead to physician order entry, to support medication error management strategies. Computerized Physician Order Entry or other e-prescribing tools should integrate with other information technology planning and decisions. Specific benefits of e-prescribing include the following: improved patient safety through a reduction in errors facilitated by informed decision making, implementation of best practices, reduction in healthcare costs by improving formulary compliance and reducing hospitalizations, improved process efficiencies by reducing call-backs from pharmacists to physicians seeking clarification, improving workflow efficiency for all clinicians, and improved patient satisfaction by reducing wait times for prescriptions and enabling clinicians to spend more time with patients as paperless processes become more efficient over time.

Leveraging retail pharmacies. For some rural facilities, timely access to onsite pharmacy resources is very difficult. An opportunity exists to partner with private sector pharmacies in small communities to ensure trained and experienced resources are available to either provide medications in some situations or to provide advice and education to patients or providers. While this model is not appropriate for many facilities, it may be ideal for some of the rural community hospitals. Other jurisdictions have experimented successfully with this model. For example, Scotland has recognized the role of community pharmacist as members of the primary healthcare team, and has negotiated a contract with pharmacists to support four services: acute medication, minor ailment, chronic medication and public health. Alberta has recently expanded the scope of practice of community pharmacists to prescribe a limited range of medications.

RECOMMENDATIONS:

53. That the DOH establish a Pharmacy feasibility study to examine and make recommendations on unit dose medication systems. The Committee is encouraged to look at the full range of options, from site specific unit-dose delivery to leveraging a single unit dose packaging and distribution model linked to the provincial purchasing model.

54. That the feasibility study review the roles of pharmacists and pharmacy techs, and make recommendations to support pharmacy staff functioning at full scope. A key objective of this role review is to ensure more pharmacists are able to work with care providers as opposed to focusing on the dispensing function.

55. That the DOH work with Health Information Technology Solutions Nova Scotia (HITS-NS) to determine the opportunity and impact of leveraging computerized physician order entry or other e-prescribing tools within the current implementation of the patient care information system. It is also recommended that a strategy be determined for leveraging medication distribution systems, e.g., Pyxis, that ensures the technology is used in areas with the greatest need.

56. That the feasibility study review the impact and opportunities for partnering with community pharmacists to provide supporting services where the hospital pharmacy is unable to do so.

DIAGNOSTIC IMAGING SERVICES

Diagnostic Imaging Services are provided across 36 facilities with total direct costs, excluding medical fees and amortization, amounting to $37.7Million, based on fiscal year 2005/06 data.[49] Currently, ten imaging modalities are provided, as part of Imaging Services with some modalities being provided at selected sites that offer a broader, more provincial-based service.

Diagnostic Modalities	Total Direct Costs	Proportion of Total Direct Costs	Number of Facilities
Radiography Services - Regional Sites	$ 13,196,789	35%	11
Radiography Services - Smaller Community Sites	$ 3,551,448	9%	25
Screening Mammography	$ 1,318,740	3%	7
Diagnostic Mammography	$ 853,760	2%	8
Interventional/Angiography	$ 2,952,204	8%	4
CT	$ 3,348,955	9%	10
Ultrasound	$ 2,362,563	6%	14
Nuclear Medicine	$ 3,842,374	10%	9
MRI	$ 1,121,845	3%	3
Electrodiagnostic Labs	$ 836,806	2%	3
Non-Invasive Lab	$ 4,328,520	11%	17
Total	**$ 37,714,004**	**100%**	

While overall growth in the provision of diagnostic imaging services is occurring year-over-year, the Province has been a leader in the implementation of leading-edge technologies like the Picture Archiving and Communication System (PACS) to increase the efficiency, effectiveness and sustainability of the service. The Province is also expanding additional modalities like MRI to assist in more timely access to services.

For Diagnostic Imaging, as for Pharmacy and Laboratory Services, health human resource issues are a major challenge.

[49] Facility count based on facilities with staff as identified in the Non-Nursing Staff Survey, and an operational budget based on MIS data provided. All cost data based on fiscal year 2005/06.

Shortage of trained staff. The most significant challenge facing Imaging Services is the availability of trained resources in the many diagnostic modalities. While most DHAs recognize the current or pending staffing shortfalls, there is a need to develop plans and tools to assist in managing these shortfalls.

Emerging radiologist challenges. While the PACS have provided some relief allowing radiologists to support the system more broadly, the increasing demand for timely access is still an issue. For some DHAs, wait times for some diagnostic tests are growing, thus directly extending treatment times. With the significant national focus on wait times and access, this issue is particularly sensitive. Alternative delivery models should be developed and reviewed to assess if a more sustainable and effective service can be provided.

The PHSOR suggests a number of initiatives that can help alleviate the pressures on diagnostic imaging, leading to improved health outcomes.

Confirm modality requirement at each site. The DHAs must identify the specific modalities each site will provide as part of their core services. For services not considered core, DHAs may need to identify opportunities for shared access to modalities such as MRI and Interventional Angiography.

Capital replacement planning. Capital replacement planning must be conducted on an annual basis. The objective is not only to enable planned updates (as opposed to unscheduled expenditures), but also to develop strategies that ensure high quality services are supported by innovative models, e.g., evergreening, which staggers the purchase and replacement of equipment over a defined number of years, so that there is always some access to new technology.

RECOMMENDATIONS:

57. That the DOH establish a Diagnostic Imaging feasibility study to examine multiple mandates: first, a Province-wide assessment of HHR challenges, outlining expected staffing shortages over the coming five years and identifying strategies to mitigate these shortages; second, to decide on the modalities available at each site and to define access processes when modalities are not available locally; third, development of provincial standards for DI services surrounding quality and access; and finally, a capital inventory and replacement strategy.

58. That the feasibility study seek the input of the DHAs/IWK to develop and implement priority access guidelines with clear estimated wait times. Further, that wait times be monitored, routinely updated, and publicly reported.

59. That the DOH work with DHAs to ensure a formalized capital replacement planning process is used for projecting all future costs and expected timelines.

PERIOPERATIVE SERVICES

The PHSOR Team's perioperative review includes individual DHA perioperative reviews in **Supplementary Report #5**. The review also identifies a number of common themes, many of which lend themselves to a Province-wide approach as opposed to a DHA-specific model. These themes all affect sustainability: demand, HHR and fiscal imperatives. What is particularly challenging for perioperative services is the complexity of the inter-relatedness of all the factors:

- With no overall plan for perioperative services, individual facilities and DHAs are trying to address the challenges on their own, leading to duplication of effort and counter-productive competition for scarce resources.
- With no common definitions or guidelines and no central booking reference, allocation of resources is even more challenging and wait list management haphazard at best.
- With extreme staff shortages in all areas, and particularly in anaesthesia and nursing, the viability of services themselves is threatened. Issues to be addressed are not limited to recruitment. On-going training is needed for nurses and others; remuneration schemes/packages for surgeons, including OR time allocation need attention; scope of practice questions require investigation.
- With a wide range in facilities and physical plant and equipment, there is inequity in the use of resources, as each facility and DHA struggles to provide programs in its own location. Issues of patient travel require exploration, including the range of pre-operative services available locally. Referrals and regional networks, not necessarily along traditional DHA boundaries, offer options for consideration.
- With a wide variety of management structures at the local level, Province-wide oversight and planning of perioperative services is hindered. Interdisciplinary leadership models can help, when nursing, anaesthesiologists and surgeons work in a collaborative model of participation and mutual problem-solving.

RECOMMENDATIONS:

60. That the DOH and the DHAs review current surgical sites within each DHA to ascertain service quality, human resources capacity and capability, physical plant, equipment, other non-labour resource availability and management systems.

61. That the review lead to development of a provincial plan for locating general perioperative services within each DHA, based on population needs and geographical access.

62. That the plan integrate a referral network to ensure easy access and appropriateness of referral to both regional specialty perioperative services and tertiary and quaternary services in Halifax.

63. That the plan take into account Province-wide HHR planning and scope of practice developments, as well as provincial surgical specialty wait lists and the balance between medical and surgical beds under the transformed health services system.

CAPACITY MANAGEMENT

The PHSOR Team acknowledges the many efforts to manage perioperative capacity effectively and efficiently by individual facilities, DHAs and the DOH. Unfortunately, these changes have been made without the benefit of a coordinated, Province-wide plan. Transformation provides the opportunity to begin to identify and manage perioperative capacity with the overall provincial goal of providing the best surgical services to the entire population, given the scarcity of human and other resources to do so.

Transformation also provides the opportunity to address both capacity and waitlist management on a more systematic, consistent basis. Each facility across the Province has its own variations in OR booking and scheduling processes; the process lacks discipline and is not protocol driven. There are no written guidelines for scheduling, no automated intelligent scheduler to highlight inaccurate surgeon estimates of time, no protocols suggesting priority and sequencing of cases and no formal review process of the slate if the surgeon's self schedule is not realistic.

While scheduling should rest with the individual facility, there are clear economies in developing a centralized booking or reservation system, whether provincially or DHA-based. The Community Wide Scheduler is currently being planned for deployment to DHAs as the standard perioperative scheduling system. This can be a platform for instituting a common, automated and powerful intelligent scheduler. Purchase of such a system would realize economies of scale and data availability would be enhanced at a variety of levels. Even with a Province-wide booking system, the PHSOR Team emphasizes that the process should be viewed as a reservation system only, providing a single call point and a control point for wait list initiation and management. The final control of the confirmation of a booking and management of the schedule should rest with the local facility.

RECOMMENDATIONS:

64. That the perioperative plan be aligned with the Wait Times Strategy to include a Province-wide program of capacity management metrics, defined and agreed upon utilization targets, and ongoing monitoring of provincial, DHA level and facility level metrics.

65. That the providers of perioperative services at all levels begin to use standardized definitions to measure the productivity of overall capacity utilization and, more specifically, nursing and anaesthesia productivity.

66. That wait list tracking be instituted on a Province-wide basis through a consistent process, with tracking by service, physician and high volume procedure. Tracking includes easy access and compilation of data, based on agreed-upon common definitions of terms and procedures.

67. That a robust automated scheduling system be introduced, including intelligent scheduling, remote viewing for physicians, preference cards and pick list functionality and report writing capability. The system should easily integrate with a Province-wide Materials Management System.

SUPPLY CHAIN MANAGEMENT

Non-labour costs are significant in perioperative services. Experience elsewhere, and in Nova Scotia, has demonstrated that standardization of instruments, prosthetics and supplies can reduce costs dramatically. The PHSOR Team believes that standardization can be leveraged within individual DHAs, but also could be possible on a provincial basis.

RECOMMENDATIONS:

68. That the perioperative plan include a Province-wide program for supply chain management to optimize efficiency opportunities surrounding standardization in key programs (e.g. Orthopaedics).

NON-CLINICAL SUPPORT SERVICES

With increasing frequency, private sector partners such as the Compass Group, Aramark and Sodexho are being engaged to assist with the provision of clinical support services such as food services, housekeeping and laundry. The reasons for this are multi-faceted and the arrangements range from having the private company provide the management oversight function to having the company hire and employ all the staff. Across Nova Scotia, there is a mixed model for managing and delivering these services with some DHAs managing and staffing these functions themselves, while others have engaged private sector partners to provide management oversight and/or provide staffing

The potential benefits of partnering with a private provider has been demonstrated to include:

- Improved safety performance in food services because the firm has well defined and developed service standards and quality programs (at one hospital in British Columbia, food safety performance rose from 63% to 86% while in another it went from 75% to 97%)

- Improved satisfaction scores with the patients and families (the VG Site in Halifax reports housekeeping and satisfaction scores are consistently above 90%)

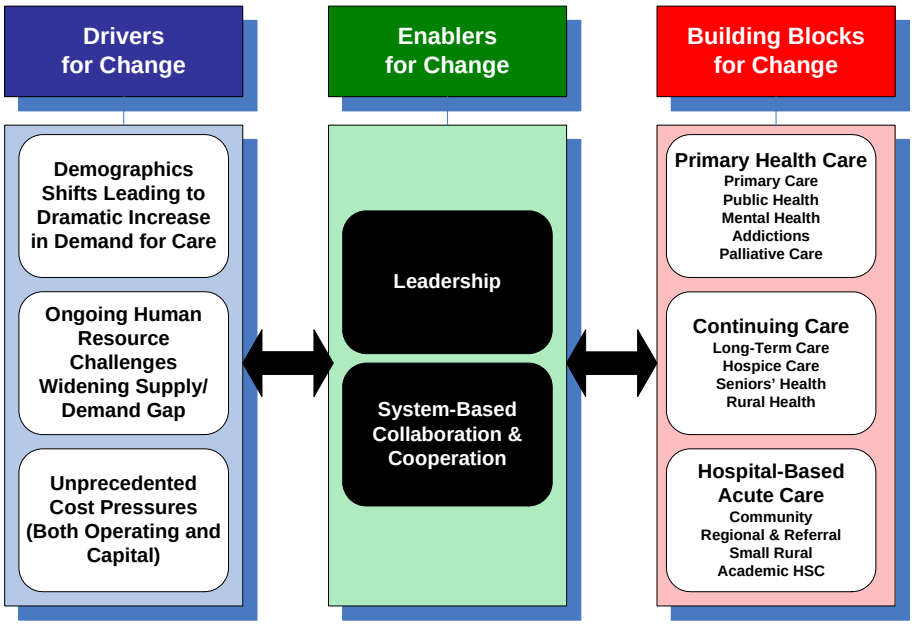
- Portering services can be improved through the use of technology enablers that have been developed by the private company. A teaching hospital in Toronto reports that daily average transport times have fallen from 26 minutes in 2004 to 16 minutes in 2007. As a result of this improved and consistent service, user and patient satisfaction has increased. Further, the more efficient program has resulted in increased bed throughput, thereby making patient beds available sooner.

- Costs can be reduced across multiple sites because the single management function provides access to staffing standards and national benchmarks. A Regional Health Authority in Newfoundland & Labrador reports that it saved more than $2Million by consolidating food services production at a central facility – one that the private partner constructed – and now provides high quality food to numerous facilities including hospitals and long term care homes.

Options such as this continue to be considered in Nova Scotia and they may be a key enabler of addressing some of the challenges that will arise during transformation. The PHSOR Team has no formal recommendation on this issue, but notes that it may warrant further review at the individual DHA level.

CHAPTER 9: CORPORATE MANAGEMENT & INFRASTRUCTURE DEVELOPMENT

Transformation of the Province's healthcare delivery system cannot take place without an appropriate infrastructure to provide system-wide operational support that contributes to the overall health status of Nova Scotians in the most cost-effective manner.



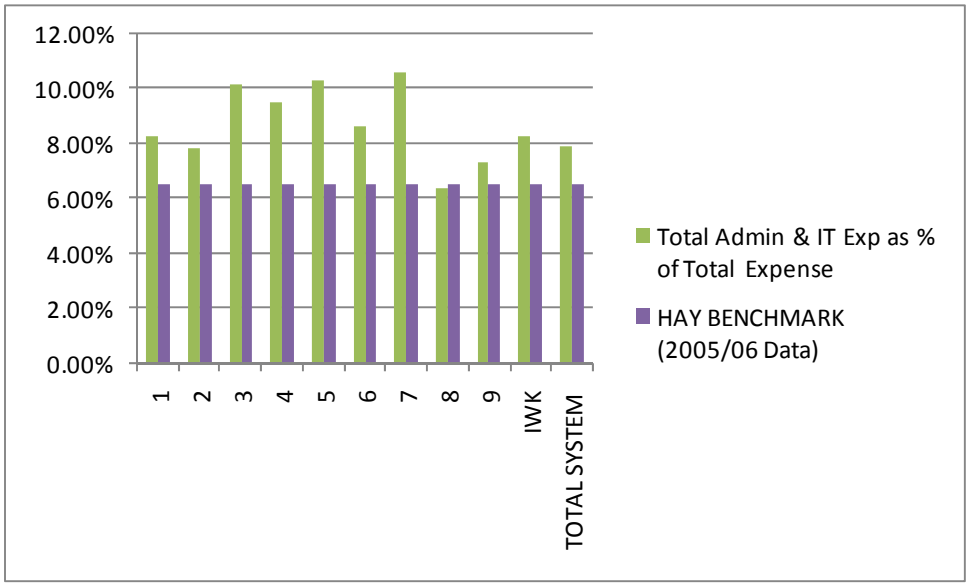
BUSINESS OFFICE CONSOLIDATION

Many healthcare jurisdictions across North America use centralized business office models. These involve transaction processing functions, to manage all services on a single platform. In turn, this allows local organizations to use their resources for decision support, financial analysis and strategic management functions, rather than day-to-day administrative applications.

One such initiative is occurring in Toronto where 13 hospitals have formed a business office corporation – Plexxus. Plexxus is expected to produce the following benefits:

- Achieve economies of scale, through the standardization and integration of processes and through group purchasing.
- Integrate common systems to pool savings and make affordable the investments required in IT infrastructure.
- Drive continuous process improvements through standardization and introduction of performance indicators.
- Reduce operating costs of administrative services for all participants, allowing them to invest more in direct patient care and improved access to services.
- Deliver timely and relevant information to hospital managers to enable better decision-making.
- Take advantage of leading practices, e.g., pay on receipt practices, web-engaged employee and manager self-serve HR, among others.

Nova Scotia is well positioned to leverage technology to enable a transition such as the one envisioned by Plexxus in Ontario. The Province's decisions to purchase SAP, and to support group purchasing, are good first steps. Taking the concept further suggests the same benefits to Plexxus for Nova Scotia and would allow the province to deliver administrative services within or closer to benchmark levels. The national benchmark (as defined through the CIHI/Hay national benchmarking study is 6.53% of costs expended on administrative services. Actual experience in Nova Scotia suggests that only one DHA (CBDHA) currently operates at or below that benchmark (see chart).



Moving to a model that enables efficiency would allow DHAs to redeploy resources to critical operations support functions, without the need to redirect additional or new resources outside of patient care delivery. High level analysis suggests that a 0.5% overall reduction in administrative costs (e.g. 7.5% of total costs versus 8%), would yield savings of approximately $8 million across the health system. These savings should be pursued for reinvestment in the system.

Multiple options for moving forward exist. Nova Scotia has experience with Information Technology (HITS-NS) using a host organization model. The alternative for consolidated business office functions is the Toronto model, i.e., establishing a separate organization that is owned by all parties.

RECOMMENDATIONS:

69. That the Department of Health work with the DHAs/IWK to undertake a feasibility study on business office consolidation, to determine if there is a business case for proceeding with this concept and, if so, the legal model to be implemented, i.e., separate corporation owned by all DHAs/IWK, or a host DHA.

For a business services platform, the Province has committed to pursuing implementation of SAP as the preferred system and has launched the Health Administration System Project (HASP) to implement the system. CDHA uses PeopleSoft and the IWK currently uses Meditech Magic. From CDHA's perspective, the primary rationale for rolling out PeopleSoft is that the system is in place and could be rolled out Province-wide much more quickly. On the other hand, the SAP model has the benefit that the rest of government is on the platform. The IWK believes that it will lose functionality if it abandons the Meditech platform.

It was beyond the scope of PHSOR to comment of which system should be selected, but it is not beyond our scope to comment on whether or not one system should be in place. While architecture solutions exist to bridge between systems, the PHSOR Team is of the opinion that one system should

be selected and pursued. From a government perspective, that decision has been made, with SAP the choice.

The PHSOR Team also acknowledges that PeopleSoft is a very good system, but one that is likely too expensive for an organization the size of Capital Health. DHA 9 should require not more than three FTEs to support the system, yet the current PeopleSoft staffing is 10 FTEs. The DHA acknowledges that some reduction in staff may be possible and will explore these opportunities as appropriate. An alternative is to leverage PeopleSoft across other DHAs, thereby spreading the ongoing operating costs over a larger base and making the system more affordable in the process.

RECOMMENDATIONS:

70. That the DOH select either PeopleSoft or SAP for DHA-wide implementation, in order to proceed with the DHA-wide roll-out as soon as possible. Once selected, all DHAs/IWK should re-confirm their commitment to the single platform.

INFORMATION MANAGEMENT / INFORMATION TECHNOLOGY

Healthcare leaders in Nova Scotia understand the positive impact that information technology has on building a safe, quality healthcare system. Through the Health Information Management Services group, the development and maintenance of a strong information infrastructure is well underway. Some selected accomplishments, developments and strategies include:

- Implementation of a Province-wide Picture Archiving and Communication System (PACS) enabling the storage, retrieval, and display of digital diagnostic images anywhere in the Province;
- Establishment of Health Information Technology Services (HITS-NS) to provide operations support for provincial IT systems such as the Nova Scotia Hospital Information System, PACS, Primary Healthcare IT, Continue Care and Telehealth;
- Development of the Health Administrative Systems Project to improve the effectiveness of administrative systems, facilitate implementation of standards and adoption of best business practices, increase financial accountability and improve planning through evidenced-based decision-making;
- Support of the wait time strategy to enable the healthcare system to respond with the right service, by the right provider, at the right time. Specifically, Information Management/ Information Technology (IM/IT) is responsible for building an information system to capture data across the Province as a basis for monitoring services and development of a provincially coordinated waitlist management system. This will include review of an operating room system, Emergency Department system, and knowledge management systems;
- Support of integrated information and evidenced-based decision-making in the DOH, programs and within the DHAs/IWK through development of tools, data standards, and awareness and education;
- Continued development and implementation of an Electronic Health Record. A number of partnerships with Canada Health Infoway And the Health Infostructure Atlantic (HIA) have resulted in the development of collaborative partnerships that have provided necessary funds and expertise to support projects;
- Continued implementation of the Primary Healthcare Information Management project to improve the use of information in primary care;

- Continued participation in pan-Canadian and HIA Public Health Surveillance projects; and
- Initiated planning for the implementation of a provincial drug information system.

The PHSOR Team acknowledges that development of an information management infrastructure has a number of challenges. These include:

- Nova Scotia, like most other jurisdictions, has a number of projects that rely on support and guidance from Information Management. Unfortunately, Canada's healthcare sector has been one of the slowest industries to adopt information technology and has made relatively low investments in IT relative to other industries. As a result, a key challenge for Health Information Management is the ability to participate in, provide input or lead projects due to time pressures, resource availability or significant barriers to change. This challenge is made more acute as the full breadth of projects is considered (e.g., PHSOR related, DOH, DHAs/IWK). A clear plan for how IM/IT can be best leveraged must be developed and supported.
- Successful implementation of IM-related projects requires a mix of expertise to support the design, building, implementation and ongoing maintenance that is not available under any single roof. The DOH Health Information Management Services group alone cannot provide adequate support to implement technology solutions; a partnership model is required. Whether this partnership includes external agencies like Canada Health Infoway, the Canadian Institute of Health Information, Health Infostructure Atlantic or internal stakeholders like DHAs/IWK, a collaborative partnership mindset must be leveraged. In fact, a productive working relationship with the DHAs/IWK will be a key influencer on how effective IM/IT will be on supporting delivery of quality and efficient care.
- The ability to achieve the IM/IT vision for the Province will require consistent support and investment in information technology enhancements. This support must come in the form of available and predictable resources (e.g., multi-year plans for staffing and financial resources) to ensure the DOH in collaboration with the DHAs/IWK has sufficient resources to design, build, implement and maintain solutions.

RECOMMENDATIONS:

71. That the Department of Health work with IM/IT to develop mechanisms to acquire necessary resources (e.g., staff secondment from the DHAs, contract positions) and coordinate projects to ensure limited resources are utilized effectively and efficiently. This may involve Project Management Offices charged with building mechanisms to ensure projects result in expected returns articulated in accountability agreements.

72. That the DOH continue to cultivate internal and external partnerships and build strong relationships with DHAs/IWK clinical and technical stakeholders to support adoption of solutions.

HEALTH HUMAN RESOURCES MANAGEMENT

The challenges of HHR are one of the key drivers for transformation. The PHSOR discusses HHR throughout this report, particularly as it relates to professional and paraprofessional staff. In addition, there are system-wide infrastructure issues that relate to management and administration of HHR across all categories of staff.

HHR LEADERSHIP

- The HHR function itself is generally understaffed to meet even the most basic needs for transformation.
- There is little HHR leadership to provide strategic HHR advice to senior management. For example, there is no VP of Human Resources in the entire system. Further, in only three DHAs does the senior HHR professional report to the CEO. This makes it nearly impossible to attract top talent into the HHR function.
- Up to date data systems for assisting the human resource professionals and the frontline managers are generally non-existent. Only two of the DHAs have a Human Resource Information System.

HHR FRONT-LINE MANAGEMENT

- There are too few frontline management positions, particularly in nursing. This contributes to employee concerns about poor communications.
- Over the last decade, many frontline management positions have been eliminated. The ability of the remaining managers to communicate with and provide leadership and guidance to frontline staff has been seriously eroded. Morale is down significantly.
- Frontline HHR management positions are not seen as desirable by the people who are needed as the next generation of managers.
- Managers have neither the time nor the funding to receive adequate development of their managerial expertise.

EMPLOYEE HEALTH AND SAFETY

- Accident rates in hospitals have been trending upward for the last four years, while other industries remain relatively constant.
- Accident rates in long term care and home care are significantly above the average for all industries and they continue to increase.
- Strains and sprains are the leading cause of injuries.
- There are no DOH initiatives to fund important safety equipment like bed lifts.
- Only three of the 9 DHAs have a position for an Occupational Health & Safety (OH&S) manager with appropriate professional qualifications.
- There are insufficient people in the OH&S function to meet the needs of the employees and the organization.
- Employee wellness initiatives in several DHAs are a positive move; however, they do not deal with occupational safety.
- The Nova Scotia Association of Health Organizations (NSAHO) does not currently have the mandate or resources to address occupational health & safety.

RECOMMENDATIONS:

73. That the DHAs/IWK create a standard organization for HHR, headed by a senior HHR professional, preferably at the VP level, who reports directly to the CEO and is part of the executive of the DHA; a manager of OH&S position filled by a person with appropriate professional expertise; and sufficient front-line staff for all aspects of the HHR and OH&S functions

74. That the DOH and DHAs/IWK, in collaboration with WCB, undertake a Province-wide initiative to improve occupational health and safety. This must include funding from the DOH to provide

staff, equipment and training. One of the key goals of the initiative should be a change in culture across the healthcare system, to give greater prominence to health and safety in the workplace.

75. That the DOH strengthen the role of NSAHO to provide common human resource services to all the DHAs.

76. That the shared service functions be formally eliminated in DHAs 4, 5 & 6 and 1, 2 & 3.

PROVINCIAL HEALTH HUMAN RESOURCE STRATEGY

The 2003 Health Human Resources Study identifies specific professions as particularly vulnerable to shortages:

- Laboratory Technologist (17% gap or 141 jobs)
- Medical Radiation Technologists (15% gap or 68 jobs)
- Registered Nurses (12% gap or 1090 jobs)
- Pharmacists (9% gap or 90 jobs)
- Medical Radiation Therapists (29% gap or 13 jobs)
- Sonographers (15% gap or 14 jobs).

The study led to a number of initiatives, including a nursing strategy, bursaries in key programs, re-establishment of the laboratory technologist training program in Halifax, additional funding for paramedics to receive advanced care training, increasing undergraduate medical training seats at Dalhousie and funding to support recruitment of internationally trained professionals.

Nova Scotia also worked with the other Atlantic Provinces to look at HHR issues across the region. A summary report was tabled in December 2005, but has not yet been endorsed by all of the provinces.

Nova Scotia is already laying the foundation for an integrated Health Human Resource Strategy that utilizes a needs-based approach to planning. The HHR strategy will accommodate all the regulated health professional groups and will address HHR needs in the following areas of service delivery: acute care, addiction services, continuing care, mental health, public health, and primary healthcare. The strategy will also address issues related to HHR policy and legislation. Goals for the Health Human Resource Strategy include:

Goal 1: To identify the right number, mix and distribution of healthcare providers and/or teams to meet population health needs.

- Build necessary planning infrastructure to assess health needs and identify workforce supply and productivity measures;
- Enhance workforce information and data systems to support a needs-based planning process for the Province;
- Determine the appropriate mix of healthcare providers to deliver care across practice settings and sectors.
- Enhance the capacity of DHAs to engage in collaborative HHR planning and evaluation;
- Collaborate with researchers to ensure the best available evidence informs HHR planning and evaluation initiatives;

Goal 2: To ensure the health workforce is responsive to changes in health needs of the population and the health system and support the provision of care in a variety of delivery models and care settings.

- Educate the health workforce to work in inter-professional teams and prepare health providers to work in unique service environments;
- Identify educational requirements to prepare health providers to meet identified needs.
- Strengthen partnerships among Department of Health, Department of Education, District Health Authorities, educational institutions, employers, unions and professional associations;
- Work with educational institutions to ensure educational curricula prepares trainees to work in a variety of work settings and practice environments;
- Work with employers, professional association and unions to ensure healthcare providers are able to deliver services to their full scope of practice.

Goal 3: To create safe and supportive workplaces to assist in the recruitment and retention of healthcare providers.

- Increase the capacity of Nova Scotia's health system to recruit and retain healthcare providers;
- Increase the capacity of employers to address health and safety issues to reduce work-related violence, illness, injury, disability and absenteeism.

While HHR is a key driver of sustainability, it is also a key factor in transformation. The emerging strategy needs to be supported and strengthened if the transformational plan outlined in this report is to be successful.

System-wide realignment of programs and services means significant changes to HHR recruitment and retention, both qualitatively and quantitatively. For example, accepting the recommendation to consolidate specialty programs on fewer sites affects HHR plans in terms of numbers and qualifications of staff needed.

Similarly, transformation offers the opportunity to realign physicians into provincial specialty networks. DHAs already have some form of departmental structure for physicians, most commonly differentiated by specialty in the academic sites, e.g., a separate Department or Division for every specialty, and more consolidated at the regional sites, e.g., Department of Surgery includes all surgeons and, in many cases, Anaesthesia. At the regional sites, these models understandably reflect the realities of critical mass and time availability. The PHSOR Team feels, however, that the academic organizations have a key role to play in providing some leadership provincially to ensure that practitioners outside of the greater Halifax area have formal peer support and connections. Regular meetings for each specialty (annual for some, more frequent for larger groups), including attendance at formal rounds, can improve competencies for physicians in other regions of the Province.

RECOMMENDATIONS:

77. That the Chief Human Resources Officer at the Department of Health work collaboratively with HR leaders at the DHAs/IWK to refine and implement the emerging provincial Health Human Resource Strategy. Elements include: an allied health strategy to support recruitment and retention of these professional staff groups and an update of the nursing strategy.

78. That the Department of Health work collaboratively with the DHAs/IWK to establish provincial networks/councils for physician groups, co-chaired by an academic lead and a regional site lead.

79. That the physician remuneration strategies align with the goals associated with Primary Healthcare.

CHAPTER 10: PROVINCIAL PROGRAMS

There are seven provincial programs, each funded by the DOH as of November 2003, included in this review.

- Cancer Care Nova Scotia
- Nova Scotia Reproductive Care Program
- Nova Scotia Breast Screening Program
- Diabetes Care Program of Nova Scotia
- Nova Scotia Hearing and Speech Centres
- Cardiac Advisory Council (Cardiovascular Health Nova Scotia)
- Nova Scotia Blood Coordinating Program.

MANDATE AND OPERATIONAL RESPONSIBILITIES

Provincial programs have been in place in Nova Scotia's health system for many years. In April 2004, the DOH, in conjunction with provincial program/service leadership, developed and approved a provincial program model.

The model outlines a multi-pronged mandate, against which programs can be reviewed:

- **Advisor to the DOH**. Act in an advisory capacity to the DOH, reporting to the Acute and Tertiary Care Branch of the Department.
- **Advisor to care providers.** Recommend service delivery models.
- **Standard setter**. Develop draft standards.
- **Educator.** Educate and communicate about standards and best practices.
- **Monitor.** Monitor approved standards.
- **Implementation support.** Work with provider organizations to ensure implementation.
- **Evaluator.** Participate in program evaluation.

The model also identifies significant factors that influence the day-to-day operations of provincial programs, including:

- **Authority** – The program manages its own day-to-day operations. It has the authority to carry out the activities outlined in its business plan and to implement approved standards.
- **Legal status** – The program is not a separate legal entity. It cannot be a direct employer of staff or hold funds in its own right. All contracts involving provincial programs are entered into under the authority of the Crown. Assets of provincial programs, including data, are owned by the DOH.
- **Host organization** - The DOH has contract agreements/memoranda of understanding with host organizations, usually academic healthcare centres, to support provincial programs.
- **Liability** - The DOH is not liable for any injury or damage to the person, including death, or for the loss or damage to the property of a host organization resulting from the host's services, unless caused by the negligence of a member of the program staff while acting within their scope of employment. The DOH protects the host organization from any liability claim resulting from the performance of employment duties by a member of the program staff. If a provincial program staff member has a professional designation, protection is provided through the appropriate professional association.
- **Health human resources** - The complement and structure of staffing for provincial programs is approved by the DOH through the business planning process and final business plan approval. Changes to staffing complement or structure throughout the year must be approved by the DOH.

- **Financial reporting** - Provincial programs are required to submit a Variance Analysis and Forecasting Report to the DOH on a quarterly basis for the 1st, 2nd, and 3rd quarter. In the 4th quarter, the programs submit monthly Variance and Forecasting Reports.
- **Reporting and approval of health systems standards** - Provincial programs provide written documentation through the appropriate Director, Acute and Tertiary Care Branch. Depending on the nature of the documentation, the Director may submit and represent the Program at the appropriate Department committee.

SIGNIFICANT ISSUES

The PHSOR includes a review of provincial programs to better understand their role, influence, and impact on the health of Nova Scotians and their place in the healthcare delivery system as it undergoes transformation.

The key objectives of the provincial program review, as directed by the DOH, included:

- Assessment of each provincial program's ability to meet the mandate, identify key challenges and barriers, and assess overall fit within the Provincial Program Model;
- Review of each provincial program's day-to-day organization and structure;
- Review of each provincial program's ability to build sustainable relationships with key partners, both within Nova Scotia and inter-provincially;
- Review of the adequacy of allocated resources to meet each provincial program's mandate; and
- Review each provincial program's working relationship with the DOH.

The PHSOR Team held a series of meetings (generally 2-4 hours) with provincial program staff and selected stakeholders. The Team also held follow up meetings with DOH leads and program managers. The focus throughout was on common themes and major issues. Details specific to the individual programs are found in **Supplementary Report #6**.

ASSESSMENT OF THE PROVINCIAL PROGRAM MODEL

Many problematic themes exist across the provincial programs. The PHSOR Team believes they are due to a lack of leadership in implementing the provincial program model. In addition, historical relationships and structures hinder a transparent planning process.

Many provinces have provincial program models and the PHSOR Team concludes that the one in Nova Scotia is developed appropriately to coordinate and define standards for provincial programs related to significant population health / chronic disease issues. The model also separates policy development and standard setting from care delivery, which the PHSOR Team views as appropriate because it separates the monitoring process from the care providers. The Team considers alignment of the provincial programs within academic health sciences centres as the host organization as appropriate. Finally, the PHSOR Team feels that the model provides the opportunity for focus and leadership and is clearly linked to the system-wide transformation outlined in this report.

The PHSOR review notes, however, that only two of the seven provincial programs conform completely to the model. The remaining five have varying degrees of adherence, e.g., some have no Memorandum of Agreement. The PHSOR Team believes that the most non-compliance issues relate to Hearing & Speech, which functions well outside the model with its own legal status and no host organization.

RECOMMENDATIONS:

80. That the DOH formally confirm if Hearing & Speech is a provincial program. If it is deemed to be a provincial program, confirm if it can remain an exception to the model, or should transition to the provincial program model.

81. That the DOH work with all provincial programs to ensure they fulfill the model's mandate, particularly as it relates to monitoring and evaluation.

82. That the DOH sign a formal Memorandum of Agreement with each provincial program that sets out deliverables and expectations of both parties.

83. That the DOH revisit the reporting structure of the provincial programs within the Department, to streamline accountability and ensure greater uniformity and smoother communications.

84. That the DOH clearly define funding for each provincial program, distinct from funding for other services of the host organization.

85. That the provincial programs develop collaborative and cooperative initiatives for information management, quality improvement, surveillance and business office functions.

86. That the provincial programs participate in transformation planning as it relates to technology and data management in general, and to a provincial patient care information system in particular.

87. That the DOH and the provincial programs undertake a detailed review of administrative vs. program service costs. This should include development of targets for administrative costs as a percentage of total program costs.

CHAPTER 11: GOVERNANCE & SYSTEM LEADERSHIP

GOVERNANCE STRUCTURE

Good governance is about promoting a strong, viable and effective organization. It is about structure and processes that ensure a comprehensive system of stewardship and accountability. With the magnitude of the transformation of Nova Scotia's healthcare delivery system, governance cannot ignore difficult decisions. Good governance is even more critical to ensure that the population of the Province has the best possible system to enhance health status and outcomes. This holds true for all organizations, large and small.

The current DHA structure and membership is legislated. Standing committees of the DHA board are Executive Committee, Audit/Finance Committee, Joint Conference Committee, Privileges Review Committee and Quality Management Committee. In most cases, the Board, its committees, the Committee of Chairs and the Chair of the Board operate under written charters that define director roles and responsibilities. Written job descriptions and committee terms of reference are in place, although some DHAs are more disciplined than others in this regard.

The enacted model attempts to represent the diversity of the communities served while sharing a common goal of ensuring healthy communities for a health future. The PHSOR identified some concerns with this model that suggest a more formal review to ensure that the DHA structure is aligned with the goals of a transformed health system.

RECOMMENDATIONS:

88. That the DOH and DHAs/IWK Board review the legislation on boards. Issues to be addressed include the appropriateness of having front line staff on Boards, the nomination and appointment process and the delineation of responsibility between the Boards and the DOH.

89. That nomination processes for CHB positions on DHA Boards be reviewed and reformed. Issues to be addressed include the need for CHBs to formally discuss potential nominations with the DHA Chair in advance of finalizing a list of potential nominees and the requirement to provide a minimum number of nominees. Failure to provide a minimum number of nominees should, at the Minister's discretion, allow the Minister to appoint someone other than a CHB nominee.

90. That all DHAs/IWK Boards develop formal, written mandates setting out their responsibilities. Issues to be addressed include governance audit; management oversight, delineation of responsibilities; in camera sessions; director selection, development, recruitment and evaluation; and parameters for relationships with other DHAs and the DOH.

91. The IWK Board should review its structure to determine if it can be more aligned with the structures used for all DHAs (e.g., community advisory linkages).

FOUNDATIONS & AUXILIARIES

Foundation, Auxiliary and DHA/CHBs must act independently, with a common appreciation of their respective roles, a mutual respect for each party in carrying them out, and continuing open dialogue and communication. As both Foundations and Auxiliaries are engaged in fundraising, and as Auxiliaries also provide volunteer resources, both groups must be involved in the transformation of the Province's healthcare delivery system. This is applicable both within individual facilities, DHAs and CHBs and across the Province.

Some cross-appointments are mandated, e.g., CHB membership on the relevant DHA board. The PHSOR Team notes that some DHAs put significant effort into building their community relationships. Others actively engage CHBs in strategic planning, annual meeting events, participating at a CEO/DHA Chair level in community activities, and making communicating DHA and DOH information. Still others are struggling in their relationship with their communities.

RECOMMENDATIONS:

92. That all affiliated Foundations and Auxiliaries undertake a review of their mandates, paying particular attention to the potential for district-wide initiatives as they relate to system-wide transformation.

93. That the DOH and the DHAs/IWK ensure that representatives of Foundations and Auxiliaries be actively involved in all aspects of transformation.

ACCOUNTABILITY FRAMEWORKS

Many provinces, including Alberta, Saskatchewan and Ontario, have created some formal mechanisms to monitor safety and quality in healthcare (e.g. Health Quality Councils),. Nationally, the Canadian Patient Safety Institute has launched initiatives such as Safer Healthcare Now. These models follow similar approaches being developed under the Institute for Healthcare Improvement in the US and form an important component of a transformed health system.

The PHSOR Review Team found that people in Nova Scotia believe that some form of safety and quality oversight agency would be of benefit as part of the go-forward strategies surrounding implementation. Such an agency could be helpful in monitoring progress on various initiatives such as lab consolidation, core services implementation, utilization management and model of care redesign, by evaluating the impact that each initiative has on outcomes, quality, safety and cost.

RECOMMENDATIONS:

94. That the Department of Health work with the DHAs/IWK to define an appropriate framework for quality and safety oversight to monitor progress throughout the PHSOR implementation.

95. That the Department of Health explore interest from other Atlantic Provinces in creating a regional model for quality and safety oversight.

FUNDING FORMULA

Cost-effectiveness and fiscal practicalities are major issues for the transformation of the healthcare delivery system. With fiduciary responsibility, Boards at all levels must be particularly sensitive to both operating and capital cost implications of the change envisioned.

The terms of reference of the PHSOR do not include a funding formula. Still, every DHA asked that the PHSOR Team comment on this issue. The Team recognizes that some formula is required. We are not in a position to define a formula, but rather to identify some of the factors that have been considered in other provinces as they have moved to a formula.

For example, the BC Needs Based Funding Formula is based on population characteristics and needs. Indicators include:

- deviation between actual annual funding to regions and allocations recommended by funding formula;
- changes resulting from ongoing review and revision of funding formula; and
- expansion of the funding formula to include additional health services.

Ontario has a funding formula that goes beyond the traditional models and includes a number of factors that trigger some adjustment to funding. The Joint Program and Policy Committee (JPPC) identifies the following adjustment factors[50]:

- For medical and surgical volumes, age/sex demographics, excess mortality by age group, socio-economic status, percentage of aboriginals living in the geographic area, and percentage of the area which is deemed rural;
- For pregnancy and childbirth volumes, age/sex demographics and fertility rates; and
- For newborn ad neonatal volumes, age/sex demographics, % of low birth weight infants.

RECOMMENDATIONS:

96. That the DOH develop a population needs-based operational funding formula that considers factors such as demographics, mortality, socio-economic status, Aboriginal population, rural populations, fertility rates, health status indicators, tertiary and quaternary workload and academic health science centre mandates.

97. That the DOH negotiate the longer term formula funding results with the DHAs/IWK to support the transformation of the healthcare delivery system, with an emphasis on primary healthcare.

98. That the DOH create a shorter term primary healthcare innovation fund that supports new concepts for programs and initiatives.

As in all provinces, capital funding is a major issue for Nova Scotia. There is currently more than $300Million in equipment requests in front of the DOH and most DHAs note that they have not identified all of their needs. In addition, a new hospital is planned for Colchester East Hants Health Authority (estimated to be approximately $138Million) and Capital Health needs to redevelop the VG Site as the provincial referral centre role. It is estimated that this project will be approximately $500Million. These three issues alone suggest that the Province will need to spend $1Billion over the next decade.

RECOMMENDATIONS:

99. That the DOH explore public/private partnerships as a means to meet its capital development requirements.

[50] JPPC, Hospital Funding Report, 2004

PERFORMANCE AGREEMENTS

The DOH and the leadership (board, executive and professional) need a framework for the decisions inherent in the transformation of the healthcare delivery system. While improved health status and fiscal imperatives drive the need for transformation, there is also a requirement for improved accountability that is acceptable and understood by all parties.

All ten provinces have legislation creating some form of regional health authorities. Local Health Authorities in BC, Local Health Integration Networks in Ontario, District Health Authorities in Nova Scotia and Regional Health Authorities elsewhere now have the authority to plan, manage, deliver, monitor and evaluate health services within their jurisdiction.

In most provinces, except Nova Scotia and Newfoundland, this process includes the introduction of performance or accountability agreements between the health authority or hospitals within it and the provincial ministry/department of health.

RECOMMENDATIONS:

100. That the DOH develop performance agreements that clearly define the roles and responsibilities of all parties, including demonstrated commitments to and participation in provincial transformation initiatives, specific financial efficiencies and reporting/monitoring.

PHSOR EFFICIENCY ANALYSES

The most common method for undertaking comparative analyses of cost structures in acute care relies on data that is grouped into Hours of Care per Patient Day (HPPD). This method has limitations; however, it is the best available without adequate data on acuity/complexity.[51] While many hospitals use some form of workload measurement system to assess productivity at a unit level, there is a growing frustration with these systems because the information is largely entered on a manual basis, leading to the criticism that data can be easily manipulated to produce the desired result, e.g., higher or lower requirements for HPPD.

The PHSOR did not include a methodology focused primarily on benchmarking across provincial jurisdictions because the underlying delivery systems can differ greatly. For example, benchmarks from Ontario may not apply in Nova Scotia because of different systems of home care, different levels of access to rehab and chronic care and varying degrees of access to community-based and/or primary healthcare services. In addition, provincial differences in the ability to recruit and retain healthcare professionals can have a dramatic impact on how care is structured and delivered across different types of organizations.

The PHSOR uses a methodology based on staffing ratios. Its strengths and weaknesses are:

- **Strength:** Patient to staff ratios are well understood by frontline managers and it is quite easy for them to identify workload that they expect staff to handle i.e., they can project staffing assignments based on their experiences;
- **Strength:** There is significant similarity across Canada in what managers view as the required staffing levels for like groups of patients, e.g., medical, surgical, telemetry, rehab, etc.;

[51] Note: Resource Intensity Weights are often used as a proxy for acuity, but these comparisons can only be made at an institutional level, rather than at a unit level. Comparisons across like units e.g., medical or surgical) must therefore revert to the HPPD model)

- **Strength and weakness:** Managers can identify issues that lead to a need for additional staff or higher provider:patient ratios, e.g., characteristics within the patient population that reflect higher care needs for the patients, but data to reflect these needs are generally not available. This can lead to debates regarding appropriateness of the model, especially when efficiencies are suggested as a result of the analysis;
- **Strength:** The literature on staffing considers the impact of having staff handle higher workloads and shows that patient:staffing ratios of 4:1 or 5:1 typically lead to good outcomes for acute care. (Canadian hospitals typically staff at levels of 5:1 or better.)
- **Strength:** The literature also notes that ratios should reflect regulated staff positions (not just RNs) and that there is a role for assistive personnel, e.g., unlicensed staff, as long as the highest proportion of staffing in acute care is with regulated personnel.

Using agreed upon staffing ratios and occupancy targets, the PHSOR target ranges for each unit are as follows:

	Target Occupancy	Low end of range for HPPD (adjusted for target occupancy)	High end of range for HPPD (adjusted for target occupancy)	Comments
Medical	90.0%	4.06	5.21	May need to be adjusted down to reflect % ALC
Surgical	90.0%	5.21	6.25	May need to be adjusted down to reflect % ALC
Med/Surg	90.0%	4.60	5.73	May need to be adjusted down to reflect % ALC
Maternal	85.0%	4.85	5.96	If LDR not included, numbers could be adjusted down
Paeds	85.0%	4.85	7.72	Higher end typically for tertiary centre
Rehab	95.0%	3.45	4.34	Needs to be adjusted based on other staff on unit
ALC	95.0%	3.63	3.89	Needs to be adjusted based on other staff on unit
Mental Health	90.0%	4.06	5.21	Needs to be adjusted based on other staff on unit

It is more difficult to use this method to set targets for critical care. For tertiary ICUs, we assume a target that is between 18.0 and 22.5 hours of care per day (assuming a mix of patients who require 2:1 or 1:1 care up to a unit that is exclusively 1:1). For regional sites, it is more difficult as most of the units indicate that the acuity only requires 2:1 staffing ratios.

The only remaining question is where within the range to set the target, e.g., top quartile, bottom, top or midpoint of the range. Based on our experience, organizations pursuing an efficiency agenda would typically select top quartile or mid-point to set the initial targets. For the purposes of PHSOR, we use the midpoint as the starting point for our analyses. Exceptions to this are:

- Units that predictably had a higher mix of more complex cases, e.g., surgical programs where case mix includes sub-specialty care such as vascular or orthopaedics, or medical units with a higher likelihood of sub-specialty care, e.g., cardiology
- Units in academic centres because of the higher likelihood for cases to be referred from other hospitals due to complexity.

In both of the above situations, we set initial targets at the top of the range. We also adjusted targets lower when we had information to suggest that there was a higher percentage of Alternate Levels of Care (ALC) on any unit, e.g., we created a blended target based on proportion of ALC versus the expected patient mix.

Efficiency opportunities were then calculated using actual HPPD (actual hours in the MIS data divided by the actual patient days for the unit) for medical, surgical, combined medical/surgical units and critical care. Efficiency opportunities were largely excluded at this time for mental health and maternal child units as well as for the non-regional sites, as the approach for addressing these requires further direction from the CEO Council.

The analysis suggests that across the system, there may have been an opportunity to have consumed fewer resources to deliver care in the regional hospitals in 2005/06. When reviewing the efficiency analysis with the individual DHAs, several data issues were flagged that suggest that the opportunities are over-stated, but everyone agreed that some savings were likely possible.

NOTE: It is important to acknowledge that savings may only be realized following the integrated model of care redesign. The analysis will need to be updated to reflect 2006/07 and 2007/08 year-to-date figures when the model of care is initiated.

RECOMMENDATIONS:

101. That the DOH update the efficiency analysis on a regular basis and review the findings with the CEO Council as a regular performance measure.

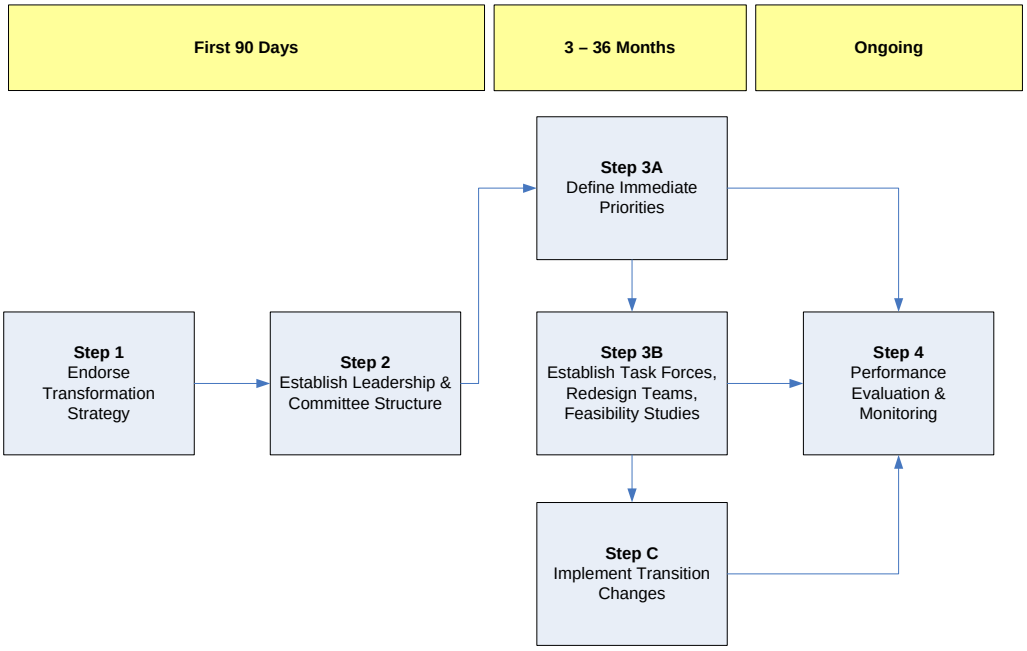
102. That the DOH and DHAs/IWK confirm staffing ratios/standards for inpatient units in all regional sites.

103. That the DHAs/IWK initiate immediate changes to staffing processes in an effort to reduce operational costs and redirect savings to priority issues.

IMPLEMENTATION ROADMAP

Moving forward with the transformation recommendations from PHSOR requires careful planning, coordination and controls. Implementation must acknowledge the limited resources, expertise and finances available and ensure they are utilized efficiently and effectively to deliver the expected and measurable outcomes and results. A multi-step Transformation Implementation Roadmap has been developed to outline key stages. It includes a leadership structure and defines a workplan to clearly communicate the required key activities. The Roadmap is broken into four phases: first 90 days, months three to 12, months 12-18 months, and months 18-36.

Implementation Roadmap



FIRST 90 DAYS

STEP 1 – RECEIVING AND ENDORSING THE REPORT

This is a critical step to launching the transformation agenda. This report contains more than 100 recommendations for the transformation of the health system in Nova Scotia. Through a series of planning sessions, the CEO Council reached consensus on all of the recommendations, using the following guidelines:

- Consensus: a majority supported a recommendation that dissenters "could live with" without the need to record their dissenting opinions; and
- When consensus could not be reached, a vote was taken to determine majority opinion and dissenting opinions were respectfully recorded.

Based on the consensus driven process that was used to confirm the content of the report, we believe this first step (endorsement of the report) should take place within 90 days of receiving the final report.

Following endorsement, it is strongly advised that a multi-faceted communications strategy be prepared to share the plan with the DHAs/IWK leaders and staff, other key stakeholders and the general public. Widespread buy-in to the transformation concept and the roadmap in particular are essential for a successful outcome.

QUESTIONS FOR THE CABINET, COUNCIL OF BOARD CHAIRS AND CEO COUNCIL PERTAINING TO STEP 1:

What level of leadership sign-off is required to move forward with implementation?

How is leadership support going to be obtained, and how will ongoing support be ensured?

Once the report is distributed, is it for information only or is feedback expected? If the latter, at what point will the report be considered truly final?

STEP 2 – ESTABLISHING A LEADERSHIP FRAMEWORK

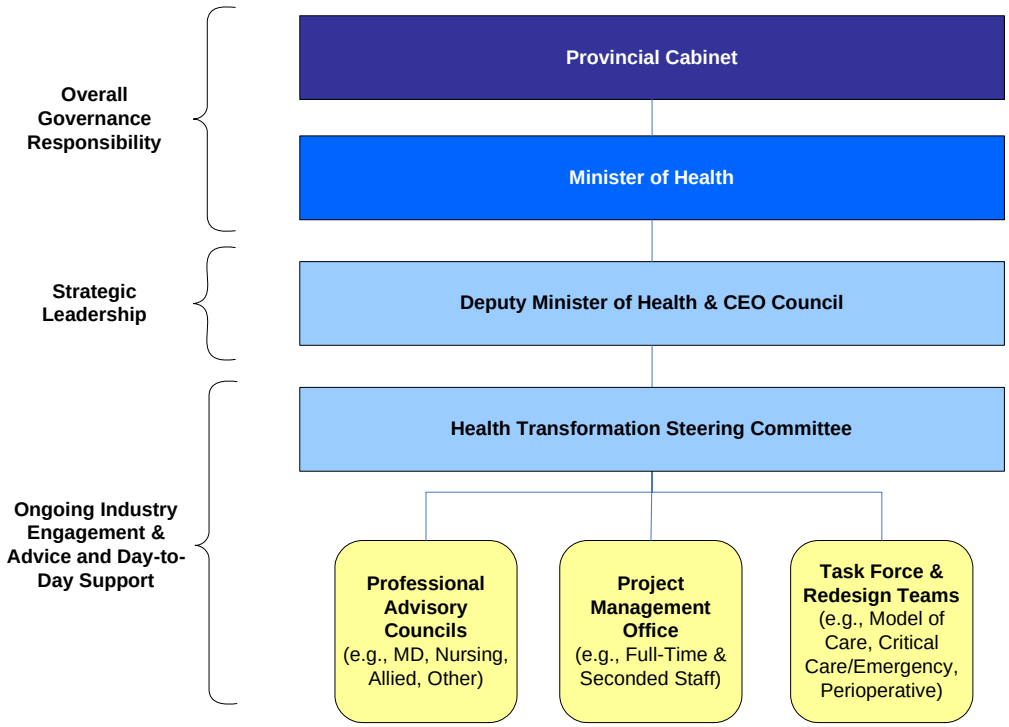
In Step 2, the Department of Health and the DHAs/IWK must formalize the leadership framework and structures to clearly define which bodies are formally charged with overseeing all aspects of the transformation roadmap. The PHSOR Team suggests that roles and responsibilities be clearly described and agreed upon as part of an accountability framework/agreement.

The PHSOR Team assumes that the Council of Chairs and Minister of Health will provide the formal governance support for the implementation and that the CEO Council, chaired by the Deputy Minister, will serve as the formal Oversight Committee. A Transformation Steering Committee should also likely be established and this group would be chaired by the senior staff person charged with day-to-day responsibility for leading implementation activities. This senior person should be identified as a key role within the Department of Health, preferably at the Executive Director or Assistant Deputy Minister level. In addition, a Project Strategy and Management Office should be established to provide the necessary infrastructure to support the project and its relationship to other initiatives.

Staffing for the transformation office could include a mix of support staff that is full-time as well as staff that can be seconded from the DHAs/IWK. This approach will allow for more industry-wide buy-in as key participants from the various DHAs will be formally involved.

The final and critical piece of the formal leadership framework is the need for establishment of a series of Provincial Advisory Councils to ensure industry-wide input on an ongoing basis. In addition, there will be a series of Redesign Teams and Task Forces created to address specific recommendations. It is in these areas (advisory councils, redesign teams and task forces) that a broader engagement of leaders from across the system needs to be incorporated. This will be a key enabler for change and provides the mechanisms through which the larger health system leadership community (clinical, professional and managerial leaders) will be engaged to support, indeed drive, the transformation process.

This structure is depicted in the diagram below.



It has also been proposed that each of these teams could be replicated at a local district level, in order to provide support to individuals who may be named to the provincial teams, as well as acting as a sounding board for recommendations that might be developed provincially. The PHSOR Team supports this broader perspective.

QUESTIONS FOR THE CEO COUNCIL PERTAINING TO STEP 2:

Is the leadership structure proposed acceptable? If not, what changes are required?

How will the Redesign Teams and Task Forces be created? What staffing options are available?

What level of decision making authority will rest with the Redesign Teams and Task Forces versus the CEO Council versus the Deputy Minister or Minister? How will the accountabilities be clearly described and supported?

What is the role and expectation for the Advisory Councils?

How will the CEO Council ensure that the various stakeholders are committed to proceeding and will support the implementation effort?

What consequences are there for people who express support, but do not follow through on a commitment to participate?

Are there financial resources available, both one-time and ongoing, that can be earmarked for investment in implementation as the process moves forward?

If available, what will be the process for accessing these financial resources in the short-term to enable some of the "quick wins" and move forward in a timely way with larger implementation opportunities?

If quick decisions are required to address unanticipated barriers, how and what will be the process for dispute resolution and rapid decision making?

THREE TO 36 MONTHS

STEP 3A – DEFINE IMMEDIATE PRIORITIES

Having achieved consensus on the recommendations contained in this report, the CEO Council also confirmed the following initial priorities:

- Confirm the Vision for the Transformation of the Health System
- Establish task forces to complete more detailed system-wide planning for critical issues;
- Launch redesign initiatives to achieve strategic and operational performance improvements;
- Initiate feasibility studies to review ancillary services and support services deliver;
- Complete detailed business cases for agreed-upon priorities;
- Implement the communication strategy and timely updates be supported throughout the entire lifespan of the implementation; and
- Confirm focused project management activities to enable successful implementation be provided adequate resources.

STEP 3B – CONFIRM TRANSFORMATION VISION

Under the leadership of the deputy Minister, work has already begun to create a unified vision for the health system of tomorrow. It has been suggested that this vision should focus on the year 2020 as this provides a longer term context for system transformation and renewal. The PHSOR Team has originally suggested a shorter timeframe for the Vision (e.g. 2010), as it is perceived that a sense of urgency exists for moving forward. A 2020 timeframe has the potential of diminishing the sense of urgency. A compromise may be to agree on the Vision for 2020 and then define the series of initiatives that need to be pursued with urgency through to 2010 as a focusing mechanism for the work to be done now.

The PHSOR Team **recommends that the Deputy Minister lead a process to confirm Vision 2020 and define the near term priorities for 2008 – 2010** that will serve as the starting point to achieving the vision.

QUESTIONS FOR THE CEO COUNCIL PERTAINING TO STEP 3B:

Is Vision 2020 the appropriate planning horizon for the transformational agenda?

Is 2010 the appropriate timeframe for focusing the immediate priorities?

What timeframe is required to confirm the new Vision?

STEP 3C – LAUNCH KEY TRANSFORMATION INITIATIVES

Transformation requires a number of fundamental changes on a system-wide basis. The PHSOR Team recommends a series of five leadership Task Forces to engage key stakeholders and develop formal recommendations for review with the CEO Council. The CEO Council has defined the following areas of immediate priority for **task forces**:

- **Confirm Priorities for Primary Healthcare Renewal (Recommendation 5):** The Vice Presidents of Community Services in each DHA met as a group in early May 2007 and are committed to pursuing a comprehensive strategy to implement priorities for Primary

Healthcare Renewal. The formation of a *Primary Healthcare Task Force* is intended to provide concrete strategies to fast-track primary health initiatives.

- **Advance the Plan to Devolve Continuing Care to the DHAs (Recommendation 20):** Devolution of Continuing Care is, in the opinion of the PHSOR Team, long overdue. Expectations of the DHAs are that they will lead the delivery of services to meet the needs of the citizens of Nova Scotia, yet they only manage portions of the continuum. Improving flow across the continuum requires that DHAs have authority over Continuing Care. Devolution requires detailed planning to ensure that it is implemented smoothly so that patients do not experience any disruptions in service as a result of the change. The *Continuing Care Task Force* will lead planning efforts to support devolution.

- **Formulate a Rural Health Strategy (Recommendation 23):** Preventing the further erosion of services in rural Nova Scotia is an immediate priority for the CEO Council. A project charter for the Rural Health Task Force should be developed over the summer and presented to the CEO Council by September2007. Once this report is endorsed, membership for the *Rural Health Task Force* should be defined and a workplan should be created so that the initial planning work can be completed by the end of calendar 2007. The workplan should focus on defining a core set of services that should be developed and supported in rural communities; it should outline strategies to ensure appropriate access to other services.

- **Revitalize a Province-Wide Clinical Services Plan and Framework (Recommendation 25):** The need to revitalize the work initially developed by the Clinical Services Steering Committee is viewed by the PHSOR Team as a critical under-pinning for the future of the healthcare system in Nova Scotia. A *Clinical Services* task force to guide this work should be put in place as an immediate priority and the work should be completed no later than March 31st, 2008.

- **Develop an Emergency Health Services Strategy (Recommendation 41):** The system is undergoing significant stress in its small emergency departments and many communities are currently experiencing disruptions in service. Development of contingency plans for the immediate term as well as longer range plans for a sustainable emergency health system is required. This *Emergency Health Task Force* should work in parallel with the Rural Health Task Force and complete its work in the same timeframe.

Over the summer months, the structure for the Task Forces should be confirmed, potential members identified, project charters formally defined and workplans developed.

Transformation also requires a rethinking of how certain processes are managed and supported. While there are a number of **redesign** opportunities associated with the PHSOR, the PHSOR Team has recommended two key areas due to the significant impact each will have on the overall healthcare system. These include:

- **Utilization Management/Decision Support (Recommendation #35):** UM/DS uses available resources and tools to leverage and extend data/information infrastructure to support planning and decision-making. As part of PHSOR, analysis of conservable days suggests that the DHAs could reduce the current cost burden dramatically if they pursued focused efforts surrounding utilization management. Days saved could lead to overall savings for reinvestment outside of acute care, or could be re-directed to enable additional access to acute care in priority areas. While longer term data/information strategies will be required, the PHSOR Team believes that initial work should focus on high volume Case Mix Groups by bringing teams together to consider what opportunities exist to streamline lengths of stay. Teams could also be established to examine opportunities to address utilization issues in the area of laboratory services, diagnostic imaging and pharmacy services.

- **Integrated Model of Care (Recommendation #37):** With the Canadian healthcare system facing mounting challenges related to sustainability in the coming years, clarifying the roles of

providers and supporting staff is essential to ensure that patient continue to receive quality nursing care by the most appropriate care provider. An Integrated Model of Care works towards identifying the best mix of staff that can, and should be part of the care team to deliver optimal care to the patient within the available resources. As part of PHSOR, the efficiency analysis identified more than $10Million in savings on medical, surgical and critical care units in the regional hospitals across the Province, but the majority of these savings can only be achieved if the existing Model of Care is redesigned. The current model of care leads to professional staff working below the level of their licensure, performing tasks that others could do. The Vice Presidents of Clinical met in early March and agreed that redefining the model of care should be an immediate priority for PHSOR implementation. This initiative should likely start with demonstration projects in two or three DHAs and a parallel initiative in home care. This work should be fast-tracked so that implementation can occur in the demonstration sites and rolled out to other DHAs as soon as possible. Over the summer months, pilot/demonstration sites should be confirmed, project charters should be developed, design teams identified and kick-off meetings scheduled for September.

PHSOR started as an efficiency review of the nine DHAs and the IWK, but it quickly became apparent that any real efficiencies would need to stem from system-wide changes. The PHSOR Team recommends four specific **feasibility studies**:

- **Laboratory Consolidation (Recommendation #48):** The Province previously had developed a Request for Proposal to consider a different model for laboratory services. The PHSOR Team recommends that this RFP be brought forward again and sent to market to consider a rationalization model for labs.

- **Medication Distribution (Recommendation #53):** The PHSOR Team recommends that a single medication distribution system be developed and the utilization of unit-dose be considered. A business case now needs to be developed to determine the appropriate model and approach for moving forward.

- **Diagnostic Imaging (Recommendation #57):** The PHSOR team recommends a comprehensive feasibility study on diagnostic imaging, covering an assessment of HHR challenges, allocation of modalities to be available at each site, and development of provincial standards for DI services surrounding quality and access, including wait times standards. The study should also investigate a capital inventory and replacement strategy.

- **Centralized Business Office (Recommendation #69):** The Province has decided to invest in a common IT platform for finance and HR, which provides the opportunity to consider a centralized business office model for the future. Savings could be significant as every 1% reduction in overall costs associated with administrative costs could lead to savings of $14Million. These funds could be redirected to a number of key growth priorities, including decision support services, HHR and direct patient care.

Feasibility studies will likely require formal Requests for Proposal to be developed and these should be prepared so that they go to the marketplace in the fall of 2007.

QUESTIONS FOR THE CEO COUNCIL PERTAINING TO STEP 3C:

Are the initial priorities for Task Forces, Redesign Groups and Feasibility Studies still supported?

Is the timeframe realistic and/or can it be fast-tracked?

Can implementation of some transformational initiatives take place while other areas are still being investigated?

STEP 3D – IMPLEMENTATION OF TRANSFORMATIVE CHANGES

As the Task Forces, Redesign Teams and Feasibility Studies are completed, opportunities will arise to implement some parts of the transformation before others. Because each of the components is

intertwined, the plan for implementation cannot be defined until the investigations are complete and the decisions have been made. It will be particularly important to ensure that transformational changes that are made earlier on do not have negative ramifications on patient access and do not bias further investigations of other areas.

QUESTIONS FOR THE CEO COUNCIL PERTAINING TO STEP 3D:

Can implementation of some transformational initiatives take place while other areas are still being investigated?

Will interim changes be required to ensure smooth transitions to the transformed healthcare system?

Will interim - and perhaps duplicate – funding arrangements be required to transform one part of the healthcare system while others continue as at present?

PERFORMANCE EVALUATION AND ONGOING MONITORING

It will be very important for the CEO Council and DOH Project Strategy/Management Office leader to track progress, report on results and monitor performance on an ongoing basis to ensure that success in maintained.

IMPLEMENTATION CHALLENGES

Transformation of the Province's healthcare system is a massive and complex undertaking. A number of challenges must be managed when completing implementation planning and implementation itself.

Leadership will be a critical factor if this transformation is to be successful. Nova Scotia has had a series of excellent reports over the past several years, but the Province has not been successful when it has come to implementation. While leadership is not restricted to the CEO Council, this group will need to play a very active and visible role in defining and leading the transformation agenda. All leaders will need a great deal of support through the implementation phase, from communication support to leadership development initiatives focused on change management. Senior leaders will also need to be conscious of the likelihood that individuals will try to "end-run" the process and ultimately change the directions that are being pursued.

Engagement of Stakeholders. People naturally resist any change that they feel they have not been part of. Key internal groups at each DHA, particularly the medical staff, nursing and allied health professionals, will play critical roles in the implementation phase.

Implementation Team's Skillsets, Capacities, and Experience. It is very important to understand what resources will be supporting the implementation in order to appropriately assign accurate estimates.

- **Relative Priority of Initiatives within the Organization.** While a number of recommendation options exist, it is critical to understand which recommendations will be pursued to appropriately prioritize recommendations. Priority of initiatives could be determined by relative challenges to implement, barriers to obtain buy-in support, cost, time, strategic influence, etc.
- **Availability of Resources.** Both the number and availability of resources will dictate how quickly a workplan can be implemented.
- **Senior Level Support.** Need to clearly understand which initiative will either have or not have the "stamp of approval" from the Cabinet, the Council of Chairs and the CEO Council.
- **Natural Resistance to Work Together.** There is a natural resistance by individual DHAs and the IWK to think outside of their individual programs and services and consider system-wide changes, especially if there is a perception of loss at the local level. The challenge of transformation will be for individual components of the healthcare system to take a more

global perspective, recognizing that the changes will ultimately benefit the health of the population.

- **Timing – Can Transformation Wait?** This is an issue of timing. The CEO Council has examined the compelling case for change and has reached consensus that change is required and it is required now. There is a need to confirm that other stakeholders feel this same sense of urgency and support the need for transformation of the system. The system then needs to outline a series of 90 day plans to achieve the desired results.

CHANGING NOVA SCOTIA'S HEALTHCARE SYSTEM: CREATING SUSTAINABILITY THROUGH TRANSFORMATION

SUPPLEMENTARY REPORTS FROM THE PROVINCIAL HEALTH SERVICES OPERATIONAL REVIEW (PHSOR)

SUPPLEMENTARY REPORT #1: DHA INITIATIVES ON PRIMARY HEALTH CARE

Many of the DHAs have successful local strategies designed to advance the primary health care (PHC) agenda. Examples noted at the time of the original onsite assessment (e.g. summer and fall, 2006) include:

DHA 1 has a very focused plan for primary health care renewal. It includes a new model of care for the Liverpool (South Queen's) and the Lunenburg area. There has been a proposal put forward for South Queen's which includes a new Primary Health Centre as well as the redevelopment of their inpatient unit. This proposal has not been approved in its entirety, although there have been some capital funds committed to the PHC unit.

DHA 2 has focused on the introduction and integration of Nurse Practitioners (NPs) into primary health care, as well as the liaison and coordination of the Community Health Centres in their DHA. There is a need for services to be provided in French. The DHA currently has two NPs working in primary health care; their goal is to have five more.

DHA 3 has focused on the development of teams within a Community Health Centre model. The DHA has a PHC plan; it is keen to employ a health systems planner and to initiate stronger programs focused on chronic disease prevention and management.

DHA 4 has a vision of five geographic PHC focal areas: chronic disease management, chronic disease prevention, youth health, women's health and native health. Lillian Fraser Memorial in Tatamagouche is undergoing some renovations to enhance the provision of primary health care for that area. This DHA has funding for an Nurse Practitioner; to date this funding is not used.

DHA 5 is working on the health status profile to inform their planning. They have developed a network of Family Physicians and Nurse Practitioners in Cumberland South to address the provision of PHC for that area. Physician recruitment is an issue to bring that model to full fruition.

DHA 6 articulates a strategic direction around healthy living and a focus on Primary Health Care renewal. While internal reorganization caused the effort to stall for a time, there is now a renewed focus in this area.

DHA 7 has a strategic plan focused on improving the health of the population and health public policy. It has a vision of the services that are required to further this agenda, with a particular focus on chronic disease management, youth health and health literacy.

DHA 8 has a well thought out approach to an integrated system of primary health delivery. This includes a vision of Community Health Centres, which have not yet been funded, for Glace Bay, Inverness and New Waterford.

DHA 9/IWK DHA 9/IWK are working collaboratively in a number of primary health care areas, as well as pursuing organization-specific initiatives as appropriate. They are focusing their efforts on chronic disease prevention and management, renewal of the district's tobacco reduction strategy, and organization and engagement of Family Physicians. There are a number of initiatives proposed including primary health initiatives such as child safety and injury prevention, development of a youth health strategy, initiatives within the Gay, Lesbian, Bisexual, Transgendered and Inter-sexed community, as well as collaborative primary maternity care practice project.

In 2001, the Clinical Services Steering Committee (CSSC), chaired by the late Dr. David Rippey, tabled its final report. That report was viewed by the CSCC as "Phase I of the Clinical Services Planning Process — focusing on acute inpatient care in Nova Scotia. Subsequent reports will look at continuing care, primary health care and emergency services. The combination of these efforts will result in a better understanding of the overall health system in Nova Scotia and contribute to better, long-term decision-making at the local level."[52] The additional reports have been done and now PHSOR has been completed.

The CSSC made a number of observations about how acute services may be organized in Nova Scotia. These observations included:

- Categorizing hospitals into five key groupings according to demand for care and complexity of services.
- Outlining the optimal set of sustainable services to be provided in each hospital category.
- Setting ideal benchmarks for numbers of physicians to maintain in-hospital programs and services.
- Further exploring ways to alleviate the bottleneck of long-stay patients in hospitals by providing more treatment options.
- Evidence, carefully collected and analyzed, should be the key ingredient in decisions affecting acute in-hospital services.
- Outlining key principles for decision-making by all health partners.

It is not the intent of this document to re-state the work of the CSSC, but rather to note that the industry appears to view this work as valid and valuable. It was also grounded in a robust review of the available data and noted the following issues:

> *The historical distribution of clinical services across the province's hospitals occurred for many reasons. Some of the reasons were practical, such as the location of highly complex cardiac surgery at the provincial health centre. Other service locations may have been influenced by geography, a community's fundraising ability, location of local doctors, historical practices, and a host of other reasons.*
>
> *The health care system is currently experiencing many changes, including declining requirements for inpatient beds, an aging physician workforce, and difficulty attracting physicians to some locations. As a result of these naturally occurring changes, the purpose of this part of the Phase I planning process was to take a pragmatic look at the distribution of hospital services and to develop a set of criteria that would support their rational distribution throughout the province.*
>
> *An ideal approach to developing the program distributions would be to identify a series of specific criteria that would suggest the minimum, optimum and maximum size of a program. Using criteria such as this, the number and distribution of obstetrical programs for the province could be calculated based on the size and distribution of women in childbearing years throughout Nova Scotia.*
>
> *Unfortunately, such criteria generally only exist for very complex services, and those services have been typically centralized at the provincial health centres.*

[52] Clinical Services Steering Committee, *Making Better Health Care Decisions for Nova Scotia*, February 2001, p. 5.

Criteria to evaluate the less complex cases that are addressed in the majority of the province's hospitals do not exist. Therefore, another approach was developed based upon program sustainability.[53]

The alternate approach noted includes a framework for identifying the scope and range of clinical services to be provided at each level of hospital facility, from "Tertiary/Provincial" Hospitals through to Community B" in small/rural communities[54]:

a) *Criteria were developed to define sustainable programs based on physician workload and were as follows:*

   a. *Specialty and Sub-Specialty Services (such as heart surgery and orthopaedics)*

      i. *Sustainable Elective Program - Hospital workload would sustain two to three physicians within a specialty type.*

      ii. *Sustainable 24/7 On-Call Program - Hospital workload would sustain four or more physicians within a specialty type.*

   b. *Inpatient Acute Services*

      i. *A Sustainable Program - A caseload would sustain five to seven family practitioners*

b) *Physician workload was developed using inpatient and day surgical hospital weighted cases as a measure. For each physician type, a threshold value of weighted cases was developed at the 2.5th percentile to identify the minimum workload associated with one full-time equivalent.*

c) *Using the sustainability criteria, the minimum workload values were summarized to form thresholds, which acted as the minimum program cut-points. (This method does not calculate the total number of physicians required in the province, by type, rather it only identifies the program cut-points for a sustainable program).*

d) *The total workload of hospitals was evaluated to determine the point at which the physician workload thresholds were met by program type.*

e) *This workload information, by program, was summarized to create a hospital classification system with five broad categories. Each classification built upon the previous one adding core services as the number of hospital weighted cases increased.*

f) *The Committee also developed additional criteria that might over-ride a straight hospital classification based on workload alone, and which included: Inter-hospital distances (i.e. the distance to available services); The overall service delivery package within each District and at each of the local hospital sites; and Physician availability.*

Questions of critical mass (criteria A above) and physician availability are becoming even more important as the younger generations of physicians is less interested in working under the same models as their predecessors did (e.g. 1 in 2 or 1 in 3 call). Younger nurses and other professionals are also demonstrating different expectations regarding their work environments.

[53] Clinical Services Steering Committee, *Making Better Health Care Decisions for Nova Scotia,* February 2001, page 23.
[54] Ibid, pp..23-24.

CONTEXT

This section of the report summarizes specific findings for each DHA. The process to complete DHA specific findings has been an iterative process, focusing initially on acute care efficiency analysis and qualitative reviews of operational issues and opportunities. The approved workplan for PHSOR included visits and interviews at each of the care delivery facilities in each DHA. This was designed to ensure that the consultants had an opportunity to visit each community, but was not intended to ensure that all departments and services at every DHA (or location) would receive the same amount of face time with the consultants. Furthermore, the review built on itself as it progressed and as common themes emerged, meetings that were scheduled later in the process often had a different focus – one that was intended to validate concerns and probe potential solutions.

The changing focus of the assessments was consistent with the Terms of Reference which clearly called for PHSOR to "identify potential performance improvement opportunities to achieve the greatest strategic benefit". Given this, the process had to focus on the issues that had the greatest potential for:

- enhancing safety or quality;
- enhancing access to care;
- improving efficiency; and/or
- supporting long term sustainability.

Much of what was found in the individual DHA reviews, has informed the system wide recommendations in Chapter 1 through 10. This is particularly true for the need to invest in Primary Health Care to enhance access to care as close to home as possible. Given this, the DHA-specific findings will only address issues that are deemed to be strategic in nature. To that end, the majority of the findings relate to acute care efficiency opportunities, utilization management strategies, and patient flow improvement.

DHA 1: SOUTH SHORE

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care;
- Community Hospitals;
- Regional Hospital;
- Infrastructure and Support Services; and
- Governance / Leadership.

Primary Health Care

The two Community Health Boards located within this DHA – Lunenburg Community Health Board and Queens County Community Health Board – have both tabled community health plans for 2007 – 2010. These plans were based on community consultations and identify a number of priorities for consideration.

- Both plans noted Addictions issues as a priority. In Lunenburg it was identified as the number one priority for teens and in Queens it was identified as the most frequently identified priority issue.

- Both plans called for attention around Primary Health Services, a theme that is consistent with overall directions outlined previously in this report.

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services. DHA specific recommendations, based on our on-site assessment, are outlined below.

- Collaborative Practice – need to continue to pursue options for expansion of Primary Health Care Team models.

- Public Health – need to confirm organizational structure/model. Currently in tri-district model with DHAs 2 and 3.

- Addictions – need to confirm organizational structure/model. Previously in tri-district model, but SWNDHA has developed new model and SSDHA needs to confirm its own model.

Recommendations for Consideration – Primary Health Care:

1. Work with DOH to pursue options for expansion of Primary Health Care Team models (as part of broader Rural Health Strategy).

2. Confirm organizational structure/model for Public Health (as part of ongoing implementation of Public Health Renewal).

3. Confirm organizational structure/model for Addictions.

4. Need further planning and integration with VON and home care services. There are visits to the clinic which could be better co-managed with the community (e.g. dressing changes, etc.).

Community Hospital - Fisherman's Memorial Hospital, Lunenburg

The Fishermen's Memorial Hospital, located in Lunenberg, is a community hospital with a mix of services and inpatient beds including: Emergency Department; 8 acute care beds; 12 Alternate Level of Care beds; 10 Addiction Services beds; 23 Veteran's Unit Long Term Care beds; and 12 restorative care beds. Conclusions/observations are as follows:

Emergency Department and Medical Unit:

- The model for this emergency department is unique in that the eight inpatient medical beds are combined with the emergency department which has three exam rooms and two trauma bays. The unit was combined in the 1990s in response to a proposal to close the emergency department. The community and local politicians lobbied and the result was the combination of the units and the corresponding consolidation of staff. The medical beds are reportedly occupied by ALC patients the majority of the time.
- The physical layout of the unit is challenging and is not optimal for either an emergency department or a medical unit.

Ambulatory Care:

- The Ambulatory Care Clinic was opened in 2002 for the purpose of providing a broad range of services. At present, due to reported funding challenges and difficulty in attracting specialists and other practitioners, <<expect some statement relating to either limited services or limited growth capability>>. The clinics now include: Plastic Surgery, Vascular Surgery, Diabetes Education, Asthma, Clinical Education and Occupational Therapy.
- Due to population needs there is now a Geriatric Clinic with three geriatricians visiting from CDHA. They currently see approximately 15 patients per month and there remains a large number of referrals and a wait list. This waitlist contributes to the emergency department volumes as these non-urgent patients present to the emergency department when they are unable to get a clinic appointment.
- There is some perception from the focus group meetings that home health services are more costly than services that can be provided from within the hospital and that "hospital-based" care is ideal for this community. Current service structure and funding encourage the community to come to the hospital rather than encouraging further community outreach. This needs to be revisited as part of the renewal of Primary Health Care.

ALC Unit:

- At the time of the review there were 12 ALC beds at Fishermen's Memorial Hospital. It is reported that these beds have decreased pressure on the remainder of the DHA for placement of these patients; however, the demand for this type of beds still exceeds supply.

Recommendations for Consideration at FMH:

1. Review emergency department and medical unit combined services. The review needs to consider the appropriateness of this combined unit and ensure that the patients admitted to the medical beds require acute admission. The staffing model (all RN on nights) should also be re-considered as majority of ED visits are not true emergencies. Finally, the review should consider required hours of coverage as volumes at night appear to be low.

2. Need to review staffing model as part of Rural Health Strategy. Current baseline for medical unit is higher than medical unit at SSRH (although staff also cover ED).

3. Consider expansion of ALC beds at this site to address DHA-wide issues.

Community Hospital - Queen's General Hospital, Liverpool

Queen's General is a community hospital with a 22-bed medical unit and a 9-bay Day Surgery Unit. Conclusions/Observations are as follows:

Emergency Department:

- The emergency department is reported to be quite busy with approximately 50 visits on average per day (approximately 18,000 visits per year).
- The physical layout of the unit is an issue.

Medical / Surgical Unit:

- The hospital has a 22 bed medical/surgical unit including 3 higher level of care beds.
- EKGs are done on this unit on Mondays, Wednesdays and Fridays

Operating Room:

- The hospital continues to perform day surgery procedures, although there is no anaesthesia support available – nurses do IV sedation.

Recommendations for Consideration at QCH:

1. Review emergency department volumes at night to confirm ongoing need for this service in this community.
2. Need to review staffing models as part of Rural Health Strategy. Current baseline for medical unit is higher than medical unit at SSRH.
3. Review and confirm appropriateness of surgical services offered.
4. Consider expansion of ambulatory care services to meet needs of local population.

Regional Hospital - South Shore Regional Hospital

Inpatient Services:

DHAs 1, 2 and 3 operate a shared financial service, and all use the same IT platform for capturing data related to worked and paid hours. That system has some significant flaws in the way that it tracks overtime hours, which leads to an overstatement of worked hours for RNs and LPNs. Adjustments have been made (where such information was provided by the DHAs), but the efficiency analysis could still be over-stated somewhat.

The analysis of inpatient services at South Shore Regional Hospital suggests that there are savings opportunities on every inpatient unit. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system-wide section of this report).

Information for Medicine, Surgery and Critical Care are summarized in the table below.

		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
Medicine	30	5.63	4.64	6.00	6.86	**- 0.99**	**- 1.36**	Day shift staffing of 9 nurses (3 RNs and 6 LPNs) leads to a planned HPPD that is significantly higher than the target. This suggests that day staffing levels should be reviewed. Significant proportion of ALC could lead to more efficiency.
Surgical	20	5.06	5.16	8.55	9.21	**0.10**	**- 3.39**	Baseline is in line with target, although we note that the 24/7 charge nurse role is not included in the Baseline HPPD (and is included in many other sites). Actual staffing numbers are too high.
Critical Care	5	13.50	14.23	15.05	16.08	**0.73**	**- 0.82**	3 RNs for 5 beds likely represents minimum staffing baseline, so no savings target identified, but this unit will require ongoing monitoring.

Other inpatient comments are as follows:

- **Maternal/Child** - program needs to be reviewed as part of provincial review. SSRH has the lowest occupancy and highest average cost per patient day (per DOH statistics). Obstetrical unit costs are 3rd highest in province. PHSOR set no target, but it appears that savings are possible and we urge the DHA to review this program.
- **Mental Health** – no target set, needs to be addressed as part of provincial bed map process.

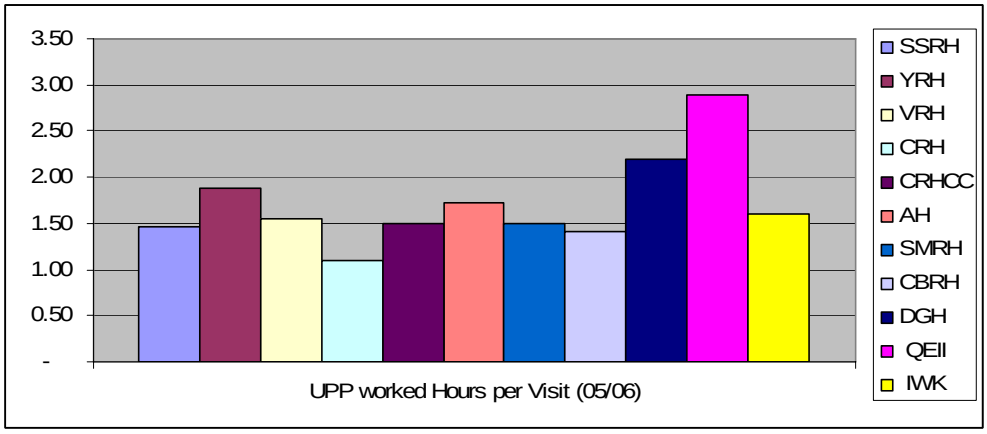
Savings opportunities (based on actual HPPD versus target) for medical and surgical units assume that a total of 33,000 hours could have been saved in 2005/06.

Recommendations for Consideration - Inpatient Services at SSRH:

1. Reduce baseline staffing on Medical Unit to reflect targeted ratios for medicine.
2. Consider clustering ALC patients on separate unit and reduce staffing levels to reflect targeted ratios for ALC. If patients volumes are too low to enable creation of separate unit, co-locate ALC on part of Medicine and reduce staff accordingly for the volume of patients.
3. Review cost structure for maternal/child services and consider alternate staffing options to reduce costs.

Emergency Department:

Patient volumes in 2005/06 were 20,878 visits and 525 patient days. This translates to an average daily volume of 57 visits and 1.4 admitted patients. At these volumes, the ED at SSRH operates with an average of 1.46 Hours of Care per Patient Visit, which is below the provincial average of 1.81, and is the 3rd lowest HPPV in the province (see chart below).



Staffing assignments are somewhat problematic as one RN is assigned to the observation beds, while a second RN handles the remainder of the bays. This assignment model is influenced by the facility layout, which is problematic and needs to be redeveloped in the longer term.

Recommendations for Consideration - Emergency Department at SSRH:

1. Review staffing assignments and consider changes to enable more balanced workload for each RN.
2. Pursue redevelopment plans for the facility.
3. Review processes surrounding management of mental health patients in the ED.

Ambulatory Care:

During PHSOR, consultants met with a sample of the ambulatory care programs and teams to determine if national trends applied to the local context. At SSDHA, we had the opportunity to meet with the Manager for Ambulatory from SSRH and some clinic staff and also drew some observations out of the focus groups and meeting with other teams (e.g. ED). We also extracted some observations from general focus groups and meetings with physicians. The following reflects our findings:

- The ambulatory area is trying to accommodate all programs and services with very limited space and human resources. An ambulatory care vision and strategy is required.
- Statistics do not appear to be accurately reflecting the volume or complexity of workload.
- Procedures have reportedly increased from an average of 30 per day to 90-120 per day now.
- Additional staff resources are likely needed but a more thorough review would be required to confirm the actual increases required.
- There is limited clerical support for many clinics (e.g. heart) resulting in professional staff performing clerical functions (clearly, a poor use of their time).
- Access to rehab across all sites (and within the community) is an issue at SSDHA (and at all DHAs).

Recommendations for Consideration re: Ambulatory Care at SSRH:

1. Confirm strategic vision for ambulatory care across SSDHA and review current programs to determine if they align with the stated vision
2. Complete a focused review of staffing roles and responsibilities and consider adding clerical resources and possibly additional professional staff time.

Relief Staffing Processes (Nursing):

Across the DHAs, the issue of short call relief was a common theme. While many DHAs have float pools which, in theory, are available to address short call relief requirements; the staff in the float pools are often scheduled to cover planned absences from the unit (e.g. vacations). This results in insufficient staff for the short call relief needs, which in turn, leads to a need to use overtime. Additional full time float pool positions are being used effectively in some organizations to support the need for short call relief. Additional analysis will be required to confirm the number of additional positions that would be required to ensure that staff are in house to cover the average daily needs. (Note: analysis was not completed as part of PHSOR as the nursing vacancy and short call needs must be assessed in the current context should the DHAs decide to pursue this strategy).

If additional nursing positions are created, the DHA would need to be diligent to ensure that sick calls are replaced from the float pools. Alternate options include "over-hiring" new graduates and absorbing them into staff positions over time (CBDHA does this and reports that it has been very effective), and building in additional positions on a unit by unit basis (as opposed to more generic float pools).

Key to more effectively managing staffing processes on a daily basis is the need for on site leadership positions to be in place during evenings and weekends. SSRH has shift coordinators, but we did not review these roles in detail as part of PHSOR. As the Model of Care Redesign is rolled out across the province, these roles will need to be reviewed and possibly redefined.

Recommendations for Consideration - Relief Staffing Processes at SSRH:

1. Consider expansion of the float pool model to allow for additional critical care staff and additional medical/surgical float nurses to be available to cover short call relief.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage SSDHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTS being focused in critical care for acute ventilator

management, but some organizations still have them actively involved in aerosol management on inpatient units. Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally.

Recommendations for Consideration – Allied Health Services at SSRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory:

SSDHA provides laboratory services across three sites. During the period of the assessment, a 24 hour operations trial was being conducted. This trial resulted in five shifts: 0700-1500, 0800-1600, 0900-1700, 1500-2330, and 2300-0700. Some key findings associated with SSDHA Laboratory Services include:

- People interviewed felt that staff were dedicated and delivered a high quality of work and service and they noted good relationship between staff, management and pathologist.
- One challenge are limited senior techs. Staff indicated that they felt "over-extended". In addition, there are seven expected retirements in the next 12-18 months, and current operations are perceived to be at capacity. It was noted that a 25% turnover is expected next year in district-wide, with 50% turnover at Fisherman's and 60% at Queens General.
- Sustainability of the department is an issue due to the staff burnout issues. Over time and sick time are both elevated. Recruitment is a real challenge. Need to leverage education incentives (e.g., bursary).
- Space is a problem which can lead to safety issues. For example, staff complained about tripping over bottles on the floor. Collection areas were noted as having no privacy.
- Need to establish more standardized approaches to blood collection. For example, there are some clinics that are free while others that are paid (private collection).
- Currently operating with a 3 to 1 ratio of MLTs to MLAs. Need to develop alternative mechanisms to better leverage MLAs.
- DHA has already initiated some rationalization of tests to ensure right tests are conducted by the right centre.
- Clear lack of quality management programs and availability of adhered to standard operating procedures (SOPs).
- Pathology was noted to be two-weeks behind. Blood services are also behind due to the lack of available staff, and the cancer gene screening tissue correlation were noted as not being able to keep up.
- Lab is mandated to be accredited by 2008. Leadership noted that this was not likely.
- Training and education were noted as key areas of investment if the DHA did not want to lose more staff.
- No ability to fast track certain groups of patients (e.g., PAC).

Recommendations for Consideration – Lab Services at SSDHA:

1. SSDHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation within DHA #1. HR planning at SSDHA should reflect provincial changes.
2. SSDHA should develop mentoring, training and education programs for staff to support improved retention, recruitment and operational efficiency.
3. SSDHA develop quality management programs, establish critical standard operating procedures and implement, and review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.
4. SSDHA to conduct a study to determine the appropriateness of lab tests ordered, and to effectively identify tests which should not have been ordered thereby reducing lab costs (where appropriate).Consider expansion of the float pool model to allow for additional critical care staff and additional medical/surgical float nurses to be available to cover short call relief.

Diagnostic Imaging:

SSDHA provides diagnostic imaging services across three sites. Wait times for most services was noted as being within provincial baselines, and the service has benefited from the province-wide implementation of PACs. The service has made acquisition of new equipment to replace outdated and unserviceable equipment. Some key findings associated with SSDHA Diagnostic Imaging Services include:

- The most significant challenges facing DI Services is the availability of trained resources in the many diagnostic modalities. Technical services are provided by college trained and certified diagnostic medical technologist, college diploma and certified cardiology technologists, post secondary clerical diploma. SSDHA must develop effective tools to assist in planning and preparing for any staffing shortfalls with a focus on recruitment and retention. In addition, discrepancy in wages has resulted in recruitment challenges for the DHA.
- Waiting space for some of the modalities is limited (e.g., ultrasound and mammography) resulting in congestion and a less than ideal patient experience. Inadequate space to support privacy and confidentiality of patient information and communications.
- Staff identified that there is insufficient support services for the department.
- Walk-in services were noted as working well. However, booked patients are standing in the same areas as walk-ins.
- Dictation and transcription is approximately one-week behind.
- CT techs were noted as a particular challenge for staffing which leads to a reduction in throughput. Also, mammography is noted as a difficult area to staff and recruit staff.
- Access to and by emergency department was noted as acceptable.
- PAC patients do not have any fast-tracking processes to ensure timely access.
- Community Wide Scheduling is well adopted and appears to be working very well.

Recommendations for Consideration – D.I. Services at SSDHA:

1. SSDHA must develop effective tools to assist in planning and preparing for any staffing shortfalls with a focus on recruitment and retention. In particular, CT appears to be an area of focus.
2. SSDHA should review and develop strategies to increase wait space in highly congested areas (e.g., at registration, mammography).
3. SSDHA should conduct analysis of staffing costs and consider alternative models. For example, review stand-by time to determine relative usage, and determine whether more permanent staffing for selected services would be more economical as opposed to incurring overtime costs.

Pharmacy:

Pharmacy services at SSDHA are provided at all three hospital sites. Some key findings associated with SSDHA Pharmacy Services include:

- Services appear to be well respected within the hospital. There also appears to be a good working relationship amongst staff and management. However, staff felt that they have been stretched too thin. Pharmacy appears to be well supported by senior management, and included in team decisions.
- The hospital has been innovative and entrepreneurial by expanding into unit dose medication distribution.
- Physical space at the regional site appears to be sufficient and there was a recently completed remodeling. A satellite pharmacy in oncology has also been established.
- Techs are working at scope and have a desire to further extend their role and responsibilities.
- Pharmacy has also been successful at enabling improved access to pharmacist on the floors at the regional site. Some of initiatives include leveraging cordless phones enabling more direct access to pharmacists, and dividing clinical pharmacists amongst floors to have a greater degree of relationship and dedication between units and pharmacists. Pharmacists also participate in ICU rounds.
- SSDHA does not have an immediate retirement issue but should continue to support recruitment and retention initiatives to reduce future human resource challenges.
- Techs are used to pick up medication orders (6 times per day) however it is felt by staff that there are too many runs and that techs are not effectively being utilized. Fax orders are also being leveraged with a plan to transition to 70% of all orders. It should be noted that an example of a fax was provided by the department where an order appeared to be crossed-out however this was produced by the fax machine. This could result in a serious medication error.
- Night cupboards are standardized across the district and an intranet application has been developed to assist in identifying where medications are stored. There is some belief that medication stashes may exist (e.g., based on samples) and the pharmacy has taken actions to control/manage.
- Diagnostic and Therapeutic processes are not consistent and medication incident follow-up and trending reports need to be strengthened.
- Need to further the medication reconciliation processes district wide.
- Need to establish clinical support for areas of growth (e.g., geriatrics, long term care areas).

Recommendations for Consideration – Pharmacy Services at SSDHA:

1. SSDHA must actively participate in the System-Wide Pharmacy Redesign Initiatives and consider implications of provincial changes within DHA #1. HR planning at SSDHA should reflect provincial changes.
2. SSDHA must evaluate staffing requirements to support unit dose, extended hours of operations, weekend coverage and medication reconciliation across all SSDHA sites.
3. SSDHA should develop a formalized oncall schedule and processes for contacting pharmacy across all sites.
4. SSDHA should transition to a 3 day fill for traditional medication distribution as the hospital shifts toward a greater adoption and use of unit dose delivery. Finalize implementation of cart exchange and bar codes system district-wide.
5. SSDHA should develop monitoring programs and trending reports, and processes to support medication incident follow-up to ensure information is leveraged department and hospital-wide, and areas of concerns addressed in a timely manner.

Focused Discussion re: Patient Flow

Patient flow is a critical issue in Canadian hospitals and as such, efforts were made probe issues related to flow in more detail. To understand patient flow challenges at SSRH, the patient journey was assessed based on a walk-through of the facility and a series of targeted interviews and meetings with key front-line staff and stakeholders. As a result, the following high level observations were noted:

- **Admitting.** Admitting Department is responsible for registration, some scheduling and tracking of bed changes. Currently, too many patient types are registered at the admitting desk (e.g., chemotherapy, OBS, EKG, Dr. Sapps, PAC, OR, all new patients, ambulatory). Need to investigate options of reducing workload and congestion at admitting.
- **Registration.** Registration has limited space to ensure patient confidentiality. Policies and procedures are outdated, and there is a critical need to continue to support staff development through ongoing education programs. Also need to focus on data quality.
- **ED. The** Emergency Department is challenged by limitiations in appropriate space, equipment, and some less efficient processes. For example, the two patient bathrooms are neither wheelchair accessible, there does not seem to be sufficient monitored beds, and layout can be modified to support better patient flow, and there was noted hold ups in the ED to wait for physician consultant. It was also noted that some physicians use the ED as a clinic. There are a lot of procedures that may be better managed through ambulatory care as opposed to ED.
- **ALC Patients.** An estimated 14-20 ALC patients are in SSRH with a district occupancy between 20-40%. While early identification of patients has been initiated, need to implement tighter processes for identification and monitoring of ALC patients.
- **Bed Management.** Bed utilization leverages a bed meeting at 0930 M-F and this appears to be working well. Policies to decant the ED have been developed and are being reviewed by the MAC. There is also monitoring of patients who are eligible for repatriation back to SSDHA from Valley and Halifax.
- **OR.** OR patients come from the ED, inpatient units, other hospitals or as urgent add-ons. All same day surgeries and day care surgeries who have general anaesthesia are pre assessed. Currently pre-assessment is available three days per week however there is likely a need for 5 day per week access.
- **Endoscopy.** Endoscopy services are supported by an RN from 0730-1530 and LPN from 0800-1600 with recovery relief provided by day surgery. Endoscopy has only one washroom in recovery space and there is limited privacy. Patients must use the washroom as the change room. MSRA patients create challenges as there is no way of isolating them. Patients coming from Nursing Homes by stretcher are nursed in the hallway. Endoscopy layout is also not wheelchair accessible.
- **Day Surgery.** Patients arrive from admitting with porter to ante room. An average caseload of 20 patients per day are treated. It was noted that due to no clerical support, nurses are completing most of the clerical activities. Day surgery does not appear to have sufficient space – need more beds, staff noted that a 10 hour shift would provide better coverage. Consideration to move pre-assessment out of days surgery will free up more space and enable redesign of the waiting area. There is also limited access to washrooms – one room for both men and women. Post procedure, patients are discharged with a family member and are provided protocols/discharge instructions.
- **ICU.** There was noted discrepancies between doctors regarding the need for ICU admissions. Some felt that some of the admissions were inappropriate to the ICU. ICU also does not have support from a ward clerk on Friday, Saturday or Sunday which may result in workload transfer to nursing. This will ultimately take away from patient care. The RT designated model in the ICU and the daily rounds with the manager, clinical leaders, physicians, pharmacy and RT are working well.
- **Discharge Planning.** Discharge planning is supported by one dedicated nurse and two social workers. Nursing plays a critical role as social workers were noted as being less comfortable with

some discharges or facility to facility transfers. Discharge planners appear to work well with home care coordinators except when the coordinators are absent. Discharge planning is generally understood but further education on the part of staff and physicians is supported. Discharge planning should also focus on the typical patients to ensure they are discharged on-time and do not spend an extra 1-2 days in hospital. Opportunities to build community outreach should be invested in.

- **Medical Floor.** Need for more private rooms to accommodate isolation, palliative patients and increased community supports to facilitate discharge into community. Medical floor has a high use of sick time and is always over census. Need to institute collaboration of team for timely discharges (i.e. doctors orders, need schedule)
- **Housekeeping** and **Porter** staff are typically unavailable at night. Housekeeping is on call after 11pm and no porters after 7pm. Lack of extended hours impacts patient flow and increases nursing duties.
- **MRSA.** For potential MRSA patients, the lab is unable to run a lab swab after 2pm daily or on the weekends due to requirement of specialty expertise to run the lab instrument. This has the potential to extend a patients length of the stay in a hospital, and creates significant workload on staff to accommodate the privacy requirements. We also note that this DHA appears to manage MRSA more aggressively than others. A consistent provincial approach is required.

Recommendations for Consideration re: Patient Flow at SSRH:

1. SSDHA to participate in Model of Care Redesign to ensure the appropriate providers are completing only the work that they can do;
2. SSDHA to develop mechanisms to control admitting to the ICU to ensure only appropriate patients are admitted.
3. SSDHA to undertake a review to determine specific needs and benefits of having housekeeping staff available in the morning hours.
4. SSDHA to have Lab identify alternative MRSA processes to enable more timely testing to reduce significant workload challenges associated with isolating patients.

Quality and Risk Management

Quality and Risk Management is supported by two full time RNs. One is dedicated to the Quality Program and management of nursing shift coordinators. The other is focused on the Risk Management program, accreditation, and management of the infection control department. Our findings for this area are as follows:

- **Quality is not functioning in a coordinated fashion.** Need to work to develop clear expectations and deliverables on and for the program. Need to introduce senior level direction and support. There appeared to be a lack of commitment, other competing priorities, and critical need for education throughout the hospital as to the Quality Portfolio.
- **Risk has no individual to oversee key risk challenges or issues.** No patient safety or risk management committees. The authority is leveraging incident reporting however interviews noted that staff were not sure if they were fixing the problem.

Recommendations for Consideration re: Quality & Risk Management at SSDHA

1. SSDHA to develop overarching structures for both Quality and Risk that clearly describe the mandates, roles and responsibilities of each portfolio.
2. SSDHA to develop education and information services to clearly inform staff and patients about the portfolios.
3. SSDHA to ensure key findings identified by both Quality and Risk are acted upon, implemented, and impacts monitored.

Professional Practice:

Nursing:

RNs and LPNs at SSDHA expressed significant concerns regarding communication with management. While this was true for all sites, it was expressed most vocally at SSRH. Staff at the regional site also express the strongest concerns about the overall work environment, which appears to, at least in part, reflect a sense that they are "on their own" after 4 pm (clerical staff leave, managers begin to leave, physicians tend to round late in the day). This all creates a feeling that there is limited support for them when things get the busiest.

RNs and LPNs also express disappointment about the level of resources available to support professional development (this is common across the province). For the LPNs, this is directly related to the need to expand their scope of practice. For RNs was expressed on a more general level. While we note that these issues were common across all DHAs, we note that SSDHA has invested more resources in development roles (3 Clinical Educators in SSDHA versus 1 position in most DHAs).

Staff also report that they would like to have access to more hands-on, front line leadership. Leadership at the front line is identified by the Institute of Medicine (IOM) as a key component of creating an optimal work environment for nurses because hands on leadership helps to create an environment of trust and professional support. Front line nursing leadership will be a critical enabler for the Model of care redesign.

Recommendations for Consideration - Nursing Issues at SSRH:

1. Undertake focused team development between RNs and LPNs with front line managers.
2. Pursue leadership/management development for front line managers to support them in their roles.

Allied Staff:

As noted previously, allied staffing levels are typically quite low in all services. This reality requires that they are supported and enabled to have an optimal impact on care delivery processes. To that end, staff report concern about a general lack of clerical support, requiring them to perform non-professional work.

Recommendations for Consideration re: Allied Health Issues at SSRH:

1. Review professional roles and add appropriate resources to support professional staff to participate in care delivery.
2. Ensure allied professionals are appropriately represented and involved in change initiatives stemming from PHSOR.

Medical Staff:

SSDHA (like other sites in NS) continues to struggle with recruitment issues for physicians, although it seems that this DHA has had marginally more success than others. The average age of physician group is a moderate concern as many of the staff are 55+ and will be considering retirement in the coming years. Physician coverage issues in communities outside of Bridgewater will likely continue to be an issue and regional call groups / divisions may need to be developed. Many people noted that recruitment in the future may need to be based on Alternate Funding Plans for physicians.

Recommendations for Consideration re: Medical Staff Issues at SSRH:

1. Continue to work with DOH to develop sustainable funding models for physician coverage, especially for Primary Health Care and Rural Health.

Infrastructure and Support Services

In most DHAs, we found that the support service and corporate functions are resourced in accordance with nationally accepted benchmark levels. In many cases, we actually found that these areas are under-resourced, which contributes to many of the challenges associated with professional performing non-professional tasks. For this reason, efficiency opportunities have not been identified and findings are minimal for many services. In addition, some of these services have been discussed in the system-wide section, so they are not re-stated here.

Financial Services

DHA 1, 2 and 3 continue to operate within a Shared Services Model for Finance. While we have recommended that a shared model be expanded province-wide, there are some immediate issues that may require attention in these DHAs.

***Recommendations for Consideration re: Financial Services*:**

1. DHAs 1, 2 and 3 should commit to continuing the shared service model until a province-wide model is developed.
2. DHAs 1, 2 and 3 support a facilitated session for the shared service director and the DHA CFO's/Director of Finance to address issues with their collective relationship.
3. The shared service model needs to be restructured so that the "shared" part is all of the transaction processing and that the DHA's have dedicated staff (number to be determined) who will deal with budgeting (both financial and service), monthly variance analysis using information from the financial operations side, forecasting, and customer service.
4. The shared service staff and the DHA staff in the host organization should not be co-located.
5. Directors of Finance / CFOs for DHAs 1, 2 and 3 to agree on a common, standard set of reports for all financial operations at all three DHAs.

Facility Redevelopment

SSRH has some serious facility issues that impact efficiency and patient flow.

Recommendations for Consideration re: Facility Redevelopment at SSRH:

1. The redevelopment planning should be fast-tracked and presented to DOH for consideration as changes may be required to enable some other initiatives (e.g. Rural Health Strategy).

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The review of governance found that SSDHA has some unique issues and challenges surrounding Governance effectiveness that need to be resolved. It is reported that there is some sense of an "us versus them" dynamic that plays out between people who see themselves as representing individual communities as opposed to taking a regional view. This creates some tension and sub-optimal dynamics between some Board members individually and the Board and senior management generally.

The review also found that numerous people report a sense of political interference that is higher than we saw or heard about in any other DHA.

From a DHA perspective, the relationship with the Community Health Boards (CHBs) is reported to be have improved over the past several years and the DHA is encouraged to continue to build this relationship for the betterment of the whole district

The relationships with the local foundations were also described as "requiring improvement", with a general need for local groups to respect regional priorities and seek out opportunities for increased collaboration between communities.

Recommendations for Consideration re: Governance

1. We recommend some formal planning with the Board to confirm governance and management roles, responsibilities and boundaries with a goal of increased effectiveness overall.
2. We recommend development of more formal annual evaluation processes for the Board itself as well as evaluation mechanisms for individual Board members.
3. We recommend that the Board continue to pursue its efforts to build strong relationships with the CHBs.
4. We recommend that the Board undertake focused work to strengthen relationships with the Foundations that raise funds for its communities and hospitals.
5. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 2: SOUTH WEST

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care
- Community Hospitals
- Regional Hospital
- Infrastructure and Support Services
- Governance / Leadership

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to continue being actively involved in provincial strategies to develop Primary Health Care services.

South West Health issued its 2005-06 Community Report in July 2006, the fifth edition of "Check Up". This report followed the release of its Strategic Plan that was released in the spring of 2004 and the Health Status Report from 2003. All of these reports reflect the need to focus on Primary Health Care, which is identified as one of five strategic directions for the DHA.

That Direction is articulated as follows:

Direction #3 - Facilitate an integrated approach to Primary Health Care (PHC).

1. Decision-making done utilizing evidence of "best practices".
   - Develop best practice models for delivery of PHC in rural communities.
   - Identify top (3) risk factors from Health Status Report.
   - Implement strategies to address.
2. Create consistent awareness among staff/publics about Primary Health Care
   - Develop communications plan
   - Implement plan
3. Enhance inter-sectoral collaboration to promote Health and Wellness within our communities
   - Promote wellness through exploration and implementation of new PHC renewal initiatives
   - Following provincial approval for projects, develop an action plan prioritized for implementation

The PHSOR Review Team encourages the DHA to continue to prioritize these issues and pursue action plans to enable mobilization.

In addition to the directions noted above, there are four Community Health Boards located within the DHA – Clare; Digby and Area; Shelburne and Area; and Yarmouth. Although the CHBs have

developed community health plans, and continue to be engaged in processes to engage citizens in discussions regarding health issues and potential priorities, there are opportunities for fine tuning this process and outcome.

DHA specific recommendations, based on our on-site assessment, are outlined below.

Recommendations for Consideration – Re: Primary Health Care:

1. Continue to work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health Strategy).

2. Continue to work with the CHBs to assist them in focusing their work surrounding development of Community Health Plans.

3. Confirm organizational structure/model for Public Health (as part of ongoing implementation of Public Health Renewal).

Community Hospital: Digby General Hospital, Digby

Digby General Hospital serves approximately 19,000 Digby County residents with 24-hour Emergency/Outpatient Services, Ambulatory Care, Inpatient Medical Care, Restorative Care and a 10-bed Alzheimer's Unit supported by Tideview Terrace, LTC facility. Conclusions/observations are as follows.

Medical Unit:

- The inpatient unit is a 20-bed unit providing acute medical care, with 9 of the beds soon to be designated ALC. Staff is a mix of RNs and LPNs on days and nights. There is also a unit clerk on days.

Outpatient/Emergency Department:

- The Department provides 24 hour on-call emergency services in addition to outpatient/ambulatory care services including physiotherapy, occupational therapy, social work, palliative care, day surgery, limited chemotherapy, diagnostic services, diabetic education, nutrition counselling, RN lead congestive failure clinic and physician specialist clinics. (Note: PT, OT, SW and other services also support the inpatient unit.)
- Staffing in the ED is 2 RNs (24/7), but may increase with the development of monitored beds in the ED.
- The unit has been experiencing some major challenges with ongoing staffing issues and as a result has experienced some disruptions in service.

Recommendations for Consideration at DGH:

1. Review emergency department staffing issues to determine if services are sustainable in the long term. Review ongoing appropriateness of monitored beds in ED.

2. Review overall staffing model as part of Rural Health Strategy.

Community Hospital: Roseway Hospital, Shelburne

Roseway Hospital, located in Shelburne provides approximately 15,000 Shelburne County residents with 24-hour Emergency/Outpatient Service, Ambulatory Care, Inpatient Medical Care, primary health care services, inpatient, ambulatory and emergency care. Conclusion/observations are as follows.

Outpatient/Emergency Department:

- The Department provides 24 hour on-call emergency services in addition to outpatient/ambulatory care services including physiotherapy, occupational therapy, social work, palliative care, day surgery, limited chemotherapy, diagnostic services, diabetic education, nutrition counselling and physician specialist clinics. (Note: PT, OT, SW and other services also support the inpatient unit.)

Medical Unit:

- The inpatient unit consists of 12 medical beds, 7 ALC beds and 5 overflow beds which will soon be designated as ALC, increasing the ALC capacity to 12. Staff is a mix of RNs and LPNs on days and night, with a unit clerk on days.
- Need a defined area for ALC beds as staff have difficulty providing appropriate care for this patient group on the medical ward where they are co-located.

Recommendations for Consideration at RH:

1. Review emergency department staffing issues to determine if services are sustainable in the long term.
2. Review overall staffing model as part of Rural Health Strategy.

Regional Hospital: Yarmouth Regional Hospital

Note: DHAs 1, 2 and 3 operate a shared financial service, and all use the same IT platform for capturing data related to worked and paid hours. That system has some significant flaws in the way that it tracks overtime hours, which leads to an overstatement of worked hours for RNs and LPNs. Adjustments have been made (where such information was provided by the DHAs), but the efficiency analysis could still be over-stated somewhat.

Inpatient Services:

The analysis of inpatient services at Yarmouth Regional Hospital suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for Medicine, Surgery and Critical Care are summarized in the table below.

DHA 2: Yarmouth Regional Hospital								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	**Number of Beds**	**Baseline Planned RN/LPN HPPD**	**PHSOR Target RN/LPN HPPD**	**DHA-Specific Actual RN/LPN HPPD**	**Total Actual HPPD (RN/LPN, Other UPP & MOS)**	**HPPD Variance (Target to Planned Baseline RN/LPN Hours)**	**HPPD Variance (Target to Actual RN/LPN Hours)**	**Comments**
4 Med/Surg	31	6.60	5.16			**- 1.44**		Day shift staffing of 9-10 nurses (4 RNs and 5 LPNs, plus an additional LPN from 0800 - 1200) leads to a planned HPPD that is significantly higher than the targeted ratios. Night staffing is also higher than expected when compared to targeted ratios. This suggests that both day and night staffing levels should be reviewed.
4 North (Medical)	13	6.73	4.64			**- 2.09**		4 staff on days would appear to be too high for a unit this size. ALC levels on this unit would suggest that review of staffing plan is warranted.
COMBINED	44	6.64	5.01	6.71	7.39	**- 1.63**	**- 1.70**	Actual data was provide in aggregate form. This should be separate dout for future tracking.
3 Medical	16	5.75	4.64			**- 1.11**		Day shift staffing of 4-5 nurses (3 RNs and 1 LPN, plus an additional LPN from 0800 - 1200) leads to a planned HPPD that is significantly higher than the targeted ratios. Night staffing is also higher than expected when compared to targeted ratios, although 3 staff likely reflects minimum staffing level. This suggests that day staffing levels should be reviewed.
ALCU	16	4.36	3.76			**- 0.60**		Unit uses LPN and PCW model which reflects care needs. Analysis suggests that there are efficiencies, but these likely cannot be achieved due to minimum staffing requirements. Potential to reconsider 5 hour LPN shifts that are built into rotation on daily basis.
COMBINED	32	5.06	4.20	5.52	6.34	**- 0.86**	**- 1.32**	Actual data was provide in aggregate form. This should be separate dout for future tracking.
Critical Care	7	11.34	14.23	12.86	14.63	**2.89**	**1.37**	Staffing plan is excellent and performance is better than target.

Other inpatient comments are as follows:

- **Medical/Surgical Beds** - The units are all quite small (13-16 beds) which creates challenges for efficiently deploying staff. The units are reported to be at or above 100% occupancy with a significant number of ALC patients (reported to be 42% in March 2007). The high occupancy / over-census issue can make efficiency analysis challenges as additional staff may be required to provide care in less than ideal settings (e.g. patient lounges)
- **Maternal/Child** - program needs to be reviewed as part of provincial review. YRH has the 4th highest average cost per patient day for its obstetrical unit (per DOH statistics). PHSOR set no target, but the review team feels that savings are possible.
- **Mental Health** – no target set, needs to be addressed as part of provincial bed map process.

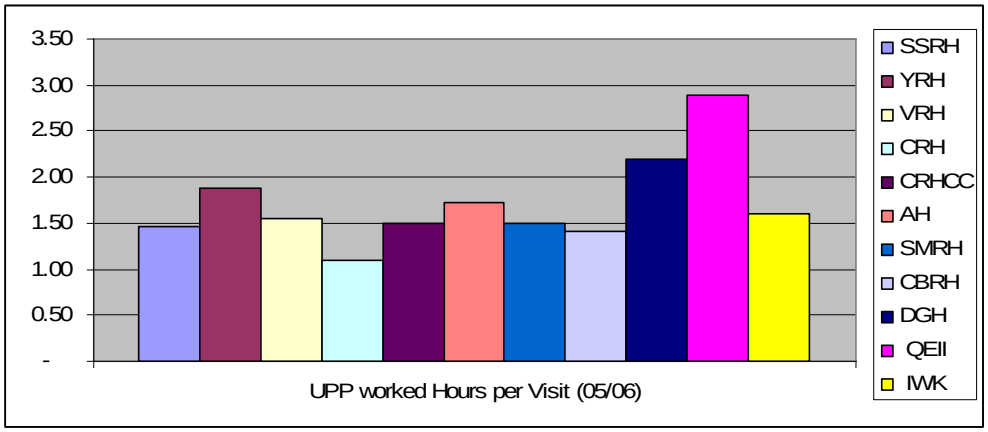
Savings opportunities (based on actual HPPD versus target) for medical and surgical units assume that a total of 41,000 hours could have been saved in 2005/06.

Recommendations for Consideration re: Inpatient Services at YRH:

1. Reduce baseline staffing on Medical/Surgical units to reflect targeted ratios.
2. Consider further clustering of ALC patients on separate units and reduce staffing levels to reflect targeted ratios for ALC. If patient volumes are too low to enable creation of separate unit, co-locate ALC on part of Medical/Surgical units and reduce staff accordingly for the volume of patients.
3. Review cost structure for maternal/child services and consider alternate staffing options to reduce costs.

Emergency Department:

Patient volumes in 2005/06 were 23,176 visits and 822 patient days. This translates to an average daily volume of 64 visits and 2.3 admitted patients. At these volumes, the ED at YRH operates with an average of 1.88 Hours of Care per Patient Visit, which is above the provincial average of 1.81, and is the 3rd highest HPPV in the province (see chart below).



Recommendations for Consideration re: Emergency Department at YRH:

1. Review staffing assignments and consider changes to enable more efficiency.

Ambulatory Care

General Clinics:

SWNDHA has previously completed an ambulatory review as part of its Clinical Services Plan and this provided some context for the Ambulatory Care Meeting. During PHSOR, consultants typically met with a sample of the ambulatory care programs and teams to determine if national trends applied to the local context. At SWNDHA, the group was very diverse and had many different services in it.

There is a need to develop a definition of Ambulatory services, with a vision and supporting infrastructure.

Additional observations:

- Ambulatory clinics operate very much like a Medical Day Unit
- Telehealth provides a fair amount of service in the clinical aspect but needs the physicians to buy into the option more heavily
- The geography and layout of the prenatal clinic is not working well

Recommendations for Consideration re: Ambulatory Care at YRH:

1. Confirm strategic vision for ambulatory care across SWNDHA and review current programs to determine if they align with the stated vision
2. Complete a focused review of staffing roles and responsibilities and consider adding clerical resources and possibly additional professional staff time.
3. Explore space requirements in light of vision and staffing analysis.

Dialysis

A meeting with Dialysis Services was also scheduled due to the breadth and focus on the program in SWNDHA. Some key findings associated with SWNDHA's dialysis services were identified:

- The Dialysis service was initiated in 1970 to meet the growing needs of the population. Care is noted as being excellent, patients are very happy, and the nursing staff very experienced. Currently, there are nine dialysis bays with some ability to leverage some swing space for an additional bay. However, it was noted that the service is at or near capacity and that some immediate operational decisions will need to be made.

- Given the relatively remote location of Yarmouth, this service should be viewed as critical since the closest related service would be Halifax and many of the patients would be unable to make the distant journey for services. This issue is made more complex by the demographics and socio-economic situations of some of the patients. There is a noted lack of access to interventional radiologist and vascular surgeons. An important point to recognize is that while patients can travel a few hours for a one time MRI, there are some very big obstacles for patients who must travel several hours routinely for dialysis services.

- The organization has a number of immediate plans to support the increasing workload. First, the program is currently investigating siting decisions to support physical growth of the service, with potential redevelopment of space for a new renal unit. They are also looking at adding an additional evening-shift to meet additional activity demands. SWNDHA expects to be able to see an additional 7-9 patients which should give about a 12 to 18 months of operations within the current space. However, it should be noted that early attempts at evening-shift rotations have not fully achieved the expected results as many patients prefer not to travel to the hospital in the evening.

- The organization may need to consider a number of other initiatives that will require more long-term planning. However, to meet the growing demand, these initiatives would need to be initiated in the near future. These include, investigating the creation of a satellite, finding new space for the clinic, and/or looking at promoting peritoneal dialysis as a substitute for hemodialysis for some patients.

- Future planning for dialysis services province-wide is currently led by a provincial planning committee of nephrologists and administrators which meets a few times a year to plan and discuss province-wide service coordination. SWNDHA dialysis leadership expressed a desire that this Committee review the challenges of service delivery and growth trends, and to provide support to assist the DHA meet its community needs.

Recommendations for Consideration re: Dialysis at YRH:

1. Confirm facility development plans for this service.
2. Have Provincial Leadership Committee review the dialysis service.

Relief Staffing Processes (Nursing)

Across the DHAs, the issue of short call relief was a common theme. While many DHAs have float pools which, in theory, are available to address short call relief requirements; the staff in the float

pools are often scheduled to cover planned absences from the unit (e.g. vacations). This results in insufficient staff for the short call relief needs, which in turn, leads to a need to use overtime. Additional full time float pool positions are being used effectively in some organizations to support the need for short call relief, but senior staff note that their experience has been less positive. Additional analysis will be required to confirm if the float pool strategy can be more effectively leveraged at SWNDHA.

If additional nursing positions are created, the DHA would need to be diligent to ensure that sick calls are replaced from the float pools. Alternate options include "over-hiring" new graduates and absorbing them into staff positions over time (CBDHA does this and reports that it has been very effective), and building in additional positions on a unit by unit basis (as opposed to more generic float pools).

Recommendations for Consideration re: Relief Staffing Processes at YRH:

1. Consider expansion of the float pool model to allow for additional critical care staff and additional medical/surgical float nurses to be available to cover short call relief.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage SWNDHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTS being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at YRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory:

SWNDHA provides laboratory services across three sites. Some key findings associated with SWNDHA Laboratory Services include:

- As a province-wide challenge is recruitment of staff, SWNDHA also has a number of recruitment challenges facing the department which was noted by staff as creating difficulties for delivering the desired levels of service and/or creating fatigue amongst staff.
- There are challenges in night coverage where there is only one staff onsite. This again creates a workload issue.
- The organizational structure of the department leverages a MLT model primarily and is currently utilizing MLAs for collection purposes only. Need to determine in what capacity and role MLAs can be integrated and where they can be used in a broader scope of service practice.
- Lab staff noted that due to staffing and volume challenges, they have had no time to focus on utilization management or quality initiatives, although this is starting to be addressed. The group also identified that there is no time to develop necessary policies and procedures to clearly define how the service should operate consistently, at the regional and other sites within the DHA. This is critical to ensure effective hand-offs and standardize work practices are developed and understood.
- There may opportunities to review services and rationalize what services are actually delivered. For example, it was noted that Digby operates a blood bank but it was agreed upon by participants that this service may be better managed through the regional hospital. The organization is encouraged to identify additional opportunities to find "new ways of delivering the service". For example, there are several off-site collection sites. Need to determine if all sites are required. Also, need to rationalize where lab tests should be completed as it may no longer be practical for current sites to provide testing services.
- Stat orders are sometimes used inappropriately. As with most DHAs, education is required to ensure STAT tests are used when they are required as this order often creates added workload and has a negative impact on general processes. This will require development of a criteria for using STAT orders, critical education to ensure stakeholders understand the criteria, and the ongoing monitoring to ensure it is used effectively.
- The service is noted to be over budget in the last fiscal year by $250K. A more detailed financial review is required to determine if the service is over budget or if there is not sufficient budget for the service.

Recommendations for Consideration – Lab Services at SWNDHA:

1. SWNDHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning at SWNDHA should reflect provincial changes.
2. An assessment of HR challenges should be drafted and presented to senior leadership at SWNDHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model, with consideration of night work. Senior leadership will work with the department and HR to address.
3. Laboratory leadership to develop a plan for ensuring MLT and MLA staff are operating at full-scope of practice. Where required, internal and external education supports should be used to bring staff up to scope of practice.
4. The Policy and Procedure for STAT test ordering should be reviewed and amended to ensure appropriate usage. STAT ordering should also be monitored over a period of time to assess if practices have changed, and where required, appropriate actions taken for individuals not adhering to policies.
5. SWNDHA to investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).
6. SWNDHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.
7. Policy and procedure development and review must be a priority.

Diagnostic Imaging:

SWNDHA provides diagnostic imaging services across three sites. Some key findings associated with SWNDHA Diagnostic Imaging Services include:

- Diagnostic Imaging services at YRH are located in a nice space, with generally good access to ambulatory clinics and the ED. The facilities have had recent renovations and generally support a good patient flow. The DHA, like all others in Nova Scotia should be credited with the implementation and successful use of the PACS. It was noted in fact that this DHA was one of the first to move to PACS at the regional site.
- As noted with a number of departments, imaging has a number of recruitment challenges. For example, there are coverage issues for some of the smaller sites (e.g., Digby) with challenges in recruitment and the upcoming issues of retirement of key staff at some of these locations. May need to look at different models of providing services. Overtime was noted as being relatively high in the department.
- Appointment scheduling is a decentralized function within the department. However, there is some interest in investigating whether this function can be incorporated with other scheduling processes of the DHA to create a more centralized, enterprise solution. While this recommendation is supported for additional investigation, Imaging has sufficient volumes and the need for specialized instruction that this continues to be provided with the department. However, services could be provided by the registration department on behalf of the imaging department to ensure consistency in the process and effective staff backup and coverage. Note: mammography scheduling is provided by the Nova Scotia Breast Screening Program.
- The service currently operates under a “scheduled” basis only and does not support patient walk-ins for examinations. While the “scheduled” model enables organizations to develop an effective plan for managing resources, issues arise when the schedule does not go as planned and there are some free gaps which could be filled by these walk-in patients. Having walk-in patients may be a

means to more effectively utilize resources so long as appropriate controls are built in to the process.

- There is a need to clearly define what an "emergency" exam is. Currently, radiologists triage requests to determine the urgency status. The group noted that this term is used inappropriately, creating unnecessary workload for staff and interrupting the general workflow. As part of the development of the definition, it will be important to understand why the "emergency" referral is made in order to reduce the source of the problem, and develop supporting education to ensure the referral is used appropriately. In addition, the need to develop DHA-wide policies and procedures was noted as an area for investment. The group also noted an important need to possess a clinical resource coordinator to support these initiatives.
- It was noted that there is a perception that radiologists have less of an interest in conducting mammography as opposed to CTs or MRI. While there is a financial incentive to support these other modalities, the impact on mammography are significant. With the mobile breast screening service, a number of results can not be read within the DHA resulting in a referral to other DHAs with a cost implication on the department, and there is an impact on wait list which not only impacts access but also affects how the DHA is viewed on a provincial basis.
- CT staffing is very thin. This results in a workload issue for the staff member but also creates a patient safety issue. With the technologist often being required to be out of the room or attending to the next patient, a patient can be left alone. In addition, the limited staff creates a risk to the service should the individual be on vacation or sick. The organization should take some aggressive steps at recruitment or cross-training additional staff to reduce the reliance on the single technologist.
- While the DHA has gone PACS, there is still a strong reliance on films and on paper. For example, results are still printed and filed in a film bag. This necessitates ongoing management of the film library resulting in workload and space issues for the department. The organization must reduce the reliance on printing results, and should continue to eliminate the film library.
- The department was noted by other inpatient areas as not placing a priority on inpatients when imaging was a pre-requisite for discharge. Currently, radiologists triage all requisitions and are prepared to discuss same with ordering physician. In a number of noted situations, patients would be referred for imaging that resulted in the patient waiting in hospital longer than necessary. There did not seem to be any mechanism to fast-track these patients. One option will be to identify those inpatients who can be discharged with an imaging examination completed within 2-3 days post discharge.
- The department was also noted by a number of other departments as requiring a signed requisition prior to being able to schedule an examination. Many areas felt that this was problematic as it did not leverage the Meditech order entry system and created an unnecessary level of control. Upon further review of this practice, it was noted that radiology felt that they not only needed the electronic order but also the requisition to understand the specific exam requirements so that they could evaluate whether the appropriate order for the right modality was made, and to support internal scheduling. Unfortunately, the Meditech order entry system only provides 40 characters of space to add detail and the department felt that this was insufficient. The process should be reviewed to determine how the technology can be best leveraged, and to determine mechanisms to ensure the accuracy and clarity of the order. Once the issue around communicating the right information to enable a decision has been resolved, further investigation should be conducted to determine whether the eOrder meets the needs or if a physical signature is required.

Recommendations for Consideration – D.I. Services at SWNDHA:

1. SWNDHA should investigate development of clearly defined definitions and protocols to manage "emergency" situations.
2. SWNDHA should investigate the benefits and impact of moving from a scheduled x-ray service to a walk-in service.

3. SWNDHA should investigate the need to develop a capacity to monitor and adjust wait times to ensure appropriate access to services.
4. SWNDHA must develop effective tools to assist in planning and preparing for any staffing shortcomings including the development of an HR strategy for Diagnostic Imaging services. The organization should take some aggressive steps at recruitment or training staff to reduce the reliance on the single technologist.
5. SWNDHA should investigate the benefits, opportunities and challenges with reducing the reliance on printing results, and should continue to eliminate that film library.
6. SWNDHA should investigate the benefits and implementation requirements for developing fast-tracking processes to obtain imaging procedures or developing early notification processes to ensure patients obtain required procedures without delaying discharges.
7. SWNDHA should review imaging ordering processes and identify mechanisms to leverage the Meditech system to communicate imaging specific data to assist radiologists in planning and prioritization.

Pharmacy:

Pharmacy services at SWNDHA are provided at all three hospital sites, although staffing levels outside the regional site are minimal. Some key findings associated with SWNDHA Pharmacy Services include:

- Staffing is a key issue for the pharmacy services at SWNDHA. Currently, within the DHA, there are four pharmacists. At Yarmouth, there are two pharmacists of which one is the district manager. Currently both are performing dispensing duties and one of the full time pharmacist will be on maternity leave by late summer. There have been two part time community pharmacists hired to start early fall (2006).
- Overall, the department remains in a staffing crisis. There is currently no night time call, and pharmacist have noted that they are currently working extended hours. We note that as of March 2007, this situation was reported to have improved somewhat.
- The Yarmouth pharmacy has 4 techs. Generally review of the services identified that techs were performing a wide array of services and continue to seek additional responsibilities. One tech position is currently vacant and has not been filled due to budget restrictions.
- Recently, administration authorized a salary adjustment resulting in the leveling of pharmacist salaries with other provinces' salary scales. This action has been viewed as critical to retention and recruitment activities.
- Due to the current workload and limited staffing, no medication reconciliation has been initiated to date. However, the site identified some need/want for implementing the reconciliation process.
- A 7-day fill is used for all patient, non-ward stock medication. There was agreement amongst staff that these practices results in medication wastage. Need to review and develop recommendations to reduce wastage.
- The department identified interest in pursuing robotic technology. While this technology will require investments, the primary drivers of reducing medication errors and enabling pharmacist to provide clinical support on the floors are viewed as key to the business case.
- There is currently limited pharmacist involvement on nursing units. There was support for building a pharmacist on the floor model where there are either full-time or part-time allocation of pharmacists to patient floors (e.g., inpatient, ED, ambulatory programs).
- Review options for Digby and Roseway, and identify recommendations. For example, if Digby and Roseway pharmacy services are unsustainable in whole or in part, can some or all medication dispensing be moved and centralized at Yarmouth. For example, the mixing of chemotherapy (Methotrexate) could easily be done at YRH and transported to DGH and RH.
- Like all other DHAs, there is support movement toward unit dose province wide.

Recommendations for Consideration – Pharmacy Services at SWNDHA:

1. SWNDHA must actively participate in the System-Wide Pharmacy Redesign Initiatives and consider implications of provincial changes within DHA #2.
2. SWNDHA should complete an assessment of HR challenges and present this to senior leadership. This report should clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A plan must also be developed to ensure technicians are working at full scope of practice, and that SWNDHA are leveraging technicians in the most appropriate way. The vacant pharmacy tech position should be filled.
3. SWNDHA should implement Safer Healthcare Now strategies including the medication reconciliation initiative, as is planned for the Digby Restorative Care Unit.
4. SWNDHA should eliminate its current 7-day fill practice (note – this may happen as part of the province-wide transition toward a unit-dose system and eliminate).
5. SWNDHA should develop strategies for integrating a pharmacist onto the nursing units. This integration may have a phased transition given the relatively limited staff, and may leverage a targeted approach to find specific areas where a pharmacist could provide value. Opportunities to build in an evaluative component into these changes should be invested in.
6. SWNDHA to review medication work processes in Meditech and identify actions to streamline workflow, including engagement of physicians to participate in computerized order entry.
7. SWNDHA to continue to identify resources to improve opportunities for continuing education and training for pharmacists and pharmacy techs.
8. SWNDHA to review options for Digby and Roseway, and identify recommendations. For example, if Digby and Roseway pharmacy services are unsustainable in whole or in part, can some or all medication dispensing be moved and centralized at Yarmouth. For example, the mixing of chemotherapy (Methotrexate) could easily be done at YRH and transported to DGH or RH.

Focused Discussion re: Patient Flow

Patient flow is a critical issue in Canadian hospitals and as such, efforts were made probe issues related to flow in more detail. To understand patient flow challenges at YRH, the patient journey was assessed based on a walk-through of the facility and a series of targeted interviews and meetings with key front-line staff and stakeholders. As a result, the following high level observations were noted:

- **Pre-Admission Clinic:** While the organization should be supported for establishing and leveraging a PAC, there appears to be further opportunities to streamline to enable higher throughput and an improved patient experience. The PAC visit is currently described as a single visit comprised of a number of queues or waits. This leads to some challenges in bringing services together in a coordinated fashion. As a result, the patient incurs multiple waits throughout the visit. We note that the organization has introduced some changes in the process following our on-site assessment and encourage them to continue efforts to streamline this process.
- **Discharge Planning:** The discharging planning function and role is a critical, proactive step organizations can take to facilitate effective, planned patient flow. Discharge planning at SWNDHA was reviewed, and a general recommendation for increased discharge planning efforts was supported. These planning activities must start prior to the patient entering the hospital, and extend throughout the episode of care. Some key issues include:
    - Discharge Planning at SWNDHA rested with generally one individual. This individually actively monitored the status of patients and is a key enabler to the movement of patients. She also served as the primary liaison person to ensure effective communication amongst staff. However, discharge planning can no longer rest with a single person or a department isolated from the inpatient unit. Discharge planning must work in an integrated fashion with the unit nurses to proactively plan and follow-up with patients. We note that the DHA is reviewing this role and has a plan ready for roll out.

- Opportunities to improve the processes associated with discharge planning should be investigated. In addition, opportunities to leverage Utilization Mangement, the IT infrastructure and build internal communication mechanisms to support early notification should be assessed.

- **MRSA.** MRSA management is having an impact at YRH as it is in many other sites. A consistent provincial approach to infection control is required.

Recommendations for Consideration re: Patient Flow Processes at YRH:

1. Redesign the patient flow processes to streamline activities for PAC visits to ensure more patients can be managed through the clinic in a more efficient manner.
2. SWNDHA must develop a policy and strategy for the timely discharge of patients. Discharge policies and processes must be formalized and receive a high-level of attention from administrative and clinical leadership. Policies must also be effectively communicated to patients by nurses and start prior to the patient entering the hospital for elective patients using the PAC.
3. Utilization management staff must work with clinical areas to support education, awareness and support of the discharge policies and processes.
4. Tools and reports must be developed to support the discharge planning process and to track the progress and impact the organization makes on timely discharge..
5. Adoption and adherence mechanisms must be developed to reward those participants who support the discharge policies and processes, and address individuals who are not adhering to the policies.
6. A Utilization Committee will be responsible for reviewing discharge statistics and reports on a monthly basis, identifying and approving recommended changes to the process and/or policy, and providing a report to senior leadership quarterly. The Committee will work with Utilization Management to identify key limiting areas and to develop strategies to address.

Professional Practice Issues

Nursing:

RNs and LPNs at SWNDHA report that they are generally happy with their jobs, although they do feel that the workload is increasing and becoming more and more complex. With the recently newly filled Director of Nursing and VP Clinical positions, staff feel a general sense of disconnection. This is balanced with the confidence in the direct management staff. This will be an important issue to resolve if senior leadership is going to be successful in implementing changes arising from this review.

RNs at the regional site expressed the strongest concerns about the overall work environment, which appears to, at least in part, reflect a sense that they got limited support from past senior administration. Strategies to increase the visibility of senior management with front line staff was identified as a need. The DHA is starting a Nursing Council which may be an effective tool for addressing these issues.

RNs express disappointment about the level of resources available to support professional development (this is common across the province). LPNs continue to be concerned about the need for them to be supported to function at full scope.

Recommendations for Consideration re: Nursing Issues at YRH:

1. Continue with roll-out of Nursing Council.
2. SWH should continue its strategic approach to how and when to engage and communicate with frontline staff, taking advantage of appropriate opportunities.

Allied Health Staff:

Allied health staff express concern about the amount of non-professional activities they are required to perform because of a general lack of support staff.

Recommendations for Consideration re: Allied Health Issues at YRH:

1. Review professional roles and consider adding more clerical and support roles to assist with care delivery and routine administrative tasks.

Medical Staff:

SWNDHA (like other sites in NS) continues to struggle with recruitment issues for physicians, although this DHA has had some success with foreign trained graduates. Relationships between admin and medicine is viewed as positive. The average age of physician group is a moderate concern as many of the staff are 55+ and will be considering retirement in the coming years.

Recommendations for Consideration re: Medical Staff Issues at YRH:

1. Continue to work with DOH to develop sustainable funding models for physician recruitment and coverage, especially for Primary Health Care and Rural Health.

Infrastructure and Support Services

In most DHAs, we found that the support service and corporate functions are either resourced in accordance with nationally accepted benchmark levels. In many cases, we actually found that these areas are under-resourced, which contributes to many of the challenges associated with professional performing non-professional tasks. For this reason, efficiency opportunities have not been identified and findings are minimal for many services. In addition, some of these services have been discussed in the system-wide section, so they are not re-stated here.

Financial Services

DHA 1, 2 and 3 continue to operate within a Shared Services Model for Finance. SWH continues to have concerns with the shared service model regarding ability to receive reports in a timely manner and confidence in the actual numbers. While we have recommended that a shared model be expanded province-wide, there are some immediate issues that may require attention in these DHAs.

Recommendations for Consideration re: Financial Services:

6. DHAs 1, 2 and 3 should commit to continuing the shared service model until a province-wide model is developed.
7. DHAs 1, 2 and 3 support a facilitated session for the shared service director and the DHA CFO's/Director of Finance to address issues with their collective relationship.
8. The shared service model needs to be restructured so that the "shared" part is all of the transaction processing (payroll, AP, AR, etc.) and that the DHA's have dedicated staff (number to be determined) who will deal with budgeting (both financial and service), monthly variance analysis using information from the financial operations side, forecasting, and customer service.
9. The shared service staff and the DHA staff in the host organization should not be co-located.

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this matrix of governance bodies, it is important to ensure

effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The review of governance found that SWNDHA has some unique issues and challenges surrounding Governance effectiveness that need to be resolved. From a DHA perspective, the relationship with the Community Health Boards (CHBs) could likely be improved.

The importance of the relationships with local boards and foundations cannot be emphasized enough. The general need for local groups to respect regional priorities and seek out opportunities for increased collaboration between communities is paramount. The relationships that SWH has built with their foundations has contributed to the success of many initiatives.

Recommendations for Consideration re: Governance

1. We recommend development of more formal annual evaluation processes for the Board itself as well as evaluation mechanisms for individual Board members.
2. We recommend that the Board undertake focused work to build stronger relationships with the CHBs.
3. We recommend that the Board undertake focused work to continue the strong relationships built with the Foundations that raise funds for its communities and hospitals.
4. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 3: ANNAPOLIS VALLEY

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care
- Community Health Centres
- Community Hospitals
- Regional Hospital
- Infrastructure and Support Services
- Governance / Leadership

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services.

Annapolis Valley Health appears to be very well advanced in its pursuit and development of primary health care services. The DHA has a well articulated vision for Community Health Centres and has a plan in place to expand the model as part of its commitment to its vision of *Healthier people, caring communities and valued healthcare teams.* This plan entitled *Strengthening Primary Health Care through our vision for Community Health Centres* was tabled in January 2004 and includes strategies and directions surrounding:

1. The role for Community Health Centres (CHCs) in strengthening the primary health care system in AVH;

2. How CHCs will contribute to a broader strategy of primary health care renewal in general and chronic disease management; and,

3. A framework for policy and planning issues that require discussion by the Board as it moves ahead.

The PHSOR Review Team commends the DHA for this work and in particular the Board's leadership, working with CHBs, to advance this plan.

The Five Community Health Boards all have developed Health plans and have identified priorities for the local population. The summary of priorities is as follows:

- Eastern Kings Community Health Board: Health Services; Exercise and Nutrition; Chronic Disease; Injury Prevention; and Seniors Issues
- Central Kings Community Health Board: Nutrition and Exercise; Injury Prevention; Cancer Caused by Environment; Stress; and Water Quality
- Western Kings Community Health Board: Addictions; Care for the Elderly (including In-home, Nursing Homes, and Palliative Care); Cost of Medical Services (including Medications and Supplies); (Poor) Access to Health Care and Doctors; Obesity; and Health Promotion

- Kingston Greenwood Community Health Board: Youth Issues; Access to Services; and Seniors Issues
- Annapolis Community Health Board: Access to Health Services; Seniors Issues; Nutrition and Obesity; Air Pollution; Preventative Mental Health; and Teen Pregnancy

DHA specific recommendations for AVH, based on our on-site assessment, are outlined below.

Recommendations for Consideration – Re: Primary Health Care:

1. Work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health Strategy).
2. Confirm organizational structure/model for Public Health (as part of ongoing implementation of Public Health Renewal).

Community Health Centres

The DHA has three Community Health Centres: Annapolis Community Health Centre in Annapolis Royal; Western Kings Memorial Health Centre in Berwick; and Eastern Kings Memorial Community Health Centre in Wolfville. Our summarized findings for each are discussed below:

Annapolis Community Health Centre

The Annapolis Community Health Centre is situated in Annapolis Royal at the western boundary of the DHA. ACHC provides a number of services to Annapolis Royal and surrounding areas. Comments on selected services include:

- Emergency Department
  - ACHC operates an emergency department. During the days, ED is staffed by 3 RNs (2 twelve hour shifts, 1 eight hour shift). During evenings, ED is staffed by 2 RNs (12 hour shifts) and 1 LPN. The ED is integrated into the entire operations of the Health Centre, and reports that it maintains good working relationships with all areas. These staff also manage the 4-7 inpatient beds. If staffing numbers were only considered vis a vis emergency staffing, the number could be viewed as too high. The impact of the inpatient beds would reduce this, but more review is required.
  - Notwithstanding this, patient volumes of 31 patients per day (average for 2005/06) may raise questions about these staffing levels (e.g. 2 staff 24/7 may be adequate).
- Collaborative Practice Focus Group
  - The collaborative practice has existed since October 2005. The practice has evolved over time progressively and has resulted in a collegial team based model, and is located within the Community Health Centre. The collaborative practice leverages a nurse practitioner who works directly with physicians and with public health (e.g., maternal child health) and other supporting services (e.g., dietary, continuing care).
  - Development of collaborative practices require a high degree of physician buy-in and support, a clear vision, and must include clinicians which truly believe in a team based environment. ACHC has been successful at laying the foundation for a productive and effective collaborative practice.

Eastern Kings Memorial Community Health Centre

In 1994, the Wolfville acute care hospital was closed and further services from the site were not planned by the DOH. In response to pressure by local physicians and the community, the space was provided by the DOH to local physicians to operate an evening walk-in clinic. This arrangement with the DOH continued for approximately 2 years until the DOH decided to develop the site into a community health care centre. EKM CHC now provides a range of primary health services to the East Kings County population including health promotion and education programs; community development; diagnostic and treatment services. Comments on selected services include:

- Community Evening Clinic
    - A large number of patients present to the evening clinic with issues that could be managed in a family practice setting. There are several reasons reported for this: (a) Large number of orphan patients without family GP's, (b) Working population chooses to access evening clinic rather than GP offices during work hours (c) Wait times for GP's in community can be long and patients can be seen faster in CHC clinic.
    - There appears to be some ongoing confusion in the community as to the role of the clinic as this was the old hospital site. There are some situations where members of the community present to the clinic that should be going to the Valley Regional Emergency Department.
    - There is also workload coming from Valley Regional as patients know the wait times will be less in the community health centre walk-in clinic as opposed to presenting to the emergency department in Valley Regional.
- EKM Physicians
    - There are currently 7 physicians providing clinic services at the EKM clinic on a rotating basis – 1 physician per evening with the schedule determined by the physician. During the day hours these physicians provide services from their private clinics in Wolfville. Two physicians have retired recently and it is reported that there will be 2 -3 retirements in the next 5 years. If replacements are not found the evening clinic may not be sustainable. Most of these physicians have privileges at Valley Regional Hospital in Kentville. All physicians take call for their own patients. Physicians also provide service to a 66 bed Wolfville Nursing Home and other private care homes.
    - Physicians feel that they need more input into planning community and primary health services. There report limited consultation with GP's in service planning.
    - There is also a perception that there are physicians in the community who are choosing not to join the EKM physician team as the call schedule is unattractive and the relationship between physicians and AVDHA Administration has been strained in the past. This leads to a lack of shared call which means all physicians travel to Valley Regional to see their own patients rather than sharing call on a rotational basis. Physicians referenced the "Berwick solution" where the 8 physicians in that community rotate Valley Regional call on one week rotation. Physician on call sees all inpatients for Berwick physicians.

Western Kings Memorial Health Centre

In approximately 1996 the Berwick acute care hospital was closed. This was a 50 bed facility with surgical and obstetrics services. Immediately upon closure, the planning began immediately to turn the facility into a community health centre/clinic, now known as the Western Kings Memorial Health Centre (WKM). This facility is unique in the DHA (and the province) in that it was turned over and is owned by a society for the residents of Western Kings County. The DHA leases all space used from the society. The WKM provides a number of services to the Town of Berwick and surrounding areas. Comments on selected services include:

- Outpatient Department
    - The outpatient clinic care for approximately 50 people per day for weekdays with a total of 1400 – 1500 visits per month. Most visits are for routine examinations, i.e. "coughs and colds". 8 physicians split the 14 hour clinic day into two shifts (8am – 6pm and 6pm – 10pm). A three to eight week wait for physician clinic appointments drive much of the volume to the outpatient department.
    - There are no Nurse Practitioners in Berwick and it was suggested that the NP model could be incorporated into the CHC as an effective enabler for Primary health care in Berwick.
- Physicians
    - The two lead physicians for the community have been providing services for over 20 years with one serving as chief for 11 years.
    - There are 8 other physicians providing services in the community. 4 of the 8 have offices in WKM. Recently two physicians left due to personal reasons but recruitment for this community has been less difficult due to a more attractive call schedule – rotating by week at Valley Regional.
    - Wait times for patients to access specialty services and consultants both in Valley Regional and Halifax was noted as a major challenge.
    - Physician relationship with DHA administration is reported as strained with lack of communication contributing to some of the outstanding issues.

Recommendations for Consideration – Re: Community Health Centres:

1. Review staffing levels at ACHC to confirm appropriateness of current models
2. Work with physicians to consider new operating models which will provide better call schedules, stronger linkages with the DHA and reduced gaps in primary care provider coverage for all citizens
3. Consider expansion of NP models at the CHC sites.

Community Hospital: Soldier's Memorial Hospital, Middleton

The Soldier's Memorial Hospital (SMH), located in Middleton, is described as an acute care community hospital serving a catchment population of approximately 40,000. As with many rural hospitals in Nova Scotia, issues for Soldier's Memorial Hospital relate to access to staffing, technology and infrastructure demands, an aging population base and the increasing demands from the community to maintain local specialized services despite declining populations of both care providers and people residing in the community. Inpatient services offered at SMH include: Medical Care (25 bed inpatient unit); Long Term Care for Veterans (25 bed LTC unit); and Transitional Care Unit (12 beds). There is also a 24 Hour Emergency/Outpatient Department and a range of ambulatory/ancillary services. Some of our key conclusions/observations are as follows.

Medical Unit:

- The medical unit at Soldiers Memorial is a 25 bed unit, which includes a four (4) bed area with 2 telemetry beds. Staff report an increasing number of ALC patients, with an average now being 5-6 per day (~30% of the non-telemetry beds). Staffing on the unit includes 3 RNs and 2 LPNs on 12 hour day shift, one additional LPN on an 8 hour evening shift and 2 RNs and 1 LPN on 12 hour nights. One of the RNs is reported to be assigned to the 4 bed telemetry / special care unit on a 24/7 basis on nights. Note: for the additional 4 beds (which includes the telemetry beds), the ratio is 4:1 (24/7).
- Current hours of care per patient day are running at 5.18 which is above the targeted HPPD established for PHSOR. This suggests that some savings may be possible.

Transitional Care:

- The Transitional Care Unit (TCU) at Soldiers Memorial is a 12 bed unit. The patient population is described as placement patients, convalescence care, restorative and palliative. Staffing is reported to be planned as 2 LPNs (24/7), which results in ratios of 6 patients to every LPN on days and nights, which represents minimum staffing levels (even though at 12 beds it results in more hours of care than required for the population being served).

Outpatient/Emergency Department:

- The Emergency Department at SMH sees an average of 59 visits per day (per MOH data) and this is reported to be a mix of ED and OPD visits). The unit is reported to be busiest during the morning with lab work and outpatient procedures.
- RN staffing is 2 RNs from 0700 – 2300 and 1 RN from 2300 – 0700 (supported by the in-house supervisor). Staff report some concerns with the staffing because one RN is alone in the department at night, but without a detailed review of visits by time of day, a conclusion cannot be drawn regarding the need for additional staff. The bigger issue may be security and staff note that they would like to have the hospital entrances locked after 2300 hours
- MD staffing for the unit is a challenge, with one MD about to withdraw services. Staff report that this is a serious issue and likely represents a looming crisis for MD coverage of the ED

Recommendations for Consideration at SMH:

1. Review staffing model for medical unit and consider changes to baseline staffing levels.
2. Review Emergency Department physician staffing/coverage issues and develop contingency plans for periods when coverage is not available. Longer term, develop plans to align with Rural Health Strategy.

Regional Hospital: Valley Regional Hospital

Inpatient Services:

DHAs 1, 2 and 3 operate a shared financial service, and all use the same IT platform for capturing data related to worked and paid hours. That system has some significant flaws in the way that it tracks overtime hours, which leads to an overstatement of worked hours for RNs and LPNs. Adjustments have been made (where such information was provided by the DHAs), but the efficiency analysis could still be over-stated somewhat.

The analysis of inpatient services at Valley Regional Hospital suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for Medicine, Surgery and Critical Care are summarized in the table below.

DHA 3: Valley Regional Hospital								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
Medicine	54	6.02	5.66	6.22	7.20	**- 0.36**	**- 0.56**	Target for PHSOR has been adjusted to reflect IMCU beds on the unit as well as nine ALC beds. Minor adjustments likely possible in baseline staffing.
Surgical	37	6.98	7.19	7.81	8.44	**0.21**	**- 0.62**	Baseline pattern below PHSOR target (which has been adjusted to account for IMCU beds), but actual staffing is above target.
Critical Care	7	16.07	14.23	19.62	22.66	**- 1.84**	**- 5.39**	Baseline plan calls for 5 RNs (24/7) for seven beds. Given potential for higher complexity patients at VRH, a 2:1 ratio may not be appropriate in this case (note: PHSOR target assumes 2:1). Actual staffing however is runnign significantly above baseline and this needs to be examined more closely by the DHA as staffing costs should likely be more in line with planned baseline. Other UPP and MOS Hours are also quite high, and above baseline plan.

Other inpatient comments are as follows:

- **Critical Care** – PHSOR Review Team notes that VRH has had an external review of the ICU and has moved to a closed unit model. Ongoing staffing challenges for nursing and higher than expected orientation costs may be driving up worked hours.
- **Maternal/Child** - program needs to be reviewed as part of provincial review. VRH has the lowest average cost per patient day for its obstetrical unit (per DOH statistics).
- **Mental Health** – no target set, needs to be addressed as part of provincial bed map process.

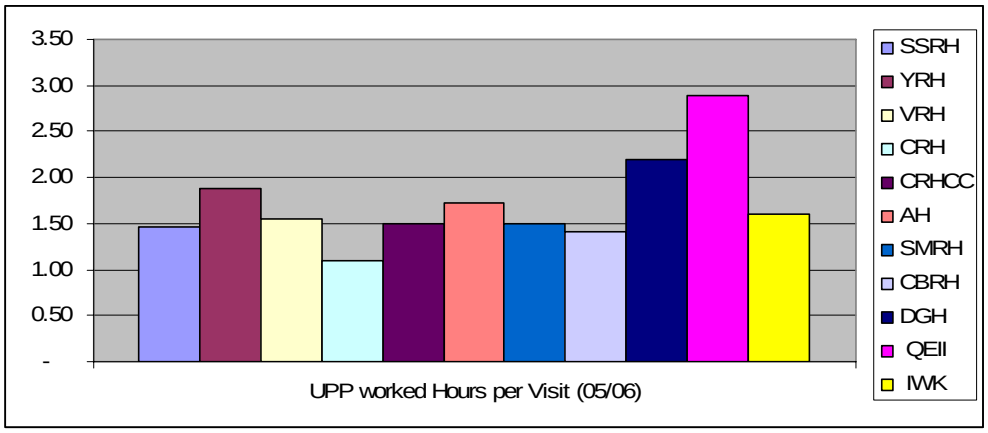
Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units (using baseline staffing as target for the ICU) suggest that a total of 24,000 hours could have been saved in 2005/06.

Recommendations for Consideration re: Inpatient Services at VRH:

1. Reduce baseline staffing on Medical/Surgical units to reflect targeted ratios.
2. Review staffing practices in ICU to determine what changes can be made to reduce actual hours per patient day. Review MOS hours for this unit.
3. Continue to review options for managing ALC patients using different models (e.g. reduce staffing levels to reflect targeted ratios for ALC).

Emergency Department:

Patient volumes in 2005/06 were 31,102 visits and 1,277 patient days. This translates to an average daily volume of 85 visits and 3.5 admitted patients. At these volumes, the ED at VRH operates with an average of 1.55 Hours of Care per Patient Visit, which is below the provincial average of 1.81, and is the 6th highest HPPV in the province (see chart below).



Recommendations for Consideration re: Emergency Department at VRH:

1. Continue to work with DOH and partners in Continuing Care to address ALC issues in an effort to reduce inpatient beds in the ED.

Ambulatory Care

General Clinics:

During PHSOR, consultants typically met with a sample of the ambulatory care programs and teams to determine if national trends applied to the local context. On that note, a provincial issue surrounding abstracting data and reporting in recognized databases (e.g. NACRS) represents an opportunity for all DHAs.

At AVDHA, we found that Ambulatory care is not well defined in the district in terms of which services actually fall under this heading. There has not really been a district approach to how to integrate new ambulatory clinics into the program mix in an organized manner. Currently, Ambulatory clinics include GP and specialty clinics for medical/surgical, orthopaedics, urology and enterostomal care, tele-health, autism clinics, and patient navigator program for Cancer patients. Clinic specific and other general issues include:

- CIU: needs standardization of procedures so that care is standard in all districts – consistency on where pts are seen (physician's office vs. clinic) and the techs should have all the same qualifications.
- GE ECG management system is in place but there are challenges around the administration of the system. DHAs 1 & 2 have the same systems but have not yet optimized the links to execute the shared costs which would be financially a positive move. There is no interface between this system and the Meditech system although the capability is there.
- Meditech has presented a number of challenges for all the groups: not all staff has the access needed for all areas so the system creates barriers often. There remains little technical support for the users of the system. Diabetes has seen an improvement since working with it, as it is easier to access lab information quickly for their patients.
- Data management in ambulatory care area is a problem – there is no abstraction of the data.
- Community wide scheduling would be an asset and is not fully implemented yet. This would help to enable different programs to coordinate the patients visits.
- Social worker roles do not exist within this DHA (although there is a posting going up for a social worker to cover the ALC).
- Policies and procedures are outdated.

- Clinical resource support is needed – for education, competency development and administrative support.
- Space will be an issue while some programs are moved and there is no space allocation increases for programs that have seen an increase in patient numbers.
- Staffing levels for Ambulatory care – orthopaedic clinic and the fact that there is only one elevator when the clinics move to the second floor could become a problem.
- There is no oncologist in the area and staff feel that one is needed. The cost of drugs and staffing levels are an issue – they need a cohesive oncology program to unify the patient navigator, physicians and chemo nurses.

Recommendations for Consideration re: Ambulatory Care at VRH:

1. Confirm strategic vision for ambulatory care across AVDHA and review current programs to determine if they align with the stated vision
2. Complete a focused review of staffing roles and responsibilities and consider adding clerical resources and possibly additional professional staff time.

Relief Staffing Processes (Nursing)

Across the DHAs, the issue of short call relief was a common theme. While many DHAs have float pools which, in theory, are available to address short call relief requirements; the staff in the float pools are often scheduled to cover planned absences from the unit (e.g. vacations). This results in insufficient staff for the short call relief needs, which in turn, leads to a need to use overtime. Additional full time float pool positions are being used effectively in some organizations to support the need for short call relief.

If additional nursing positions are created, the DHA would need to be diligent to ensure that sick calls are replaced from the float pools. Alternate options include "over-hiring" new graduates and absorbing them into staff positions over time (CBDHA does this and reports that it has been very effective), and building in additional positions on a unit by unit basis (as opposed to more generic float pools).

Recommendations for Consideration re: Relief Staffing Processes at VRH:

1. Consider expansion of the float pool model to allow for additional critical care staff and additional medical/surgical float nurses to be available to cover short call relief.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies

and the new models of care delivery that will be designed and implemented. Within that context, we encourage AVDHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTS being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at VRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory:

Annapolis Valley District Health Authority operates laboratory services on three sites with collection services on all five sites. There is a higher utilization of techs as opposed to aides on most sites. Some key findings associated with AVDHA Laboratory Services include:

- In 2005, as part of the NShIS implementation, the service converted from the Britech system to the Meditech lab system. While there were a number of challenges and issues identified with the implementation even though the DHA was the second last to implement, there still remains some sentiment that it has been a "step-back" since there is perceived reduction in efficiency and functionality. The implementation issues were that the learnings from prior implementations were not leveraged, overall coordination and design was not appropriate and there was limited fit with current processes, and the process seemed very reactive.
- Laboratory collections are scheduled with three pickups (7am, 11am, 2pm) and supported by adhoc pager collections. There is also lab collection conducted at each site during scheduled hours (e.g., 7am to 10:30am at Valley). There is a desire to extend hours of collections and ensure specimen pickups meet client area needs.
- There is also some general misuse of STAT orders which should be further investigated. We recommend that processes be put in place for STAT testing from the ED and inpatient units
- Staff appears to be experienced and there is a noted dedication toward services amongst department staff. However a key challenge is the access and availability of management. Staff noted that the manager for the district is often not available due to her broader district role and suggested that an operational site manager for the Valley site would be a significant improvement.
- Staff also noted an opportunity to further improve working relationships with units to improve understanding for what client areas need and what services lab can deliver. Need to improve communication processes both within the department and between departments, and need for improving hospitals support for training and education.
- Need to review staffing mix to determine service model. Specifically, need to determine where aides can/should be leveraged as the current model is more heavily dependent on techs.
- While there are three labs within the DHA, there are variations in operation protocols (e.g., policies and procedures) and operation models (e.g., some run core labs while others do not). Further investigation should be conducted to determine whether standardized processes and/or service delivery models should be investigated (e.g., shared lab service model)

- Need to also investigate whether three labs are required. A primary argument for the current lab model is to support the EDs however this should be more closely reviewed. The lack of a provincial approach means that there is no rationalization of services amongst other labs. This requires further investigation. While this report has recommended a laboratory rationalization, the DHA may want to start with its own review.

- While a review of appropriate ordering practices was identified as an area for potential review, we suggest that further assessment of the magnitude of the impact should be undertaken. Specifically, need to further develop processes for utilization tracking. We recommend that the Senior Leadership should establish a forum and process to discuss and make decision on lab utilization.

- A clear authority structure has been established including clearer description of the mission, vision, and values, organizational structure, reporting and communications structure. Issues to address include an annual performance review, improvement of communication lines, and recruitment and retention strategies.

- A quality coordinator has been hired and also supports back fill when necessary, scheduling is completed by staff members, approaches to improve quality of work life are being implemented, and minutes are produced for all meetings.

Recommendations for Consideration – Lab Services at AVDHA:

1. AVDHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning should reflect provincial changes.
2. An assessment of HR challenges should be drafted and presented to senior leadership at AVDHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model. Senior leadership will work with the department and HR to address.
3. Laboratory leadership to develop a plan for ensuring MLT and MLA staff are operating at full-scope of practice. Where required, internal and external education supports should be used to bring staff up to scope of practice.
4. The Policy and Procedure for STAT test ordering should be reviewed and amended to ensure appropriate usage. STAT ordering should also be monitored over a period of time to assess if practices have changed, and where required, appropriate actions taken for individuals not adhering to policies.
5. AVDHA to investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).
6. AVDHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

Diagnostic Imaging:

Medical imaging services are offered at all five sites. Generally, imaging services is viewed positively by areas served and has been noted by staff as a good department to work in. AVDHA has been credited with being the first DHA to fully implement PACS. Overall, as seen in all other DHAs, the PACS implementation is viewed as a significant success and enabler for the province.

Imaging also recently implemented the Meditech imaging module. Many staff commented that "it takes longer from all standpoints" to use the radiology information system (RIS) within Meditech. Some of the issues are attributed to the order entry requirements. There is also consistent perceptions by the DHA that the implementation was not generally well led by the province and that there was critical intervention completed by the DHA that improved the process significantly.

Meetings with staff identified that they believe that the department puts the patient first. They feel that they work well as a team, provide good coverage, are accommodating, and have established a good working relationship with other areas. This is supported by the camaraderie within the department, ability to get a high number of add-on patients when required, and volume of referrals coming from Halifax.

Additional findings associated with AVDHA Diagnostic Imaging Services include:

- A number of various approaches are employed to schedule cases. For example, CT, ultrasound and GI book appointments on the Community Wide Scheduler, mammography uses the breast screening scheduling approach, nuclear medicine schedules their own appointments manually in a book, and angiography related procedures are scheduled by the Utilization staff. Need to determine if more consistent scheduling approaches can be leveraged that utilize enterprise related scheduling (e.g., CWS) to reduce workload.
- There is some resistance to utilizing electronic reported results. It was noted that physicians at Soldiers Memorial only wanted printed results as opposed to electronic reports. There needs to be increased education and change management supports to build buy-in to the new technologies in order to realize the gains and opportunities from investments in technology.
- While there have been investments in PACS technology, equipment is noted to be old, especially in some of the general x-ray areas. There is need for investment.
- Currently, a single maintenance service is used for all imaging equipment where it is no longer under a vendor maintenance agreement. It was described by staff that this agreement may not be adequately servicing equipment and that further review should be initiated. This recommendation is further supported by comments that "there are daily breakdowns in equipment" which is affecting productivity of services delivered.
- Waitlists are viewed as an issue. While there are some modalities that are doing rather well, other areas need to be reviewed from a wait time perspective. With the newly public and published wait lists, it is critical that wait list information accurately depicts real activity.

Recommendations for Consideration – D.I. Services at AVDHA:

1. AVDHA should investigate options consistent scheduling approaches that can be leveraged to enable enterprise related scheduling
2. AVDHA should require physicians to transition to electronic results reporting.
3. AVDHA needs to investigate issues and develop a capital equipment acquisition and replacement plan.
4. AVDHA should investigate the need to develop a capacity to monitor and adjust wait times to ensure appropriate access to services.

Pharmacy:

At the time of the review, there were four pharmacists at VRH with an additional pharmacist expected to be in June 2006 and a staff member returning from maternity leave in October 2006. Pharmacists are supported by 8 full time and 2 casual techs. The department must be acknowledged for their ability to recruit pharmacists over the past 15 months, for adjusting the pay in hospital-based positions and offering other incentives (e.g., establishing a clinical pharmacist on the floor model).

Some key findings associated with AVDHA Pharmacy Services include:

- There is an issue with timely receipt and response to orders. Due to the current approach of using porters, there is a less direct route used to receive orders. We support using a fax machine to ensure timely deliver. Where necessary, more than one fax line can be used to prioritize orders (e.g., stat fax number) to ensure med orders are received and acknowledged in a more timely basis.

- After hours coverage is done from the night cabinet. During this time, a resource person (clinical leaders) maintain a key to support nursing access to pharmacy. As a result, the clinical leaders described the potential risk of becoming burned out thereby reducing their ability to focus on other key activities. While the process is reported to be working well, we have some concerns about general check-and-balances required for a process like this and recommend a more detailed review of these practices.

- Critical need to get pharmacist on the floor. This was noted to be part of the manager's vision. Need to investigate alternative approaches to better utilizing pharmacy technologists to support key initiatives like medication reconciliation thereby enabling greater pharmacist role on units.

- A nine day fill is used however this practice needs to be looked at further. With a nine day fill, and assuming the average length of stay is 4.5 days, we can estimate conservatively that ½ of all oral medications are wasted. When a 9 day fill medication are returned to pharmacy, pharmacy disposes of meds where the pill cost is < $0.60. Note: of the 3000 pills dispensed, most are less than $0.60. Hence, of the $1.2M budget, if 1/3 is for IV drugs, 1/3 for chemo drugs, there is approximately 1/3 for medications resulting in an estimated drug costs of $400K of an annually wastage of $200K. Note: restocking has not been incorporated into the analysis.

- The hospital did not rate well on the ISMP survey completed before the new manager arrived (2nd lowest in Nova Scotia). There is some belief that this has improved over the last 15 months but a survey is recommended to be completed by the end of the year.

- The pharmacy is not unit dose and this results in significant workload and may be one driver to the 9 day fill. In some areas, there is a 30 day fill (e.g., in the transitional care unit). Need to determine if a unit dose system can be leveraged in province-wide pods to improve distribution efficiency and create opportunities for the pharmacists to work with the nursing units, allied professionals and clinicians. The organization, and potentially the DHA or province need to determine if a unit dose system(s) should be leveraged, and whether if such a system were leveraged, if there could be an increased role of pharmacist on the floor and a reduced role in the pharmacy. Furthermore, opportunities to leverage province-wide solutions could potentially result in creating a few province-wide pods for unit dosing.

- Issues related to transferring medications to follow the patient. For example, if a patient is admitted via the ED and then admitted to the floor, there is considerable time expended on tracking the medications to ensure it is routed to the patient. This is both a workload and cost issue for the hospital.

- There is a suspected number of medication stashes throughout the hospital. There is a critical need to bring these under control or eliminate them altogether.

- To support the many new processes within the hospital, DHA, DHAs or potentially province-wide, there is critical need to develop standardized processes, policies and procedures.

- Need to invest in education to ensure clear understanding of processes amongst users.

- Need to further extend hours of operations to provide better services to clients.

Recommendations for Consideration – Pharmacy Services at AVDHA:

1. AVDHA must actively participate in the System-Wide Pharmacy Redesign Initiatives and consider implications of provincial changes within DHA #3.
2. AVDHA should complete an assessment of HR challenges and present this to senior leadership. This report should clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A plan must also be developed to ensure technicians are working at full scope of practice, and that AVDHA are leveraging technicians in the most appropriate way.

3. AVDHA should eliminate its current 9-day fill practice (note – this may happen as part of the province-wide transition toward a unit-dose system and eliminate).
4. AVDHA to continue to identify resources to improve opportunities for continuing education and training for pharmacists and pharmacy techs.

Focused Discussion re: Patient Flow

Patient flow is a critical issue in Canadian hospitals and as such, efforts were made probe issues related to flow in more detail. To understand patient flow challenges at VRH, the patient journey was assessed based on a walk-through of the facility and a series of targeted interviews and meetings with key front-line staff and stakeholders. As a result, the following high level observations were noted:

Patient Scheduling:

- Scheduling at the various sites is conducted differently. At the Valley, there is a decentralized scheduling model, and at Soldiers Memorial and Annapolis, a centralized model is leveraged. Need to determine which model is the best for the patient type and facility layout.
- There was also a noted "Traffic Jam" at the front of the hospital as patients are admitted for day surgery, same day admit, or admission as an inpatient at one desk. A separate desk, which shares contiguous space, handles lab registration. The result is a very crowded area.
- To track and order patients, two numbering systems are used which creates some confusion. The organization wishes to move towards a system to support coordination (e.g., Quematic system).
- Patients are being admitted in the admitting area and are then sent to the Medical Day Unit (MDU) to review registration and check in. This results in duplication of effort and elongates the patient flow process. Duplication in process should be eliminated.
- Information provided as part of a referral is not always complete resulting in added workload to "hunt" down information. This creates additional workload when time is of the essence.
- An estimated 18 out of 54 patients are waiting on ALC (1/3) and an estimated additional 5 will be added to ALC list. This provides considerable strain on a unit.

Discharge Planning

- The discharging planning function and role is a critical, proactive step an organization can support to facilitate effective, planned patient flow. Considerable opportunity to build discharge planning processes exist for AVDHA.
- Key challenges for discharge planning include:
- Available data not considered accurate to assist in planning. For example, long term care statistics are not accurate, or target LOS are not applied or available.
- Focus on discharge planning has been centred around long-stay patients versus the patients that stay one to day extra days.
- ALC patients stay so long in the hospital that they de-compensate. This was noted as an injustice since patients did not get the "nursing home stimulation" but were in some situations required to pay the co-payment fee
- With 50-66% of elective patients not attending PAC, the opportunity to start discharge planning prior to the patient entering the hospital is lost.

Recommendations for Consideration re: Patient Flow Processes at VRH:

1. Redesign the patient flow processes to streamline activities for PAC visits to ensure more patients can be managed through the clinic in a more efficient manner. Need to investigate alternative PAC appointments and service delivery models (e.g., PAC lite appointments via telephone). Need to call patients in advance of an appointment as no-shows is an issue for the PAC. Need to identify means to more tightly link pre-anaesthesia activities with PAC.
2. Review and redesign patient scheduling processes to ensure appropriate functionality and policies and procedures are established. Evaluate and select mechanisms to improve patient flow and queue management. Review patient flow process for MDU and eliminate the unnecessary registration steps. Develop a policy and procedure explicitly identifying required information for registration. Implement system-based tools to track and monitor ALC or pending-ALC patients.
3. AVDHA must develop a policy and strategy for the timely discharge of patients. Discharge policies and processes must be formalized and receive a high-level of attention from administrative and clinical leadership. Policies must also be effectively communicated to patients by nurses and start prior to the patient entering the hospital for elective patients using the PAC. Discharge management staff must work with clinical areas to support education, awareness and support of the discharge policies and processes. Tools and reports must be developed to support the discharge planning process and to track the progress and impact the organization makes on timely discharge. Adoption and adherence mechanisms must be developed to reward those participants who support the discharge policies and processes, and address individuals who are not adhering to the policies. Utilization Committee will be responsible for reviewing discharge statistics and reports on a monthly basis, identifying and approving recommended changes to the process and/or policy, and providing a report to senior leadership quarterly. The Committee will work with Discharge Planning to identify key limiting areas and to develop strategies to address.

Professional Practice Issues

Nursing:

RNs at AVDHA generally report that their working environment is good, although they have increasing concerns regarding workload, patient acuity and general need for ongoing professional development. Some of the specific issues that the staff raised in team meetings and the focus group include:

- AVDHA has a CNO role in place (this is somewhat unique within Nova Scotia), and also differs from models elsewhere in the country where the CNO is a “staff role”. The CNO at AVDHA has line responsibility for operations and is a separate management layer between front line leaders and the VP, Clinical.

- AVDHA also appears to have a more robust support structure than most DHAs (e.g. Clinical Resource Nurses, Clinical Leaders), which we applaud. The DHA also appears to have invested more in management/leadership development of the nursing leaders, although we note they have no managerial roles in place on evenings and weekends, which we would suggest should be re-considered.

LPNs report more concerns about the work environment, and continue to desire to have their roles defined at full scope of practice. Some of the specific issues that the staff raised in team meetings and the focus group include:

- New LPNs feel that they are not being allowed to use the competencies they have and they do not feel that they have administration’s support to move to full scope (see administration as heavily favouring RNs). The LPNs feel they need a positive tone from the leadership of the hospital.

- Staff describe situations of conflict with the RNs, especially in units where the LPN has been replaced by an RN, but is still used to cover breaks ("if we are good enough to cover meal breaks, why did we need to be replaced")

Equipment is a huge issue for both RNs and LPns, with staff reporting that there is not enough and what is there is old or not working well.

Recommendations for Consideration re: Nursing Issues at VRH:

1. There appears to be a general need to engage front line staff in some team building. This will be essential if AVDHA decides to pursue model of care redesign. There should be an overall move to respecting all providers throughout the entire facility to foster an increase in work satisfaction.
2. AVDHA needs to be more proactive at getting the LPNs working to full scope and do some education with the RNs to redefine their roles once this happens.
3. Senior leadership may want to work on being more visible and accessible to this group of staff.
4. Front line managerial roles may need to be expanded (evenings and nights).

Allied Health Staff:

There are numerous common themes surrounding allied health in all DHAs – with a general sense that this group could be expanded (in terms of numbers of staff available to support care delivery), but there are not enough resources available to support this move. Some of the specific issues raised at AVDHA include:

- Human Resources: General feeling that there are not enough numbers of allied health staff (in all areas) to do the jobs required. Clerical support is an issue.
- Education: Education for this group is seen to be lacking.
- IT: Meditech has been a workload issue. Staff also note that it can lead to missed referrals for Allied Health because not all staff have access to and/or use the system. Some referral processes continue to be paper based.
- Space: Lack of adequate space for allied health was flagged as a major issue.

Recommendations for Consideration re: Allied Health Issues at VRH:

1. Review professional roles and consider adding more clerical and support roles to assist with care delivery and routine administrative tasks.
2. Review potential for allied staffing to be leveraged and deployed differently within care delivery models.

Medical Staff:

AVDHA (like other sites in Nova Scotia) continues to struggle with recruitment issues, although we note that AVDHA appears to have had more success than other DHAs. The main Human Resources problem is GP staffing of ERs in Annapolis and Middleton. Recruitment of specialists is not reported to be a major problem.

The medical staff structure at AVDHA is unique (when compared to DHAs outside of HRM). The model is a VP and Chiefs at each hospital. Most DHAs only have one Chief. The AVDHA also appears to have a more robust Departmental structure than most DHAs

AVDHA has successfully consolidated many programs (e.g. surgery and OBS), but there continues to be some residual resentment at the smaller sites.

Other major issues identified by medical staff: Impending call crisis – there have been DOH meetings, but no action; No overall provincial manpower plan; Problem with ICUs – physicians are not salaried appropriately for work involved; and there are a few nurse practitioners working with GP's. This likely should be expanded.

Utilization management (UM) has been described previously as an overarching issue across the province. AVDHA appears to be doing better than other DHAs, which make relate to the Quality/UM Coordinator (who members of the medical staff say has been very helpful). This DHA also has had success in getting pathways in place for some patients.

Recommendations for Consideration re: Medical Staff Issues at VRH:

1. Continue to work with DOH to develop sustainable funding models for physician recruitment and coverage, especially for Primary Health Care and Rural Health.
2. Review medical staff structures to ensure that it continues to be an appropriate leadership model.

Infrastructure and Support Services

In most DHAs, we found that the support service and corporate functions are either resourced in accordance with nationally accepted benchmark levels. In many cases, we actually found that these areas are under-resourced, which contributes to many of the challenges associated with professional performing non-professional tasks. For this reason, efficiency opportunities have not been identified and findings are minimal for many services. In addition, some of these services have been discussed in the system-wide section, so they are not re-stated here. That being said, we believe that AVDHA, like other DHAs, needs to invest in key roles such as Decision Support and Information Management to support future decision making.

Financial Services

DHA 1, 2 and 3 continue to operate within a Shared Services Model for Finance. While we have recommended that a shared model be expanded province-wide (e.g. using SAP as a baseline), there are some immediate issues that may require attention in these DHAs.

Recommendations for Consideration re: Financial Services:

1. DHAs 1, 2 and 3 should commit to continuing the shared service model until a province-wide model is developed.
2. DHAs 1, 2 and 3 support a facilitated session for the shared service director and the DHA CFO's/Director of Finance to address issues with their collective relationship.
3. The shared service model needs to be restructured so that the "shared" part is all of the transaction processing and that the DHA's have dedicated staff (number to be determined) who will deal with budgeting (both financial and service), monthly variance analysis using information from the financial operations side, forecasting, and customer service.

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The review of governance found that AVDHA is generally quite strong, although there are likely some opportunities to more formally address processes surrounding evaluation and effectiveness. From a DHA perspective, the relationship with the Community Health Boards (CHBs) is described as very

positive and the DHA is to be commended for the role that it has played in helping to support the CHBs.

In addition, we note that the DHA has been very focused in developing positive relationships with its Foundation and Auxiliaries. These groups are important strategic partners and we commend the DHA for its efforts surrounding these relationships.

Recommendations for Consideration re: Governance

1. We recommend development of more formal annual evaluation processes for the Board itself as well as evaluation mechanisms for individual Board members.
2. We recommend that the Board continue its work in building stronger relationships with the Foundations that raise funds for its communities and hospitals.
3. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 4: COLCHESTER EAST HANTS

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care
- Community Health Centres
- Community Hospitals
- Regional Hospital
- Infrastructure and Support Services
- Governance / Leadership

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services.

In its 2007 Report to the Community, Colchester East Hants has identified key population health issues facing its community and outlines the work that is underway to address some of the local needs. The PHSOR Review Team commends the DHA for this work and encourages the DHA to continue to build relationships with its community partners to develop innovative programs for the community.

The PHSOR Team also notes that the DHA has had success with the Primary Health Community Health Nurse model and commend the DHA for securing ongoing funding for this service.

The Five Community Health Boards in CEHHA have identified priorities for the local population. The summary of priorities is as follows:

- Along the Shore CHB: Increasing awareness of health services and how to access them and lobbying for more outreach services.
- East Hants CHB: Among the priorities identified by the East Hants CHB is the creation of teen health centres in Hants East and Hants North Rural High Schools.
- North Shore Area CHB: Improving programs and services for seniors is a major priority of the North Shore Area CHB.
- South Colchester CHB: Recreation continues to be an area that needs addressing in order for individuals to maintain a healthy and active lifestyle.
- Truro & Area CHB: Encouraging and promoting physical activity and healthy eating within their community health board area, in order to reduce obesity and other diseases, is the number one priority of the Truro & Area CHB.

DHA specific recommendations for CEHHA, based on our on-site assessment, are outlined below.

Recommendations for Consideration – Re: Primary Health Care:

1. Work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health and Primary Health Care Strategies).

2. Confirm organizational structure/model for Public Health (as part of ongoing implementation of Public Health Renewal).

Community Health Centres

Public Health Services, Addiction Services, Mental Health Services, blood collection and other ambulatory services have been offered throughout East Hants for many years, however these services have been offered from different locations without a coordinated approach.

The East Hants Resource Centre opened in Summer 2005. This facility offers the residents of East Hants a focal point for health services where they can access a range of health services under one roof and gives health care providers in the centre a greater opportunity for collaboration. The centre now combines the following health services:

- Addiction Services
- Public Health Services
- Blood/specimen collection
- Diabetes Centre Clinic
- Mental Health Services
- Electrocardiograms
- Spirometry Clinic

The PHSOR recognizes the need to expand community health centres across the province. With that in mind, the East Hants Resource Centre should continue to be the focal point for delivery of community-based services for the local population. Outreach services could also be developed at this site for Colchester Regional Hospital and hospitals in Halifax (IWK and QEII). This resource centre model should also be considered along with others (i.e. Cobequid) when expanding community health centres across the province.

Recommendations for Consideration – Re: Community Health Centres:

1. Continue to explore services that can be co-located at the East Hants Resource Centre to expand the programs that can be provided locally. This should include primary health care services as well as outreach/ambulatory programming that will allow citizens to access follow-up care locally.

2. Consider expansion of Community Nurse or NP models at this site.

Community Hospital

As with many rural hospitals in Nova Scotia, themes across the province are similar and involve access to staffing, technology and infrastructure demands, an aging population base and the increasing demands from community to maintain local specialized services despite declining populations. The Lillian Fraser Memorial Hospital, located in Tatamagouche provides the following services:

- 10-bed inpatient Medical Unit for short stay acute. Baseline staffing for the unit calls for 2 RNs and 1 LPN (24/7). This seems excessive for a ten bed unit with an average daily census of 8.14 patients (some of whom are ALC).

- ED is available 24/7 with physician on-call. Nursing dedicated for 8 hour day and nursing shared with acute unit during nights.

- Diagnostic Imaging on site between 8:00 – 16:00 p.m. daily.

- Lab operates between 8:30 - 11:30 a.m. Monday to Friday by appointment. Services provided on-site include: blood/specimen collection; chemistry, hematology, urinalysis and coagulation. Other samples are sent to the Laboratory at Colchester Regional Hospital for testing.

- ED is available 24/7 with physician on-call. Nursing dedicated for 8 hour day and nursing shared with acute unit during nights.

- Clinics include: Diabetes, Obstetrics, Perinatal, PT, Surgical, VON Foot Care. Lillian Fraser Memorial Hospital provides nearly 2000 scheduled outpatient services a year. Registration is staffed 08:00 – 20:00.
    - At this time, there is a $3M renovation planned for this facility. The renovation will reportedly improve lab services, consolidate patient care beds and expand outpatient services. EHS is also planning to build a new site adjacent to the hospital with a relocation of air evacuation services from the local airport.

Recommendations for Consideration at Lillian Fraser:

1. Recommend further review of baseline staffing requirements. With regard to staffing issues, the hospital's baseline staffing calls for 4 RNs/LPNs during the day to support a 10-bed inpatient unit and the ED. This is very high when compared to other hospitals of similar size in the province (e.g. most small sites use 2 staff (24/7) and supplement with one RN on days for 8 hours).

2. Recommend a formal re-designation of inpatient beds. The hospital identifies the beds as "acute", but it seems that they are a mix of ALC, convalescent and sub-acute. Confirming the mix may provide an opportunity to revisit staffing levels and reduce by one RN on days.

3. Recommend collaborative planning with CHA to ensure that the required mix of services are available between Lillian Fraser and Pugwash to meet the needs of the residents of (and visitors to) these communities. Both communities face the same challenges surrounding human resources and some joint programming may be beneficial. Furthermore, Lillian Fraser is scheduled to undergo some redevelopment while the facility in Pugwash will need redevelopment in the future. Redevelopment planning for both should not happen in isolation and should consider opportunities for innovative program planning.

Regional Hospital: Colchester Regional Hospital

Inpatient Services:

The analysis of inpatient services at Colchester Regional Hospital suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for Medicine, Surgery and Critical Care are summarized in the table below.

DHA 4: Colchester Regional Hospital								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
Medicine	30	5.00	4.64	5.43	6.54	**- 0.36**	**- 0.79**	Staff report that up to 40% of beds are ALC. Cohorting is being pursued. Target for Geriatric unit has been adjusted to relfect the significant number of ALC patients. Significant HPPD for MOS and UPP Other needs to be reviewed.
Geriatrics	22	5.11	3.76	5.79	7.29	**- 1.35**	**- 2.03**	Baseline plan is very high , especially given the fact that 5 beds are VAC. Actual HPPD significantly higher than the 30 bed unit. Staffing across these two units needs to be reviewed. Significant HPPD for MOS and UPP Other needs to be reviewed.
Surgical	24.9	4.78	5.16	6.76	8.02	**0.38**	**- 1.60**	Beds reflect adjustment for weekend closure. Actual staffing very higth compared to baseline and target. Baseline is below target. Significant HPPD for MOS and UPP Other needs to be reviewed.
ICU	7	13.91	14.23	17.39	19.12	**0.32**	**- 3.16**	Baseline plan calls for 4 RNs (24/7) for seven beds. Actual staffing however is running significantly above baseline
CCU	4	13.24	13.24	14.89	14.92	**-**	**- 1.65**	Baseline plan assumes 2:1 staffing ratio which is appropriate. Should consider combined unit and revisit bed numbers as average daily census in CCU is 2.34 (7.9 for both ICU and CCU)

Other inpatient comments are as follows:

- **Critical Care** – PHSOR Review Team notes that CRH has a split unit (7 ICU and 4 CCU beds). We encourage the DHA to review the need for 11 beds and consider alternate models.
- **Maternal/Child** - program needs to be reviewed as part of provincial review. CRH has the second highest average cost per patient day for its obstetrical unit (per DOH statistics). Cost structure needs to be reviewed.
- **Mental Health** – no target set, needs to be addressed as part of provincial bed map process.

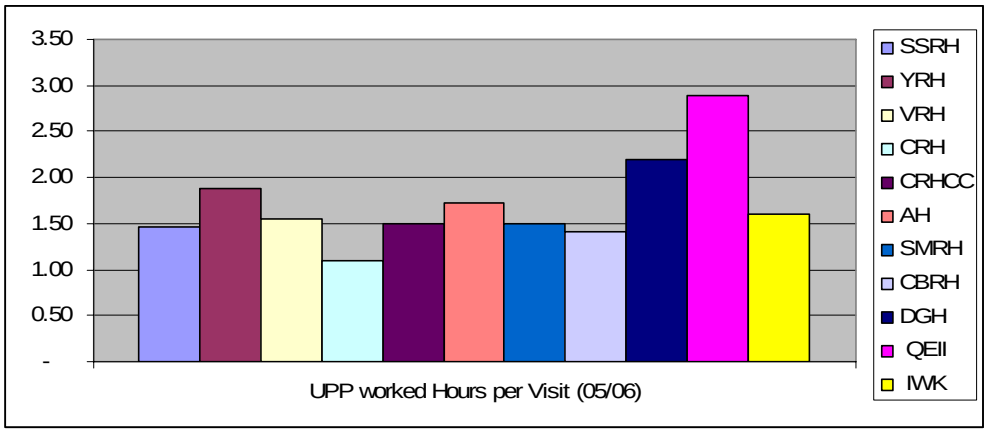
Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units (using baseline staffing as target for the ICU) suggest that a total of 34,000 hours could have been saved in 2005/06.

Recommendations for Consideration re: Inpatient Services at CRH:

1. Reduce baseline staffing on Medical and Surgical units to reflect targeted ratios.
2. Review Critical Care staffing practices to determine what changes can be made to reduce actual hours per patient day.
3. Review MOS and UPP Other hours for all units.
4. Review Maternal/Child costs and staffing practices.

Emergency Department:

Patient volumes in 2005/06 were 35,113 visits and 384 patient days. This translates to an average daily volume of 96 visits (4th highest in NS) and 1.1 admitted patients (2nd lowest in NS). At these volumes, the ED at CRH operates with an average of 1.10 Hours of Care per Patient Visit, which is the lowest in the province (see chart below), although the hospital does use RT in the ED at times (a practice that appears to be unique to CRH).



The facility is a major barrier for efficient and effective care in the ED (as it is for most programs and services delivered at CRH). Proximity of the Department to the Ambulatory care area and main Entrance is seen as one of the biggest problems. It was also noted that privacy is an issue throughout the department and that a general lack of isolation rooms presents a potential infection control issue. Unfortunately, the facility issues cannot be addressed in the short term and will be dependent on the construction of the new hospital before it can be fully resolved. That being said, the unit is considering some short term solutions, most notably a change in practice surrounding triage and registration.

Another key issue in the ED is the management of the mental health population. This is a complex problem involving community partners, mental health staff, psychiatrists and the ED staff. The mental health service had, at the time of the review, recently initiated a crisis service and this was seen to be a positive move by everyone, but it was noted that the service needs to be extended to provide coverage over the entire weekend.

An issue that was raised by EHS and hospital staff is the hospital's policy of requiring staff to go with EHS for transfers, even if an paramedic with advanced training is available.

Recommendations for Consideration re: Emergency Department at CRH:

1. Review staffing practices that requires an RN from the ED to accompany ambulance transfers.
2. Revisit staffing models and consider increased staffing that would lead to Hours of Care per Visit that is more in line with provincial averages.

Ambulatory Care

General Clinics:

During PHSOR, consultants typically met with a sample of the ambulatory care programs and teams to determine if national trends applied to the local context.

At CRH, the ambulatory care portion of the review focused on the Medical Day Unit, the perinatal clinic and includes input from the general focus group with allied health staff. General findings include:

- Some concerns were identified re: safety and risk were noted, including inappropriate storage for the medication carts and lack of monitoring equipment for cardiac monitoring.
- Inadequate space for the services as they have evolved, leading to privacy and confidentiality issues. We also noted that some procedures (e.g. wound care) are being undertaken in less than ideal space.
- Lack of appropriate clerical supports, which leads to the use of professional staff for non-professional activities/functions

- Significant growth in volume without a commensurate growth in resources

Recommendations for Consideration re: Ambulatory Care at CRH:

1. Confirm strategic vision for ambulatory care and review current programs to determine if they align with the stated vision
2. Complete a focused review of staffing roles and responsibilities and consider adding clerical resources and possibly additional professional staff time.

Relief Staffing Processes (Nursing)

Across the DHAs, the issue of short call relief was a common theme. While many DHAs have float pools which, in theory, are available to address short call relief requirements; the staff in the float pools are often scheduled to cover planned absences from the unit (e.g. vacations). This results in insufficient staff for the short call relief needs, which in turn, leads to a need to use overtime. Additional full time float pool positions are being used effectively in some organizations to support the need for short call relief; however, CRH has had difficulty filling current float pool positions, so additional postings may be ineffective.

Recommendations for Consideration re: Relief Staffing Processes at CRH:

1. Review float pool model to determine how it might be redesign to make it more attractive for recruitment. Options to consider include posting unit specific positions.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage CEHHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTs being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at CRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory:

CEHHA operates lab services at both CRH and LFMH and has blood c\ollection at East hants Resource Centre. The Lab at CRH operates 24x7 at Colchester and has early morning collection operations from 6:30am to 1pm weekdays except holidays. As a result, the lab experiences a very high volume rush early in the morning. Some key findings associated with CRH Laboratory Services include:

- There has been a rapid turnover of techs. This has resulted in significant workload to train and mentor staff. There was also a noted issue around pending retirements that will leave lab services in a crisis. In the next 1-2 years, the manager is expected to retire and there is no immediate plan for how to deal with this issue.
- The lab currently leverages MLAs however noted that they are not used to full scope. It was discussed that there is an opportunity to expand scope as a strategy to help manage the HR shortages in addition to better leveraging the skills and improving job satisfaction of all resources
- The lab is interested in investigating point of care glucometer testing to be conducted by nursing. Lab views the point of care testing to be a positive move however there is a need to ensure processes are in place to ensure effective and appropriate use and management of equipment.
- There appears to be unnecessary and excessive usage of STAT tests which must be managed. There appears to be a lot of confusion regarding the appropriate ordering of STAT tests, which will require an education and communication strategy.

Recommendations for Consideration – Lab Services at CEHHA:

1. CEHHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning should reflect provincial changes.
2. An assessment of HR challenges should be drafted and presented to senior leadership at CEHHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model. Senior leadership will work with the department and HR to address.
3. Laboratory leadership to develop a plan for ensuring MLT and MLA staff are operating at full-scope of practice. Where required, internal and external education supports should be used to bring staff up to scope of practice.
4. The Policy and Procedure for STAT test ordering should be reviewed and amended to ensure appropriate usage. STAT ordering should also be monitored over a period of time to assess if practices have changed, and where required, appropriate actions taken for individuals not adhering to policies.
5. CEHHA to investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).
6. CEHHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

Diagnostic Imaging:

Medical imaging services at CRH are provided from 8am to 4pm Monday to Friday with on-call coverage 7 days per week during off hours. Some of the key findings associated with CEHHA Diagnostic Imaging Services include:

- The department is generally located next to emergency providing good access. DI Services uses hospital-wide porters to move patients however there are situations where the techs would support transport to the ED.
- DI Services also uses the central-wide scheduling service of the hospital. It was noted that this seems to be working well. The NShIS has made progress through their EMR implementation for results reporting, and the ITS (RIS) is noted to be working well.
- The department has noted challenges in staffing and would like to see a larger casual relief pool. They also have had pending decisions that are awaiting DoH approval for (e.g., Mobile Breast Screening vehicle has been requested to increase services to other DHAs but there is a concern regarding funding, and awaiting a decision on the Digiguide core biopsy question).
- The most significant challenges facing Imaging Services is the availability of trained resources in the many diagnostic modalities.

Recommendations for Consideration – D.I. Services at CEHHA:

1. CEHHA must develop effective tools to assist in planning and preparing for any staffing shortfalls.
2. CEHHA needs to investigate issues and develop a capital equipment acquisition and replacement plan.

Pharmacy:

At the time of the review, CEHHA had been very successful at attracting and retaining pharmacy staff. Staff include: 4 staff pharmacists, 2 pharmacy managers (including 1 pharmD), 6 pharmacy techs (currently in the process of recruiting 1 additional tech). The Tech staff enter orders, pharmacists verifies distribution, and tech checks – this is viewed as a very good model that effectively utilizes pharmacy techs.

CEHHA uses pharmacists for a number of functions in addition to their traditional dispensary role. The include assignments to: Critical Care (PharmD 0.2 FTE), off service patients on Surgery) 1 FTE), 4E/4S Medical Unit (1 FTE), Pharmacy Special Projects and ED Reconciliation (1 FTE), and Drug Distribution responsibilities (1 FTE).

Some key findings associated with CEHHA Pharmacy Services include:

- Morning orders are prioritized, entered, dispensed and distributed very early in the morning. This process seems to work well. Medication orders are faxed in.
- Medication distribution is working well. Scheduled distribution runs at 11am, 1:30pm, 3:30pm, and 4:30pm by pharmacy techs. Stat runs completed by Porters before 8am.
- Some medications are stocked up in “personal unit stashes”. This creates problems with counting inventory and look-alike products. Need to develop a strategy to address.
- Meditech as an auto refill system is not working. Orders are not triggered appropriately.
- Pharmacy-Nursing liaison appears to be working well.
- P&T group meets monthly and tries to base decisions on evidence-best practice.
- Currently, CEHHA is not using point of care bar coding/scanning medication administration.
- MAR has been redesigned which has improved function and also reduced errors.

Recommendations for Consideration – Pharmacy Services at CEHHA:

1. CEHHA must actively participate in the System-Wide Pharmacy Redesign Initiatives and consider implications of provincial changes within DHA #4.
2. CEHHA should complete an assessment of HR challenges and present this to senior leadership. This report should clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages.

Focused Discussion re: Patient Flow

Patient flow is a critical issue in Canadian hospitals and as such, efforts were made probe issues related to flow in more detail. To understand patient flow challenges at CRH, the patient journey was assessed based on a walk-through of the facility and a series of targeted interviews and meetings with key front-line staff and stakeholders. As a result, the following high level observations were noted:

Privacy in Registration Areas. Most of the registration areas are affected by issues related to privacy and confidentiality, and space congestion challenges. These issues should be managed as best as possible under the current physical location until the new facility has been constructed.

Resource Facilitator Role. The resource facilitator and administrator on call roles are not working effectively. As a result, the organization seems to be in a constant situation of flux. While key areas work hard during the days to manage flow effectively, resource facilitators and administrators on call do not appear to be equipped with the tools and information to support effective patient flow during the evenings and weekends. As a result, patient flow and system efficiency reduce during non-core hours creating challenges for day staff. Greater coordination is required.

Repatriation. It was noted that there is a reluctance to receive patients back from surrounding DHAs which creates challenges when CEHHA attempts to repatriate patients from CEHHA. There needs to be an improved ability to identify, track and initiate decisions between leadership at DHAs to support movement of patients. For example, long stay patients from other DHAs that can be safely transferred back to their home community should be tracked and discussed between chiefs of staff to ensure and enable discussions between chiefs to discuss and resolve issues.

Access to LTC Beds. Due to the high volume of ALC beds (estimated between 25-35%), there is a need to obtain quicker access to LTC beds or to designate transitional care beds. However, in light of the many challenges with accessing LTC beds, it is important for providers to effectively track and monitor the ALC patients, and ensure that a clear plan for managing these patients is developed.

Holding Beds. Patients returning from receiving an emergency cath in Capital DHA, have their bed saved for them until they return. The estimated volume is 1-2 cases per week. As a result, a patients bed is held empty.

Discharge Planning. The discharge planning function and role is a critical, proactive step an organization can support to facilitate effective, planned patient flow. Discharge planning at CEHHA is supported by social work and utilization management. Their focus is primarily complex discharge planning situations by working both within the hospital and with continuing care to find resources. Some of the progress CEHHA has made towards discharge planning include:

- The organization has taken steps to raise awareness about timely discharge. The organization, in the last three months, have put up signs informing staff and patients of the 11am discharge policy. This is a positive action. Follow-up monitoring of the impact of the signs on timely discharge should be conducted.
- There has been progress made with the discharge planning process. We believe that this is a good start that must be further built upon. Specifically, clarity around organizations strategies for discharge planning must be well understood by all staff, mechanisms (e.g., policies and procedures) be established to ensure adherence, and tools be developed to assess compliance (e.g., discharge summary reports).

- There is also a Utilization Committee. There was not sufficient time to clearly understand the role and function of this Committee. Need to investigate validity of available data and determine what reports should be created.

Key challenges for discharge planning include:

- Available data not considered accurate to assist in planning. For example, long term care statistics are not accurate.
- People are not getting placed in home area due to no beds. This results in considerable stress for the patient and the family due to relative distant moves (<100km).
- ALC patients stay so long in the hospital that they de-compensate. This was noted as an injustice since patients did not get the "nursing home stimulation" but were required to pay the co-payment fee.
- The assessment takes too long to obtain. Patients may wait in hospital 1-2 weeks.
- No social workers in emergency department.
- Need to decant the system but there is no where to send patients. Need to look into innovative community based options to support improved flow. This was noted as being investigated however uptake was considered very slow.
- Hospital leadership appears to have established guidelines that limit the repatriation of patients that are at other hospitals. This results in a corresponding difficulty in repatriating non CEHHA patients back to their home community.

Access to Continuing Care. Timely access to continuing care is also an important consideration for patient flow. Such timely access (utilizing an efficient process) ensures minimal social worker and/or nursing time is spent managing the administrative process to ensure beds can be made accessible sooner.

At CEHHA, the process for accessing continuing care starts with a request by a physician, nurse, patient or family member requesting support, a form is completed and faxed to a centralized 1-800 number, the form is routed to one of two Continuing Care Coordinators located within the hospital, an assessment is conducted and patient classification occurs (possibly within 1-2 weeks), financial assessment is completed, and an approval decision is completed.

Key access challenges include:

- Any request made after 2:30pm will not be addressed that day. Weekends also create a gap in service.
- There are times when VON support is not available.
- There is a long waiting list for home support however nursing access is pretty good.
- It was noted that CEHHA has the smallest number of LTC beds per population, a fact that has been recognized in the Continuing Care Strategy

Recommendations for Consideration re: Patient Flow Processes at CRH:

1. Review current workspaces and identify immediate solutions to improve privacy and confidentiality of registration areas. Note: identified solutions should be reviewed with the knowledge of the new upcoming facility. CEHHA must ensure design and layout decisions for the new facility take into account management of the space, privacy and general patient flow issues.
2. Redesign the Resource Facilitator role to ensure effective patient flow, appropriate utilization of clinical resources, and coordination with day leadership. As part of the redesign, need to consider who the facilitators should report to, requirements and investments for training and education. Assess whether a Nursing Night Coordinator/Supervisor model should be implemented.

3. CEHHA to develop, communicate and implement a repatriation policy clearly outlining their position on repatriation, and to work with other DHAs to gain support for implementation. CEHHA to develop a report to monitor patients who may be ready for repatriation, and to have the Chief of Staff review the report on a periodic basis (e.g., every week or bi-weekly).
4. CEHHA to develop an ALC report to monitor all patients on the ALC list, and awaiting placement on the ALC list. This list should be reviewed periodically by clinical and administrative leadership to support pro-active management.
5. CEHHA to continue to review alternate arrangements/options to the "holding-bed" policy Capital DHA.
6. CEHHA must develop a policy and strategy for the timely discharge of patients. Discharge policies and processes must be formalized and receive a high-level of attention from administrative and clinical leadership. Discharge management staff must work with clinical areas to support education, awareness and support of the discharge policies and processes. Tools and reports must be developed to support the discharge planning process and to track the progress and impact the organization makes on timely discharge. Adoption and adherence mechanisms must be developed to reward those participants who support the discharge policies and processes, and address individuals who are not adhering to the policies.
7. The Utilization Committee to be responsible for reviewing discharge statistics and reports on a monthly basis, identifying and approving recommended changes to the process and/or policy, and providing a report to senior leadership quarterly. The Committee will work with Discharge Planning to identify key limiting areas and to develop strategies to address.
8. CEHHA to investigate options for building interim capacity re: transitional care beds.
9. CEHHA to undertake a review of processes, policies, and timeliness for accessing continuing care services should be conducted to identify opportunities for redesigning processes to improve timely access to services, and where possible, service level agreements relating to services be developed. As a result, modified policies and procedures should be distributed and communicated to ensure a clear understanding for how services are to be engaged.

Professional Practice Issues

Nursing:

RNs at CEHHA who attended the focus group generally describe a working environment that is not as rewarding as it could be. This appears to be consistent with information presented in the Report to the Community regarding the staff satisfaction survey. One of the biggest issues raised to the review team was related to significant ongoing concerns about overtime, sick time and planned vacation time. Staff suggest that they can be ordered back to work on overtime and can be ordered in on scheduled vacation days ("if you have a day booked off, you are expected to call in at 0500 and confirm that you can still have the day off"). This has led concerns that it is not always necessary and not always appropriate to order people back.

LPNs have concerns about the need to move their practice to full scope, a move that, at the time of the review, had occurred on one unit, but not others. LPNs feel that they could be full scope in other areas, but note a general perception that some barriers have been put in place for them to move to full scope and that some barriers may be artificial (e.g. IVs).

Staff also report that they would like to have access to more hands-on, front line leadership. This issue has been discussed previously in this report. They would like to see nursing supervisors in place on evenings and weekends (which is consistent with a recommendation made previously in this report).

Nurses also feel they are not allocated enough educational time every year (reported to be one 8-hour day per year). This needs to be something that is handled consistently in all DHAs and we encourage CEHHA to confirm if their practice is consistent with provincial standards.

Recommendations for Consideration re: Nursing Issues at CRH:

1. There appears to be a general need to engage front line staff in some team building. This will be essential if CEHHA decides to pursue model of care redesign. There should be an overall move to respecting all providers throughout the entire facility to foster an increase in work satisfaction.
2. CEHHA needs to be more proactive at getting the LPNs working to full scope and do some education with the RNs to redefine their roles once this happens.
3. Senior leadership may want to work on being more visible and accessible to this group of staff.

Allied Health Staff:

There are numerous common themes surrounding allied health in all DHAs – with a general sense that this group could be expanded (in terms of numbers of staff available to support care delivery), but there are not enough resources available to support this move. Some of the specific issues raised at CEHHA include:

- Human Resources: General feeling that there are not enough numbers of staff to do the jobs required. Clerical support is an issue.
- Space: Not enough office or teaching space
- Working Environment: Staff describe a general work environment that is very hierarchical, which is viewed as a limiting factor for the professional groups as decision-making can take a very long time.
- Multidisciplinary Teamwork: There appears to be a division between nursing and allied health staff that needs to be resolved in the interest pf patient care.

Recommendations for Consideration re: Allied Health Issues at CRH:

1. Review professional roles and consider adding more clerical and support roles to assist with care delivery and routine administrative tasks.
2. Review potential for allied staffing to be leveraged and deployed differently within care delivery models.
3. Pursue team building between allied health and nursing.

Medical Staff:

CEHHA (like other sites in Nova Scotia) has struggled in recent years to maintain staffing levels within core groups of physician specialties. This is a larger system level issue that needs to be addressed through a provincial planning initiative that will lead to agreement on a core services framework and may lead to provincial models for physician remuneration (thus reducing – if not eliminating – the current amount of competition between DHAs for the same pool of physicians and surgeons).

We note CEHHA has moved to a collaborative model with other DHAs to provide Radiologist coverage. This model should be continued and its applicability in other areas should be explored (e.g. sub-specialty programs may be able to share resources across DHAs and provide coverage for elective services in more than one DHA or provide outreach programs to one another).

Utilization management (UM) has been described previously as an overarching issue across the province. CEHHA, like all DHAs, needs to define its expectations for physician participation in UM improvement and monitor behaviour to ensure that physicians are participating appropriately.

The DHA has engaged an external consultant to assist with some of the relationship issues between physicians and management. This work needs to be continued. One issue that needs further

exploration is the potential for co-leadership models that formally engage physicians in management functions

Recommendations for Consideration re: Medical Staff Issues at CRH:

1. Continue to work with DOH to develop sustainable funding models for physician recruitment and coverage, especially for Primary Health Care and Rural Health.
2. Review leadership/management structures to determine if co-leadership structures would be an appropriate leadership model.

Infrastructure and Support Services

In most DHAs, we found that the support service and corporate functions are either resourced in accordance with nationally accepted benchmark levels. In many cases, we actually found that these areas are under-resourced, which contributes to many of the challenges associated with professional performing non-professional tasks. For this reason, efficiency opportunities have not been identified and findings are minimal for many services. In addition, some of these services have been discussed in the system-wide section, so they are not re-stated here.

Decision Support

It is our view that Decision Support is a critical supporting function and resource for provider organizations, and must be invested at both the local and provincial levels to support effective and timely decision making. The decision support department at CEHHA was established approximately three years ago. The group was formed by "cobbling" resources and expertise together from existing staff – this progress should be applauded. During this early start up phase, Decision Support has focused efforts on building a report card that is primarily used by senior level leadership. The report is a very good tool to present findings and overall trending over time for a number of key areas in conformance with accreditation standards. Some key findings for CEHHA Decision Support Services include:

- Key users of decision support reports are senior level leadership. This includes both the report card as well as a number of ad hoc queries. The senior leadership have been very supportive of the development of DSS and have recently included DSS as part of a monthly meeting.
- While there is a decision support presence, most of the related work is managed by one individual. To build necessary capacity, required skills and number of staff should be assessed.
- Need to leverage DSS to create routine reports that help staff, management, physicians and leadership to understand key challenges associated with discharge management. To support this learning process, education strategies must be developed. While reports are being used to make key decisions, there is a need for detailed reports to support day-to-day decision making. For example, for high volume clinical activity perceived to have broad variation in LOS, develop a report, by physician that shows variation so a decision can be made as to whether further analysis and possibly development of a protocol should be pursued.
- As part of this "getting the information out there" process, there is a corresponding need for increasing the degree and level of education to support uptake and usage of information. This will require efficient and quick access to data, supporting education programs, and the resources to complete reports in a timely basis. We believe that this will be part of the next stage of development for DSS.

Recommendations for Consideration re: Decision Support Services:

1. CEHHA to continue to develop its DSS functions to support strategic management.

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The review of governance found that CEHHA is generally quite strong, although there are likely some opportunities to more formally address processes surrounding evaluation and effectiveness. From a DHA perspective, the relationship with the Community Health Boards (CHBs) is viewed as needing to be strengthened and needs to be a priority for the Board on a go-forward basis.

There was some concern expressed about the ability of the community to raise required funds to support the capital campaign, yet we note that this requirement appears to be consistently applied across all DHAs.

There was also some concern expressed at the time of the review about the need for Joint Conference Committee mechanisms to enhance communication with the medical staff. We note that this has since occurred.

Recommendations for Consideration re: Governance

1. We recommend further development of formal annual evaluation processes for the Board itself as well as evaluation mechanisms for individual Board members.
2. We recommend that the Board undertake focused work to build stronger relationships with the Foundations that raise funds for its communities and hospitals.
3. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 5: CUMBERLAND

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care
- Community Health Centres
- Community Hospitals
- Regional Hospital
- Infrastructure and Support Services
- Governance / Leadership

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services.

On March 9, 2004, the Board of Directors of the Cumberland Health Authority approved a strategic plan designed to guide the planning and decision making of the organization through the fiscal year 2005-06. Work is underway to develop implementation and action plans to meet the following organizational goals:

- Strategic Direction #1 - Human Resources: To ensure the successful recruitment and retention of skilled and dedicated health personnel to effectively meet the health and health service needs of our residents and maintain consumer confidence.

- Strategic Direction #2 - Promotion of Health: To improve the health of our communities through ensuring the planning and delivery of health promotion activities and initiatives in the CHA.

- Strategic Direction #3 - Integration of Services: The Cumberland Health Authority will provide leadership in ensuring a comprehensive, coordinated and integrated continuum of health services

- Strategic Direction #4 - Access to Quality Health Services: The CHA will provide an appropriate range of quality health services to all citizens.

The PHSOR Team applauds the work that the DHA has pursued with regard to its collaborative practice models and nurse practitioner programs that have developed through rural health networks. The Cumberland South Rural Practice Network is just one example of an innovative initiative designed to provide primary health care service to three rural communities in northern Nova Scotia. It aligns extremely well with all of the directions outlined above and demonstrates strong leadership from the Board and Executive Team. Similar planning is now underway for a North Cumberland Network and we encourage the DHA to pursue this initiative as soon as possible.

The model in Springhill has operated since 2001 and currently consists of two family physicians and 1 NP. The practice primarily serves the needs of the senior population in the community. In addition to physician and NP patient clinics, the NP also provides a variety of wellness clinics. The only concern

noted during the review was that this model may be overly physician centric with limited independent NP practice, but we note that the DHA feels that this model will continue to evolve as a new NP has recently been hired.

The model in Advocate Harbour is evolving, and serves a very important role for a community that is somewhat geographically isolated. It is reported that the NP operates an independent practice from a privately owned building in the community. Physician support is provided through the South Cumberland Rural Health network and this is reported to be working well. We would encourage the DHA to consider co-location of the NP office into the Bayview Memorial Healthcare Centre.

There are three Community Health Boards in CHA – Pugwash and Area, SOAR (Springhill, Oxford, Amherst and Regions); and SPAR (Southampton, Parrsboro, Advocate and Regions). Of the three, the Pugwash and Area CHB appears to have advanced the most in terms of planning and this CHB notes that health care should include a broad range of programs and services that impact on health but with less focus on institutions and more on community-based care and participation. The Pugwash & Area CHB also aims to encourage community involvement in health planning and service delivery, to identifying strengths and areas for improvement, factors that effect health, and to address these issues with community-based programming. Previously, the Pugwash & Area CHB has supported a number of programs including healthy teen sexuality, tobacco reduction, nutrition and physical activity, and will continue to promote health related initiatives in the future.

DHA specific recommendations for CHA, based on our on-site assessment, are outlined below.

Recommendations for Consideration – Re: Primary Health Care:

1. Work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health and Primary Health Care Strategies).
2. Work with the CHBs to develop formalized Community Health Plans.
3. Review potential to co-locate NP within the Bayview facility in Advocate Harbour.
4. Review collaborative practice model in Springhill to ensure working relationships are optimal.

Community Health Centres

CHA has four (4) small community health centres and/or hospitals within its geographic boundaries:

- North Cumberland Community Hospital
- South Cumberland Community Health Centre
- Bayview Memorial Health Centre

While we recognize that some of these facilities are officially defined as hospitals, we have included their summaries in the community section, leaving the acute care section for review of the regional site in Amherst.

North Cumberland Memorial Hospital

Opened in 1966, the North Cumberland Memorial Hospital (NCMH), located in Pugwash, is currently approved for 4 short stay acute beds plus palliative care. The hospital provides a mix of in-patient, out-patient, ambulatory care clinics and health promotion services. NCMH provides 24-hour emergency/out-patient service utilizing an on-call emergency coverage system as well as diagnostic services through the laboratory and diagnostic imaging staff. Emergency Health Services Nova Scotia has a newly-constructed facility on the property to house ambulance staff and equipment and as well, an air ambulance landing area is located on site.

Comments on selected services include:

Emergency Department:

- The Emergency/Outpatient Department at NCMH provides 24 hour emergency services utilizing a physician on-call emergency coverage system. In the fiscal year 05/06 there were 6640 ED visits and 4557 OPD visits.
- Nursing coverage for the ED is dedicated however at high volume times the RN from the Inpatient unit must support the ED leaving reduced coverage on the inpatient unit.
- EHS is co-located with the facility however transfer service is limited as there is only one crew and they are unable to leave the catchment area unless there is another crew in the area that can provide coverage. This significantly reduces the effectiveness of EHS. A helipad on site can assist with appropriate transfers and this is utilized 4 – 5 times per year.

Acute and Palliative Care

- NCMH is currently approved for 4 short stay acute care beds which are utilized to provide care to those needing short term hospitalization or those awaiting transfer to another facility. North Cumberland also provides palliative care services to individuals in the community who require end-of-life care. The Palliative service is growing and staff report that the current FTE allocation is inadequate to meet the needs of the program. For example, social work is not available and the RN reports that she routinely works 3 days per week, even though her position is funded at 0.4 FTE.

South Cumberland Community Care Centre

Opened in 1975, the South Cumberland Community Care Centre (SCCCC), located in Parrsboro, provides a mix of long-term care services which are offered in conjunction with an out-patient/emergency department with 24-hour on-call emergency coverage as well as DI and lab services (which are available as follows - Lab 8-4 & DI 8 – 12 daily. No on-call). There are 14 LTC beds and 2 palliative care/swing beds. The facility is immediately adjacent to the professional centre which is home to the South Cumberland Rural Health Network (discussed previously in this report). Comments on selected services include:

Emergency Department

- The Emergency/Outpatient Department at SCCCC provides 24 hour emergency services utilizing a physician on-call emergency coverage system.
- In the fiscal year 05/06 there were 3.420 visits to the Emergency Department. Many of these visit were not however considered urgent and could have been seen by community physicians if there was greater access to clinic hours.
- Outpatient clinics are also provide for: addictions, diabetes, foot care, mental health, nutrition and public health. There were 3,573 OPD visits seen in the ED.

Adult Day Care

- There is an Adult Day Care with daily capacity of 25 (annual visits = ~2000). Services provided include: Nursing services, counselling and assessment regarding personal care, assistance with personal care including bath, shampoo, etc., referrals to the clinics, lunch and snacks. Services are available for short-term respite or longer term placement.

Bayview Memorial Health Centre

Bayview Memorial Health Centre has been serving Advocate Harbour since 1945 with the present facility opening in 1989. It is a single-story, 10 bed facility that includes long term care and palliative care. It also has a nursing station for urgent care as well as other services including laboratory, dietary, asthma clinic, physiotherapy and occupational therapy and diabetes education some of which are provided on a part-time basis and with assistance from staff of other county facilities. Comments on selected services include:

Inpatient Services:

- The inpatient beds are staffed by one RN and one LPN on a 24/7 basis. There is also a patient care leader (M-F) who staffs the desk and OPD area and a 0.7 FTE recreation coordinator. There is clerical support (0.95 FTE) and an office coordinator (0.70). There is also a number of other positions reported in the payroll data including General Service Worker (1.0 FTE), Laundry Worker (1.0), Maintenance (1.0), and Cooks (2.0)

- These staffing levels need to be revisited given the role that this facility serves as 5:1 ratios for RNs/LPNs are high when compared to other LTC service providers. This coupled with the auxiliary staff that are available (0.70 FTE recreation therapist) may lead to a more expensive model of care than should be expected in this community.

Recommendations for Consideration – Re: Community Health Centres:

1. Redevelop the NCMH facility in conjunction with the local nursing home and continue to pursue rural network model in Pugwash

2. Consider expansion of Adult Day Care in Parrsboro in conjunction with a growing need for a Seniors Health focus province-wide

3. Co-locate NP at Bayview Memorial

4. Review staffing model at Bayview Memorial

Community Hospital

As with many rural hospitals in Nova Scotia, themes across the province are similar and involve access to staffing, technology and infrastructure demands, an aging population base and the increasing demands from community to maintain local specialized services despite declining populations.

All Saints Springhill Hospital

The All Saints Springhill Hospital (ASSH), located in Springhill, was built in 1963. Many renovations have been completed since that time to meet the needs of the community. Most recently the renovations included the expansion of the primary care space which is attached to the hospital. Comments on selected services at ASSH include:

Primary Care Collaborative Practice site. The Collaborative Practice for this community is housed at this site.

Restorative Care Unit: Ten restorative care beds providing an interdisciplinary, goal oriented approach to restoring patients' functional needs.

Transitional Care Unit: Eight transitional care beds for patients awaiting placement and two palliative care beds are also located in the facility.

Ambulatory Clinics: All Saints Springhill Hospital offers a number of clinics and services on an out-patient basis. These include: Addiction Services, Diabetes Clinic, Foot Care Clinics, Mental Health Services, Nutrition / Dietitian, and Public Health Services. In 2005, there was a total of 4500 patient visits for specialized ambulatory clinics including internal medicine, pediatrics, EENT, and OB/GYN.

Emergency/Outpatient Department: The Emergency/Outpatient Department at ASSH provides 24 hour emergency services and is co-located as an outpatient clinic. The unit includes a two bed trauma room, a quiet room, and two exam rooms. The department services the town of Springhill and surrounding areas of Oxford, Collingwood and Southhampton.

There were 11,000 visits to the department in the 2005 fiscal year. It is reported that 86% of these visits were for non-urgent care (CTAS levels 4 & 5) that would have been more appropriate for a clinic setting. Volumes generally are steady throughout the day with a limited number of visits after 2100. The department is staffed as follows:

- Days – 2 RN's, 1 x 12, & 1 x 8 and are supported by a unit clerk Monday to Friday.
- Evenings – 1 RN, 1 x 8; and 1 LPN 1 x 8
- Nights – 1 RN, 1 x 8

Recommendations for Consideration at ASSH:

1. Review baseline staffing models and practices to ensure consistency with targets defined for other units.
2. As part of DHA health services planning consideration could be given to expanding community clinic hours to decrease ED volumes for non-urgent visits. Operating hours of the ED need to be reviewed to ensure that the community has access to the most appropriate care in a timely manner. Additional support from EHS could be considered for ED non-peak hours (i.e. after 2300 hours).
3. Consider further development of the existing physician clinic space with recruitment of additional physicians and for increased allied health clinics.
4. Work with the medical unit at CRHCC to examine admission criteria for RCU and determine if this unit could be used to assist with patient flow and better management of the frail elderly.

Regional Hospital: Cumberland Regional Health Care Centre

Inpatient Services:

The analysis of inpatient services at Cumberland Regional Health Care Centre (CRHCC) suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for Medicine, Surgery and Critical Care are summarized in the table below.

DHA 5: Cumberland Regional Hospital & Health Centre								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
Medicine	35	4.28	4.29	5.09	5.65	**0.01**	**- 0.80**	Staff report that up to 40% of beds are ALC. Cohorting is being pursued. Target as been adjusted to reflect mix of medical (at target of 4.64) and ALC (at target of 3.76). Savings are possible.
Surgical	15	5.87	5.16	6.25	7.39	**- 0.71**	**- 1.09**	Actual staffing very high compared to baseline and target, suggesting savings are possible. Significant HPPD for MOS and UPP Other needs to be reviewed.
ICU	5	15.88	14.23	14.96	16.71	**- 1.65**	**- 0.73**	Baseline plan calls for 3 RNs (24/7) for five beds, which likely reflects minimum staffing. Actual staffing is running below baseline, so no savings target defined in final analysis.

Other inpatient comments are as follows:

- **Maternal/Child** - program needs to be reviewed as part of provincial review. CRHCC has the highest average cost per patient day for its obstetrical unit (per DOH statistics). Cost structure needs to be reviewed.

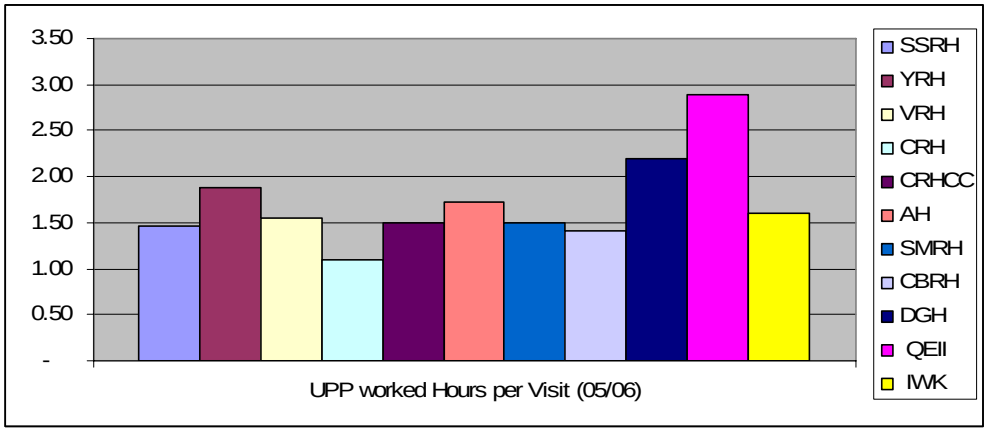
Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units suggest that a total of 15,000 hours could have been saved in 2005/06.

Recommendations for Consideration re: Inpatient Services at CRHCC:

1. Reduce baseline staffing on Medical and Surgical units to reflect targeted ratios.
2. Review MOS and UPP Other hours for surgical and critical care units.
3. Review Maternal/Child costs and staffing practices.

Emergency Department:

Patient volumes in 2005/06 were 19,977 visits and 365 patient days. This translates to an average daily volume of 55 visits (lowest in NS for regional sites) and 1 admitted patients (2nd lowest in NS). At these volumes, the ED at CRHCC operates with an average of 1.5 Hours of Care per Patient Visit, which is essentially at the midpoint for the province (see chart below).



The ED is staffed by the community General Practitioners who rotate through the working days of Monday – Friday and also do on call after hours and weekends. They do 12 hour shifts and paid an hourly fee when on shift. Not all physicians in town do ED shifts but if they do not they often will take second call.

It was reported that there can often be long waits for patients who present at the ED and are triaged as CTAS 4 or 5. This problem is viewed differently by different staff, with nurses expressing some concern that the public view the ED as a clinic and this may lead to inappropriate use of the ED. This is viewed as a larger issue when the unit is dealing with staffing challenges. Physicians agree that it can be an issue, but do not see the need to bring in extra MDs to cover busy/peak times (nurses think this should be pursued).

Recommendations for Consideration re: Emergency Department at CRHCC:

1. Revisit MD coverage and staffing models and consider increased staffing at peak times.

Ambulatory Care

General Clinics*:*

During PHSOR, consultants typically met with a sample of the ambulatory care programs and teams to determine if national trends applied to the local context.

At CHA, we had the opportunity to meet with the Manager for Ambulatory and also drew some observations out of the focus groups and meeting with other teams (e.g. ED). General findings include:

- The facility, like the rest of the hospital, is generally well designed. Staffing for the area appears functional (mix of RNs and LPNs, as well as clerical, lab techs).
- Scheduling was described as somewhat problematic
- There has been some pressure to increase services on weekends, but this would likely require an increase in staffing.
- GPs and surgeons use clinic space for booked clinics. Some clinics are also booked for nurses to see patients for certain procedures (e.g. vac dressings, wound care)
- There was some concern expressed that diabetes was moved off-site (but we would support that direction)
- There was also concern noted about lack of allied health resources to support ambulatory care (as well as community based care)
- Related potential issues: No dialysis service in Amherst, Need to review practice of having perinatal clinic on maternal/child unit, Potential opportunity to decant some volume out of the ED and into private practitioners offices

Recommendations for Consideration re: Ambulatory Care at CRHCC:

1. Confirm strategic vision for ambulatory care and review current programs to determine if they align with the stated vision
2. Complete a focused review of staffing roles and responsibilities and consider adding clerical resources and possibly additional professional staff time.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage CHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTs being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at CRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory:

CHA operates lab services at four sites and has volumes as follows:

Site	2004/2005 Volumes	2005/2006
CRHCC	634,439	712,528
ASSH	131,503	153,451
NCMH	73,050	85,399
SCCC	11,529	19,232

Some key findings associated with CHA Laboratory Services include:

- While services are provided at multiple sites, there has been some rationalization to the regional site. This has been viewed as being successful.
- Transportation between sites is provided by taxis and private couriers. There are 3 scheduled pickups: 7am, 10:30am, 2pm.
- Response time for specimen pickups and results reporting is noted as being acceptable. Meditech is an enabler to support order entry and results reporting.
- STAT tests could be used more appropriately. There is a noted perception that there may be some inappropriate over-usage.

Recommendations for Consideration – Lab Services at CHA:

1. CHA must participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning should reflect provincial changes.
2. An assessment of HR challenges should be drafted and presented to senior leadership at CHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model. Senior leadership will work with the department and HR to address.
3. Laboratory leadership needs to develop a plan for ensuring MLT and MLA staff are operating at full-scope of practice. Where required, internal and external education supports should be used to bring staff up to scope of practice.
4. The Policy and Procedure for STAT test ordering should be reviewed and amended to ensure appropriate usage. STAT ordering should also be monitored over a period of time to assess if practices have changed, and where required, appropriate actions taken for individuals not adhering to policies.
5. CHA to investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).
6. CHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

Diagnostic Imaging:

Medical imaging services at CHA are provided on four sites:

- The Regional hospital provides core services between 7:30am and 4:00pm with 3 x-ray techs, 1 ultrasound tech, 1 CT tech, 1 mammography tech, and 1 echo tech. From 4:00pm to 11:00pm, 1 tech serves ED and inpatient only. From 11:30 to 19:30 hours, a tech is available on callback. Monthly callback for x-rays is about 20, and 12-16 for CT. In addition, the Regional hospital supports the Nova Scotia Breast Screening Program.
- Springhill has 1.6 x-ray techs and 1 echo tech and operates from 8am-4pm Monday to Friday, and 4pm to midnight on-call.
- Pugwash has 1.0 FTE operating from 8am to 4pm providing x-ray services only.
- Parrsboro has 0.5 FTE from 8am to 12pm providing x-ray services only.

Some of the key findings associated with CHA Diagnostic Imaging Services include:

- Currently, CRHCC, ASSH, and the facilities in Pugwash and Parrsboro have all moved to PACS. It was noted that the implementation of PACS has improved timely access to imaging reports. In addition, the province has made significant progress enabling the sharing of images.
- Portering services related to diagnostic imaging was praised as being very good however there was a request to increase access to porter services.
- Overall, patient flow through the clinic was noted as very good. The only delay was access to ultrasound due to access to a single machine.

Recommendations for Consideration – D.I. Services at CHA:

1. CHA must develop effective tools to assist in planning and preparing for any staffing shortfalls.
2. CHA needs to investigate issues and develop a capital equipment acquisition and replacement plan.

Professional Practice Issues

Nursing:

RNs express disappointment about the level of resources available to support professional development. CHA, like virtually all other DHAs, has limited educator resources (e.g. 1.0 FTE DHA-wide).

Staff report that they would like to have access to more hands-on, front line leadership. Leadership at the front line is identified by the IOM in its book Keeping Patients Safe as a key component of creating an optimal work environment for nurses because hands on leadership helps to create an environment of trust and provides for a sustainable change management effort.

LPNs at CHA describe a work environment that they feel could be improved, with the biggest single issue for them being the desire to work at full scope. They perceive that senior leaders are opposed to this, which they say devalues them as regulated staff. LPNs also want access to more educational support.

Recommendations for Consideration re: Nursing Issues at CHA:

1. There appears to be a general need to engage front line staff in some team building. This will be essential if CHA decides to pursue model of care redesign. There should be an overall move to respecting all providers throughout the entire facility to foster an increase in work satisfaction.
2. CHA needs to be more proactive at getting the LPNs working to full scope and do some education with the RNs to redefine their roles once this happens.

Allied Health Staff:

There are numerous common themes surrounding allied health in all DHAs – with a general sense that this group could be expanded (in terms of numbers of staff available to support care delivery), but there are not enough resources available to support this move. Some of the specific issues raised at CHA include:

- Clerical supports: Staff report a lack of clerical supports, which leads to professionals doing clerical work instead of providing services
- Continuing Education: Allied staff perceive that they have less access to educational resources than nursing and view this as a lack of support for these professions
- Human Resources: Not enough numbers of staff to do the work required. This is seen as especially problematic in the community.

Recommendations for Consideration re: Allied Health Issues at CHA:

1. Review professional roles and consider adding more clerical and support roles to assist with care delivery and routine administrative tasks.
2. Review potential for allied staffing to be leveraged and deployed differently within care delivery models.
3. Review educational resource allocations for this group of staff.

Medical Staff:

CHA has some unique history regarding relationships with physicians, but the issues appear to have been resolved and the physicians are now generally positive surrounding their relationships with administration. The DHA should be praised in the leadership it has shown in addressing these issues.

There are some issues surrounding physician coverage in the community. Specifically there seems to be a slight under-current of resentment regarding the different remuneration models with GPs on Fee

for service questioning the APP arrangements that have been made available to some of their colleagues.

The issue of Nurse Practitioners was also noted, with some expressing strong support to expand this model and others less interested in this as a solution.

Recommendations for Consideration re: Medical Staff Issues at CRH:

1. Continue to work with DOH to develop sustainable funding models for physician recruitment and coverage, especially for Primary Health Care and Rural Health.
2. Continue to engage with community based MDs to strengthen working relationships.

Infrastructure and Support Services

In most DHAs, we found that the support service and corporate functions are either resourced in accordance with nationally accepted benchmark levels. In many cases, we actually found that these areas are under-resourced, which contributes to many of the challenges associated with professional performing non-professional tasks. Redesign of the model of care in nursing will need to consider what, if any, changes need to be made to the resource levels in these areas.

For this reason, efficiency opportunities have not been identified and findings are minimal for many services. In addition, some of these services have been discussed in the system-wide section, so they are not re-stated here.

Decision Support

It is our view that Decision Support is a critical supporting function and resource for provider organizations, and must be invested at both the local and provincial levels to support effective and timely decision making. There is minimal utilization management or decision support resources. The organization does have a research analyst however this role has not been dedicated to conducting detailed utilization (clinical or financial) analysis. Health records plays a limited role in provision of key information. There appears to be a need to develop or acquire these services to ensure leadership has critical information to make decisions.

There also appears to be some data issues with Meditech. It appears that admissions may not be appropriately attributed to the unit where the patient stays. For example, patient admitted via ED to ICU has the patient admission assigned to ED as opposed to the ICU.

Recommendations for Consideration re: Decision Support Services:

1. CHA to enhance decision support/utilization management capacity within the health authority. Opportunities may also exist to leverage province-wide resources if health authorities are not available.
2. Ensure senior leadership and management have access to routine and periodic reports to support decision making. Leadership must leverage information to build support for using the information.

Quality Management

The Quality Management program was initiated six years ago and has responsibility for quality improvement and risk management. The program is supported by two individuals, a director and a coordinator, is directly accountable to the VP, Community and has working relationships with the Quality Management Committee of the Board and the District Quality Management Advisory Committee. Currently, the program has developed services in quality management and risk management, however there is a noted gap in the areas of utilization management.

Quality improvement focuses on providing support to staff to assist them to identify and achieve improvements. While the largest project to date is to support the accreditation process, ongoing

improvement initiatives are supported by the 14 facilitated teams which meet monthly. While specific comment about the success of each team was not a focus of this assessment, the organization should be supported for its effort to maintain this momentum throughout the year and building the continuous improvement concept into day-to-day functions. However there are a number of challenges that must be managed. These include:

- Each team is charged with identifying opportunities to improve services however a key challenge to manage is the overextension of staff. It is important to ensure that staff time is being used constructively and that they are not being overburdened.

- Another associated challenge is to maintain support and momentum. With the number of teams and multiple projects, it will be easy to identify and develop initiatives that may not be implemented. The organize must strive to undertake projects that once approved as being value-add, there is the required support to enabling implementation and realization of benefits.

Risk management involves collecting, tracking and analyzing incidences to identify potential risks or threats (e.g., occurrence reports, complaints report) to the organization and their staff. Interviews noted that there is further potential to increase the activities to improve risk management. The organization has introduced risk management education as part of the orientation, and has adopted an non-punitive approach which better positions the service for success.

Utilization management activities are limited and can generally be described as uncoordinated. While there are numerous examples of data collections process, there is little perceived or real use of the data for execution or decision making purposes. This is not intended to be a criticism for the process, but rather an indication of the lack of available resources to support these activities. The organization greatly supports increasing capacity and experience in this area.

While support for the team appears to be good, there was noted opportunity to improve the mechanisms to ensure good ideas move forward. For example, challenges exist with obtaining buy-in from stakeholders and gaining leadership support for projects that impact multiple areas or where the project is initiated by another area and quality management is not included in the planning activities.

Recommendations for Consideration re: Decision Support Services:

1. Develop a more standardized initiation, review and approval process for projects. This process does not need to be time or work intensive, but can ensure the right review processes and include key personnel (e.g., front line staff, leadership, decision maker) to ensure decisions are effectively made. It will also be very important to identify specific roles and responsibilities of stakeholders (e.g., District Leadership Team) within the process.
2. Need to develop a dedicated resource to coordinate data management. While this role is typically a utilization management function in most hospitals, there is no existing staff leading this task. The organization is urged to look within to find an appropriate staff member (e.g., population health analyst) with an understanding of the content knowledge, tools and work processes or investigate the option of leveraging a shared services model (e.g., Multi-DHA Utilization Management Group)
3. Identify the role quality management plays in projects, and educate stakeholders. While most would agree that quality management should be part of most or all projects, it is noted that their role is sometimes dependent on where and by whom the project is initiated. There must be a clear education strategy developed with expectations of role and contribution.
4. Need to ensure effective coordination of project. Given the number of teams and projects, quality management must actively track and manage projects. There may also be a desire to have an approval process to ensure only projects meeting a specific criteria be resourced.

Governance

PHSOR included an overall review of governance. At CHA, the review of governance found that both the CEO and the Board view their relationship as positive and mutually respectful, and grounded in a good sense of cohesion around directions. There is a strong internal sense that the Board functions effectively and that roles & responsibilities are reported as being well defined (and we saw no evidence to suggest that this is not true). Senior staff appear to have strong working relationships with key Board functions (e.g. VP, Community with CHBs and VP, Finance with Finance Committee).

The Board notes that the current legislated model is reported to be working for CHA, but it works because of relationships, not by design. Orientation for new Board members is viewed as an improvement opportunity.

From a DHA perspective, the relationship with the Community Health Boards (CHBs) is reported as good, and CHBs are viewed as essential elements in the system. For the CHBs, they view that the relationship could be strengthened (e.g. their advice could be sought and acted upon more frequently).

The relationships with the local foundations was described as "improved significantly", yet the consultants found that there is still substantial opportunity for increased collaboration and a continued move towards district solutions and district fundraising.

Recommendations for Consideration re: Governance

1. Need further development of formal annual evaluation processes for the Board itself as well as evaluation mechanisms for individual Board members.
2. Need to undertake focused work to build stronger relationships with the Foundations that raise funds for its communities and hospitals.
3. The Board needs to review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 6: PICTOU COUNTY HEALTH AUTHORITY

A review of PCHA was largely excluded from the PHSOR process as PCHA had been reviewed in the fall of 2005, some four months prior to the initiation of PHSOR. For comments on PCHA, please refer to the report previously submitted by Corpus Sanchez International. Notwithstanding the above, we updated the analysis of nursing hours to provide consistency across all DHAs. The updated analysis, along with updated summaries of ED hours and allied health staffing, is presented below.

Regional Hospital: Aberdeen Hospital

Inpatient Services:

The analysis of inpatient services at Aberdeen Hospital suggests that there continue to be savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for Medicine, Surgery and Critical Care are summarized in the table below.

DHA 6: Aberdeen Hospital								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
Medicine	30	6.53	5.38	6.66	7.21	**- 1.15**	**- 1.28**	Note - baseline includes 6 palliative beds. Target has been adjusted from pure medical unit to reflect these additional beds. Staff previously reported that up to 30% of beds are ALC. If this is still the case, the target should be adjusted down to reflect lower care needs. Current analysis suggests that savings are possible.
Medical / Telemetry	15	5.00	4.64	5.38	6.29	**- 0.36**	**- 0.74**	Baseline staffing ios planned at 5:1, which likely reflect minimum staffing for the unit. Therefore, even though the analysis suggests some savings, no savings are being suggested in the final findings.
Surgical	33	5.38	5.73	7.26	8.02	**0.35**	**- 1.53**	Actual staffing very high compared to baseline and target, suggesting savings are possible.
ICU	10	13.24	14.23	15.16	16.82	**0.99**	**- 0.93**	Baseline plan calls for 5 RNs (24/7) for 10 beds, but average daily census is less than 8. Some savings likely possible.

Other inpatient comments are as follows:

- **Maternal/Child** - program needs to be reviewed as part of provincial review.
- **Mental Health** – no target set, needs to be addressed as part of provincial bed map process.

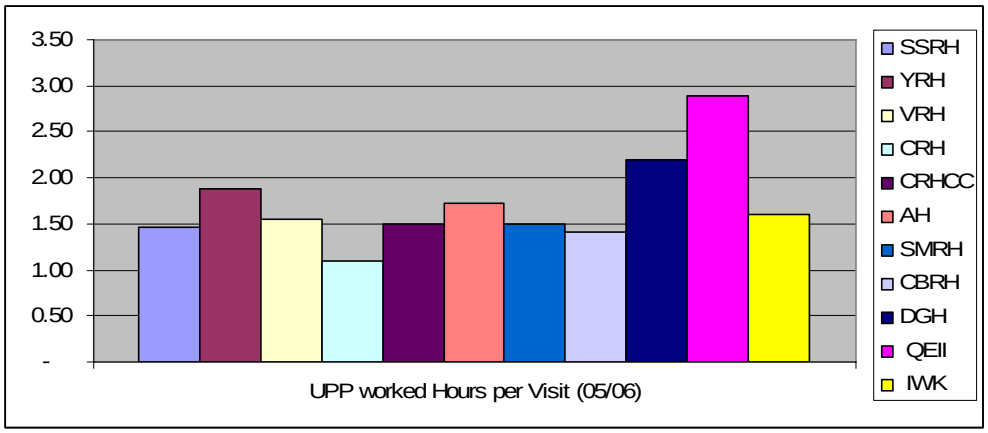
Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units (using baseline staffing as target for the ICU) suggest that a total of 33,000 hours could have been saved in 2005/06.

Recommendations for Consideration re: Inpatient Services at AH:

1. Reduce baseline staffing on Medical and Surgical units to reflect targeted ratios.
2. Review Critical Care staffing practices to determine what changes can be made to reduce actual hours per patient day.

Emergency Department:

Patient volumes in 2005/06 were 27,338 visits and 1,681 patient days. This translates to an average daily volume of 75 visits (6th highest in NS) and 4.6 admitted patients (2nd highest in NS). At these volumes, the ED at AH operates with an average of 1.73 Hours of Care per Patient Visit, which is the 4th highest in the province (see chart below). This HPOPV likely reflects the use of additional staff to manage admitted patients.



Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

Note: Allied staffing numbers for DHA 6 are not included in the above table as this data was not included as part of the 2005/06 data request. DHA 6 should be included in future comparisons on ago-forward basis.

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage CEHHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTs being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at AH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

DHA 7: GUYSBOROUGH ANTIGONISH STRAIT HEALTH AUTHORITY

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care
- Community Health Centres / Community Hospitals
- Regional Hospital
- Infrastructure and Support Services
- Governance / Leadership

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services.

The Strategic Plan for GASHA outlines four strategic directions:

- Strategic Direction #1: Improve the Health of Our Population
- Strategic Direction #2: Advocate for Healthy Public Policy
- Strategic Direction #3: Focus on our Health System Programs and Services
- Strategic Direction #4: Develop and Implement a Strategic Approach to Human Resource Planning, Recruitment and Retention

All of these directions impact Primary Health Care and the PHSOR Team applauds the work that the DHA has pursued with regard to these directions and its commitment to building positive relationships with its Community Health Boards and community partners. On this latter point, the DHA has three CHBs:

- Guysborough
- Antigonish Town and County
- Strait Richmond

Each CHB has developed a community health plan outlining goals and objectives that are reflective of the local health needs. Each CHB also maintains a profile of its community including a health services directory. The health service directory identifies strengths and deficiencies with respect to the factors that affect health and an inventory of the community-based health services delivered to the local population.

During the review, meetings were held with primary health care leaders and some issues were flagged, including:

Collaborative Practice model

- The collaborative model between nurse practitioner and physicians is seen to be working well, however, there is a need to include allied health professionals, e.g. physiotherapists, occupational therapists, social workers, family practice nurses, etc.

- The nurse practitioner currently has a caseload of approximately 250 patients per month. This is not sustainable in the long run. The ratio currently is one nurse practitioner to three physicians. A second nurse practitioner is needed to improve service as with this workload, advocacy and quality of care is not a priority. Without the inclusion of an additional nurse practitioner or family practice nurse, there is a fear that the nurse practitioner will be limited to a "hands-on" role only within the clinic. The goal was to have the nurse practitioner available 60% in the clinic and 40% in the community as a health promotion and prevention resource.
- There are approximately 25 physicians in the community and although the nurse practitioner does see some of the patients of these physicians, there is limited buy-in from physicians in the community who are not part of the collaborative practice. There is great opportunity for the expansion of collaborative practices throughout the DHA, but there needs to be stronger leadership and sharing of the DHA vision for Primary Health Care services with physicians.

Aboriginal Health:

- There is a need for increased First Nations public health programming however this must be planned through a joint effort with the federal government and governments for First Nations communities.

Youth Health Centres:

- Development of Youth Health Centres has reportedly been a challenge for GASHA. The DHA should continue to work with the YHC Provincial Advisory Committee in addressing the delivery of youth centered services through Youth Health Centers.

Addictions:

- There is a need to increase programming that would stress family involvement in recovery programs.
- There is a lack of transitional housing in community to support patients on return to home.
- There is a need to enhance services for shared patients to include social and psychological models. There is a need for greater collaboration with mental health services as there is an increasing complexity of patients with 40 – 60% having concurrent disorders.
- The DWI program is difficult to administer in large geographic area. There is a lack of transportation alternatives for those required to take courses and services are not available in most small communities.

DHA specific recommendations for GASHA, based on our on-site assessment, are outlined below.

Recommendations for Consideration – Re: Primary Health Care:

1. Work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health and Primary Health Care Strategies).

2. Continue to work with DOH to access additional funding for Nurse Practitioner services.

3. Engage physicians in planning for expansion of the model, reviewing their concerns and identifying strategies to increase support from the physician community for the model.

4. Continue to pursue priorities surrounding Youth Health and Addictions services.

5. Develop an aboriginal health strategy, in conjunction with First Nations communities.

Community Health Centres

GASHA has four (4) small community health centres and/or hospitals within its geographic boundaries:

- Eastern Memorial Hospital in Canso
- Guysborough Memorial Hospital in Guysborough
- St. Mary's Hospital in Sherbrooke
- Strait Richmond Hospital in Evanston

While we recognize that some of these facilities are officially defined as hospitals, we have included their summaries in the community section, leaving the acute care section for review of the regional site in Antigonish.

Eastern Memorial Hospital

Eastern Memorial Hospital is a six-bed facility located in the town of Canso, Nova Scotia. Located 115 kilometers from St. Martha's Regional Hospital, Eastern Memorial Hospital is uniquely placed to serve the health and health care needs of the residents of local communities in the eastern portion of Guysborough County. The hospital was founded in 1948 and is presently adjacent to the Canso Seaside Manor, home for special care. Comments on selected services include:

Inpatient Unit and Emergency Department:

- Occupancy on the inpatient unit is 50-60% (with ALC patients accounting for most of the beds).
- Core staffing is as follows: 2 RNs who work both the ED and the inpatient unit and 3 physicians who cover the site (1 on-call each day).
- Other staffing is as follows: PT – come once or twice a week from St. Martha's, a PT Aide, 1 FTE lab tech (crossed trained to cover DI) and support staff (housekeeping, dietary, maintenance and part time clerical).

Facility:

- Physical layout of the hospital is an issue as the ED and inpatient unit are physically separated. This is viewed as a risk, safety issue for patients/RNs and the estimated cost to rectify is $150,000 - $175,000

Guysborough Memorial Hospital

Guysborough Memorial Hospital is a ten-bed hospital facility located in the town of Guysborough, Nova Scotia. Located 65 kilometers from St. Martha's Regional Hospital, Guysborough Memorial Hospital is conveniently located to serve the health and health care needs of the residents of communities in Guysborough County. The hospital has a partnership with the Guysborough Youth Health Center and is adjacent to the Milford Haven Home for Special Care. Comments on selected services include:

Palliative Care:

- The Palliative Care Program reportedly provides the only cancer care support in the area and provides pain/symptom management and supports navigation.

- High palliative care volumes may impact patient flow and workload. Alternate models should be investigated (e.g. let patient be at home and pay for medications).

Facility:

- The physical layout of the hospital is an issue as there are major facility challenges to effective care delivery

St. Mary's Memorial Hospital

St. Mary's Memorial Hospital was founded in 1949 and is located in the town of Sherbrooke in Guysborough County. St. Mary's Memorial Hospital is an six-bed facility offering a number of health programs and services for residents in the local communities.

Inpatient Unit and Emergency Department:

- Occupancy on the inpatient unit is reported to be 60% (with ALC patients accounting for most of the beds).
- Core staffing is as follows: 2 RNs who work both the ED and the inpatient unit (or one RN and one LPN. RNs are ACLS trained, trauma course and 2 family physicians (Doctors' office in facility)
- Other staffing is as follows: 0.2 FTE PT - one day/week from St. Martha's; 0.6 FTE PT Aide; 0.4 FTE Laundry; 1 FTE lab tech; 0.6 FTE x-ray; 0.5 FTE health records tech; Support 2 x 0.5 FTE housekeeping; Dietary – 2 FTE cooks; 1 FTE maintenance; 0.2 FTE Dietician from Guysborough – one day/week; and 1 FTE clerical/data entry

Facility:

- Physical layout is a challenge as the ED is located far from the inpatient floor.
- Space review recently completed at St. Martha's - Canso and Guysborough have had reviews, recommendations; Strait and St. Mary's still waiting

Strait Richmond Hospital

Strait Richmond Hospital is a fifteen-bed facility located in Evanston, Richmond County Nova Scotia. Opened in 1980, Strait Richmond Hospital serves the health and health care needs of the residents of communities in Richmond County and the southern portion of Inverness County. The Strait Richmond Hospital is located 80 kilometers from St. Martha's Regional Hospital. The hospital also houses an eleven-bed inpatient unit for Addiction Services.

Inpatient Unit and Emergency Department:

- The majority of the patient population is the elderly, seven out of the 15 beds are used for people waiting for placement. 2 beds are designated Palliative Care. One of these beds is full all the time while the other is full 80% of the time.
- Core staffing is as follows:
    - Inpatient unit: 1 RN/1 LPN on days (with a team leader on weekdays and an extra RN on weekends) and 1 RN/2 LPNs at night)
    - ED: 2 RNs (24/7) plus Chemo nurse (0.2 – 7 days week)
    - Unit and ED have ward clerk coverage (Monday – Friday)
    - 1 Physician in-house 24/7

- Other staffing is as follows: DI – 3 positions in budget but have one long standing vacancy; Lab – 3 techs plus clerical staff; PT (0.5) and PT Assistant; Health Records/Admitting; Laundry done on site; Housekeeping; Dietary; Maintenance; and Clerical/data entry

- A key strength of this facility is that the staff themselves view the role as that of a primary care hospital and do not see the need to be more than that

Recommendations for Consideration – Re: Community Hospitals:

1. Develop facility redevelopment plans for each site.

Regional Hospital: St. Martha's Regional Hospital

Inpatient Services:

The analysis of inpatient services at St. Martha's Regional Hospital suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for GARU, Medicine, PCU, and Critical Care are summarized in the table below.

		DHA 7: St. Martha's Regional Hospital						
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
GARU / LTC	27	6.33	4.42	5.21	6.19	- 1.91	- 0.79	Note - baseline includes 13 geriatric assessment, 9 medical and 5 LTC. Our model has no defined target for geriatric assessment so we have assumed a staffing mix equal to the medical beds. The actual need still needs to be confirmed as this target may not be appropriate for the population served in the assessment beds on this unit. Final staffing plans need to reflect other providers in the mix, intensity of care offered under geriatric assessment model and actual number of patients each day that receive that intense care. The larger issue is that the baseline plan is higher than the actual staffing, and this needs to be reviewed and likely reduced.
PCU	24	5.73	5.16	6.47	7.64	- 0.57	- 1.31	Baseline plan and actual staffing are both higher than baseline. Staffing practices need to be reviewed.
Critical Care	6	13.24	14.23	17.75	19.66	0.99	- 3.52	Baseline plan calls for 3 RNs (24/7) for 6 beds, but average daily census is less than 6. Some savings likely possible.

Other inpatient comments are as follows:

- **Obstetrics** – we have recommended that all programs need to be reviewed as part of provincial review. SMRH has the 3rd lowest average cost per patient day for its obstetrical unit (per DOH statistics) ands the 2nd highest occupancy.

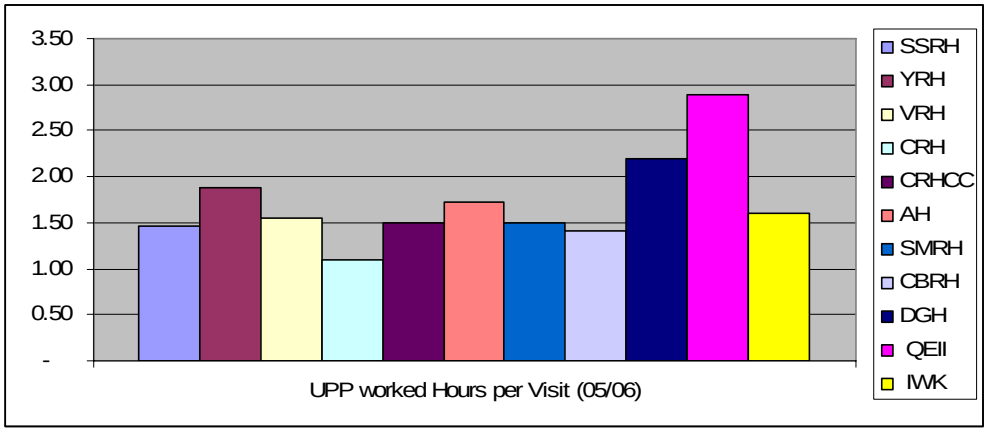
- **Paediatrics** – the calculation of targets suggests that there are opportunities here, but it is a critical mass function (average daily census less than 3), so no savings have been identified.

Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units suggest that a total of 23,000 hours might possibly have been saved in 2005/06.

Emergency Department:

SMRH is the only accredited District Trauma Centre in the province and they are to bo congratulated for pursuing and achieving this designation.

Patient volumes in 2005/06 were 24,667 visits and the hospital recorded 9 patient days in the ED. This translates to an average daily volume of 68 visits (which is 4th lowest in NS for regional sites). At these volumes, the ED at SMRH operates with an average of 1.49 Hours of Care per Patient Visit, which is essentially at the midpoint for the province (see chart below).



The ED is staffed by a mix of designated Emergency Room physicians (who only work the ED) and a core of community-based General Practitioners who rotate through working days and doing call as well. It was reported that there can sometimes be long waits for patients who present at the ED and are triaged as CTAS 4 or 5. It was also noted that admitted patients tend to overflow into the OPD, causing difficulty for booked procedures (this also suggests a data problem as the hospital reports zero patient days).

Recommendations for Consideration re: Emergency Department at SMRH:

2. Continue to focus on initiatives surrounding patient flow.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we

encourage GASHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTs being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at SMRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory:

GASHA operates some level of lab services at all of its sites, but the comments noted here largely pertain to the SMRH Lab, and include:

- Specimen procurement occurs from 0730 to 1500 Monday to Friday with 1.75 FTE registration clerks and 2 phlebotomists serving an average 150 collections per day. Phlebotomists also go to other locations: R.K. Macdonald Nursing Home, Bethany Infirmary, Highland Crest Home, and collect from patients at home where there is no VON support.
- General Lab operations from 0700 to 2300 Monday to Sunday. There is 1 on-call staff between 2300 – 0700.
- Monday to Friday there are 2 staff from 0700 to 1500, 1 staff from 1300 to 2100, and 1 staff from 1500 to 2300. All other staff work from 0800 to 1600. On Saturday, 3 staff from 0700 to 1500. 1 extra staff in microbiology until noon if required. Sunday and holidays: 3 staff from 0700 to 1500.
- There are generally no MLAs used. Staffing is primarily MLTs and phlebotomists (2). While this model is used in other jurisdictions within Canada, this model may be challenging with the general shortages of MLT.
- Staff retirement issues. It was noted that a large number of staff are able to retire now or in the near future. For example, all senior technologists and mangers are eligible for retirement. Some very significant retirement/succession planning issues (many senior technologists and managers will be or are of retiring age) must be addressed. This may be an opportunity to reconfigure the lab (e.g., create a core lab) or rethink the lab service delivery models (e.g., rationalization model).
- Microbiology staffing is an issue due to the high training requirements. For example, it takes an estimated one year to train a staff member.
- Cytology overtime incurred since more work than 1 FTE but not enough for 2 FTEs.

Recommendations for Consideration – Lab Services at GASHA:

1. GASHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning should reflect provincial changes.
2. An assessment of HR challenges should be drafted and presented to senior leadership at GASHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model. Senior leadership will work with the department and HR to address.
3. Laboratory leadership should develop a plan for introducing utilizing MLA staff in addition to MLTs.
4. GASHA should investigate additional opportunities to use point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).
5. GASHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

Diagnostic Imaging:

Services: Diagnostic Imaging services includes X-Ray, CT scans, ultrasounds, EKG, mammography, and nuclear medicine. There are currently 10.35 FTEs rad techs, 2 FTEs CT techs, 1.5 FTEs EKG techs, 2 FTEs ultrasound techs, 1.2 FTEs mammography and 1.2 FTEs nuclear medicine. There are also 4 FTEs for clerical stenographers; 3 general clerks, 1 PACS administrator and 1 darkroom tech. Wait times vary by modalities: x-ray (7 days), nuclear medicine (21 days), CT (26 days), ultrasound (33 days), mammography (130 days).

The Hours of Operations. Reception opened from 0730-1600; Booking Office from 0800-1600; CT, ultrasound, nuclear medicine and mammography from 0800-1600; radiography core staff from 0800-1600 with 1 tech working evenings from 1400-2200 and on call services from 2200-0800; CT tech on call from 1600-0800, and weekend coverage from 0900-1700 and on call services 1700-0900. 80% of activity is between the hours of 0700 to 1500, with 19.5% of activity between 1500 and 2300 hours.

Some of the key findings associated with GASHA Diagnostic Imaging Services include:

- Scheduling using Community Wide Scheduler (CWS). Imaging leverages the CWS for scheduling appointments. Noted that current scheduling practices allows for urgent exams to be done quickly.
- Currently 2 radiologists with a plan of moving to 3 radiologists.
- Large patient geography served.
- Report turnaround is described as very good.
- PACS working very well.
- Staffing retirements will create a challenge to the services.
- Some waiting list challenges need to be addressed.
- Staff shortages require the existing staff to perform more than their normal amount of evenings/weekend shifts leading to more fatigue, more injuries and more sick time. Low staffing levels makes it more difficult to arrange and grant vacation time and time owed. Full complement of staff would alleviate some problems with physical fatigue and such morale issue.
- Staff and equipment are common themes when it comes to talking about barriers. Both Strait and St. Martha's have old equipment with restricted usage. New more adaptable equipment

would allow full usage of the rooms and the ability to service more patients in the same amount of time.

Recommendations for Consideration – D.I. Services at GASHA:

1. Investigate consolidation opportunities for x-ray services. This potentially may result in the closure of Canso and Sherbrooke imaging departments, or a reduction of FTEs at those sites as staff may be transferred to the busier sites.
2. Review staffing levels and develop a plan to approach full staffing complement to reduce staff fatigue and morale issues.
3. Review equipment status and develop a plan for replacement.
4. Improve patient scheduling. The current fax system leaves appointment notification as the responsibility of doctor's offices in most cases. This has been recognized as the weak link in the process. Gaining control of this process should lead to improved failed appointment rates and improved waiting times.
5. Improve utilization at all sites. Make more efficient use of all x-ray rooms in the district by spreading the current amount of work around better.
6. Establish ultrasound service at Strait-Richmond Hospital to service patients from that geographic area. Examine potential for a radiologist to work part-time at that site.

Pharmacy:

Staffing. GASHA has 2.8 pharmacist and 5.8 pharmacy tech FTEs.

Hours of Operations. GASHA operates a day-time service from 8am-4pm, 7 days a week. Informal oncall is supported by switchboard access. During off hours, a full size night cabinet is leveraged.

Some of the key findings associated with GASHA Pharmacy Services include:

- Porter delivery of medications was noted as working well.
- A paper-based MAR is used.
- No pharmacists on the floor. With the limited 2.8 pharmacists, there is little opportunity to get a pharmacist to the floor. Opportunities to better leverage the techs should be investigated to free up some pharmacist time. 90% of medication education on the floor is completed by nurses.
- Need a concentrated effort on medication reconciliation.
- Operation reviews of pharmacy services were conducted in June 2003 and a follow up study was scheduled for the fall of 2005. Given timing of the onsite, we have not confirmed if any issues came out the follow up review.

Recommendations for Consideration – Pharmacy Services at GASHA:

1. Investigate opportunities to better leverage pharmacy techs to enable pharmacists to more directly support the care delivery teams.
2. Undertake a redesign to improve medication reconciliation.
3. Continue to work on recommendations stemming from the Pharmacy review.

Professional Practice Issues

Nursing:

RNs at GASHA generally report that their working environment is good, although they have increasing concerns regarding workload, patient acuity and general need for ongoing professional development.

Some of the specific issues that the staff raised in team meetings and the focus group include:

- Staff are pleased with the self-scheduling process, but expressed significant ongoing concerns about workload, overtime, sick time and planned vacation time. Staff feel that additional staff are needed and that admin is not listening. This perception will present significant challenges for GASHA as it moves to implement changes noted in this report
- Some issues were identified with the need to get LPNs at full scope. The impact on RNs has, in the opinion of the RNs, not been recognized or acknowledged. On a broader level, the upgrading of LPNs typically causes issues for the RNs, because they themselves are not functioning at full scope
- Staff would like to see incentives offered to allow for additional education opportunities
- Staff would like more input into decisions that they feel are imposed on them (e.g. computers). This likely reflects a communication issue regarding the rationale behind decisions (rather than a need to involve staff directly in these decisions)

LPNs have some different concerns, essentially related to the role and the ability to practice at full scope. Scope of practice issues:

- New LPNs feel that they are not being allowed to use the competencies they have
- Older LPNs express some concerns about the need for training and support to now move to full scope, and some report that they have been advised that their jobs will be eliminated if they don't upgrade. This has created some tension, but appears to be isolated to a small number of staff
- It was also reported that some units are letting LPNs work to full scope while others are not. LPNs are not clear on the rationale for these differences and we encourage senior leadership to review this
- LPNs feel threatened by the reported decision by the hospital to hire Patient Care Aides to assist with physical care

Recommendations for Consideration re: Nursing Issues at GASHA:

1. There appears to be a general need to engage front line staff in some team building. This will be essential if GASHA decides to pursue model of care redesign. There should be an overall move to respecting all providers throughout the entire facility to foster an increase in work satisfaction.
2. Continue to review scope of practice issues and work to ensure that all staff work at full scope of practice as defined by the appropriate Colleges.

Allied Health Staff:

There are numerous common themes surrounding allied health in all DHAs – with a general sense that this group could be expanded (in terms of numbers of staff available to support care delivery), but there are not enough resources available to support this move. Some of the specific issues raised at GASHA include:

- Coverage:
    - The need to provide services across all communities presents challenges for those groups that have limited staff resources

- Human Resources:
  - General feeling that there are not enough numbers of staff to do the jobs required
  - Clerical support is an issue
  - Home based services are seen to be lacking
  - There is no vacation replacement for PT/OT. Lab from here covers other areas.
- Service scope:
  - Rehab is viewed as an essential service but shorter and shorter lengths of stay makes it difficult to deliver
  - Perceived need to develop more ambulatory services for people requiring rehab
- Education
  - Allied staff perceive that they do not have enough access to education, when compared to other groups (e.g. nursing)
  - Staff perceive that senior leaders do not recognize that allied health must do 40 hours of education per year – and they feel that support for this is lacking.

Recommendations for Consideration re: Allied Health Issues at GASHA:

1. Review professional roles and consider adding more clerical and support roles to assist with care delivery and routine administrative tasks.
2. Review potential for allied staffing to be leveraged and deployed differently within care delivery models.

Medical Staff:

The regional hospital (like other sites in NS) continues to struggle with recruitment issues (e.g. have 2.5 anaesthetists, likely need 4), yet GASHA appears to have had more success than other DHAs

GASHA also generally appears to have a better overall relationship with its physicians than some other DHAs

The Chief of Staff role has recently been filled on a permanent basis after an interim Chief was in place for approximately one year.

We note GASHA has moved to a collaborative model with other DHAs to provide Radiologist coverage. This model should be continued and its applicability in other areas should be explored (e.g. sub-specialty programs may be able to share resources across DHAs and provide coverage for elective services in more than one DHA or provide outreach programs to one another).

Utilization management (UM) has been described previously as an overarching issue across the province. GASHA, like all DHAs, needs to define its expectations for physician participation in UM improvement and monitor behaviour to ensure that physicians are participating appropriately. Consequences for non-participation should be clearly defined and then monitored and enforced as required. On this point, we note that CEHHA reports that it has been quite successful at having radiology monitor utilization for ordering of tests and that their involvement has positively impacted/reduced inappropriate tests. This should be encouraged for other services. We encourage GASHA to follow up with CEHHA to see if similar practices can be put in place at SMRH.

Recommendations for Consideration re: Medical Staff Issues at SMRH:

1. Continue to work with DOH to develop sustainable funding models for physician recruitment and coverage, especially for Primary Health Care and Rural Health.

Infrastructure and Support Services

In most DHAs, we found that the support service and corporate functions are either resourced in accordance with nationally accepted benchmark levels. In many cases, we actually found that these areas are under-resourced, which contributes to many of the challenges associated with professional performing non-professional tasks. For this reason, efficiency opportunities have not been identified and findings are minimal for many services. In addition, some of these services have been discussed in the system-wide section, so they are not re-stated here.

Decision Support

It is our view that Decision Support is a critical supporting function and resource for provider organizations, and must be invested at both the local and provincial levels to support effective and timely decision making.

GASHA has a single (1 FTE) Utilization Coordinator position responsible for actively supporting patient transfers and looking after hospital admissions as required. There is no formalized decision support staff/team. This single individual helps to support key patient flow blocks like ALC and palliative care patients, and assists in the discharge planning and communicating process. The role is working but there needs to be more profile to ensure physicians get involved and support the process. There is also need to leverage social workers and use available data/information to assist in planning and decision making.

Options for Consideration:

- Update and support the discharge policy to ensure active discharge planning to enable more on-time discharge and where feasible, staggered discharges to manage workload.
- The CEO should receive information on the discharge process to ensure a senior-level "light" is being put on the process. This will be important to show all parties that the discharge process is being taken very seriously.
- Invest in decision support capacity to support planning and decision making.
- Build a link between the Coordinator and social workers

Recommendations for Consideration re: Decision Support Services:

1. Update and support the discharge policy to ensure active discharge planning to enable more on-time discharge and where feasible, staggered discharges to manage workload.
2. The CEO should receive information on the discharge process to ensure a senior-level "light" is being put on the process. This will be important to show all parties that the discharge process is being taken very seriously.
3. Invest in decision support capacity to support planning and decision making.
4. Build a link between the Coordinator and social workers

Quality Management

GASHA has invested in Quality and Risk Management program. This includes quality, risk and patient safety.

The Quality Management portfolio includes 10 teams (each responsible for policies and procedures, accreditation, indicators, receive feedback from client satisfaction). The teams meet on average 10 times per year and reports to Quality Council. Teams are multidisciplinary and distribute work through sub-committee. Each year teams develop goals and objectives and receive support from senior leader responsible. Teams are also very active in supporting accreditation. To date, progress has been made in patient satisfaction, performance indicators for the teams, accreditation and conducting education at smaller sites. In the future, QM should work on implementing Safer Healthcare Now initiatives, investing and supporting decision support, continuing to create a culture of safety by working with staff, implementing policies and procedures, measuring adherence, and building adoption and buy-in. The multiple sites do create some unique challenges for QM.

The Risk Management portfolio leverages a Patient Safety Advisory and has worked to establish a blame-free (non-punitive) culture at GASHA. The Advisory reports to the Quality Council. The complaint process is noted to be working quite well. Further work on improving incident reporting should be supported. While there has been some traction, this is an area that does require further focus and investment. For example, there is a need to focus on the non-compliant departments, a need to spend more time on education (staff/board/leadership/medical), a need for more correspondence with Nurse leaders and district management, and a need to update middle management with updates of progress and key initiatives so they can be more supportive.

There is also a need to ensure clarity regarding accountability, expectations and focus as Quality/Risk management can consume significant resources without having a lot of success. For example, it is important to clarify accountabilities – who is accountable for what, the expectations of projects in terms of what the the initiative trying to achieve and why, and clarity around focus to ensure key projects are initiated and completed as opposed to many started but few completed.

Also, there is a need to ensure sufficient support for projects (e.g., project management office) to facilitate and support projects and ensure necessary traction and evaluation of initiatives. While there is anecdotal evidence that the program works, need to introduce an evaluation element.

Recommendations for Consideration re: Quality Management Services:

1. QM should work on implementing Safer Healthcare Now initiatives, investing and supporting decision support, continuing to create a culture of safety by working with staff, implementing policies and procedures, measuring adherence, and building adoption and buy-in.
2. Further work on improving incident reporting should be supported.
3. Ensure clarity regarding accountability, expectations and focus as Quality/Risk management can consume significant resources without having a lot of success.
4. Ensure sufficient support for projects (e.g., project management office) to facilitate and support projects and ensure necessary traction and evaluation of initiatives.

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The Board at GASHA says they operate on the Carver Model providing the CEO – their only employee – with strategic objectives, ends and means and appropriate executive limitations. Both the Chair and CEO view the model to be appropriate and see the Board/Management relationship as highly effective,

mutually respectful, and feel that there is a good understanding of, and cohesion around, general directions, roles & responsibilities.

From a DHA perspective, the Board notes that they are working collaboratively with the Community Health Boards (CHBs) and the CHBs appear to agree noting that "they have an excellent relationship with DHA board and feel that the DHA is very open to working with CHBs". We note that this is a somewhat unique situation in the province and feel that GASHA may be able to assist other DHAs by sharing their experience in building effective relationships with the CHBs.

The relationships with the local foundations was described as "requiring some improvement", with a general sense that there is not enough contact. We note that the foundation members did not meet with us.

Recommendations for Consideration re: Governance

1. We recommend that the Board continue its work with the CHBs to ensure ongoing strong relationships with the these important groups.
2. We recommend development of more formal annual evaluation processes for the Board itself.
3. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 8: Cape Breton District Health Authority

This section is intended to summarize key issues/findings for this DHA. Findings are clustered as follows:

- Primary Health Care
- Community Health Centres / Community Hospitals
- Regional Hospital
- Infrastructure and Support Services
- Governance / Leadership

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The DHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services.

DHA Strategic Planning and Link to PHC:

The DHA's Strategic Directions (2003-2008) outlined four key areas of priority:

1. Healthy Communities
2. Healthy Services
3. Healthy Workplaces
4. Healthy Policies

The DHA views these strategic directions are core pillars that support goals and objectives and reflect a common theme: building a stronger and healthier Cape Breton. All of these directions impact Primary Health Care and the PHSOR Team applauds the work that the DHA has pursued with regard to these directions and its commitment to update its progress towards its goals and objectives on a regular basis. As the DHA prepares to define new strategic directions in 2008, we encourage the organization to continue its population health focus and renew and strengthen its commitment to Primary Health Care.

Community Health Boards and PHC:

There are six volunteer Community Health Boards (CHBs) in the Cape Breton District:

- Central Cape Breton County Community Health Board
- East Cape Breton County Community Health Board
- Northside The Lakes Community Health Board
- Victoria County Community Health Board
- Central Inverness Community Health Board
- North Inverness Community Health Board

While the District works to promote and educate people about healthier choices through a population health model, the CHBs enhance that commitment by sponsoring and supporting various community based initiatives designed to improve the overall health of a community.

As part of their role, the CHBs provide advice and input to the District's Board of Directors and help to identify health priorities. One way this is done is through the development of a CHB Community Health Plan. This plan helps the District to better understand the health needs and challenges in a community. The plans also support the District's overall business planning, program planning and Strategic Directions. The various Community Health Plans appear to be well developed and structured, outlining community health profiles and issues and then defining recommended initiatives to improve the health of local citizens.

CHBs are also active in promoting the District's Communities in Motion initiative by providing funding grants to numerous community based groups for programs that encourage greater physical activity. The CHBs also coordinate the selection of groups for funding under the Nova Scotia Health Promotion and Protection, Wellness Initiative Fund for community based projects that help improve the health of the community.

Collaborative Practice model

A focus group meeting was held with individuals directly involved in established collaborative practices in Glace Bay and Inverness. These individuals reported that the services were running well, however are not sustainable with the current resources. Themes and issues identified by the team that support the need for provincial direction include:

- There may be a need a Well Women's Clinic on We'Koqma'q First Nations (located in Whycocomagh) as it has been identified as a community need. An additional nurse practitioner is needed for this community if services are to be expanded.
- There may be a need for increased education and dialogue with the community on the role of a collaborative practice and the roles that both the nurse practitioner and physicians play in this model.
- There may be a need for additional clerical support for nurse practitioner as clinic time appears to be being reduced due to administrative duties.
- Nurse practitioners in Glace Bay may need further support from community physicians. There appears to be some limits surrounding buy-in in this community due to longstanding traditions of physicians being the health care providers. Despite this, nurse practitioner workload is significant.
- Collaborative practices need to expand to include an interdisciplinary team, e.g. mental health, nutrition services, occupational therapy, etc.

Aboriginal Health:

- The First Nation's Advisory Committee which has been meeting for ten years and recently was cited as "best practice" resulting in substantive grants for another District in the province to establish a similar approach.
- There is a need for increased First Nations health programming and the DHA recognizes this and also recognizes that this must be planned through a joint effort with the federal government and governments for First Nations communities.

Addictions:

- There is a need to increase programming that would stress family involvement in recovery programs.
- There is a lack of transitional housing in community to support patients on return to home.

- There is a need to enhance services for shared patients to include social and psychological models. There is a need for greater collaboration with mental health services as there is an increasing complexity of patients with 40 – 60% having concurrent disorders.
- The DWI program is difficult to administer in large geographic area. There is a lack of transportation alternatives for those required to take courses and services are not available in most small communities.

DHA specific recommendations for CBDHA, based on our on-site assessment, are outlined below.

Recommendations for Consideration – Re: Primary Health Care:

1. Work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health and Primary Health Care Strategies).
2. Continue to support the work of the CHBs as the planning processes in CBDHA appear to be some of the most developed in the province.
3. Continue to pursue priorities surrounding Youth Health and Addictions services.
4. Continue to develop an aboriginal health strategy, in conjunction with First Nations communities.

Community Health Centres: Rural CB

CBDHA has four (4) small community health centres and/or hospitals within its geographic boundaries:

- Inverness Consolidated Memorial Hospital, Inverness
- Sacred Heart Community Health Centre, Cheticamp
- Buchanan Memorial Community Health Centre, Neils Harbour
- Victora County Memorial Hospital, Baddeck

While we recognize that some of these facilities are officially defined as hospitals, we have included their summaries in the community section, leaving the acute care section for review of the Cape Breton Health Care Complex.

Buchanan Memorial Community Health Centre

Built in 1999, the Buchanan Memorial Community Health Centre is located in Neil's Harbour. The catchment area includes 4,200 residents of Neil's Harbour and people living north of Smokey Mountain. The facility houses 10 inpatient beds, which includes a Palliative Care/Pediatric Room, three treatment rooms and a chemotherapy preparation room in its Emergency Department as well as onsite lab and DI. The health centre also has a Community Services wing that contains offices for Public Health, Home Care Nova Scotia, Addiction Services, a Dietitian, a Palliative Care Coordinator and a Social Worker. Services offered at this facility also include diabetes education, occupational therapy and three physicians have their offices within the hospital.

The organization reports an increase in people served during the busy summer months as tourists visit the Cabot Trail. A number of themes for this facility are common with other facilities of similar size across the province. Those listed below represent those that are of biggest concern to staff.

- The staffing pattern in this facility differs from other sites in Rural CB with a baseline plan for 1 RN and 1 LPN 24/7). This pattern is augmented by an additional RN on days to staff the OPD/ED. While we view this staffing model as highly appropriate (given the volume of ED visits at night), people note that it is different from other sites on the Cabot Trail and is perceived by some as a barrier to recruitment.

- We also note that this issue leads to some conflict between the RNs and LPNs as RNs believe that an all RN staff is appropriate (given the fact that both Sacred Heart and Victoria follow this model), but the LPNs do not view this model as essential.
- LPNs also report that they are not allowed to work at full scope.
- Two of the three physicians have their offices are on-site and this is viewed as very positive.
- The current physician complement is 3 GPs. One GP recently had to take a leave of absence for health reasons, resulting in the need for the remaining GPs to take 1 in 2 call. This represents a longer term planning issue as all of the GPs will be eligible for retirement with the next 5-10 years and it is highly unlikely that new recruits will support this type of call rotation.
- Clerical support is reported to be an issue, especially now that Meditech has been installed
- EHS is seen to be very good in the area, although there are some concerns about EHS policies that prevents an ambulance from leaving the area until a replacement is in the region.

Sacred Heart Community Health Centre

Opened in 1999, the Sacred Heart Community Health Centre is a 10-bed acute care hospital located in Cheticamp and serving Northern Inverness County. The facility houses 10 inpatient beds and includes two rooms designated as Special Care/Coronary Care Rooms and two others as Palliative Care rooms. Other services include Emergency Department, Ambulatory Care, Chemotherapy Preparation Room, Laboratory, Diagnostic Imaging, Physiotherapy, Occupational Therapy, Medical Social Work, Palliative Care, Nutritional Counseling, Diabetic Education, Foot Clinics, Eye Clinics, Physician offices, Public Health, Mental Health and Continuing Care offices.

A number of themes for this facility are common with other facilities of similar size across the province. Those listed below represent those that are of biggest concern to staff.

- Being attached to the nursing home is viewed as highly positive. We note that CBDHA has entered into a contract with the Home to have the same individual serve as the Administrator / Facility Manager for both the Home and the Health Centre. We think this is a model that should be encouraged in other communities in Nova Scotia.
- The staffing pattern in Health Centre differs from other sites in Rural CB with a baseline that is all RN (Buchanan Memorial has 1 RN and 1 LPN 24/7). While we feel that the Buchanan Memorial staffing plan is appropriate for the patient population served, the staff (RNs and MDs) feel very strongly that an all RN model at night must continue. This is largely driven by the perceived need to cover the ED at night, but volumes may not justify this model. In the long term this may not be an option as the RN shortage puts additional pressure on rural communities.
- The organization has been very successful at recruiting physicians and now has a complement of four physicians who appear very committed to staying in the local community. Physician offices are on-site and this is viewed as very positive.
- Clerical support is an issue, and will become more of one now that Meditech is being installed

Victoria County Memorial Hospital

Built in 1995, Victoria County Memorial Hospital is located in Baddeck, approximately 1 hour from Cape Breton Regional Hospital. The catchment area includes 5,000 residents, with a significant tourist population increase between June and October. There are 12 inpatient beds and a 24 hours outpatient/emergency departments Other on-site services Lab, DI, Nutritional Counseling, Occupational Therapy, Physiotherapy, Diabetic Education Centre, Palliative Care, Medical Social Work, Home care, public health, mental health and addictions.

A number of themes for this facility are common with other facilities of similar size across the province. Those listed below represent those that are of biggest concern to staff.

- There are no adult mental health services in this community despite a perceived growing need. This may be something that can be addressed as part of a renewed Mental Health system.

- LPN's are not operating at full scope of practice.
- There is a significant ED volume throughout the year with an increase during the summer. They have implemented a nurse first triage which has assisted in directing patients back to clinics during day hours, but there are still significant evening and weekend visits that are non-urgent.

Recommendations for Consideration – Re: Community Health Centres:

1. The Emergency Departments have significant non-urgent volume. Some of these visits may be more appropriately seen in alternate settings (e.g. MD offices, booked outpatient clinics, etc)
2. As Meditech continues to roll-out, staff (MDs and RNs) will need to be engaged in processes to ensure that the technology is leveraged and utilized effectively. People expressed anxiety about the system because they perceive it has provided minimal benefits to date. Some MDs also stated that they would not use the system. This needs to be addressed as physician order entry is clearly a preferred process from a safety perspective.
3. We would encourage the DHA to work with staff to overcome any tensions that exist because of perceived issues arising from staffing model at Buchanan Memorial (e.g. 1 RN / 1 LPN at night).
4. We urge the DHA to engage the physicians in planning processes to address concerns over longer term on-call issues.

Inverness Consolidated Memorial Hospital

The Inverness Consolidated Memorial Hospital opened in 1977, following the integration of Inverness County Memorial Hospital and St, Mary's Hospital. The Inverness Consolidated Memorial Hospital houses acute and continuing care services and serves Inverness and surrounding area. Services include: inpatient acute medical and surgical beds (31 beds), maternal/child beds (6), palliative care, long term care beds (11), general surgery, endoscopy, low risk obstetrics, mental health services and 24 hour Emergency, ambulatory care as well as Lab, DI, physio, OT, mental health, home care, respiratory therapy and social work. Key findings for each area are as follows:

Inpatient Units:

Acute Inpatient (37 beds)

- The acute inpatient unit is a total of 37 beds (31 general med/surg/palliative, 3 obs and 3 paeds).
- There are 4 RNs on day shifts (11.25 hours) and 2 on nights (7.5 hours)
- There are 2 LPNs on days (11.25 hours) and 2 additional LPNs 24/7 (working 8 hour shifts)
- The staff are divided along the two sides (halls) and are split as follows: 1 wing has 3 RNs and 1 LPN on days; the other has 1 RN and 3 LPNs
- The wing with only one RN reports challenges with workload related to medications (as LPNs are not working at full scope)

Long Term Care (11 beds)

- Aite Curam has a total of 11 beds
- Staffing is one RN on days with 2 LPNs on days (1 working 7.5 hours and 1 working 11.25) and 1 LPN at night

Emergency Department

- Baseline staffing is 1 RN (24/7) and one additional RN on days (M-F) to assist with pre-surgical preparation.

Operating Room

- The OR has two rooms and staffing assumes 4 RNs (2 per room) on Monday, Tuesday, Thursday and Friday anmd 1 RN on Wednesdays. Staff are on-call for after hours emergency surgery

General Comments on staffing

- This facility demonstrates some very innovative models for staffing (e.g. LDRs are not staffed daily because of low volumes) but rather an RN leaves the floor when a delivery is in house. That being said, actual HPPD runs above the baseline and somewhat above PHSOR targets for combined medical/ALC/long term care.

Other Issues at ICMH:

- Staff report significant anxiety regarding the need to maintain maternity services at this site. With volumes that are reported to be less than 30 per year, the long term viability of this service is questionable, but the site appears to do an excellent job at screening higher risk cases (as per RCP report). The bigger issue is the ability to maintain physician services to support deliveries. We were advised that only one GP is willing to deliver babies and when he retires, finding a GP to provide this service may be very difficult. We note that the site experiences some disruptions of service now if anaesthesia or the GP is not available and anecdotally, it appears that these disruptions are increasing.
- Staff also report anxiety regarding the ability to maintain surgical services. The biggest challenge in the long run will be anaesthesia coverage, but again, the site appears to do a good job at managing this program at the current time.
- Surgical staff are all approaching retirement. The DHA needs to undertake future HR planning to determine what strategies can be pursued to recruit a new core group.
- Additional staffing may be required to support delivery of care in the OPD. The chemo program in particular may require additional resources.
- DI equipment is aged and reportedly some equipment has been deemed inappropriate for ongoing use for patient care
- Allied health staffing levels reflect skeleton services. Long term viability needs to be considered in future HR planning
- Ongoing educational strategies for staff are required
- Rollout of Meditech has created significant workload
- Infection control resources are likely required to support this site.

Recommendations for Consideration – Re: Inverness Memorial Consolidated Hospital

1. Staffing levels need to be reviewed to determine what factors cause the hospital to use actual hours of care in excess of the planned baseline levels

2. The DHA needs to engage in detailed HR planning surrounding key service areas for this site. Part of this planning will have to focus on contingency plans to maintain services for the local population if human resource shortages arise due to retirements or departures.

3. The DHA should engage in program and service development planning to confirm core services that are required at ICMH to fulfill its role as a community hospital.

4. An equipment replacement strategy needs to be developed for this site. The plan should consider equipment that is available at other sites that could be shared across communities (e.g. DI equipment in Cheticamp may be available for residents from Inverness)

Regional Hospital: Cape Breton Health Care Complex

Inpatient Services:

The analysis of inpatient services at the Cape Breton Health Care Complex suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for selected units at CBRH as well as the units at the other sites in industrial Cape Breton are summarized in the table below.

DHA 8: Cape Breton Health Care Complex								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
Cape Breton Regional - Selected Units								
Med/Surg/Telemetry (4A)	30	5.24	5.73	6.13	6.63	**0.49**	**- 0.40**	Target was set at top of range for med/curg units. Variance may reflect IMCU/Stepdown patients on this unit. Baseline may be too low.
Medical Oncology (4B)	31	6.05	5.73	6.42	6.88	**- 0.32**	**- 0.69**	Target was defined as top of range for med/surg which may not adequatelty reflect the complexity of care
Medical (4C)	30	5.83	4.64	6.04	6.51	**- 1.19**	**- 1.40**	This unit has ALC patients, but also a lot of VRE, so the target was set at the midpoint for medical units. The baseline and actuals are well above target, suggesting that there is an efficiency opportunity. Note: occupancy in 2005/06 was below 85% (an anomaly according to the DHA). This drop in occupancy accounts for 0.4 HPPD (28.6%) of the negative variance between actual and target.
Surgery (ortho/vasc/neuro - 3A)	31	5.38	6.25	5.80	6.32	**0.87**	**0.45**	Target was set at top of range because cases are deemed to be tertiary. This suggests that the unit operates below the target, but in the range. At this time, suggest no change.
General Surgery (4D)	31	5.38	6.25	5.78	6.28	**0.87**	**0.47**	Target was set at top of range because cases are deemed to be tertiary. This suggests that the unit operates below the target, but in the range. At this time, suggest no change.
Northside								
Medical Unit (5E)	15	5.53	4.98	6.02	6.54	**- 0.55**	**- 1.04**	Target has been adjusted to reflect midpoint for medicine for 11 beds and 1 RN for four IMCU beds. Unit to be consolidated with 2W, which will help address structural inefficiency associated with small unit size.
Medicine / Palliative (4W & 4E)	29	4.36	4.20	4.63	4.97	**- 0.16**	**- 0.43**	Target has been adjusted to reflect mix of medical and ALC. Using this method, some savings have been identified. 7.50 hour shift for LPN could be reviewed and potentially eliminated
Med/Surg (2W)	15	4.44	4.64	5.56	6.32	**0.20**	**- 0.92**	Baseline is likely appropriate but actual costs are much higher. Consolidation with 5E will help address structural inefficiencies associated with smaller units. Other UPP and MOS warrants further review as it 0.76 hours per day.
Glace Bay								
3W/3S MEDICAL	33	4.92	4.64	5.86	6.51	**- 0.28**	**- 1.22**	Target reflects midpoint for medical units. The baseline for the unit calls for 9.5 RN/LPN staff on day shift which appears to be too much for the level of care reportedly being delivered. Recommend reduction in baseline staffing. Actual staffing is running even higher, suggesting that savings are achievable.
Cardiology / Medicine	12	4.86	4.64	5.71	6.69	**- 0.22**	**- 1.07**	Both baseline and actual are above target.
ALC	18	3.51	3.31	3.90	4.38	**- 0.20**	**- 0.60**	Continuing Care standards suggest skill mix should be 70% CCA. This unit is exclusively RN/LPN. Changes to skill mix should be introduced.
New Waterford								
Medical	22	4.11	5.03	5.45	5.98	**0.92**	**- 0.42**	Adjusted target assumes 10% chronic vents (3:1 ratio), with rest of beds defined as medical (at midpoint). Baseline appears correct using this target, but actual staffing is much higher. Savings appear feasible.

Other inpatient comments are as follows:

- **Critical Care** – we have not set targets for critical care units as the acuity in the ICU is unclear and the other units have critical mass issues. We question the need for a critical care unit at Glace Bay, noting its average daily census is less than 3.
- **Obstetrics** – we have recommended that all programs need to be reviewed as part of provincial review. CBHCC has the 5th highest average cost per patient day for its obstetrical unit (per DOH statistics), ands the 6th highest occupancy.

- **Paediatrics** – the calculation of targets suggests that there are opportunities here, but it is a critical mass function, so no savings have been identified.
- **Over-Hires** – the DHA routinely over-hires in the spring to secure jobs for new graduates form nursing programs. These hours are included in the actual hours and contribute to some of the variances noted. Therefore some of the savings potential would be overstated.

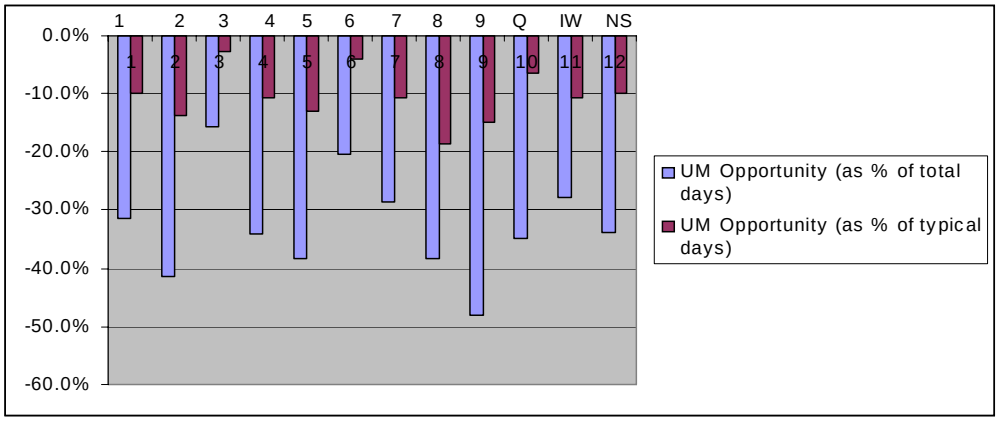
Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units suggest that a total of 66,000 hours might possibly have been in 2005/06.

Recommendations for Consideration re: Inpatient Services at CBRH:

1. Review actual staffing costs and introduce processes to reduce variability from targeted or baseline staffing levels.
2. Review staffing patterns on medical units at all sites.
3. Review MOS and UPP Other hours for units at Northside and Glace Bay.

Utilization Management:

CBDHA has the highest variance between expected length of stay and actual length of stay in the province.



This suggests that there is substantial opportunity to reduce LOS and reduce costs.

Recommendations for Consideration – Utilization Management:

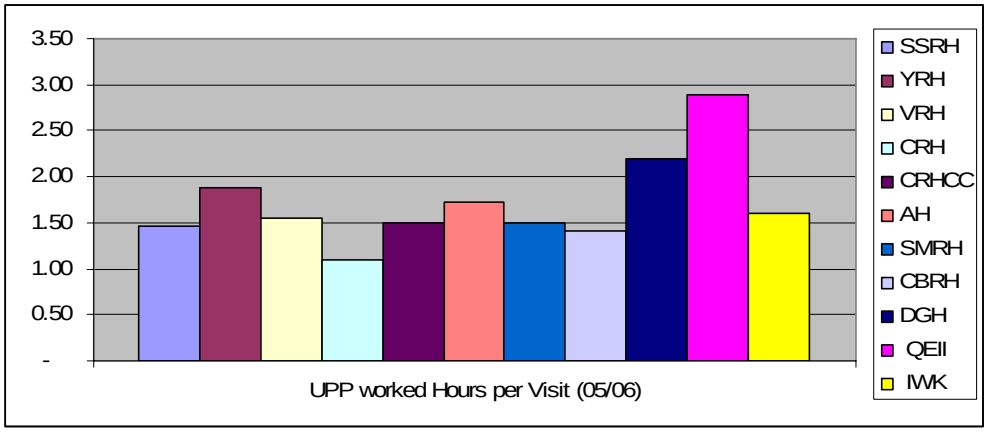
1. Actively engage physicians and managers in processes to focus on high volume cases that are significantly outside of the ELOS in an effort to reduce LOS through more coordinated approaches to discharge planning

Emergency Department:

Patient volumes in 2005/06 were 44,424 visits and the hospital recorded 1,824 patient days in the ED. This translates to an average daily volume of 122 visits (which is the 2nd highest in NS for regional sites) and 5 admitted patients per day (which is the highest in the province). It is noteworthy that

data from 2006/07 (to December 31, 2006), shows that the average number of admitted patients in the ED at CBRH has more than doubled, to 11.2. The next highest number of admitted patients is the QEII, with 4.7 patients per day on average.

At these volumes, the ED at CBRH operated with an average of 1.42 Hours of Care per Patient Visit, which is essentially at the midpoint for the province (see chart below).



The ED is staffed by physicians for 40 hours each day (1 MD 24/7 plus second MD during peak periods). Nursing staffing patterns/assignments appear to be appropriate with one RN dedicated to triage during the day and the remaining three RNs covering the treatment areas and observation beds. (Triage at night is shared by the RNs covering the treatment areas). We note that "Fast Track" was initiated but was not viewed as positive so has been dropped.

It was reported that there can sometimes be long waits for patients who require access to DI. This should be reviewed further by the DHA.

Recommendations for Consideration re: Emergency Department at CBRH:

1. Continue to focus on initiatives surrounding overall patient flow and access to DI.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage CBDHA to initiate some role reviews for these resources to ensure that the current role as

well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTs being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at CBRH:

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ambulatory Care:

A focus group was conducted with ambulatory care staff to understand what they believed is working well and what needs improvement. The following outlines key findings from the focus group:

- Ambulatory services are operated using a decentralized model. Participants felt that services are well utilized, and that they are patient-centred in their care delivery. In particular, participants noted that intake of heart function patients is working well.
- Physical access via 4th floor was noted as problematic but there was a noted plan to address.
- Currently, physician offices schedule patients and then fax a completed list to clinics as opposed to utilizing the Community Wide Scheduler. Opportunities to leverage an enterprise-wide scheduling model supporting multiple clinics, disciplines and services should be investigated. Some services were noted as not utilizing Meditech (e.g., orthopaedic). The impact of not leveraging the common hospital information system should be investigated.
- Staff noted that the electronic medical record is working well and is leveraged by the clinics.
- Participants noted that $5.2M has been approved to build ambulatory care centre in next 5-10 years.
- Some patients were noted as falling through the cracks. For example, orthopaedic patients were noted as traveling from Inverness to see a patient at the Regional hospital however the physician was not present. There was a noted need for improved communication with outlying areas. Need to improve/strengthen the communication loops.
- Need to institute a better system when patients arrive with a paramedic. Currently, patient may need to wait till the paramedic is available to return.
- Some patients arrive very early for appointments. Need to set expectations and identify the process as part of the communication from the office.
- COPD/isolation space is at a premium. Need to determine improve approaches to managing space to support patients.
- Insufficient instrumentations is sometimes resulting in staff taking instruments from the ED thereby creating incomplete sets. Need to discontinue this practice.

Recommendations for Consideration – Ambulatory Care at CBRH:

1. Need to look at improved registration processes and scheduling processes to support greater and more efficient through-put in a patient centred model.
2. Need to monitor and address late physician arrival to clinic appointments.
3. Need to develop improved overtime management controls. Investigate utility of CWS to support.
4. Capacity planning for space and time allocations should be conducted. Introduce utilization management practices.

Ancillary Services:

Lab, DI, and Pharmacy have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory*:*

The lab collections are available from 730-1500 hours daily. The service indicated that it is operating on budget and has been effective in referring out tests. The core lab model seems to be working well and effectively utilizing the staff available. Turnaround times for services was noted by the lab as being good. The Lab indicated that they could take on more activity from other sites if there was a need or demand. Lab runs are done first thing in morning and on an adhoc (pager) basis throughout the day. Some of the key finding and issues experienced at CBDHA Laboratory Services include:

- The Lab takes on an active role in educating areas (e.g., nursing). Lab leadership has noted that a collaborative working arrangement has been formed with floors. In addition, an intranet guide has been developed to assist in ordering practices within the health authority.
- CBDHA has developed an innovative distribution model to bring specimens into the regional site from all sites within the health authority and where required and appropriate, send some specimens to the QEII.
- The service has effectively transitioned stats ordering from 14% to 4% through the development of education and monitoring processes.
- Computerization has been a big support for the lab. However, the lab is not currently not leveraging automation. Need to investigate further.
- Staffing as noted by leadership as being generally good. The service leverage casual staff and has implemented an MLA model however note that there may be opportunity to further leverage MLA staff to a greater extent. Rate of pay still remains an issue to attract and maintain staff.
- A potential opportunity for future expansion will include greater adoption of point of care testing. Currently glucometers are available but not really monitored by Lab. There is an interest by ED to get into pregnancy monitoring. Need to evaluate need and ensure lab services are involved from the outset.
- A key challenge for the service is operating a multi-site operation and the transportation issues. Currently, the service leverages two couriers and a taxi service Monday to Friday.
- Morale issues due to union negotiations and salary differential are currently affecting staff.
- Meeting ISO standards by 2008 will be a challenge for the service. Lab Leadership noted that there is still a lot of work to be done.
- Lab services noted that it needs support from human resources, IS, material management, engineering. Current level of support is noted as good but a greater level of support is required.

***Recommendations for Consideration – Lab Services at CBRH*:**

1. CBDHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning should reflect provincial changes.
2. An assessment of HR challenges should be drafted and presented to senior leadership at CBDHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model. Senior leadership will work with the department and HR to address.
3. CBDHA should investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).

4. CBDHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

Diagnostic Imaging:

Diagnostic Imaging services are provided by 120 FTEs. Diagnostic Imaging services includes X-Ray, CT scans, ultrasounds, echocardiography, nuclear medicine, bone density testing, diagnostic mammography and mobile breast screening. There is currently 1 technical director, 3 managers/supervisors, 2.1 PACs system administrators, 38.6 radiology techs, 6.4 CT techs, 2.4 EKG techs, 10.4 ultrasound techs, 3.4 MRI techs, 1.1 bone density techs, 2 mammography techs, 4.8 nuclear medicine techs, 1.1 angio tech, 7.5 breast screening staff, 7 transcriptionist, 22.1 clerical staff, and 3.1 porters. CBDHA also has 14 radiologists - 10 in Cape Breton, 1 Inverness, 1 North side, and 2 in Glace Bay). All of the radiologist outside of Cape Breton are senior radiologists (>60 years).

Some of the key findings and issues associated with CBDHA Diagnostic Imaging Services include:

- The most significant challenges facing DI Services is the availability of trained resources in the many diagnostic modalities. CDHA must develop effective tools to assist in planning and preparing for any staffing shortfalls. Imaging leadership estimated a technologist shortfall of 8.5 FTEs across the four sites. Staff shortages are leading in higher overtime costs. Staff shortages require strong recruitment strategies. The salary differential also has an impact on recruitment and staff morale.
- Some equipment is requiring replacement. While the hospital have made investments in equipment (MR, RF, Ultrasound, bone density, DR room, nuclear meds), there is a need for ongoing investments that should be built into capital planning (e.g., vascular, CT, nuclear meds, ultrasound).
- Recruiting and maintaining radiologists is dependent on access to equipment. It was noted that the current state of equipment may reduce the DHA's ability to attract and retain staff.
- Impact analysis when bringing on new physicians and/or services is not being conducted. Hence the impact on support services and resources is not factored into planning (e.g., recruitment of the new thoracic surgeon).
- Patients (e.g., cancer patients) may have a time sensitive need to access services. With the high waiting lists, delivery of services becomes challenging. Need to ensure timely and appropriate access using fast track or protocols.
- Imaging Leadership indicated that staff have a high level of functionality. At CBRH, there are 2 nuclear med cameras and 2 techs resulting in 28 cases per day. At QEII, there are 9 nuclear med cameras, 12 flouro techs, 2 hot lab techs and 1 tech for cardiac prep resulting in 42 cases per day.
- Leadership noted that there was a perception that wait times are growing. No quantitative data was provided to support this finding.
- While PAC implementation has been very successful, there is a noted lack of technical support for the system. For example, it was noted that there is only one PAC administrator and a noted need for additional support. Data provide identifies 2.1 FTEs assigned to PAC administration.
- Noted opportunity to leverage TalkTechnology for automated transcription. Currently being investigated.
- Recently submitted request for two porters. Currently, Imaging leverages hospital based porters.

Recommendations for Consideration – D.I. Services at CBDHA:

1. Review equipment status and develop a plan for replacement.

2. Introduce more formal impact analysis process to identify impact on all areas, including DI.
3. Improve utilization at all sites. Make more efficient use of all x-ray rooms in the district by spreading the current amount of work around better.

Pharmacy:

Staffing and Hours of Operations. CBDHA delivers pharmacy services at all sites, but has full time pharmacy coverage on four sites. There are no formalized on-call services available. The following outlines staffing and hours of operations:

- North side, 830-430 M-F, 1 pharmacist, 2 techs.
- Glace Bay, 830-430 M-F, 1 pharmacist, 1 techs.
- New Waterford, 830-430 M-F, 0 pharmacist, 1 techs.
- Regional, 800-430 M-F, 1000-1630 S-S, 6 pharmacist, 15 techs.
- Inverness has a pharmacy tech, and Baddeck, Cheticamp, Neils Harbour leverages a part time pharmacy tech.
- In addition, there is 2.6 FTEs assigned to IT Pharmacist and IT Pharmacy Tech.

Some key findings and issues associated with CBDHA Pharmacy Services include:

- Estimated 400,000 medications orders processed annually. As well, over 5000 treatments prepared for oncology and the CIVA program manufactures approximately 45,000 units per year. As well, a high volume of adult TPN and neonatal TPN at the regional site dispensed. The department has utilizes MEDITECH which has been operational for two years. Custom reports enhance ability to track drug tends and utilization issues.
- CBDHA has initiated medication reconciliation and is working to create computer generated MARs.
- Pharmacy Leadership has noted the challenges associated with staffing coverage under a multi-site model. Recruitment remains a big challenge. Department actively goes to health fairs to recruit staff.
- Pharmacy utilizes a tech to enter order with a check by the pharmacist. In some situations, the pharmacist is required to enter orders. Currently not utilizing a tech-check-tech process. Further review of improved ordering and dispensing process should be conducted.
- Pharmacy hours need to be extended to meet the late admits or returns of patients to units (e.g., after 4-7pm).
- Orders are picked up in the morning by the porter at 9am, and then hourly by the ward clerk. Two medication delivery "drops" are leveraged (e.g., 1pm and 4pm). After 4pm, there is no access to the pharmacy. Need to review the ordering, dispensing and medication distribution processes and redesign for efficiency and effectiveness.
- Currently, CBDHA does not leverage pharmacists on the units.
- CBDHA not utilizing a unit dose system.
- No formalized process for pharmacist on call used. Pharmacists however are contacted at home.
- Access to medications at night was noted as a concern by staff.
- Need to continue to implement Safer Healthcare Now! Initiatives.
- Need to develop strategies for recruitment and retention of pharmacists.

Recommendations for Consideration – Pharmacy Services at CBDHA:

1. Investigate opportunities to better leverage pharmacy techs to enable pharmacists to more directly support the care delivery teams.

2. Undertake a redesign to improve medication reconciliation.

Professional Practice Issues

Nursing:

RNs at CBDHA generally report that they feel that the staffing patterns are inadequate. This presents a major challenge for the DHA given the findings contained in this report which suggest that many of the inpatient units in the District staff above required levels.

This general sense of being stretched and overworked reportedly leads to lower morale, although nurses generally state that they like their jobs and like working for this DHA. Nurses here, as in other DHAs report that they perform numerous non-nursing functions. RNs would like to be more involved in Discharge Planning, but demands on their time do not allow for this.

More so than the RNs, LPNs at CBHCC describe a work environment that could be improved. This appears to be directly related to issues surrounding moving them to full scope of practice, including:

- New LPNs feel that they are not being allowed to use the competencies they have and they report no confirmation that DHA wants them to work as full scope.
- Some feel that that senior admin views LPN role as "helpers" for the RNs
- As with the RNs, LPNs, report that they perform numerous non-nursing functions

Recommendations for Consideration re: Nursing Issues at CBDHA:

1. There appears to be a general need to engage front line staff in some team building. This will be essential if CBDHA decides to pursue model of care redesign. There should be an overall move to respecting all providers throughout the entire facility to foster an increase in work satisfaction.
3. Continue to review scope of practice issues and work to ensure that all staff work at full scope of practice as defined by the appropriate Colleges.

Medical Staff:

Cape Breton has the most sophisticated medical staff structure outside of HRM, which is appropriate given the role that it plays. CBDHA also generally appears to have a good overall relationship with its physicians, although there is some sense at the staff level that physicians do not have enough rules defined regarding their behaviour.

The VP, Medical is seen as a real asset to the organization and the medical staff appear to value his leadership.

Utilization management (UM) has been described previously as an overarching issue across the province. CBDHA, like all DHAs, needs to define its expectations for physician participation in UM improvement and monitor behaviour to ensure that physicians are participating appropriately. Consequences for non-participation should be clearly defined and then monitored and enforced as required.

Recommendations for Consideration re: Medical Staff Issues at CBRH:

1. Continue to work with DOH to develop sustainable funding models for physician recruitment and coverage, especially for Primary Health Care and Rural Health.
2. Work to engage the medical staff in processes to improve Utilization Management.

Patient Flow

To understand patient flow challenges at CBDHA, the patient journey was assessed based on a walk-through of the facility and a series of targeted interviews and meetings with key front-line staff and stakeholders. As a result, the following high level observations were noted:

- Registration appears to be working well. A hybrid model is utilized with admitting conducted at: central admitting/lab, ambulatory/Day Surgery, ED, diagnostic imaging, other clinics/services (PT, OT).
- Phlebotomy Services are effective. A priority-based triage model allows pre-identified walk-ins to be managed in an expedient manner (e.g., immuno-compromised, PAC access). To support this, there is a registration person in phlebotomy. There is also a communication board to let patients know how busy the department is. May need to consider expanding the number of chairs.
- ED registration processes appear to be working well. Hospital leverages a triage prior to registration model. Once triaged, patient can be fast tracked to the 13 stretchers – 2 exam, 9 stretches, 2 psychiatry rooms. ED also has 4 observation stretchers, 4 trauma rooms, space for 7 hallway patients. ED was noted to have been diverted on a few occasions over the few weeks to the review.
- Discharge lounges have been tried but overall adoption has been limited.
- No formalized bed meetings are conducted.
- Opportunities to leverage a progressive care unit to care for epidural patients to reduce demands on the ICU have been used.
- ALC activity varies from 47 to up to 70 beds. There is a dedicated temporary 18 ALC bed capacity.
- Home care support services available however home nursing services are difficult to obtain.
- Need for palliative care services in the community.

As part of the walk-through, specific comments were made in the following areas:

- Ambulatory Clinic (Orthopaedic)
- Diagnostic Imaging
- PAC
- Inpatient Unit (Orthopaedic)
- OR Booking

Ambulatory Clinic

A walk-thru of the orthopaedic clinic noted that the paging system was old and antiquated. Overhead pages were not effective at calling patients – alternate models should be investigated. In addition, signage in the clinics is generally poor and should be improved.

Some general comments related to ambulatory scheduling were noted. In particular, there appears to be overbooking issues, late arrival of some patients, resulting overtime issues for staff, and some over utilization of rooms. It was noted that MDs just come in and use space and there is less coordination of other care providers (e.g., Nursing) support services. In addition, it was noted that there are lots of add-ons.

Diagnostic Imaging

CBDHA recently transitioned to scheduling imaging appointments. Generally speaking, this transition was noted by staff to be both successful and beneficial, has resulted in a decreased level of confusion amongst staff and has enabled better management of inpatient activity. CBDHA is encouraged to track and monitor the wait list to assess the impact scheduling appointments has made.

PAC

The PAC should be credited with their success at serving elective inpatient activity – currently, staff noted that PAC serves 100% of the hospital's elective inpatient, leverages the community wide scheduler (CWS) and the EMR. PAC provides primary nursing consultation between 1 and 5 days prior to surgery and generally spends between 30-60 minutes per patient. Generally the PAC sees 12-20 patients per day, and has negotiated block access to diagnostic imaging and leverages 2 lab runs per day. One area of improvement is increased level of patient education support. Need to determine the planned growth in PAC to meet growing demands for services (both volume and breadth).

Anaesthesia consultations to start in a few weeks. A pain clinic will be starting and will provide a broader supply of MDs by leveraging surgical anaesthetist for PAC services.

Inpatient Unit

A visit to the orthopaedic unit was completed to better understand general issues associated with care planning and delivery in inpatient areas. A key area of focus and development is on improving the discharge management activities. CBDHA should continue and strengthen discharge planning, and coordinating home care, social work involvement earlier.

A key issue directly impacting orthopaedics and potentially other units are medication ordering and transportation processes. Specifically, after hour delivery of medications was noted as an area requiring modifications. Staff discussed challenges with receiving medications for late admits to the units (i.e., after 5pm) resulting in nursing staff expending significant work to track and administer medications. Staff noted that there was minimal access to pharmacy after 4pm to respond to questions. Access to ward stock was noted as being acceptable. CBDHA should look into extending hours of operations of the pharmacy or developing processes for accessing medications for late admits.

OR Booking

Current OR Booking processes are completely manual resulting in duplicative or redundant processes that leverage an old mainframe unit. CBDHA will adopt a new scheduling system as part of the province-wide OR Information System.

Discharge Planning

The discharge planning function and role is a critical, proactive step an organization can support to facilitate effective, planned patient flow. The organization noted that it does not utilize formalized bed meetings.

Access to Continuing Care

Timely access to continuing care is also an important consideration for patient flow. Such timely access (utilizing an efficient process) ensures minimal social worker and/or nursing time is spent managing the administrative process to ensure beds can be made accessible sooner.

Recommendations for Consideration re: Patient Flow

1. CBDHA should investigate revising or creating ambulatory scheduling guidelines to clearly document rules that will be monitored for adherence.
2. CBDHA should develop capacity to monitor utilization of clinic resources including overtime of staff and effective utilization of the ambulatory grids.
3. CBDHA should also conduct an assessment to determine what activities should be completed in the clinic versus activity better suited for the MD office.
4. Pharmacy medication order, distribution, and administration processes should be reviewed to ensure more timely access to medications and reduce unnecessary workload on nursing staff.
5. Hours of operations for the pharmacy should be reviewed.
6. Implement a new OR Information System with OR specific scheduling functionality.
7. CBDHA must work to support more timely discharge of patients by physician staff, and should consider the introduction of bed meetings and other proactive activities to coordinate discharge planning.
8. A review of processes, policies, and timeliness for accessing continuing care services should be conducted to identify opportunities for redesigning processes to improve timely access to services, and where possible, service level agreements relating to services be developed. As a result, modified policies and procedures should be distributed and communicated to ensure a clear understanding for how services are to be engaged.

Information Technology

A meeting with IT services was conducted to understand current challenges and supporting initiatives affecting the department. These include:

- Currently leverage 14 FTEs to provide hardware, software, network support, systems development, telecommunications, user education and training, and required helpdesk services. CBDHA also utilizes the provincial help desk. IT is currently supporting 1,760 computers across 14 sites with a departmental budget of $1.2M. The department estimates IT operating costs is 0.79% of total operating budget and believes it is the lowest of all DHAs.
- Generally, it was noted that users have a favourable opinion of IT services.
- Demand for IT services and support have been increasing. There is a general belief by the department that they are falling behind as indicated by response time increasing. Need to improve desktop and application support to reduce backlogs and improve response time.
- There is a noted need for access to decision support to support planning and decision-making by administration and clinical staff.
- Department believes that they are not adequately staffed to support key provincial initiatives. While there is an expectation and need to support these requirements, the department has noted that there is limited support provided by DOH.
- There is a need to engage staff in departmental IT process improvement opportunities. The key limiting factor is time by both staff – clinical, IT and support areas.
- Strategies to improve education and training related to technology should be invested in.
- When asked whether CBDHA's could take on a larger support role for other DHAs, it was noted by the Director that they did not view expanded services as a key area of growth for the department.
- The department has made investments in developing/supporting home grown applications (e.g., HRIS). Need to determine if this model is appropriate.

Recommendations for Consideration re: IT Services:

1. Support development of implementing key services and/or systems. For example, rolling out a shared DSS model including linkages with key data repositories and installing business intelligence software.

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The Board at CBDHA view the relationship between the Board and the CEO as excellent and feels that the Board functions very effectively and has a strong understanding of roles and responsibilities and the differences between management and governance

From a DHA perspective, the Board notes that they are working collaboratively with the Community Health Boards (CHBs) and that they feel they have good open communication.

The CHBs themselves report that they are an active group but can struggle with attendance and focus. Furthermore, we heard no negativity towards the DHA. Finally we note that the CHBs would likely benefit from some general development regarding their roles and responsibilities

Recommendations for Consideration re: Governance

1. We recommend that the Board continue its work with the CHBs to ensure ongoing strong relationships with the these important groups
2. We recommend that the Board continue to build its relationships with the Foundation to create a regional agenda with these groups.
3. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year.

DHA 9: CAPITAL DISTRICT HEALTH AUTHORITY

General Update

Prior to looking at any details surrounding findings, it is important to note that this report differs somewhat from the draft reports prepared for and presented to the other DHAs. The rationale for these differences include:

- CDHA undertook a patient services assessment previously and has already received a set of detailed recommendations;
- The workplan prepared by CSI for PHSOR, and approved by the Steering Committee, called for a "mini-assessment" at CDHA to conduct follow up meetings to the assessment that was completed previously. The focus of these meetings will be to confirm progress that has been made to date and identify any issues with outstanding recommendations from the previous review. We will also assess barriers that have impacted implementation; and
- The mini-assessment also included a review of areas not previously identified as the previous review was focused solely on patient services.

Primary Health Care

The majority of issues surrounding Primary Health Care have been addressed in the system-wide section of this report. The CDHA needs to ensure it is actively involved in provincial strategies to develop Primary Health Care services.

Capital Gains

A major initiative for CDHA in the area of primary health care is the development and rollout of its Capital Gains framework. This framework seeks to address current gaps in the delivery of primary health care services and builds on the relationship between a patient and the primary care provider and augments this through a series of initiatives including:

- Family Practice Teams
- Family Practice Groups
- Community Health Teams
- Community Health Networks
- Health Systems / Acute Care Facilities
- Provincial / Regional Programs

Capital Gains is tightly linked with chronic disease management models and CDHA is to be congratulated for its work in this area.

Other Key Initiatives

In addition to Capital Gains, CDHA has a number of other areas that it is now focusing on, including:

- Duffus Street's *Renewal In Action*
- The Rainbow community project
- North Preston Community Health Centre
- Family Practice Nursing

As the DHA prepares to define new strategic directions in 2008, we encourage the organization to continue its population health focus, and renew and strengthen its commitment to Primary Health Care.

Recommendations for Consideration – Primary Health Care

1. Work with DOH to pursue options for expansion of Primary Health Care initiatives (as part of broader Rural Health and Primary Health Care Strategies).
2. Continue to rollout Capital Gains
3. Continue to support the work of the CHBs
4. Continue to pursue joint planning priorities surrounding Youth Health and Addictions services with the IWK

Mental Health

CDHA Mental Health Services provides both in and out-patient clinical promotion and treatment programs and services to residents of the DHA. Mental Health Services in CDHA also act as a tertiary referral centre for the province and provide an extensive list of services. For the purposes of this report, the Nova Scotia Hospital and related inpatient and community linkages were examined.

Mental Health Services and Nova Scotia Hospital

The Nova Scotia Hospital Emergency Psychiatric Assessment Service provides access to emergency psychiatric assessment.

A team of health care professionals skilled in assessment and critical evaluation provides a range of services including assessment, consultation, education and some short-term, community-based follow-up. Based on the outcome of the psychiatric assessment, the team will recommend the most beneficial community-based treatment option. Treatment plans may suggest follow-up with a community mental health team, a general practitioner, a return to current health care provider, community service or agency, or hospital admission.

The physical plant of the Nova Scotia Hospital has been the subject of many reviews and it is not the intent of this report to examine those issues. It is noted however that the Nova Scotia Hospital facility is inadequate to meet the needs of patients and practitioners. Significant investment must be considered a priority to replace this facility if services are to continue to be delivered from this site.

Key Themes/Issues include:

Staffing

- It is difficult to recruit for Mental Health Services as they are not able to offer long term or permanent positions. Most positions are short term which makes recruitment challenging. Facilities at Nova Scotia Hospital detract from being able to retain new graduates, as working conditions are difficult.
- Mental health nursing training is not included until fourth year, by which time nurses have already decided which specialty area they want to work within. Dalhousie University is moving this to third year which may help. However, nursing students do complete a rotation through mental health units.

Forensics

- Co-location of forensics with corrections five years ago appears to have created confusion. It is not well understood that Nova Scotia Hospital is a hospital separate from corrections. (There are empty beds in forensics that are reportedly not getting filled due to co-location with corrections.

The DHAS notes that while the census of true Forensic patients is decreased, there are legal and ethical issues in putting “regular” mental health patients in a secure facility.)

Mental Health Stigma

- There is a stigma associated with admission to Nova Scotia Hospital. Mental Health is not well integrated into the health system.

Service Planning

- Aging population is the biggest driver of volume but the lowest priority for program planning.
- There is a lack of planning and integration with IWK for Youth Services.
- Access to affordable medications is a barrier to treatment

Community Transition, Resources and Supports

- Inpatients wait a long time before being able to transfer out even after having been stabilized. Beds are often filled with ALC patients at all sites.
- Lack of coordination with Department of Community Services due to classification discrepancies of patients. Staff in Mental Health may make recommendations but provincial department classifies using different criteria. (e.g. no PRNs for 30 days or patient is excluded). Patients can wait up to 18 months as community service often does not agree with mental health recommendation that patient is ready to return to the community.
- Staff need to be encouraged to work within a new model which is community rather than acute care based. The service should be modified to go to patients rather than requiring patients to come to the service.

Nova Scotia Hospital Inpatient Unit

- Limited or no occupational therapy and social work for inpatient units. These services would expedite discharge.
- There are no portering, clerical support or medical diagnostic services. Patients must go to Dartmouth General Hospital, which may be more cost-effective but is currently inefficient, requiring patients to wait and be re-admitted. CT scans are common and patients with behavioural challenges are often difficult to manage when accessing diagnostic services.

Facility Planning

- Bungalows are being built on the Nova Scotia Hospital site to replace beds currently in the acute care setting. They are to be transitional and based on a rehabilitation model but some staff fear that placement may become permanent. Patients eligible to be admitted to the bungalows require community overnight options, and clinical rehab services. A few staff feel that funding would have been better allocated to enhance community services and support community living.

Recommendations for Consideration – Mental Health

1. Consider a collaborative project with the Department of Community Services for the development of appropriate housing, medication subsidies and transportation to reflect the needs of mental health patients.

2. Work with DOH and the other DHAs to undertake a focused review of Mental Health services including, but not limited to: (a) a Health Human Resource strategy for mental health professionals; (b) a provincial bed analysis to determine how many beds are needed in the province and where those beds should be and (c) Province wide strategies for program growth and development (e.g. seniors' mental health services).

3. Increase allocation of funding for community and outpatient services to meet patient needs and to reduce the need for unnecessary inpatient stays.

4. Increase monitoring and accountability of DHAs for implementation of provincial care standards. Implementation of these standards would reduce fragmentation of services and improve patient care.

5. Establish a closer link between IWK mental health and community both for paediatric patients in the community and for patients who were provided care by IWK and then need to transition to adult services.

6. Continue plans to relocate from the Nova Scotia Hospital site, for safety reasons and for the benefit of an improved environment for patients.

7. Need closer collaboration between Mental Health Services and the Department of Justice. This has been difficult due to a difference in philosophy for the treatment of mental health patients.

Community Health Centres

CDHA has five (5) small community hospitals / health centres that are located in its boundaries:

- Cobequid Community Health Centre in Lower Sackville
- Hants Community Hospital in Windsor
- Musquodoboit Valley Memorial Hospital in Middle Musquodoboit
- Eastern Shore Memorial Hospital in Sheet Harbour
- Twin Oaks Memorial Hospital in Musquodoboit Harbour,

As with other DHA reports, we have included operational summaries for facilities such as these in the community based care section, leaving the acute care section for review of the QEII and the DGH.

Cobequid Community Health Centre

Opened in 2006, the Cobequid Community Health Centre, located in Lower Sackville, is a unique model for ambulatory care in Nova Scotia. The CCHC provides a range of health and social services to a growing population within CDHA. Feedback was provided on a wide variety of the services offered through the health centre. For the purposes of this report the themes and issues are presented by service/issue area.

Role of Community Health Centre

- Although co-located, many services are still delivered in silos. Some staff and community members are unfamiliar with the Community Health Centre concept and cannot differentiate between hospitals and CHCs. CCHC is still considered to be an “acute care centric” model for the delivery of services.

- Some staff feel that CDHA does not have Cobequid on its radar despite the significant investment.

- Community expectations for this centre are high. Wait times, at first, were longer than in previous facility. Volume has increased as patients are choosing to “check out” the new building rather than go to their GP. A sustained increase in ambulatory services has been managed with increased efficiency.

Diagnostic Services

- There are long wait times for ultrasound and barium procedures as in the entire District. There is room for future growth. Three full-time radiologists are on-site but additional technologists are needed. The current shortage of imaging technologists is a limiting factor for any increase in testing. Digital mammography screening, as part of the NS Breast Screening Program, has just been opened.

Models of Care

- Nurse practitioner proposal was submitted to the DoH prior to the move to the new building, however this proposal has not yet been approved or implemented. This facility has space that is ideal for a collaborative practice.

Emergency Department

Note: The emergency department hours are 7 a.m. – 10 p.m., seven days per week. The department is staffed for 19 of the 29 available bays. This is an increase from 12 bays at the previous site.

- Two or three times per week there are patients remaining after midnight either receiving treatment or waiting for transfer to QEII. The emergency department doors close at 10:00 p.m. but patients can arrive right up to that time which extends the actual operating hours well beyond the scheduled close of 10 p.m.

- There is increased volume coming from Dartmouth General Hospital and QEII as patients think they will be seen faster.

- The complement of physicians had remained the same despite the increase in volumes from the previous site; however, in March 2007, DoH authorized two more hours of care per day. This has reduced the LWBS rate from 12% - 8%.

- For consultant follow up or for surgery or admission, patients present to the emergency department in Cobequid and then must re-present to the QEII emergency department before they can be admitted if Cobequid is trying to transfer. This can take 12 – 15 hours. If the patient is not admitted, they must find a way to return to Cobequid often with limited transportation options. Elderly patients can become stranded in Halifax.

Staffing

- It is reported that within the next five years 50% of nursing staff will retire. There are 25 casuals but all work elsewhere and are rarely available. Although there is usually coverage for planned vacation, sick calls are often not covered.

- Length of time for posting and hiring decisions is reported to be much longer since it must now be done through CDHA rather than locally. Postings are on Tuesdays and Fridays only and access to human resource consultants is challenging due to their limited availability.

- Additional funding is perceived to be needed for physicians including a second physician in the emergency department from 11:00 a.m. onwards.

Recommendations for Consideration – Cobequid Community Health Centre

1. Need patient transfer protocols where patients have had work up and require a bed or consult at QEII to facilitate direct transfers rather than re-admits. CDHA needs to integrate systems. Many of the patients seem to be more legitimately categorized as walk in clinic patients – may need to redefine/confirm the role of this emergency department.

2. Continue to enhance the ambulatory component of this centre to maximize service including completion of the plans for endoscopy, urology, and chemotherapy for cancer care.

3. Continue to review hours of care required from physicians to manage volumes.

Hants Community Hospital

Hants Community Hospital is located in Windsor Nova Scotia. It serves the communities of Windsor and Hantsport, the Municipality of West Hants, and portions of the Municipality of East Hants. There are 38 acute care beds on-site and four beds that can be used for acute care, immediate care or temporary long term care. This hospital provides a range of primary health services including: 24-hour emergency care, Acute medical care, General surgical care, Physiotherapy services, Laboratory services, Diagnostic imaging services, Social work services, and a number of ambulatory services.

Emergency Department Services

- There are 18,000 patient visits per year but usually only five visits per night (after 10 p.m.). Most are triage levels 4 and 5. There are limited GP clinic hours in the community which increases pressure on emergency department to be the after hours walk-in clinic.
- The emergency department space was remodeled approximately five years ago. The space is reported by staff to be "OK", however there are a number of patient flow that need to be addressed.
- Emergency department physicians need to have cross-credentials for the DHA. The physician coverage schedule is not sustainable in the long term. Emergency department physicians could be shared across DHA as required.
- It is difficult to transfer from the emergency department at Hants Community Hospital to the emergency department in at QEII. Patients who are too complex for Hants Community Hospital and not complex enough for QEII are not being served well in either location.
- There are five emergency department RN retirements anticipated in the next three to four years. There is a limited casual pool and recruitment of nurses is a challenge. Due to the proximity to Halifax, many nurses choose to not work in smaller community hospitals.
- There is no in-hospital support for EDIS so more experienced staff in department end up being the "go-to" person. Need for additional EDIS training as the data going into the system is not being entered consistently.
- There is no Early Response Team for mental health patients. Ninety-five percent of acutely ill patients are referred to Nova Scotia Hospital. There is no safe room in the emergency department.

Community Family Physicians

- There are 12 GPs in the community, however, only three have chosen to maintain hospital privileges. Patients who require hospitalization present to the emergency department to be admitted by the on-call physician. This increases the workload for the three physicians with privileges.

Staffing

- The facility has historically faced chronic shortages in virtually all areas with limited casual and vacation relief, but the DHA reports that all RN positions are now filled.
- LPN/RN Integration – There is a general resistance to bringing LPNs to full scope despite need to reduce RN workload. LPN scopes of practice have expanded and include medication administration on Haliburton and Unit 500.

Transfers to QE II

- The patient transfer process to QEII is reported to be difficult. There is an internist on call at Hants Community Hospital only every other week. QEII often challenges physicians' requests that patients need to be transferred (mainly in grey areas of cardiac and medical care). There is not the same issue in trauma.

Hospital Future

- There is a need to know the future of the hospital and the services that will be provided, i.e. diagnostic imaging, surgery, medical beds, etc. Need to define role and structure and access to specialized services as core services are expanded or new services developed. There is a general reluctance by physicians to suggest expanding services as it is unknown what the long term plan is for the hospital.

Recommendations for Consideration – Hants Community Hospital

1. Evaluate how the CDHA is best served as an entire DHA with emphasis balanced between Metro Halifax and more remote areas. Increasing recognition required that all parts of the DHA are dependent on each other.
2. Review emergency department utilization (as part of provincial recommendations for emergency department changes). Redirects may be possible to Kentville or QEII during non-peak hours. There may be a business case for decreasing coverage with minimal patient impact which would decrease physician coverage pressures.
3. Evaluate the space in the emergency department for better flow.
4. Review recruitment and retention strategies for all health care professionals. Some services at this facility are at risk without additional staffing.

Musquodoboit Valley Memorial Hospital

Musquodoboit Valley Memorial Hospital is located in Middle Musquodoboit. The facility currently has eight acute beds, one respite bed and 28 long term care beds. A new clinic space was opened adjacent to the hospital in September 2005. The clinic operates Monday to Friday and includes three physicians and a nurse practitioner. There are other physicians in the community who do not have hospital privileges. The emergency department is currently undergoing renovations to improve space. The emergency department has three exam bays and is located across the hallway from the new clinic.

A number of themes for this facility are common with other facilities of similar size across the province. Those listed below represent those that are of biggest concern to staff.

- Patients are reportedly presenting to the ED from out of catchment area after hours due to shorter waiting times and to limited clinic hours of GPs in community.
- Recruitment and retention are issues for this community due to its remoteness.
- Sixty percent of nursing staff are expected to retire in the next three to five years. The DHA is at high risk of losing services due to lack of available staff.

- There is a need for increased physician support for vacation and sick leave. On-call coverage is every three weeks and this is resulting in burn out.
- There is a need for a geriatrician due to the increasing population of seniors. This position could be shared with two other nearby hospitals, Twin Oaks Memorial Hospital and Eastern Shore Memorial Hospital.
- There are no adult mental health services in this community despite a perceived growing need. This may be something that can be addressed as part of a renewed Mental Health system.

Recommendations for Consideration – Musquodoboit Valley Memorial Hospital

1. Emergency department services at this site may not be sustainable without strategies to address the call schedule and RN coverage after hours. Review emergency department hours with the possibility of reducing hours (there are very few visits after 10 p.m.). Trauma is already diverted to Dartmouth General Hospital and EHS could provide after hours coverage.
2. Review inpatient bed utilization. Joint planning needs to be undertaken for Eastern Shore Memorial Hospital, MVM and Twin Oaks Memorial Hospital.
3. Nursing recruitment needs to be a priority and a full time float pool needs to be established to cover the needs of the three sites of MVM, Twin Oaks and Sheet Harbour.

Eastern Shore Memorial Hospital

Eastern Shore Memorial Hospital is located in Sheet Harbour. The hospital opened in 1976 and now has 16 hospital beds. At any point in time there are 25% of the beds occupied by ALC patients.

Services provided include: palliative and respite services; acute care services, outpatient emergency services, ambulatory care, diagnostic imaging, laboratory services, physiotherapy, occupational therapy, clinical nutrition, social services; Adult day clinic, Diabetes clinic, and Meals on Wheels.

Space is also leased to tenants to provide services including: Drug Dependency, Public Health, Home Care Nova Scotia, Nova Scotia Hospital Outreach, and IWK/Grace Mental Health and Family Services. Issues and themes noted include:

- Recruitment of all health care professions is a big issue. Due to “rural” community it is difficult to attract new health care providers. There is few casual or part time staff making vacation and sick leave difficult to fill.
- More ambulatory visits because patients will come and wait for physician as they cannot access clinic times due to unavailability of physicians.
- Hospital does not feel fully integrated with Capital Health and in some aspects have a sense of not belonging to the metro area. Have greater collaboration and relationships with MVM and Twin Oaks.
- LTC and AC are not co-located which could allow for some efficiencies, e.g. staffing, etc. They are co-located in a contiguous building.

Joint planning needs to be undertaken for Eastern Shore Memorial Hospital, MVM and Twin Oaks Memorial Hospital. These sites are not sustainable in the long term for inpatient, outpatient and emergency department services. There needs to be a plan to integrate services across these sites where possible.

Nursing recruitment needs to be a priority and a full time float pool needs to be established to cover the needs of the three sites of MVM, Twin Oaks and Sheet Harbour.

Recommendations for Consideration – Eastern Shore Memorial Hospital

1. Joint planning needs to be undertaken for Eastern Shore Memorial Hospital, MVM and Twin Oaks Memorial Hospital. These sites are not sustainable in the long term for inpatient, outpatient and emergency department services. There needs to be a plan to integrate services across these sites where possible.

2. Nursing recruitment needs to be a priority and a full time float pool needs to be established to cover the needs of the three sites of MVM, Twin Oaks and Sheet Harbour.

Twin Oaks Memorial Hospital

Twin Oaks Memorial Hospital is located in Musquodoboit Harbour, Nova Scotia. The facility opened in 1976 and today operates a total of 14 beds. There is a 40 bed LTC facility close to the hospital and there are plans to create a physical connection between the two.

There are a variety of tenant services located at the site including Addiction Services, Home Care Nova Scotia, Nova Scotia Hearing and Speech Clinic, and Beltone.

The hospital provides include: palliative and respite services; acute care services, outpatient emergency services, ambulatory care, diagnostic imaging, laboratory services, physiotherapy, occupational therapy, clinical nutrition, social services; Adult day clinic, Diabetes clinic, and Meals on Wheels. Issues and themes include:

- Recruitment is less of an issue as this community is growing but there is a lack of physicians and there is still not sufficient staffing in other health care positions to provide long term stability. Upcoming retirements could create crisis.
- Difficult for physicians to transfer to Dartmouth General and there is much pressure to keep patients in the community. Limited resources in community not well understood by front-line staff in Metro Halifax.

Recommendations for Consideration – Twin Oaks Memorial Hospital

1. Joint planning needs to be undertaken for Eastern Shore Memorial Hospital, MVM and Twin Oaks Memorial Hospital. These sites are not sustainable in the long term for inpatient, outpatient and emergency department services. There needs to be a plan to integrate services across these sites where possible.

2. Nursing recruitment needs to be a priority and a full time float pool needs to be established to cover the needs of the three sites of MVM, Twin Oaks and Sheet Harbour.

3. Need for greater integration with Dartmouth general and established patient transfer protocols to enable more timely transfers or patients.

Acute / Tertiary Care

Dartmouth General Hospital

The analysis of inpatient services at the Dartmouth General Hospital suggests that there are savings opportunities. Some savings should be possible within existing models of care, but much of the identified opportunity will need to be pursued in parallel with model of care redesign (see system wide section of this report).

Information for selected units at DGH is summarized in the table below.

DHA 9: Dartmouth Regional Hospital								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
3 West (Med/Surg)	32	5.00	5.31	5.89	6.90	**0.31**	**- 0.58**	Baseline is below PHSOR target for Med/Surg, but actual is running higher
4 West (Med/Telemetry)	23	3.99	4.64	4.70	5.63	**0.65**	**- 0.06**	Baseline plan well below PHSOR midpoint target. Actual spending essentially on plan.
3 East (Med/Palliative)	38	5.04	5.21	5.30	6.28	**0.17**	**- 0.09**	PHSOR target set at top of range to reflect higher care needs for palliative. Unit essentially on plan.
Transitional Care	28	3.81	3.76	3.84	4.48	**- 0.05**	**- 0.08**	Actual essentially on plna, although we note model is 100% registered/licenced staff
Critical Care	8	16.54	14.23	17.57	20.40	**- 2.31**	**- 3.34**	Baseline plan and actual significantly above target. MOS is also very high. Unit staffing requires review.

Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units suggest that a total of 16,000 hours might possibly have been saved at DGH in 2005/06.

Recommendations for Consideration – Inpatient Services at Dartmouth General

1. Review baseline staffing patterns and actual staffing practices in critical care
2. Review staffing practices on 3 West (actual above both baseline and target)
3. Increase baseline on 4 West
4. Review staff mix on TCU to include unlicenced aides
5. Review MOS in all units

Queen Elizabeth II Health Sciences Centre

The analysis of inpatient services at the QEII suggests that there are savings opportunities. Information for selected units at the QEII is summarized in the table below.

DHA 9: Queen Elizabeth II Health Sciences Centre								
		2005/2006 MIS Data (Provided by DOH)						
Unit Description	Number of Beds	Baseline Planned RN/LPN HPPD	PHSOR Target RN/LPN HPPD	DHA-Specific Actual RN/LPN HPPD	Total Actual HPPD (RN/LPN, Other UPP & MOS)	HPPD Variance (Target to Planned Baseline RN/LPN Hours)	HPPD Variance (Target to Actual RN/LPN Hours)	Comments
MEDICINE								
8A/B - Medical Oncology	23	8.70	9.21	9.95	11.92	**0.51**	**- 0.74**	Baseline is below PHSOR target for Medicine, but actual is running higher. MOS is potentially too high (with that much MOS support, unit in theory could run at lower HPPD)
VG 6B - NEPH/TRANS + IMCU	23	6.13	7.04	7.31	8.57	**0.90**	**- 0.27**	Baseline is below PHSOR target for Medicine, but actual is running higher. MOS is potentially too high (with that much MOS support, unit in theory could run at lower HPPD)
VG 6A - UNIT + IMCU	19	7.59	7.72	7.40	9.02	**0.13**	**0.32**	Baseline is below PHSOR target for Medicine, but actual is running higher. MOS is potentially too high (with that much MOS support, unit in theory could run at lower HPPD)
PALLIATIVE CARE	10	8.10	7.72	8.14	10.01	**- 0.38**	**- 0.42**	Baseline is slightly below actual, but above PHSOR target for Medicine. Patient population needs to be reviewed and staffing levels confirmed. MOS is very high (with that much MOS support, unit in theory could run at lower HPPD)
HI 6.2 - CARDIOLOGY	36	4.71	4.64	4.39	5.28	**- 0.07**	**0.25**	Actual below target - no savings
HI 8.1 - MEDICINE	34	5.51	4.64	5.63	6.62	**- 0.87**	**- 0.99**	Baseline is below PHSOR target for Med/Surg, but actual is running higher
HI 8.2 - MEDICINE	34	6.62	4.64	6.62	7.63	**- 1.98**	**- 1.98**	Unit runs on baseline but baseline appears high given the fact that medical units have high numbers of ALC. Even if target was set at top of range, the unit would be 1.4 hours over target. Changes required.I14
HI 8.4 - MEDICINE (IMCU included)	34	7.35	6.66	7.34	8.46	**- 0.69**	**- 0.67**	Unit on plan with baseline but baseline appears to be too high given PHSOR blended target.

SURGERY								
VG 3 - ENT	21	5.02	6.25	6.86	8.13	**1.23**	**- 0.61**	Baseline is below PHSOR target, but actual is running higher. MOS very high (with that much MOS support, unit in theory could run at lower HPPD)
VG 5A - GYN ONC	20	6.01	6.25	6.92	8.40	**0.24**	**- 0.67**	Baseline is below PHSOR target, but actual is running higher. MOS very high (with that much MOS support, unit in theory could run at lower HPPD)
VG 5B/5N - UROLOGY/SHORT STAY	33	5.03	6.25	6.57	8.09	**1.22**	**- 0.32**	Baseline is below PHSOR target, but actual is running higher. MOS very high (with that much MOS support, unit in theory could run at lower HPPD)
VG 9A - GEN SURG / GI MED	27	6.02	6.25	5.94	6.99	**0.23**	**0.31**	Baseline and actual HPPD are below PHSOR target (which academic site was set at top of range). Midpoint target is more in line with actual HPPD. Suggest no change in current practice. MOS requires review.
VG 9B - GENERAL SURGERY	24	6.77	6.25	6.03	7.21	**- 0.52**	**0.22**	Baseline is higher than PHSOR target, but actual HPPD is below (note: target at academic site was set at top of range, but this may not apply to general medicine). Midpoint target is more in line with actual HPPD. Suggest no change in current practice. MOS requires review.
HI - 4.1 VASCULAR	30	7.08	6.25	6.96	8.44	**- 0.83**	**- 0.71**	Baseline and actuals are above PHSOR target.
HI - 4.2 PLASTICS/BURNS	17	7.01	8.37	8.37	10.15	**1.36**	**-**	Burn unit reflects base staffing requirement and critical mass issues impact actual. Target set at actual.
HI - 7.1 - CARDIAC	31	6.43	7.15	8.34	9.69	**0.72**	**- 1.18**	Baseline below PHSOR target (which has been adjusted to reflect IMCU beds), but actual is much higher. MOS is also high. Savings opportunities appear to exist
HI 7.2 - ORTHO	30	7.22	7.18	7.38	8.55	**- 0.04**	**- 0.20**	Baseline and target (adjusted for IMCU) are essentially the same. Actual is running above
HI 7.3 - NEUROSURGERY	30	6.81	7.18	6.77	8.09	**0.38**	**0.41**	Target has been set to reflect IMCU beds, actual running below. No change suggested
HI 7.4 - ORTHOPAEDICS	18	8.10	6.25	6.45	7.74	**- 1.85**	**- 0.20**	Baseline is high, although actual is very close to PHSOR target. Redefine Baseline and look for savings in actual
HI 8.3 - ORTHOPAEDICS	27	7.41	6.25	6.38	7.50	**- 1.16**	**- 0.13**	Baseline is high, although actual is very close to PHSOR target. Redefine Baseline and look for savings in actual

CRITICAL CARE								
VG 3A	11	21.66	21.66	22.93	26.33	**-**	**- 1.27**	PHSOR has not defined clear targets for critical care. Unit runs above planned baseline. MOS appears high.
HI - CCU	12	11.03					**-**	
HI - CARDIAC IMCU	18	8.82					**-**	
CCU + IMCU COMBINED	30	9.71	11.25	12.06	14.25	**1.54**	**- 0.81**	Blended baseline well below actual, and this needs to be reviewed by CDHA. MOS is very high.
HI 5.2 - ICU	12	26.47	23.82	23.97	26.91	**- 2.65**	**- 0.15**	Baseline assumes 1:1 on all patients, actual essentially on target. No change recommended.
HI - CVICU	13	22.40	23.82	24.98	28.31	**1.42**	**- 1.16**	Target assumes 9 patients @ 1:1 and 4 @ 2:1. This needs to be confirmed as CVICU patients are typically only 1:1 on first day post-op (i.e. target could be lower). Also baseline calls for reduced staffing on weekends (when there are limited fresh post-op cases), but target does noty. Actual is running considerably higher, suggesting that there is a savings opportunity for this unit. MOS is very high.
OTHER								
Geriatrics (9 LANE)	24	4.56	4.64	5.18	5.92	**0.08**	**- 0.54**	Baseline is below PHSOR target for Medicine, but actual is running higher
Transitional Care Unit (4A)	38	3.64	3.76	3.84	4.47	**0.13**	**- 0.08**	Baseline is below PHSOR target for ALC, but actual is slightly running higher
Transitional Care Unit (4B)	20	3.75	3.76	4.14	4.53	**0.01**	**- 0.38**	Baseline is at PHSOR target for ALC, but actual is slightly running higher
Rehab 5 - Neuro/MSK	22	4.10	3.90	4.53	5.46	**- 0.20**	**- 0.64**	Actual running above target and baseline
Rehab 7 - Stroke / ABI	22	4.67	3.90	4.77	5.81	**- 0.77**	**- 0.88**	Actual running essentially at baseline. Target may be too low given ABI/Neuro population. At top of range, target would be 4.34, still below actual
Rehab 8 - Sub-acute	22	4.10	3.90	4.78	5.61	**- 0.20**	**- 0.89**	Actual above both baseline and target
Restorative Care	27	3.80	3.90	4.28	5.23	**0.10**	**- 0.38**	Actual above both baseline and target

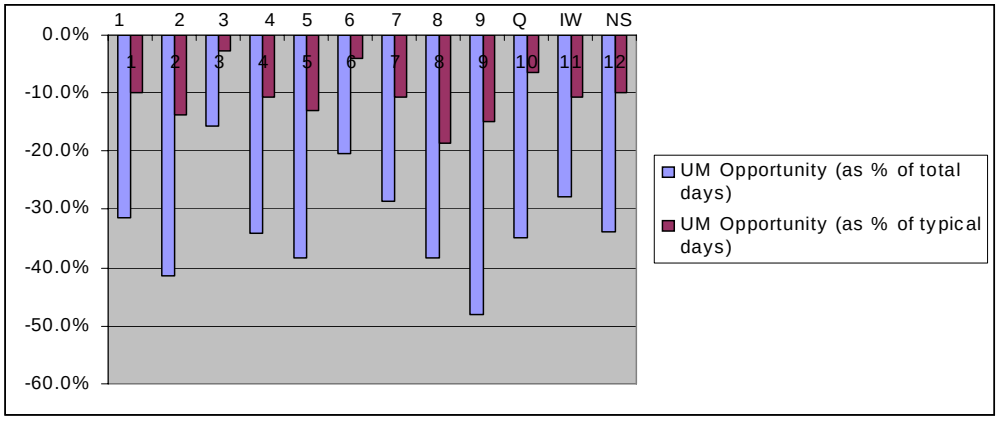
Savings opportunities (based on actual HPPD versus target) for medical, surgical and critical care units suggest that a total of 97,000 hours might possibly have been saved at DGH in 2005/06.

Recommendations for Consideration – Inpatient Services at QEII

1. Review staffing patterns in all units
2. Review MOS in all units

Utilization Management

CDHA has one of the lowest variances in typical ELOS vs ALOS in the province.



Even though CDHA performs better than most DHAs, there is still substantial opportunity to reduce LOS and reduce costs.

Recommendations for Consideration – Utilization Management

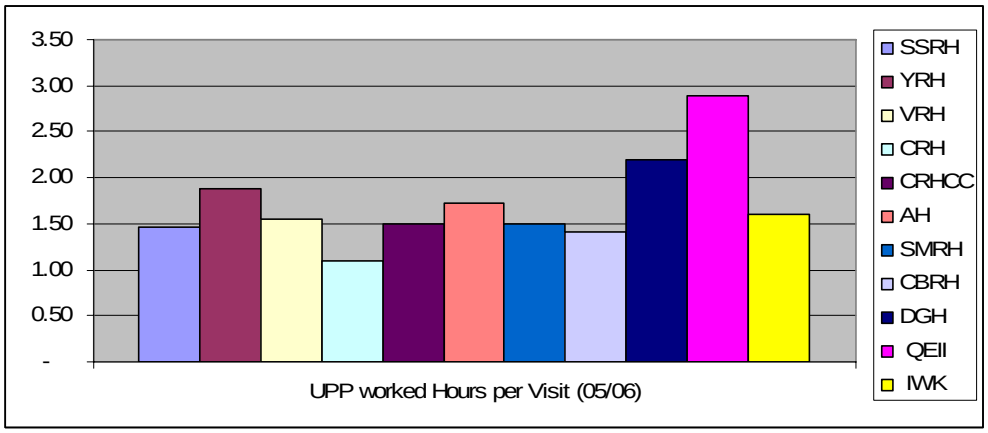
1. Actively engage physicians and managers in processes to focus on high volume cases that are significantly outside of the ELOS in an effort to reduce LOS through more coordinated approaches to discharge planning

Emergency Department

Patient volumes at the QEII in 2005/06 were 58,302 visits and the hospital recorded 1,305 patient days in the ED. This translates to an average daily volume of 160 visits (which is the highest in NS for regional sites) and 3.6 admitted patients per day.

For DGH, there were 38,209 visits in 2005/06 and the hospital recorded 1,113 patient days in the ED. This translates to an average daily volume of 105 visits (which is the 3rd highest in NS for regional sites) and 3.0 admitted patients per day.

At these volumes, the EDs at QEII and DGH had the highest and 2nd highest average Hours of Care per Patient Visit (see chart below). This may warrant further review, especially at DGH.



Ambulatory Care:

During the review, consultants met with a sample of the ambulatory care programs and teams to understand their specific care delivery challenges, what they believe is working well and what needs improvement. Managers noted that ambulatory programs at CDHA have grown dramatically in recent years and reported a number of issues. These include:

- Managers believe they are now reaching capacity in terms of current volumes;
- The Dickson building, which was built as ambulatory space is very cramped and is quickly becoming less than desirable for adequate spacing;
- In other buildings, space has been converted from old offices and old inpatient units. The result is a very mixed model that is very inefficient in some cases;
- Ambulatory areas are generally not well equipped from an equipment perspective;
- The ambulatory clinics closely follow through the programs (except MDU) and while this is viewed positively, many people noted that Ambulatory Care might benefit from having someone identified as having lead responsibility to do advocating and planning for the areas;
- Patients are making multiple visits to various areas and there is no coordination of these visits to ensure or even encourage "one stop shopping" for the patients;
- Patients must register for each clinic visit – this is very labour intensive and time consuming;
- There are a number of IT systems in place by the various clinics and none of them interface with the others;
- There is no relief staff funding for any of ambulatory services;
- Physician services are lacking in some areas and they are looking at new ways of operating i.e. Nurse Practitioners (NPs); and
- Recruitment of staff continues to be a challenge.

Recommendations for Consideration – Ambulatory Care at CDHA

1. Confirm strategic vision for ambulatory care across CDHA and review current programs to determine if they align with the stated vision.
2. Complete a focused review of staffing roles and responsibilities and consider adding clerical resources and possibly additional professional staff time.
3. Review potential need for an overall leader for ambulatory care, noting that this role would need to continue to align with the program model.
4. Ensure ambulatory care is a major focus of any longer range facility redevelopment plan.
5. Conduct a patient flow redesign to improve access and flow, efficiency and effectiveness of operations. A focus on intake processes (e.g., patient scheduling and registration) should be included.

Allied Health Staffing:

Allied Health staff are a critical part of the health care system, and will need to be actively involved in any redesign efforts surrounding the transformational imperative described throughout PHSOR. Staffing levels in the various allied health services are typically very low, as shown in the table below.

	Health Authority and Sites								
	DHA 1	DHA2	DHA3	DHA4	DHA5	DHA7	DHA8	DHA9	TOTAL
Respiratory Therapy Total	6.1	5.3	5.0	5.0	2.0	3.5	25.6	32.5	85.0
Pharmacy Total	12.0	12.3	14.8	13.0	7.5	9.6	36.1	118.5	223.8
Occupational Therapy Total	3.0	4.0	5.3	1.0	3.9	4.0	14.4	65.8	101.4
Physiotherapy Total	12.5	16.2	20.5	10.8	12.5	11.2	36.6	117.1	237.2
Social Work Total	3.0	3.0	-	2.0	2.5	4.0	16.3	51.5	82.3
Laboratory Total	40.2	53.8	54.2	44.7	26.7	39.9	150.4	350.1	760.0
Diagnostic Imaging Total	37.8	52.0	53.7	33.8	24.8	26.7	120.0	187.8	536.6
Recreation Total		1.0	-						1.0

The PHSOR Team did not set targets for staffing (either increases or decreases) as these considerations need to be reviewed within the context of emerging health human resource strategies and the new models of care delivery that will be designed and implemented. Within that context, we encourage CDHA to initiate some role reviews for these resources to ensure that the current role as well as potential new roles, are properly understood and leveraged. For example, RT roles differ dramatically across Canada, with most RTs being focused in critical care for acute ventilator management, but some organizations still have them actively involved in aerosol management on inpatient units (a practice that has been abandoned in many jurisdictions). Still others use RTs in the Emergency Department. DHAs in Nova Scotia need to consider the appropriateness of all of these roles and ensure that staff are being deployed optimally, and supported properly by non-professional staff (e.g. clerical and assistants).

Recommendations for Consideration – Allied Health Services at CDHA

1. Undertake focused reviews of allied roles to ensure they are properly utilized in current and emerging models of care.

Ancillary Services

Laboratory, Diagnostic Imaging, and Pharmacy Services have all been discussed in detail in the system-wide chapters of this report, but some DHA-specific comments include:

Laboratory Services

Data provided by CDHA indicated that a total of 350.1 FTEs were maintained in Laboratory Services. This included: 9 managers/supervisors, 245.3 techs, 59.23 phlebotomist/assistants, 19 technical specialists, 25 blood transfusion staff, 1 biomed tech, 2 lab scientist, and 7.6 clerical staff, 5 secretaries.

Some general areas for Lab Services to review include:

- Available staffing remains a significant area of concern for most acute care labs across Canada. An assessment of HR challenges should be drafted and presented to senior leadership. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. Analysis should include an assessment of introducing more technicians or assistants into the service model.

- There has also been a growth in point of care testing enabling testing at the hospital bed-side, patient's home, and physicians office (e.g., glucose meter). CDHA in encouraged to investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).

- CDHA should review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

The lab services industry is also undergoing significant advancement and change. For example, the field of medical laboratory technology is evolving toward increased computerization with new

instruments and new tests being continually developed. Automation in labs could have a dramatic impact on the roles and responsibilities of technicians and assistants. There is also increasing versatility of new equipment enabling manufacturers to consolidate instruments so that multiple types of lab tests can be performed on one instrument.

- While an in-depth review of the state of equipment was not conducted, further examination should be conducted to develop a multi-year plan for equipment requirements to meet the needs of CDHA, or potentially a broader distribution network.

- During PHSOR, the question as to why two labs exist at both CDHA and the IWK. The consultants concurred with prior suggestions to consider lab consolidation. The timing of this decision has become more critical with the IWK lab relocation to support the perioperative development. We reviewed documentation surrounding past discussions of this suggestion and do not feel that the reasons presented previously represent obstacles that cannot be overcome. We understand that some discussions have taken place and that there is an agreement to look at this issue further.

Recommendations for Consideration – Lab Services at CDHA

1. CDHA must pursue jointly with the IWK a plan to consolidate their two laboratory services. This is underway.
2. CDHA must actively participate in the System-Wide Lab Review and consider implications of provincial consolidation. HR planning should reflect provincial changes.
3. An assessment of HR challenges should be drafted and presented to senior leadership at CDHA. This report will clearly outline the expected staffing shortages over the coming five years and identify mitigation strategies for managing these shortages. A specific area of analysis should include assessment of introducing more technicians or assistants into the service model. Senior leadership will work with the department and HR to address.
4. CDHA should investigate the opportunity of using point of care testing devices, and build a business case in conjunction with other impacted areas (e.g., nursing).
5. CDHA should continue to review the utilization of lab tests to ensure appropriate usage and ordering practices of physicians, and to investigate establishment of an ongoing monitor plan.

Diagnostic Imaging Services

Data provided by CDHA indicated that a total of 187.8 FTEs were maintained in Diagnostic Imaging. This included: 1 technical director, 4 managers/supervisors, 1 team leader, 2 site leaders, 58.5 radiography techs, 11 CT techs, 11 ultrasound techs, 6 mammography techs, 13.1 nuclear medicine techs, 6.8 DI technical assistants, 8.2 breast screening staff, 8 MRI techs, 0.8 bone density techs, 2 physicists, 12.3 transcriptionist, 1 data processing clerk, 31.14 clerical, and 10 film processors.

Some general areas for Diagnostic Imaging Services to review include:

- The most significant challenges facing DI Services is the availability of trained resources in the many diagnostic modalities. CDHA must develop effective tools to assist in planning and preparing for any staffing shortfalls.

- While an in-depth review of the state of equipment was not conducted, further examination should be completed to develop a multi-year plan for equipment requirements to meet the needs of CDHA's imaging requirements.

In addition, we do note the following specific issues for CDHA:

- Medical Imaging has somewhere in the range of $40 Million in capital equipment across the Capital DHA, and has not had a capital budget for planned replacements for the past 8-10 years. Equipment replacement has occurred only on an emergency basis when equipment can't be repaired. Examples were given of RF and Ultrasound equipment that has been acquired second

hand from community hospitals that have deemed the equipment to be obsolete, but which is being used in the academic centre because it is still better then what they had. Given the nature of the cases that are seen in an academic centre and the need to recruit and retain both tech's and physicians, there needs to be a commitment to reasonably current technology at the academic centre.

  - *There is no easy solution to this problem. The entire Capital DHA has had little capital equipment over the past few years, however it is clear that this cannot continue and a long term equipment replacement strategy is necessary. If funding cannot be obtained from the Ministry then this would be a high priority for any reinvestment of operating savings that can be created. The Capital DHA, with an operating budget of approximately $600 Million, requires between $6-10 Million a year for capital equipment.*

- A new 64 slice CT was donated for Dartmouth, while only older technology continues to be available at the academic centre. Not being able to access this newer technology for the more acute cases at the academic centre represents sub-optimum care.

  - *Given the close proximity of Dartmouth, cases from the academic centre should be given access to the newer CT. This could be accomplished through dedicated blocks of time, and/or through the use of a central booking system that allows appropriate cases to be matched with appropriate technology across the DHA.*

- One barrier to optimizing the use of limited technology to provide the best care possible is the fractionated medical staff governance. For example the radiology groups are in separate practice plans and on fee-for-service billing.

  - *Consideration should be given to requiring the radiologist to be part of a single practice plan or to converting them from fee-for-service to an Alternate Funding Plan (AFP). This will eliminate a significant barrier to sharing resources.*

Recommendations for Consideration – Diagnostic Imaging Services at CDHA

1. Support a province-wide study to examine HHR challenges, identify expected staffing shortages over the coming five years, and identify strategies to mitigate shortages.
2. Review equipment status and develop a plan for replacement.
3. Investigate alternative approaches to better match clinical needs with the appropriate technology available throughout the DHA.
4. Introduce more formal impact analysis process to identify impact on all areas, including DI.
5. Improve utilization at all sites. Make more efficient use of all x-ray rooms in the district by spreading the current amount of work around better.

Pharmacy Services

CDHA operates pharmacies on seven of its 12 sites utilizing a combination of both traditional and unit dose drug distribution.

- Halifax Infirmary. 0700-2300 M-F, 0700-1500 S-S. Unit Dose Drug + CIVA.
- Victoria General. VG 6North 0700-2300 M-F, 0800-2000 S-S. VG 2North 0800-1700 M-F. VG 11 Vic 0830-1630 M-F. Unit Dose + CIVA.
- Dartmouth General. 0800-1600 M-F, 0800-1600 Saturday/Holidays. Traditional + CIVA.
- Nova Scotia Hospital. 0830-1630 M-F. Traditional.
- East Cost Forensics. 0900-1700 M-F, 0900-1230 S-S. Unit Dose.
- Hants Community. 0800-1600 M-F. Traditional.
- Eastern Shore Memorial. 0800-1600 M-F. Traditional.

Remaining five sites are supported by other pharmacies or a consulting pharmacist:

- Addiction Services supported by Nova Scotia Hospital.
- Offender Services supported by East Coast Forensics.
- Cobequid supported by a consultant pharmacist.
- Musquodoboit Valley supported by Dartmouth General.
- Twin Oaks supported by Dartmouth General.

CDHA has an estimated 149 FTEs supporting overall operations. This includes

- 6 Managers, 1 site leader (Hants), 3.2 clinical coordinators (PharmD), 2 pharmacy residents, 1.4 students
- 48.06 pharmacists, 4 senior pharmacy techs, 76.71 pharmacy technicians
- 4 store clerks, 3.5 secretaries

Some key findings associated with CDHA Pharmacy Services include:

- While challenges likely remain as a result of the supply-demand nature and general shortage of pharmacists across Canada, Capital Health has been successful at attracting pharmacist to the larger acute care based programs.

- Capital should be praised for the significant investments made in unit dose drug distribution and CIVA programs at many of the pharmacy units. These investments have enabled pharmacist to take on a clinical pharmacist role on many of the units thereby better leveraging both pharmacist and pharmacy tech resources. Further review of available capacity or growth capacity should be determined to assess if the program can be expanded, and at what costs, to support a broader distribution network.

- In some of the busy, acute care based services, hours of operations have been extended (i.e., to 11pm on weeknights) to meet the growing needs of late admit patients and to better assist nursing.

- In many of the larger acute hospitals, care teams have been assigned a pharmacist, have access to a pharmacist upon request or have an oncall service available. An estimated 12-15 pharmacist are dedicated to clinical practice on the unit. Evidence suggests that having a clinical pharmacist interact with care units result in improved working relationships with pharmacy, better access to medication advice and information, and potential reduction in medication adverse events.

- Some of the community based hospitals (e.g., Hants, Eastern Shore) either leverage a pharmacist for the traditional drug distribution or leverage a pharmacy technician.

- A functional leadership model has been implemented which has a director with five managers assigned to a clinical unit (e.g., cardiology, neurology) in addition to functional responsibilities including core programs (e.g., formulary management, evidence based drug evaluation), dispensing oversight of a specific site, and operational responsibilities (e.g., Regional Drug Information Service). This model was implemented in 2006 and was noted to be working well.

- Capital Health leverages pharmacy techs to support pharmacists. Overall, the technician to pharmacist ratio is 1.69. Dartmouth General leverages techs more significantly as indicated by its ratio of 2.09. At the QEII, there is an estimated 1.42 techs for each pharmacist. This high adoption and use of pharmacy techs is viewed as a positive model.

- Further examination into developing and implementing computerized physician order entry (CPOE) should be investigated. CPOE has been shown to not only support reduction of medication adverse events, but also may unlink the ordering from the dispensing processes enabling pharmacy services to serve a number of clinical units in a decentralized fashion.

Recommendations for Consideration – Pharmacy Services at CDHA

1. Investigate opportunities to better leverage pharmacy techs to enable pharmacists to more directly support the care delivery teams.
2. Undertake a redesign to improve medication reconciliation.
3. Implement strategy to introduce Computerized Physician or Provider Order Entry.

Patient Flow

A mini-review of patient flow was conducted at the QEII (Halifax Infirmary and Victoria General sites) using a series of interviews with key stakeholders, observations collected through site visits and attendance at planning and coordination meetings (e.g., bed planning meeting). The following summarizes some of the key observations related to patient flow including the identification of key issues and proposed recommendations.

Patient flow at the QEII is challenged by the size of the organization, multiple sites, lack of standardized and documented processes relating to how patients move through the system, differences in physician practices even as it relates to a common patient group, and the shear volumes of activity. To meet and address these challenges, a number of reviews and assessments have been completed, both leveraging internal and external parties. However, while there seems to be some good planning efforts, the relative follow through has been limited. While most agree with the need to improve patient flow, in a patient centred manner, there still remains opportunities to improve the flow of patients by changing how patients are prepared for before entering the hospital, how patients are managed as they move throughout the hospital, and by changing how services are delivered.

Patient Flow – Halifax Infirmary

- Medical Inpatients at QEII utilize a clinical teaching unit model where there are four medical inpatient units (A, B, C, D with 65 beds), an IMCU (with 7 beds), a TCU unit (white unit with 9 ALC beds), and a receiving unit. The Receiving unit is a very active unit where patients are not only received but in many situations are discharged from directly. A primary role of the inpatient units is to not only provide clinical care but also to support teaching and education of medical residents and other professionals.

- Patients admitted to a medicine floor primarily enter the hospital via the ED. Once a decision is made to admit a patient, the patient is either immediately admitted to an inpatient unit (e.g., A, B, C, D), is admitted to the receiving unit (Receiving), or is cared for in an ED bed (e.g., virtual bed), until a bed becomes available. On a rotational basis, units are selected to admit a patient to their unit. During this period, it is the selected units role to make decisions related to all incoming patients. Once a patient is placed on a unit, each physician teaching team will round daily to make decisions on the care of the patient. Once a week, the entire care team will round on the patient.

- A bed meeting is conducted daily where a physician lead, responsible for the clinical teaching units, reviews the number of patients in the ED, patient status on floors, potential discharges to determine key actions to best manage the care demands. This meeting is conducted daily at 9am. While this meeting serves a useful purpose, a number of observations were made. These include:

  - **Discharge Planning.** Discharge planning is typically not done in advance resulting in a rush to coordinate post-care services for patients. As a result, the discharging process may be elongated which increases the patients length of stay and also limits timely access

to beds for patients that need them. There needs to be improved incentives for more timely discharge. Staff consulted noted that they felt the process was not patient focused. Whether this perception is reality or not, this issue must be managed. It was also noted that once a decision to discharge is made, it should be acted on immediately. There were some examples that the teams would go to the ED after the bed meeting to review patients as opposed to starting the discharge process on the units. To be effective, each team must be focused on identifying, supporting, and following-thru on available discharges in a timely manner. This approach for free up beds for ED access.

- **Teaching Impacts on Patient Flow.** It is well known that teaching hospitals often require additional resources to support the education mandates for its students. However, the role of teaching also has another phenomenon – a critical need to inform students of hospital policies and processes (e.g., discharge) more frequently due to new students entering the hospital. As a result, the organization must place a high regard to informing and educating students about this critical role, and must institute policies and procedures to support individuals via orientation programs and ongoing education.

- **Continuity of Services.** The primary complaint about the inpatient units is the lack of continuity of services delivered as patients are moved amongst the units, sometimes 4-6 times per patient during an episode of care. While this is not only disruptive for patients and staff and generates numerous workload issues for housekeeping and nursing staff, the multiple moves further fragment care. It was noted that it would not be atypical for allied staff to start discharge planning prior to a patient move thereby necessitating repeating the discharge planning and consultations. In addition, staff noted a reduced level of job satisfaction due to the lack of ability to follow the care of patients. There was also a noted reduction in the sense of the team (including OT, PT, nurses, RT) due to limited engagement in rounds (once per week). As a result staff commented that a "large part of their day is consumed by reporting off".

- **Access to Care.** There are three primary mechanisms to be admitted to the hospital: the ED, hospital to hospital admissions, and via clinic. There was some discussion as to the appropriateness of hospital to hospital admissions. Some felt that a direct admit to a hospital bed would reduce the impact on the ED.

- **Bed Management Decision Makers.** While there is value in having a physician lead the bed meetings, there was limited involvement by the bed management coordinator. Given the little flex and capacity constraints facing hospitals, it makes sense to have a dedicated person(s) supporting this function on an organization-wide basis. It is also important to develop a working model between the physician lead and the bed management coordinator. The bed management coordinator is a critical resource to overall bed management across the organization and must be leveraged and provided with the appropriate level of authority to support key decisions.

- **Focus on Medicine Beds.** Lack of focus on surgical beds. Interestingly, there was not a high degree of focus on surgical capacity requirements in the meeting. Due to the time constraints, it could not be determined if there was an equal focus placed on bed planning for surgical beds on a more organization-wide process for bed management.

- **Repatriation.** While there are clear districts that are not receiving patients back, there should be additional emphasis to develop the required memorandums of understanding to support repatriation opportunities. CDHA must have the ability to appropriately decant its inpatient units in a timely manner.

- **Impacts of MRSA.** With the limited private rooms available on the units, the MRSA precautions have a significant impact on workload, patient flow and utilization of the limited resources. Between room requirements due to palliative rooms, negative pressure rooms, and no space for MRSA rooms, an extensive amount of work is expended on moving patients around. With the requirement of having MRSA patients flagged in the

ADT system as MRSA for life, there is an expectation that the MRSA workload will continue to increase. As a result of this workload, staff noted reduced job satisfaction. Some analysis should be conducted to identify alternative approaches to managing these cases.

Patient Flow – Victoria General Hospital

A quick review of VGH as it relates to patient flow was completed through a tour of the facility and consultations with selected areas. Generally, it must be noted with the exception of the Eye Centre, facilities are old, many clinics have been retrofitted into existing or renovated space that do not ideally meet the requirements, equipment in some areas is dated and not standardized creating issues for preventative and overall maintenance, waiting space is less than ideal in many areas, and overall signage creates a challenge for navigating patients and families through the hospital.

As a result, there are a number of patient flow challenges based on the facility. The following outlines relevant findings:

- **Navigating the VGH Site.** The VGH site can be confusing to navigate through so any opportunities to prepare the patient and their family prior to their arrival should be built into education and communication mechanisms delivered as part of the early education for patients.

- **Eye Centre.** It must be noted that a beautiful ambulatory and procedural facility has been constructed for the Eye Centre. Included within the space are three individual clinic areas with excellent access for patients (e.g., red, green and blue), good layout, dedicated registration areas, and four procedural (mini ORs).

- **Ambulatory Clinics.** Many of the ambulatory clinics are co-located in the Dixon Site.

- **Medical Imaging.** Imaging appears to be distributed into two primary locations within the VGH site (e.g., x-ray and ultrasound separate from MRI and CT). While there was no discussion of the impact on patient flow or resourcing, this layout is seen to be less than ideal.

- **Cancer Program.** Is centrally located on the main floor of the Dixon tower. While overall space did not seem ideal, the close proximity within the center to an external access was seen as a beneficial.

- **Day Surgery.** Day Surgery is conveniently located near to an elevator, is co-located with PAC services, and is relatively close to the PACU and ORs. A quick review of both the pre-operative and post-operative spaces indicate a general lack of comfortable and adequate space. Specifically, the pre-operative space lacks any privacy, patients in gown are asked to sit with other patients and families until they are ready to go to the OR, and while not observed due to the time of the day, it was noted that the space becomes very congested. The post-operative space also suffers similar challenges and has problems getting stretchers through the doorway.

- **Off-Service Patients.** A number of off-service patients are received from other services or districts at the VGH. Participants noted that this was often consumer driven (e.g., referral patterns). Education programs and devices must be developed to inform the right referrals, and ongoing monitoring should be supported to ensure the patient goes to the right provider/service so as to not elongate a patient's journey for care.

- **Discharge Planning.** There is noted good work happening for the discharge planning of surgical cases however the medicine population has further work ahead of them. In some situations, care paths have been developed, and where available patient flow is noted to be quite good. However, in many other areas, care maps have not been developed resulting in limited communication and discharge planning. There is anecdotal evidence that this is elongating a patient's stay. Participants did identify that the lack of care maps was directly related to the lack of available resources to develop. In addition, there has been limited investment in the development of case manager models or in implementation of acute appropriateness software (e.g., MCAP, InterQUAL). There was agreement to further enhance early education associated with discharge planning (e.g.,

in surgeon's office, PAC, medical residents/attendants) of the importance of timely discharge and the organization's position summarized in a policy and procedure document. The organization should however be supported for their efforts to find opportunities for improvement. For example, the participants noted that the white team at the HI site is dedicating one nurse to support discharge coordination of patients. Participants also noted that the mindset and behaviours of physicians relevant to discharging is getting better.

- **Available Information.** While there has been good efforts to make data available within the facilities, there was noted concern that staff still do not have required data available to them. Need to further collaboratively investigate what data is required and how it needs to be provided to users to be most functional.

- **Medicine Beds.** The clinical teaching model for inpatient medicine beds was noted to negatively impact on patient flow. The example where patients were moved from the receiving unit to an inpatient unit, so patients could be moved from the ED to the receiving was raised as an example. While there may be appropriate need for moving patients from an educational basis, the move was noted to further fragment the system and care delivery, and result in added workload for staff (e.g., housekeeping, nursing, and allied staff).

- **Capacity – Occupancy.** Participants noted that it was sometimes difficult to identify where capacity exists within the organization due to the lack of a bed board (manual or electronic). There is an opportunity to increase the authority of the bed management coordinator to better support planning and capacity questions.

- **Access to Post Acute Services.** Participants identified that there are challenges in gaining access to home care, continuing care, and long term care placements. This bottleneck is directly impacting available beds due to the high levels of ALC patients. However, while ALC beds continue to be an issue, it is believed that more appropriate and timely discharging of the non-long stay patients could have a significant utilization impact on the organization.

- **Water Leaks.** It was noted that a number of areas on the site have water leaks during rain storms.

Recommendations for Consideration – Patient Flow

1. A review of the existing teaching model should be completed in order to build teaching processes that are less support the efficient management of units and patient flow.
2. Develop, implement and enforce discharge management policies and procedures. Timely and appropriate discharges must be a priority for physicians. Use of ELOS to assist in the timely planning and coordination of discharging patients, introducing discharge planning sooner, and investigating fast track protocols to support rapid access to beds should be investigated.
3. Develop appropriate repatriation tracking reports, and a policy and procedure to address long-standing repatriation issues.
4. A review of bed move practices should be completed followed by the development of approaches to limit unnecessary bed moves.
5. A review of processes, policies, and timeliness for accessing continuing care services should be conducted to identify opportunities for redesigning processes to improve timely access to services, and where possible, service level agreements relating to services be developed. As a result, modified policies and procedures should be distributed and communicated to ensure a clear understanding for how services are to be engaged.

Information Technology

A meeting with IT services was conducted to understand current challenges and supporting initiatives affecting the department. These include:

- The Capital DHA is a "best of breed" IS shop.
- There has been minimal investment in the core systems and IT infrastructure at the Capital DHA for the past few years. The Director, IT should develop a new 5-year IT Strategic Plan, inclusive of an Information Management Architecture map. While some of the sections of this recommended document need to be driven by the Capital DHA Strategic Planning and therefore will need to be updated, much of the document and visioning can be and should be accomplished now.
- The Director of IT has indicated that she is in the process of determining how much of the IT budget is necessary for "day-to-day" operations, vs. strategic investments. Her early sense is that 90% of the IT budget is required for day-to-day operations. A more comprehensive and IT focused operational review would probably identify specific opportunities for savings in the "day-to-day" operating budget that can be reinvested. However, while a "strategic IT Investment Fund" is of strategic importance, this reinvestment opportunity needs to be weighed against some more basic needs such as those identified in the facilities section of this report, and/or the need to reinvest in capital equipment.
- There is no business intelligence software tool in place to support a decision support function. The investment in such a front-end tool (such as 'Cognos') would also require a central data warehouse or data staging database that can be queried. As a result, Decision Support is more of an information production centre, gathering data from disparate sources, than a value added analytical team. A business case should be developed to invest in business intelligence software and the I.T. support infrastructure. The business case should consider the FTE savings in Decision Support that can be achieved by having the proposed consolidated role as discussed in "Finance Section" being able to access and analyze data directly (i.e. the elimination of the "data gathering" function).

Recommendations for Consideration – IT Services

1. CDHA should develop a new 5-year IT Strategic Plan, inclusive of an Information Management Architecture map.
2. CDHA should complete a business case to invest in business intelligence software and a supporting IT infrastructure.

Governance

Within a provincial context:

- The review included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries.
- With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

Within a DHA context:

- Capital Health is clearly an organization in transition and, from a governance perspective, some new processes and practices need to be put in place
- We note that there appear to be no formal processes in place for gauging board effectiveness, and while Board has bylaws in place, we saw no evidence that statements of governance practices exist
- At this stage, the Board appears to be operating under the Carver model, which may not be appropriate given its overall state of transition. If the Carver model is maintained, more attention will need to be paid to establishing operating parameters for the CEO/management team and regular CEO evaluations will need to be completed
- The Board members who participated in the process did note that the Finance/Audit Committee appears to be well structured, with the right mix of skills and experience in place,
- The relationships with the local foundations were described as "requiring improvement", with a general sense that there is not enough contact.

Recommendations for Consideration – Governance

1. We recommend that the Board review the appropriateness of the Carver Model to determine if it is the best model for this organization. If the decision to keep Carver is made, operating parameters need to be established for the CEO. If not, then a transition strategy to a new model needs to be developed.
2. We recommend that the Board undertake initiatives aimed at building stronger relationships with the CHBs and Foundations.
3. We recommend development of more formal annual evaluation processes for the Board itself.
4. We recommend development of more formal annual evaluation processes for the CEO.
5. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan for the coming fiscal year

General Update

Prior to looking at any details surrounding findings, it is important to note that this report differs dramatically from the draft reports prepared for and presented to the other DHAs in the province. The rationale for these differences include:

- The IWK undertook a full operational assessment in the spring of 2005 and received a detailed from Corpus Sanchez International (CSI) in the late spring of 2005
- The workplan prepared by CSI for PHSOR, and approved by the Steering Committee, called for a "mini-assessment" at the IWK whereby "a small team of consultants would 'loop-back' to the IWK to conduct follow up meetings to the assessment that was completed in the spring of 2005. The focus of these meetings will be to confirm progress that has been made to date and identify any issues with outstanding recommendations from the previous review. We will also assess barriers that have impacted implementation."

The mini-assessment was conducted at the very end of the PHSOR on-site assessment phase. The reason for scheduling the IWK last was to ensure that any issues raised by DHAs surrounding the provincial / tertiary role that the organization plays could be flagged and discussed with IWK leaders. In addition, any issues that were not part of the initial review of the IWK were addressed (e.g. Governance)

It is clear that the senior team at the IWK feels that they had made some substantial progress on a number of recommendations and continued to focus on looking for ways to move ahead with others. The intent of this report is to:

- Reflect on general issues that have been identified during PHSOR as requiring action and then to comment on how these general issues will or might impact the IWK;
- Respond to issues raised and feedback given during our meetings;
- Update the analysis of staffing costs from the last review; and
- Flag any other issues that, in our opinion, warrant re-mentioning

Inpatient Services:

While we did not have detailed meetings surrounding each unit, we have completed some analysis of new data and had general discussions with leaders at the senior team, Director and Manager levels. General comments for each unit are as follows:

Birthing Unit:

Original Review:

- CSI noted that the unit appears to staff all rooms at 1:1, regardless of stage of labour for mother. Recommendation was to re-visit this and adopt new staffing model but there was no overall target included in the report

Current Update:

- Current planned baseline calls for 13 RNs (24/7) for 10 rooms.

- It is very difficult to set targets for this unit using the ratio model because active labour is 1:1 and early labour is 2:1, but it appears that current staffing plan is largely unchanged from prior report.
- There still appears to be a need to redefine baseline staffing model. No target can be set at this point in time, but that does not mean a savings opportunity does not exist.

Newborn Unit:

Original Review:

- Unit had 55 beds, but noted that it staffed based on an assumption of 44 beds. Baseline called for 11 RNs (24/7) but actual usage was running higher. Recommendation was to revisit staffing levels

Current Update:

- Unit appears to have made significant progress on baseline staffing; however; data appears to include newborn days so HPPD analysis cannot be completed accurately

NICU:

Original Review:

- NICU had previously planned for staffing for 40 beds (although capacity was higher) and assumed 19 RNs (24/7) for this unit
- Actual HPPD was 13.8; target set at 11.25
- Recommendation was to redefine current model of care

Current Update:

- Planned Baseline has increased to 21 RNs (24/7) for same bed base.
- Results in current planned HPPD (assuming 2:1 staffing at 85% target occupancy) of 13.90
- Actual HPPD = 13.01, which is below target of 13.90 – suggests target may be overstated as some patients in NICU would appropriately be cared for at 3:1.
- Target for efficiency analysis will be current HPPD – therefore no savings

6B:

Original Review:

- Conclusion. Previous report noted that unit provided care equaling 2,068 patient days and did so as average HPPD of 8.2
- Target. Savings potential was based on target HPPD of 6.6

Current Update:

- Unit appears to staff with 2 RNs (24/7) plus one 7.5 shift on days.
- Average daily census (ADC) is 6.84 patients
- Actual HPPD in 2005/06 was 10.45
- Using ADC as basis for calculating planned HPPD suggests that unit requires 8.7 HPPD (for 7 beds at 90% occupancy). Actual HPPD in 2005/06 was 10.45

7A: Prenatal

Original Review:

- In last report, ante-partum unit operated at 4.7 HPPD which was also set as target

Current Update:

- Unit is reported to be 22 beds, but average daily census is 15.52.
- Unit's current baseline (assuming 22 beds) calls for planned HPPD of 3.73 (assuming 90% occupancy). Actual HPPD is 5.29
- Updated targets used for PHSOR suggest that post-/ante-partum care requires ratios of 5:1. This leads to a target HPPD of 5.29 HPPD (at 85% occupancy). Unit runs on target – no savings identified.

Overall Comments – Women's Units:

- For RN Staffing: the units appear to be essentially on plan, with the only exception being 6B, which runs with an actual HPPD that is slightly higher than we would expect to see
- For other staff (e.g. managers, clerks, aides): the units appear to routinely use less staff than are identified in the baseline. This makes it difficult to identify a target. In other DHAs we have used the defined baseline as a target, but these hospitals do not plan for or have the type of infrastructure that the IWK has for these types of roles
- Given that Women's routinely uses less resources, we have chosen the current actual HPPD as the target and note that these resources need to be part of a broader plan to redefine the models of care

PMU (7E/7S):

Original Review:

- Baselines for units called for staffing of 9 RNs on days and 8 on nights for an average daily census of 20 patients (capacity = 27)
- Previous actual HPPD was operating in excess of 10.0 and target was set at 6.6 (based on ratios of 3:1 on days and 4:1 on nights)

Current Update:

- These units have a total of 25 beds and current baseline calls for 10 RNs on days and 8 on nights for planned HPPD of 9.53 (assuming targeted occupancy of 85%)
- Actual HPPD in 2005/06 was 10.74, suggesting that performance has not changed since prior review.
- Assuming staffing ratios of 3:1 on days and 4:1 on nights (at 85% occupancy), the target HPPD would be 7.72. At this target, the unit has an efficiency opportunity

6 North:

Original Review:

- Previous report noted that unit provided care equaling 3,930 patient days and did so as average HPPD of 12.5
- Staffing was reportedly based on 2:1 ratios (24/7), which was consistent with Children's oncology units elsewhere

Current Update:

- Current baseline (assuming 15 beds) calls for 10 RNs on days and 7 on nights, for a planned HPPD of 15.0 (at 85% occupancy)
- This is higher than the previous staffing plan of 2:1 (which at 85% = 13.24)
- We believe 2:1 is viable on an oncology unit, and could even be higher if BMTs are done elsewhere. At this target, the unit has an efficiency opportunity

MSNU (5th floor)

Original Review:

- The medical services nursing unit was split before and operated at different HPPDs for each unit (HPPD for 5 South was 7,7 and HPPD for 5 West was 10.1).
- Combined staffing plan was reported to be 12 RNs on days and 6 on nights. Patient days were 4180.
- Target for both was set at 6.6 (assumes 3:1 on days and 4:1 at 100% occupancy)

Current Update:

- Current baseline calls for 12 RNs on days and 10 on nights, resulting in a planned HPPD (at 85% occupancy) of 9.1
- Current patient days are 7,983, which suggests an average daily occupancy of 21.87 patients, yet the baseline plan suggests that the unit's capacity is 32 beds. Actual HPPD, using this data, says the unit operates at 8.52 HPPD
- Target HPPD is based on 3:1 on days and 4:1 on nights, for a target of 7.72. At this target, the unit has an efficiency opportunity

PICU:

Original Review:

- At time of previous review, the PICU was running at an average daily census of 3.2 patients which was reportedly linked to lower than anticipated cardiac volumes. The unit's baseline called for 4 RNs (24/7) which was based on the need to staff 5 beds
- The units HPPD was running at 31.7 and the target, based on 1:1 care needs was set at 22.5

Current Update:

- Planned Baseline. Unit still staffs at 4 RNs (24/7) and average daily census is now 3.5. The current planned HPPD for RNs (assuming 85% target occupancy) is 17.65
- Current HPPD is running at 33.60 HPPD for RNs
- PHSOR target for teaching hospital ICUs is based on range of 21.18 – 26.47 (at 85% occupancy) with midpoint of 23.82.
- Using 23.82 as a target suggests that the unit has an efficiency opportunity

4S: Mental Health

Original Review:

- Mental Health Inpatient Unit was not a significant focus in last review but we did note that actual HPPD was 10.8 and we set a target of 6.6 (based on 3:1 on days and 4:1 on nights)

Current Update:

- Current baseline calls for a combined planned HPPD of 7.75 (when including RNs and CMH workers)
- PHSOR targets for Children's services are based on 85% occupancy, which means that ratios of 3:1 on days and 4:1 on nights would equal a target HPPD of 7.72
- The current HPPD (for RNs and CMHWs combined) ius running above 16.0 HPPD (with a n average daily census of 9.68 beds

- Mental Health services has been flagged in every DHA as an area that requires more review. This is done for two reasons:
  - The patient populations differ so dramatically that no comparative analysis can be done, and
  - The data may routinely include staff that roll up into the actual cost centres that are not included in the baseline (e.g. other allied health professionals)
- For these reasons, mental health has been excluded from the target setting process in all DHAs, but that does not mean that opportunities for improvement do not exist

Overall Comments – Children's:

- For RN Staffing: all of the units appear to be present with an efficiency opportunity
- For other staff (e.g. managers, clerks, aides): two of the units appear to routinely use significantly more staff than are identified in the baseline, while the others use slightly less This makes it difficult to identify a target. In other DHAs we have used the defined baseline as a target, but these hospitals do not plan for or have the type of infrastructure that the IWK has for these types of roles.
- For Children's, we have set the target at current planned baseline, but note that these resources need to be part of a broader plan to redefine the models of care

Overall Findings:

Savings opportunities (based on actual HPPD versus target) for the inpatient units suggest that a total of 80,000 hours could have been saved in 2005/06.

Recommendations for Consideration re: Inpatient Services at the IWK:

1. Reduce baseline staffing on Paediatric units to reflect targeted ratios.
2. Review Critical Care staffing practices to determine what changes can be made to reduce actual hours per patient day.

Ambulatory Care:

During the onsite meetings, Ambulatory Care was a source of significant frustration for the Directors and Managers at the IWK as they felt that our previous report contained data errors and did not provide enough detail surrounding ambulatory care. During this review, we met with the Directors and discussed their feedback in detail and updated staffing information. Our previous comments regarding Children's ambulatory care was as follows:

- *Overall, the medical clinics (for Children) do not appear to have the volume to justify the staffing. While there may not be significant opportunities to restructure and reduce costs, there does appear to be a general opportunity to leverage the current resources to either increase volume or to share resources across clinics more effectively and reduce costs accordingly. In short, it appears that some scheduling reflects physician preferences, which may not be sustainable.*

For Women's we felt:

- *That the current range of clinics appears to be adequate in light of current funding levels, but we felt that there were opportunities to expand service volumes and/or establish additional clinics; and*
- *That the perinatal clinics see a large volume of patients per year (14,000) and volumes are stable due to the stability in the number of births. A staff cut two years ago has resulted in*

less time reportedly being available for patient teaching (which should be a priority in this clinic); and

- *That there are community based clinics offered in various locations in the Halifax area. These clinics are in the early stages of development, but they appear to be doing a good job of community based care. This is one of the few areas where there is a focus on the IWK's part to meet the needs of minority or marginalized women.*

At the end of the day, we were left with the following impressions of Ambulatory Care (both during the initial review and during the most recent mini-assessment visit):

- Staff are program based and this can lead to inefficiencies if clinic volume fluctuate. A more generic model (which exists in some clinics) would alleviate some of these issues, but this may not be consistent with the program management model and the impact of any such change needs to be carefully thought out
- There does not appear to be any universal definition or common understanding of what ambulatory care is required at the IWK – it appears, at least in part, to have developed in response to the need to provide clinic space for new physician.
- The link between teaching and ambulatory is generally acknowledged, but the impact operationally is not well understood.
- Workloads vary dramatically, and there does not appear to an organizational mechanism to revisit staffing loads and redistribute resources between programs. There are no clearly defined expectations or targets related to ambulatory care (e.g. number of visits expected for each clinic each day) which is critical in order to ensure that resources are being used effectively.
- Adequacy of space varies considerably between clinics

***Recommendations for Consideration re: Inpatient Services at the IWK*:**

1. In our previous review, we recommended that the organization conduct a follow-up detailed review of ambulatory to confirm staffing levels and performance expectations for each clinic.
2. While we still view that recommendation as valid, we would expand it to include:

   Development of a common vision for the future development of ambulatory care

   Development of criteria to determine if (a) a clinic is appropriately positioned at the IWK, and (b) if all visits within the clinic are appropriate

   Development of clear criteria for volume and quality to confirm that resources are well utilized

   Development of consistent models of care, that clearly define roles and responsibilities of each member of the care team

   Consideration should also be given to introducing support roles to free up professional time from performing non-professional tasks (e.g. scheduling)Review actual staffing costs and introduce processes to reduce variability from targeted or baseline staffing levels.

Shared Services

In our previous review, we noted that there appeared to some significant opportunities to leverage system level solutions and have a more sustainable cost structure. Some of these relate to opportunities for shared services with Capital Health, while others reflect opportunities for the IWK to take a lead role in some provincial solutions. Many of these opportunities have been explored in the past and we sense a willingness and interest on the part of the IWK to pursue some innovative models in this area.

Recommendations for Consideration re: Shared Services

1. We recommend that the IWK, in its upcoming strategic planning process, aggressively pursue shared services options and partnership models to reduce the overall cost structure (or increase revenue) and free up resources for investment in new initiatives. Examples of some options include:
   - Provincial options with the DOH (e.g. IM/IT);
   - Service delivery networks with other Districts;
   - Shared corporate services (e.g. Finance, HR); and
   - Shared diagnostic and support services with Capital Health
2. As PHSOR proceeds, we would once again encourage the IWK to seek out such opportunities with an initial focus on what can be achieved in conjunction with CDHA.

Organizational Restructuring

We note that the IWK has spent a great deal of time with organizational restructuring and has had a number of changes in its leadership structure and senior leadership team. During our review, the issue of leadership restructuring, and the resulting impact on the middle management group, was raised in numerous discussions.

The issue of a perceived need for improved alignment with the hospitals management structure and traditional physician organizational structures and processes was also noted (note: this was an issue during our previous review).

While we were advised that the CEO is planning to proceed with team development as well as some further refinements to the structure, we note that the past year has had a significant impact and this leads to conclusion that efforts to improve relationships should be given an immediate priority.

Recommendations for Consideration re: Restructuring

1. Pursue additional organizational development and design as an immediate priority
2. CEO and VP, Patient Care should continue to work with middle managers to understand and resolve any ongoing issues for this group
3. VP, Medical to continue to work with physician community to understand and resolve their concerns regarding the potential need for better alignment with program management structureWe recommend that the Board continue its work towards the corporate governance model

Governance

PHSOR included an overall review of governance, including DHA Boards, Community Health Boards as well as linkages with Foundations and Auxiliaries. With 9 DHAs, the IWK, 37 CHBs, and multiple Foundations, there is a sense that the health care system in Nova Scotia includes a significant amount of governance at multiple levels. With this many governance bodies, it is important to ensure effective governance practices and processes are in place and that there is proper and appropriate alignment between the various levels of governors.

The Board at the IWK follows a different model than all of the other organizations in the DHGA delivery system in that it is an appointed Board and has no CHB representatives sitting at the table. The current model does however have some staff and physicians on the Board and this is viewed as an issue by some. Board size and composition was also identified as an issue.

The Board is in the process of transitioning away from the Carver model to more of a corporate style Board with committees, terms of reference, and governance charters. This has caused the current Board to be a bit of a state of transition, and both the Board Chair and CEO are anxious to get on with the work of completing the transition.

As this transition progresses, key Committees are being re-established (e.g. Finance) and this is viewed by many as positive. We would concur, noting that, in our opinion, the Boards accountability for fiscal stewardship ca be better addressed through a working committee model

Once this work is complete, other key governance processes, including Board evaluation (for both individual members and the collective Board) will be pursued.

Other Board members interviewed expressed support for these changes, noting that it would help to take them to the next level of effectiveness and functioning and note that the evolving governance culture is quite satisfying

One of the key steps will be a by-law review that is expected to address many long standing issues. (Note at the time of PHSOR meetings, this review was expected to be completed in the fall of 2006). Changes to the bylaws require DOH approval and the Board is hopeful that this will be a smooth process.

Foundations were also part of the review and we note that the IWK Foundation states that it currently operates quite independently of the health centre, noting that the degree of alignment between the Foundation and Hospital is less than it used to be.

Recommendations for Consideration re: Governance

1. We recommend that the Board continue its work towards the corporate governance model
2. We recommend that the Board continue to pursue its goals surrounding more formal annual evaluation processes for the Board itself.
3. We recommend that the Board continue to work on building stronger linkages with the Foundation
4. We recommend that the Board review this report and put processes in place to ensure that senior management develop an appropriate action plan to address the recommendations.

DHA 1: South Shore District Health Authority

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as some analysis of quantitative data provided by each DHA.

The findings for South Shore Regional Hospital are set out below.

General Information

There is a capacity of four operating rooms, one of which is a cystoscopy room. The schedule is blocked by service. Surgeon time within each block is assigned by the service. South Shore Regional Hospital runs three operating rooms Monday to Friday. On average the hospital runs two general anaesthesia and one ophthalmology room on Monday and Tuesday and three general anaesthesia rooms on Wednesday to Friday. A fourth room is run for three hours on Thursday for local cystoscopies.

The hospital has 15 surgeons, four dentists, and one urologist who are part time from Valley Regional Hospital. There are three anaesthetists and a fourth is being recruited. The average age of the group is approximately 65 and at least one will be retiring over the next year.

Endoscopy runs from 0800 to 1500 Monday to Friday. Physicians do self-scheduling within assigned blocks. Staff are flexed appropriately and an LPN does equipment maintenance and cleaning. The area has its own recovery area and this is staffed by day surgery staff. This model seems to work well.

From mid July to early September the operating rooms are reduced to two for summer closure. In 2005-06, perioperative services performed 3816:

- 823 inpatient
- 2993 day surgery
- 2081 endoscopy

The composition of the surgical staff at the time of the review included the following:

- Two ophthalmologists
- Four general surgeons
- Three OB/GYN
- Three plastic surgeons
- Three oral surgeons
- One urologist (cysto only)
- Four dentists

Governance

A review of governance and management identified the following findings:

- The manager for perioperative services is responsible for inpatient surgery, OR booking, endoscopy, day surgery, operating room, PACU, and pre-admission clinic (PAC). This is an acceptable span of control given that there is a coordinator responsible for the day-to-day activities in the operating room.

- The OR manager has program level responsibilities while the OR coordinator has responsibility for day-to-day activities. There is some dynamic tension between the two individuals as they carry out their respective roles.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the roles be clarified in terms of specific activities, levels of authority, patterns of effective delegation and the locus of final responsibility.*

- *We recommend that the DHA consider engaging some external assistance to support the initial facilitation for this exercise.*

Scheduling

A review of scheduling processes identified the foll\owing findings:

- OR booking is staffed with one clerk and operates from 0800-1600 Monday to Friday.

- The OR booking process is totally manual which is problematic as the absence of a technically supported "intelligent" system can leads to issues with conflict checks surrounding appropriateness of case mix (e.g. inpatient and day surgery) as well as case length estimates. The result can be inappropriate bookings and/or overbooking of cases. Given the manual nature of the process, the clerk relies on the OR Coordinator to provide clinical knowledge to support case sequencing and to flag any issues with the planned caseload.

- The OR booking process is not efficient or effective. The booking slips are often late and OR packages are often incomplete. It was reported that these practices are worse for some individual surgeons, and that there are no consequences for "chronic offenders".

- Unbooked block time is released 48 hours in advance of the day.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend a redesign of the process prior to the introduction of an automated system.*

- *We recommend that current policies be revised to ensure that scheduling practices follow a standard set of rules and that consequences for non-compliance be developed with medical staff input.*

- *We recommend that the current booking form be revised.*

- *We recommend the policy surrounding release of un-booked time be revised to require time to be released at least 72 hours in advance. This would allow surgeons to plan office hours and make use of the open time.*

Capacity Management

A review of capacity management identified the following findings:

- There is no process for gathering data and reviewing block or room utilization. The scheduling system is entirely manual and data extraction is an arduous process.

- The fourth operating room is a dedicated cystoscopy room. The room is good-sized and could be used for other purposes.

- South Shore Regional Hospital is considering the addition of a new endoscopy suite in the next three to five years. The area will include two procedure rooms, a cleaning area, a patient waiting area, on-site registration, an endoscopy recovery area, a dictation room and a patient/physician counseling area. Currently the endoscopy clinic has one procedure room.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend that when an automated system is introduced, perioperative management begin regular review of room utilization by day of the week. We also recommend that the Surgical Advisory Committee begin a quarterly review of block utilization with reallocation of blocks according to preset standards and an agreed upon process.*

- *We recommend that the hospital evaluate the cost of removing the fixed cystoscopy equipment, sealing the floor and purchasing portable technology to support the three hours of cystoscopy time per week. The room could then be developed primarily as an ophthalmology room but also for other smaller procedures and local cases. The utilization of this room should increase significantly and not be affected by the level of anaesthesia resource. This could facilitate the re-introduction of the ambulatory orthopedic program and minimize the access issues for other services.*

- *We recommend that an analysis be done to right size the area based on current and future projected volumes, technology requirements, imaging requirements and surgeon/nursing input.*

Pre-Admission Clinic (PAC)

A review of pre-admission clinic identified the following findings:

- The PAC is open from 0800 to 1600 three days per week (Monday, Friday and either Tuesday or Wednesday depending on OR schedule requirements). Only about 30% of patients are seen in the clinic. The scheduled clinic hours are for nursing only. Anaesthesia sees patients on an ad hoc basis between cases.

- Anaesthesia has developed specific criteria for pre-anaesthetic assessment. In addition all same day admissions and inpatients must be seen. The criteria are appropriate but need further dissemination and discussion with surgeons.

- PAC has written patient teaching materials for general surgical patients, ostomy care mastectomies, etc. A patient navigator is used for patients with a cancer diagnosis. All materials are provided to patients and families individually.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We recommend that a formal pre-anaesthetic program is developed once the fourth anaesthetist is recruited. At that time the entire PAC program should be redesigned with consideration given to telephone screening, group teaching, service/procedural specific sessions, improved documentation effort and a "PAC lite" process for nursing only requirements and frequent flyers.*

- *We recommend that South Shore Regional Hospital consider organizing some group teaching sessions for patients with similar needs. A group education session and tour could be provided for children and families on a regular basis. We also suggest expanded use of telehealth capabilities.*

Operating Rooms

A review of the operating rooms identified the following findings:

- On Monday to Friday, the OR runs one room from 0800 to 1530 hours, one room until 1600 hours, and one room until 1700 hours. Staff start times are appropriate. Two RNs are on-call after 1700 hours Monday to Friday and all weekend.

- The late room reportedly finishes on-time 60-70% of the time. There is limited call-back on weekends (usually one to two cases) but the frequency is variable.

- All C-Sections are done by the OR staff and anaesthesia in the delivery room theater. Staff are sent from the first room that breaks. If anaesthesia is available then the OR coordinator and another staff member will start the C-section until an OR theater finishes and staff are available. This seems to work well.

Post Anaesthesia Care Unit (PACU)

A review of post anaesthesia care unit identified the following findings:

- The PACU (recovery room) is open from 0830 to 1630 Monday to Friday. Staff start times are self-scheduled based on a review of the next day's schedule. The process works well. There is no on-call coverage in PACU.

- PACU has ten bays but currently only uses five of the bays.

- PACU provides the location for ECTs and cardioversions. The procedures are supported by the OR staff not PACU.

- South Shore Regional Hospital does a number of dental work procedures for children; however, there are limited practices that support a child centric environment.

To support the required changes to the post anaesthesia care unit, the following recommendations have been provided for consideration:

- *We recommend that South Shore Regional Hospital do a review of the amount of call-back that involves more than one case and determine if there is a need to provide on-call coverage for PACU.*

- *We recommend that a sixth bay be equipped for monitoring and that this be available on Thursdays. The sixth bay should also be used on Mondays (when the orthopedic program starts). This will reduce crowding and possible PACU holds to OR on these higher volume days.*

- *We recommend review of the use of PACU for ECTs and Cardioversions. Many facilities use PACU staff to support these procedures. This minimizes potential first case delays in the OR.*

- *We recommend that one parent be allowed to accompany the child to the OR and once the child is awake in PACU that parents be allowed in. Policies and procedures need to be established for this purpose and an area should be set aside in PACU to provide an appropriate environment for the parent.*

Day Surgery

A review of day surgery identified the following findings:

- The day surgery area is open from 0700 to1800. Day surgery sees approximately 25-28 patients/day. Staff start times are staggered appropriately. Hours of operation are aligned with OR and PACU hours.

- An LPN is used to augment RN staff as needed. There was initial resistance to a non-RN but staff are now more accepting.

- Day surgery capacity is six stretchers, two ophthalmology stretchers and five lounge chairs. The area is small and provides minimal privacy.

- Staff assignment is done by stretcher bay and each patient is assigned a bay for both pre and post care. Once the initial vital signs are taken post-op then the patient is transferred to a chair. This method of assignment may not fully flex with the workload.

- All patients receive toast and something to drink before discharge. The food is provided by the RN.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend that the LPN role be expanded to include medication administration.*

- *We recommend that a redesign of patient flow and use of space be completed to support the facilities renovation planning process now being discussed.*

- *We recommend a redesign of documentation and administrative support roles in day surgery.*

- *The practice of providing food for patients is excellent but we recommend that South Shore Regional Hospital consider the use of volunteers in providing the light meal.*

Staffing

A review of staffing identified the following findings:

- Staffing is appropriate in PACU, day surgery, endoscopy and PAC.

- OR staffing is targeted at three RNs per room.

- South Shore Regional Hospital does not have any casual staff for the OR, so coverage for illness, vacation, extended leaves, etc. has to come from the staff on-site. Staff orientation for the OR is also very long, so staff numbers do not always reflect actual capability of individuals and the team.

- Perioperative services has no clerical support except for the booking clerk. All clerical activities are performed by an RN.

- The OR Manager has plotted out staff retirements over the next four years.

- Inexperienced OR staff are required to take OR course and this is an approach that we support. Staff education is planned by OR leadership on a once/month basis. There is no formal educator support so the plan is sporadic.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that the OR review services and procedures to ascertain which cases require 3 RNs. We note that this level of staffing is typically only required for larger cases and that many cases can function with 2.5 RNs per room for less complicated cases. At a minimum, the OR should consider if three RNs are needed through the entire case. There are many cases where three RNs could be used at the beginning and end of case only. This level allows support during turn-over and coffee/lunch relief.*

- *We recommend that the analysis of case staffing requirements account for the issues related to the lack of casual staffing to support short call relief.*

- *We recommend that a review of clerical activities be done and appropriate clerical roles be developed. Clerical support can be shared between OR and PACU and another clerical position can support PAC, day surgery and endoscopy. Perioperative clerical roles should be cross-trained across the program. All chart preparation, chart compilation, and chart checking (except for final check) should be done by clerical staff and not by an RN.*

- *We recommend that future HR planning consider the anticipated retirements and overlay recruitment needs factoring in orientation, OR course time and specialty training timelines.*

- *We recommend that a more formal OR program be established for staff with schedules published quarterly. Sessions can include new equipment, procedures, techniques, surgeon provided education, etc. We recommend that at least once per quarter time be allocated for an open staff meeting.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- First case delay is a significant issue. All clinical people interviewed perceive that 100% of first cases do not start on-time. In-room time is usually 0810. The issue is multi-factorial including documentation problems, nursing slow to bring cases into room, late anaesthetists, late surgeons, etc. Furthermore, there is no common definition of OR start time.

- Perioperative flow seems effective once the cases actually start for the day (i.e. beyond the first case delay issue). Room turn-over seems effective with the support of one cleaner. Everyone seems committed to efficient turn-over of the room.

- Anecdotally, there is a perception that afternoon blocks are not fully utilized at the end of the planned schedule. Theaters reportedly often end before the end of the day.

- Incomplete histories and physicals and consents are a problem for OR Booking, PAC and Day Surgery. We were advised that this is an issue for two services (Plastics and General Surgery) and that it may be an issue with individual surgeons.

- Some patients walk to the OR but many arrive by stretcher (accompanied by a porter). Porters are not part of OR staff and may have other priorities for transport. This can result in transport delays.

- Registration of patients for both PAC visit and day surgery occurs in admitting.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- We recommend that a manual study be conducted to determine the exact nature of the first case delay problem, including average length of delay, potential reasons and possible solutions. This study should be commissioned by the Surgical Advisory Committee with results compiled for review and specific actions taken.

- We recommend that the Surgical Advisory Committee discuss and develop a common definition of OR start time (with input from anaesthesia, nursing and surgeons). Once defined, the definition should be included in policies, promulgated to surgical staff and monitored for performance.

- We recommend that an analysis be done of the last scheduled cases of the day based on patient out-of-room times. The average end time can be compiled and trended according to an agreed upon target. If the average out-of-room time does not align with the staffed resources then a review of scheduling practices and slate management should be conducted. Appropriate changes can be made in both of the situation warrants.

- We recommend discussions with individual surgeons surrounding the impact of incomplete documentation and related issues to engage them directly in resolving any ongoing issues. If individual discussions don't work then the matter should be referred to Surgical Advisory Committee.

- We recommend that the OR consider walking patients from day surgery to OR whenever possible. This will decrease some delays in case start time. We also recommend a designated porter for first cases of the day which require transport by stretcher. Another alternative would be to have the third RN in room pick up the patient from day surgery (although this should only be considered as a last resort if porters are not available).

- We recommend that registration support be decentralized to PAC and Day Surgery so patients can go directly to the area. This is particularly important the morning of surgery.

Documentation

A review of documentation processes identified that documentation itself is an impediment to effective patient flow. The booking form, anaesthesia record and day surgery documentation all need revision and update of content. In addition chart preparation is done by an RN late in the document flow process.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We recommend a complete redesign of the document flow process including timely completion of OR packages at the time of booking, revision of appropriate forms, earlier preparation of charts by clerical staff and progressive chart check beginning several days before surgery with final check in day surgery. South Shore Regional Hospital should consider a policy of not booking the case unless the OR package is complete, i.e. booking slip, history and physical, consent, etc.*

Bed Management

South Shore Regional Hospital reportedly has a minimum number of surgical postponements (case cancellations), despite the reported high number of medical patients on a 20 bed surgical unit at any given point in time. Every effort appears to be made to prevent cancellation of the elective schedule resulting in significant on-unit moves, transfers and pressure on surgeons. We support and applaud the current effort to maintain the surgical schedule.

Materials and Drug Management

A review of materials and drug management identified the following findings:

- South Shore Regional Hospital is on a case cart system with RNs in the OR topping off carts on the morning of surgery. The system seems to work well, although morning top-off should be reviewed in relation to first case delays.

- Anaesthesia machines are reported to all be new within the last two years and the general room equipment is good.

- Materials management provides inventory management against par levels. Inventory is minimal and appropriate.

- Currently the OR Coordinator does most special order purchases. Materials management has appointed an OR liaison who will take over this responsibility.

- There are enough instruments according to staff, but many of the instruments will need repair and/or replacement. There is a new contract with Cardinal Health that may bring this issue to the forefront.

- Reportedly, there have been some issues with SPD in the past. These seem to be decreasing with the ongoing discussions with materials management and the planned introduction of an OR liaison.

- Preference cards are manual and difficult to read.

- Controlled substances are distributed by the pharmacy to the PACU. The PACU acts as a distribution centre for OR nursing and anaesthesia with minimal tracking of drugs during the day. There is no signature process for controlled substances when they leave the PACU. PACU has no idea which, how much or where medications have gone. Anaesthesia controlled drugs are delivered by the OR nurse directly to the top of the anaesthesia cart. They are left unattended in open rooms. The controlled substance sheet is filled out by the anaesthetist during the case and includes the patient's name, drug name, amount of drug and signature of the anaesthetist administering the drug. The OR RN brings back the remaining controlled substances and administration record to PACU at the end of the day and the count is performed and signed by nursing. The system is very open and provides any number of opportunities for loss.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that the OR appoint an RN lead for each large service and have them work directly with surgeons and materials management for specialty equipment, instruments and supplies.*

- *We recommend that South Shore Regional Hospital begin to budget for replacement of instruments over the next several years.*

- *We recommend that the SPD leadership review the ongoing training of staff around case cart replenishment. We also recommend that new staff be oriented rigorously and given an opportunity to visit the OR and see the results and significance of their work.*

- *We recommend preference cards be computerized for both OR and SPD staff. These can then be put into the OR information system (once it is selected, purchased and implemented).*

- *We strongly recommend that the system be tightened immediately. We have already discussed a "tackle box" type of system, whereby anaesthesia picks up their own controlled substances directly from pharmacy, signs for them, records medications as they are administered and then returns the tackle box to pharmacy at the end of the surgical day. This process needs to be fixed immediately as the hospital is open to serious legal risk if the faulty system comes to the attention of the authorities. The OR Manager was working with her counterpart in pharmacy to begin setting up a tighter system.*

Waitlist

A review of waitlist identified that one of the ophthalmologists has a significant wait list of 415 patients with a one year wait. There has been significant discussion among OR leadership and executive management regarding how to handle this.

To enable improved management of the waitlist, the following recommendation has been provided for consideration:

- *We recommend that South Shore Hospital allocate a bolus of time to the surgeon in the fall to reduce the wait list to az more acceptable level. Once this is accomplished, then additional time will need to be allocated as part of the block schedule to maintain the wait list at an acceptable level. This can be done by extending the day by two to three hours weekly or offering one to two days of additional OR time per month.*

Data Concerns

All data is manual and difficult to extract, summarize, and analyze. This is a significant issue for management of staff resources, block allocation and business case development.

DHA 2: South West Nova District Health Authority

Introduction

The PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present detailed recommendations. Findings are based on interviews with staff, management and physicians as well as some analysis of quantitative data provided by each DHA.

The findings for Yarmouth Regional Hospital are set out below.

General Information

The OR has a capacity of four rooms but only two rooms are used on a regular basis. A third room is used for orthopaedics, on average, twice a month based on the orthopaedic surgeons' schedule and patient need. The services offered are general surgery, gynaecology ENT, dental, ophthalmogy and minor orthopaedics by contract. The complement of surgeons includes:

- Three general surgeons
- Three gynaecologists
- One ENT surgeon and itinerant from Toronto
- One ophthalmologist

Perioperative services include OR, PACU, PAC, day surgery, endoscopy and OR booking. Approximately 4,600 to 4,800 OR procedures are done annually. Endoscopy case volume is approximately 2,000. Almost 100% of admissions are same day. 86% of surgery is outpatient.

Governance

A review of governance and management identified the following findings:

- There have been multiple changes in OR management over the last 15 years. The current management team is perceived as excellent by surgeons, staff and anaesthesia. The OR has a team leader role but she is counted as part of regular room staff. Day surgery has an unofficial team leader.
- The OR Committee is experiencing a rebirth. The Committee has been reconstituted and attendance has improved. The membership of nursing, anaesthesia, surgical chief with ex officio members from administration is appropriate. The OR Committee is in the process of developing written guidelines.
- The OR Committee is currently dealing with guidelines and operational issues. There have been informal efforts to review block utilization.
- The OR Committee's new chair is from family practice. This is not a typical choice for an OR Committee but the Chief of Staff feels that a disinterested party is important as the committee reestablishes itself.
- Surgeons have expressed concern about the lack of common incentives between anaesthesia and themselves. They are concerned about the impact of the AFP on the productivity of anaesthesia and their desire to do more cases.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the OR Committee continue its current efforts and that it include the development of policies and procedures for booking of cases (scheduled and unscheduled), block management, block reallocation protocols, case cancellations and "bumping" procedures. All of these policies should be deliberated, committed to writing and approved by the OR Committee. The practices should then be monitored for adherence to policy and appropriate actions taken by the OR Committee for repeated offenders.*

- *We recommend that the OR Committee review block utilization by surgeon on a quarterly basis. Targets for utilization should be set by service and if a surgeon is not meeting their utilization targets, the OR Committee should discuss the reasons for this with the surgeon. If the reasons are related to a lack of case volume then the surgeon should be put on notice that if they do not improve their utilization, then time will be reallocated to others to ensure scarce theater time is allocated appropriately.*

- *We recommend that the OR Committee Chair role be reviewed once the committee is functioning smoothly and efficiently. However, the review should not take place for 2 years unless there are issues.*

- *We recommend that the DoH review the AFT agreement to ensure there are sufficient incentive mechanisms to support anaesthesia productivity. Any AFP contracts should have specific productivity targets tied to the funding plan.*

Scheduling

A review of scheduling processes identified the following findings:

- OR time is 100% blocked by surgeon with the exception of a four hour per week open block filled on a first come first served basis. This seems to work well.

- The OR booking process is not efficient or effective. There are no adhered to timelines for submission of booking forms and accompanying documentation. Often booking is done 24 hours in advance. This process is flawed and results in an average of ten changes in OR slate the afternoon prior to the day of surgery. As a result, it is difficult for anaesthesia and nursing to plan and creates significant additional workload.

- YRH uses the Britech system for scheduling. The system is very limited and the vendor has not been aggressive in keeping up with user requirements.

- OR Booking Office is at the front desk of the OR. This location seems to work for ease of access to ask questions, however, the location may foster increased last minute changes to the schedule and many disruptions to scheduling throughout the day. YRH should review the risk/benefit of this.

- While, surgeons are encouraged to let the OR know if they cannot use their block as far in advance as possible, there are no standardized practices for the release of block time by surgeons.

- There are no consistent deadlines for booking elective cases. The OR Committee is deliberating this issue and wants to move the deadline to 72 hours. ENT is currently having difficulty meeting this requirement.

- Slate review is typically completed the day before surgery in the afternoon. The slate is generally scheduled to be finalized by 1100 hours the day before but this rarely happens. This

is very late but understandable given the number of last minute changes to the elective schedule.

- Anaesthesia reviews the slate the day before to assign staff but then individuals negotiate changes. This is an acceptable practice as long as it doesn't create delays in finalizing the slate.

- The OR Committee is deliberating a protocol for classification of emergency cases. There is a draft classification that was discussed at the March 2006 meeting but no formal policy has been developed or approved.

- The OR closes four weeks a year except for emergency procedures. This occurs during the summer, March break and Christmas seasons. There is some concern by physicians under a fee-for-service model that their income will be adversely affected.

- Anecdotally there are problems with turn-over time. However, there is no available data, nor can the information be easily pulled from the post-case information in Britech.

- First case delays have been identified as a problem area. Nursing, anaesthesia and surgeons have agreed that the 0800 hours posted start time is surgeon cut time. There is also agreement that the patient must be in the room no later than 0745 hours. While the guidelines are not written they are clearly understood by all groups. Initially, these informal guidelines were implemented and there was significant improvement in start times. It was noted that everyone liked the result of starting on time which enable most to finish on time. However, the practices have not been monitored and each group has slowly started coming in later.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend a complete redesign of the booking process to include appropriate specifications for an automated scheduling system.*

- *We recommend that SWNDHA work with the DoH and other DHAs to develop a plan to purchase a province-wide perioperative scheduling system that can be centrally supported by Information Systems but locally managed and administered within a DHA. This will give DoH direct access to generic, standardized data about surgical services across the province. Wait list management can be enhanced and resource allocation can be based on parametric data. At the same time local facilities can have access to the statistical information they require to manage OR time allocation, resource assignment and allocation and business case development. An alternative to a new purchase could be to rollout the new system at QEII across the province. This will make use of previous capital investments and strengthen the referral relationships between tertiary services and local facilities.*

- *We recommend that the OR Committee develop block release standards by service that are realistic and achievable. Some services may need a later block release time because cases tend to be urgent or wait lists are negligible. Generally 48-72 hours is reasonable for release of block. However, surgeons may need more notice if time becomes available to plan office schedule changes. Both of these issues need to be considered and discussed with surgeons before a policy is finalized.*

- *We recommend that the OR Committee establish policies and procedures and supporting booking deadlines for elective cases. We suggest that for many services the booking deadline for elective cases could be 7-10 days. The OR Committee should develop a booking policy that is written, clearly understood, communicated to surgeon office staff and monitored for adherence. The deadline could be different for some services such as ENT.*

- *We recommend that as the OR booking process is redesigned, slate review is instituted as a phased process with initial review one week prior to ascertain equipment conflicts, sequencing issues, etc. Next reviews should occur at 24 hour intervals beginning 72 hours prior. Final review is done by the team leader before the schedule is finalized. This will greatly improve resource planning, case starts and capacity utilization.*

- *We recommend that the OR Committee expedite discussions on a classification system for emergency cases and a draft policy is finalized. The OR Committee can then obtain input from key surgeons, revise accordingly and then approve, publish and communicate. The policy should include a procedure for "bumping" of cases as well.*

- *To better understand issues relating to closures, we recommend that a survey be conducted of surgeons to ascertain how many elective case would be done during these periods. If the number is significant, need to determine if it is reasonable to keep one room open for elective cases during a closure period.*

- *We recommend that when a new system is implemented, perioperative management should include regular measurement of turn-over time as part of the dashboard.*

- *We recommend that a regular review/audit of first case delays be conducted with the results compiled and reviewed by the OR Committee. An acceptable standard of deviation needs to be established and performance results published for all to see. There needs to be constant attention focused on first case start time performance. If the performance does not meet the acceptable standard then a more detailed analysis should be completed to identify root cause.*

Capacity Management

A review of capacity management identified the following findings:

- The OR has unused physical capacity. Surgeons would like to see additional elective OR time made available.

- Surgeons were noted to be pressuring nursing and anaesthesia to run a third room more frequently, especially to handle emergency C-sections. Currently, when a section goes on the board no one wants to be the first room to break because the room will be delayed and the surgeon runs a greater possibility of cancellation.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend that YRH do a cost/benefit analysis to assess the impact and benefits of opening an additional room on a planned basis to accommodate additional surgical requirements. This might coincide with the opening of a dedicated laparoscopic theater.*

- *We recommend that YRH explore the possibility of opening a third room to handle emergency sections rather than disrupting the elective schedule. Analysis should include frequency and timing of C-sections during the elective schedule as well as the predictable availability of nursing and anaesthesia resources.*

Pre-Admission Clinic (PAC)

A review of pre-admission clinic identified the following findings:

- Approximately 40% of patients go through PAC. Generally, there are no written protocols for who should be seen. Anaesthesia has recently developed an electronic questionnaire that is administered by the PAC nurse. A score is generated and patients are referred to the

anaesthetist based on the results. We applaud anaesthesia's efforts to create an evidence based set of criteria for consultation requirements.

- The PAC is located within the footprint of day surgery and the patient flow seems to work well. Patients are scheduled for their visit by the OR booking clerk and registered on-site. There is some telephone contact with each patient prior to the visit but it is usually scheduling focused.

- If time permits, patients are encouraged to get lab work prior to coming to PAC however many have lab work done post clinic. As a result, the nurse and/or anaesthetist can not review the results for issues. The nurse does an assessment, individual teaching, referral to anaesthesia, etc. All other diagnostic procedures and testing are done outside the clinic footprint in the respective departments.

- OR packages go from OR booking to day surgery. There are multiple people adding information to the file and there is no formal system for chart preparation and review.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We recommend that nursing develop written guidelines for who should be seen in the PAC in addition to those requiring anaesthesia consult. Guidelines could include all same day patients, those on particular medications or requiring physiotherapy or occupational therapy support. .*

- *We recommend that YRH explore the possibility of a telephone screening program for all patients with some minimal triage around patients requiring an on-site visit. Patients could be classified into several categories of visits to maximize the use of resources and strengthen the services around specific patient needs. Patients should be scheduled by the PAC staff not OR booking. These concepts should be addressed and included in a redesign effort.*

- *We recommend that a formalized, patient centred flow and/or a fast track process be developed to ensure priority access to key services (e.g., diagnostic imaging, lab) for PAC patients to ensure the clinic does not get behind. The schedule should provide for different types of visits as well as block or group teaching for patients with similar procedures and post-op care needs. These concepts should be addressed and included in the redesign.*

- *We recommend that a formal system be established with clear accountability for chart and package completion and review. Chart preparation is usually done by clerical personnel and final chart review is done by a RN. A chart review checklist should be attached to the front of each chart and each item should be checked off and initialed as it is added to chart. The RN who does the final check should sign the checklist. A redesign of information flow will assist in reducing the non-value added and redundant activities.*

Operating Rooms

A review of the operating rooms identified the following findings:

- Hours of operation are 0800 to 1800 hours. Staff starts are staggered appropriately. Add-on cases are planned in one room between 1600 and 1800 hours.

- There is an all RN staff for clinical work and there has been some discussion about the benefit of introducing the OR technician role.

- The OR is still doing shave preps. This is not current practice.

- Pre-operative antibiotics are being administered in the OR as opposed to day surgery.

- YRH has a long history in laparoscopic surgery. While YRF appears to have the required equipment, it needs to be transported to the room creating potential for damage and staff injury. Because the equipment is mobile there is significant time spent in organizing the room and arranging cables to create a safe environment. This creates a potential safety hazard for personnel and greatly increases room turn-over time. Perioperative services have submitted a request for a dedicated laparoscopic room.

- Minor surgery ("lumps and bumps") is currently done in the main OR.

- The endoscopy clinic is located near the OR but is a separate space. Hours of operation are 0800 to 1530 hours. One RN and one LPN support one procedure room from 0730-1530. The area has a cleaning room with two Sterus machines. There is no drying closet.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend that the role of the OR technician be explored regarding market availability, local training capability and ease of introduction into an all professional staff. Surgeons should be included in these discussions.*

- *We recommend that shave preps be stopped as it is not current acceptable practice.*

- *We recommend that pre-op antibiotics be administered in the day surgery area a minimum of 45-60 minutes before cut time.*

- *We recommend that the proposal for a dedicated laparoscopic room be given serious attention. This type of program is one that lends itself to quick community fundraising since the impact on post-operative recovery is significant. We also recommend that the proposal be reviewed to be sure that it includes necessary renovations to the OR to support a room of this type. Current room size will not support a laparoscopic room so one of the theaters will need to be expanded with a concomitant impact on the physical plant.*

- *We recommend that minor surgery be moved to the ambulatory area with appropriate lighting, washing facilities, etc. provided. Surgeons should be asked for input into the location so that they can feel comfortable providing service in the area and have input into the design of the minor surgery room.*

- *We recommend that YRH consider purchase of a drying closet for the endoscopic clinic.*

Post Anaesthesia Care Unit

A review of post anaesthesia care unit identified the following findings:

- Hours of operation are 0800 to 1800 hours.

- PACU supports all surgical case recovery as well as ECTs and cardioversions. There were 100 ECTs done in 2005-06 and there has been a steady increase in the number over the last three years.

- Endoscopy patients usually bypass PACU and go directly to day surgery for second stage recovery.

To support the required changes to the post anaesthesia care unit, the following recommendations have been provided for consideration:

- *We recommend that RN start times be reviewed for possible coverage beyond 1800 since ORs operate till 6pm.*

- *We recommend that ECT and cardioversions are monitored to determine the impact on PACU staff workload issues.*

Day Surgery

A review of day surgery identified the following findings:

- Hours of operation between 0645 to 1800 hours. Staff arrival is staggered appropriately.
- Day surgery has an all RN staff plus clerical support.
- There is a capacity of seven stretcher bays and five or six chairs. Clinical space is organized as pre-op and post-op space. Staff are assigned based on workload and patient flow. Patients register in the unit and are brought into a change area where they are held until the OR nurse comes to pick them up. Flow works well unless there is a problem with documentation.
- Antibiotics are currently administered intra-operatively.
- Perioperative staff identified the need for a family liaison that could be located in day surgery to provide updates for families on patients' surgical progress.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend a review of day surgery closure time in light of OR operating until 1800. If there is sufficient after hours surgery the closure time should be reevaluated.*
- *We recommend that the day surgery documentation process be reviewed and potentially redesigned in the areas of content, chart preparation and review and flow. Accountability for completion and accuracy needs to be established and chart completion should be done by the day before surgery.*
- *We recommend that antibiotic administration take place in day surgery. Perioperative management will need to analyze impact of this change on day surgery workload and perioperative flow. For example, first case patients may need to come in earlier.*
- *We recommend that YRH consider the use of volunteers to support the family liaison role. Selected individuals would require some minimal training in managing families in crisis.*

Staffing

A review of staffing identified the following findings:

- The OR targets three RNs per room. The team leader role is part of room staffing.
- Perioperative staffing is stable. Recruitment usually comes from within. No formal course is required and inexperienced staff receive internal training.
- PACU staffing and day surgery staffing are adequate. Endoscopy staffing is higher than usual but the presence of an LPN facilitates procedure and expedites turn-over allowing the clinic to do more procedures in a day.
- Day surgery has an all RN staff plus clerical support of 1.5. One clerk supports day surgery activities from 0645 to 1400 and another clerk supports PAC from 1230 to 1545. Endoscopy is staffed with one RN, one LPN and an equipment aide to clean and maintain the equipment. The RN is managing the patient and the LPN is supporting the physician and equipment.

Everyone is satisfied with this, although many facilities use only a single RN during the procedure.

- Anaesthesia currently has four anaesthetists but several are planning retirement. Recruitment is difficult.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that YRH review the OR room staffing complement (i.e., need for three RNs in all cases). Many cases only need the third RN for the beginning and end of the case. If the staffing were changed there would probably be sufficient resources to support a robust team leader role. The individual would not be part of routine room staffing but would be running the daily schedule, troubleshooting room issues, assisting with opening of bigger cases and updating day surgery and PACU regarding slate changes. She would also assist OR booking with questions and concerns. The position could also support some ongoing education efforts and provide mentoring and support for new staff. Redefining the team leader role in this way will improve perioperative flow and ensure that staff are supported appropriately throughout the day.*

- *We recommend that the hospital consider requiring all staff with no OR experience to attend a formal course such as the one offered in Halifax.*

- *We recommend that DoH develop a provincial wide plan to deal with potential surgical consolidations driven by scarce anaesthesia resources.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- Perioperative flow appears to be fine. All clinical areas are located on the same floor in contiguous space. This facilitates the flow of patients and staff communication. Flow from day surgery could be improved by redesigning the document flow and chart preparation processes. (See day surgery). Also the timelines for OR booking need to be standardized and adhered to so that perioperative staff have sufficient time to work-up patient and prepare for surgery.

- Recently surgeons have begun to accompany the anaesthetist to PACU while the RN stays behind to turn-over the room. This is an unusual practice and may not have the benefit intended.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend that YRH explore the impact of surgeons accompanying the anaesthetist to the PACU on both surgeons and PACU RNs. The PACU RN is not always getting the complete detail required to render nursing care to patients and follow-up is needed with the OR RN. This creates extra work for PACU.*

Documentation

A review of documentation identified that documentation flow is a problem, particularly on the day of surgery. The consent and history and physical should accompany the booking form but this does not always happen. The OR package goes from booking to day surgery and is filed by day and surgeon. PAC adds information after the visit. As a result, there are OR delays because of lack of documentation on the day of surgery or last minute bookings with minimal work-up.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We recommend redesigning the documentation flow process with a focused review on all data elements collected, redesign of overall data/information flow and design of reporting requirements to enable ongoing monitoring and evaluation.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- Instrumentation is good; equipment is good; preference cards are updated by the designated leads of services on a regular basis. In addition, materials management has an equipment aide assigned to the OR full time. The role appears to work well. The OR liaison picks all cases with some support from RNs.

- The relationship with SPD is noted as improving. There is a regular meeting between OR and SPD staff and two-way education is currently being planned.

- Controlled substances are kept in the sterile core under double lock. The stock for nursing and anaesthesia is combined. Nursing dispenses drugs to Anaesthesia each day based on individual preference. Nursing signs out the drug but there is no anaesthesia signature for receipt of the drugs. Anaesthesia initials for each medication as they are dispensed to patients on a control sheet and then signs control sheet at the end of the day and returns it to nursing who puts it in the narcotic closet. Although there is a signature spot for nursing to receive medication not all sheets had an RN's signature. This system is fairly tight but puts nursing in the position of dispensing medications to another profession.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that YRH explore the use of case carts. The OR has sufficient instruments and sterile core space to accommodate filled carts for the day's slate. This system is much more efficient and should enhance room-turn-over.*

- *We recommend that the OR-SPD sessions continue and the quality of communication and support between the two departments be monitored. We also recommend that SPD designate a core group of staff to support the OR and that these individuals be given an opportunity to visit OR so they can see and understand the necessity and importance of their jobs.*

- *We recommend that YRH institute a locked "tackle box" system" for each anaesthetist, and that the boxes are dispensed and replenished by pharmacy directly.*

Waitlist

A review of waitlist identified that the hospital has limited capability to track physician wait lists.

To enable improved management of the waitlist, the following recommendation has been provided for consideration:

- *We recommend that the hospital track wait list by service and physician through OR booking. The patient could go on the wait list at the time of surgical booking. This tracking effort will require a new perioperative information system.*

Data Concerns

A review of data identified that the Britech system does not allow perioperative management or the OR Committee to access the information needed to manage perioperative resources efficiently and effectively. Data is available but is not easily accessible and not in great detail.

To enable improved use of data, the following recommendation has been provided for consideration:

- *We recommend that a systematic data plan be developed to allow OR Committee to review and manage block utilization. This will require tracking of utilization of assigned blocks on a monthly basis and then quarterly summary report against agreed upon targets. These reports should become a regular part of the Committee's agenda and should be produced automatically by the scheduling system. In addition, perioperative management should develop a dashboard of key indicators to track progress in resource utilization. Parameters should include room utilization by day of week and time of day as well as budget variances and key quality indicators.*

DHA 3: Annapolis Valley District Health Authority

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as some analysis of quantitative data provided by each DHA.

The findings for Valley Regional Hospital are set out below.

General Information

There are six OR theaters, one of which is a dedicated cystoscopy room. Four theaters are used Monday to Friday, with a fifth room two Mondays/month. VRH has performed approximately 7500 cases annually in last three years. Ninety-seven percent of inpatient admissions are same day.

Services include vascular surgery, orthopaedics, general surgery, urology, ENT, oral-maxillofacial, gynaecology and dental surgery. Ophthalmology services are provided at Soldiers Memorial Hospital. Regional services are provided for orthopaedics, vascular surgery, and urology for the Western region. Perioperative services includes OR, PACU, endoscopy clinic, PAC, and day surgery. OR booking is handled by utilization

Governance

A review of governance and management identified the following findings:

- The OR management structure appears appropriate.
- The medical day program is currently included under the organizational umbrella of perioperative services.
- The OR Committee has been somewhat unfocused in the past but is now taking on appropriate responsibility. The Committee is developing guidelines for the elective booking of cases, release of block time, and bumping of cases.
- VRH lacks a formal process for clinical service planning. Physician recruitment efforts are hindered by the lack of a cohesive approach to service planning, OR time allocation and resource funding for required equipment and instruments.
- VRH provides a regional service to DHAs 1, 2 and 3 in orthopaedics, vascular surgery and urology. The orthopaedic services are defined by a formal contract with specific expectations. All services including booking are coordinated centrally and VRH physicians and perioperative leadership work with Yarmouth and now Bridgewater to facilitate the care to the region.
- The anaesthesia issues in Halifax are placing pressure on the surrounding areas to gear up and do more case volume and complexity. VRH is a regional centre that could provide appropriate outlet for Halifax and ensure a more locally directed level of care to the population of the region. The resource market will probably drive surgical services in this direction.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the medical day program be transferred from day surgery to ambulatory care as soon as possible but no later than the actual physical relocation of the service.*

- *We recommend that policies and procedures be developed for reallocation of block time based on waitlist and current block utilization criteria and case cancellation protocols. We also recommend that the Committee establish appropriate block utilization targets by service and monitor these quarterly for compliance. If not met, the service can be given notice and then an appropriate period of time (usually one quarter) be provided to improve. If no improvement then block time is taken away.*

- *We recommend that the OR Committee create a coordinated process for this effort and feed information and business case support to services and the formal medical staff and administrative processes.*

- *We recommend that formal contracts be developed with DHAs 1 and 2 for the coordination and delivery of services for vascular and urology.*

- *We recommend that VRH administration work with the DoH to proactively plan for potential changes in service complexity and mix.*

Scheduling

A review of scheduling processes identified the following findings:

- The OR elective schedule is service block. One room is often used as a swing room to support opening and readying the room for big cases. This works well and decreases the turn-over time significantly. Surgeons report that they like the approach.

- OR booking is done in utilization using a DOS based version of Surgi-Serve. The system is no longer supported by the vendor.

- The OR manager reviews the slate one week ahead to ascertain if the blocks are filled. If not, the surgeon is notified and asked if he plans to utilize the block. For the most part surgeons are reasonable. The system is informal at best.

- The OR manager and team leader review the slate the day before to determine equipment conflicts, best sequencing, and bed availability. They work closely with utilization and changes are made as appropriate.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend that DoH develop an RFP and standardize the purchase and use of OR scheduling software.*

- *We recommend that formal policies and procedures be developed for block management and utilization trending by the OR Committee.*

- *We recommend that the slate review process be moved up to at least 48 hours in advance with finalization the day before.*

Capacity Management

A review of capacity management identified the following findings:

- The OR measures total case time and case volume by day of the week by month.

- The OR does not track room utilization by day of week and time of day.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend that the OR Committee set up expected utilization standards and begin to trend the actual activity against these.*

- *We recommend that OR management begin to develop a methodology for reviewing room utilization. This is an excellent way of monitoring productivity of scarce anaesthesia and nursing resources. We would be happy to discuss an approach with you in greater detail.*

Pre-Admission Clinic (PAC)

A review of pre-admission clinic identified the following findings:

- Hours of operation are 0800-1600 hours Monday to Friday. The PAC is staffed with one RN. Four RNs from day surgery rotate through the clinic. There were 998 patients seen by nursing and other disciplines in 2005-06. The anaesthetic clinic runs Monday to Friday from 0730 to 1530 and saw 1024 patients.

- There are no written guidelines for who needs to go to the PAC. Overall numbers of patients seen are low.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We recommend that this area be redesigned as part of the day surgery redesign. At the very least, all same day admission patients should be seen in the PAC prior to surgery. Redesign could also include "PAC lite" visits as well as possible phone prescreening of all surgical patients with triage of who needs an actual on-site visit.*

Operating Rooms

A review of the operating rooms identified the following findings:

- Hours of operation are 0800 – 1530 for elective cases.

- The add-on list is then done in one room which is staffed until 2200 and cases can go to midnight on regular basis.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend that another late room be planned and staffed until 1800 on Monday to Friday. Anaesthesia and nursing resources will be required and nursing start times will need to be staggered to provide staff.*

Post Anaesthesia Care Unit (PACU)

A review of post anaesthesia care unit identified the following findings:

- Hours of operation are 0730 – 2200 Monday to Friday and 0800-1600 Saturday and Sunday. There is one RN on-call after hours. The PACU targets a minimum of four RNs in the department for 11 bays (they actually have 12 bays but use 11). They see a fair number of children and staff them 1:1. Staffing is not rich.

- Each RN takes a list for the day but they cover one another. Most RNs are critical care trained. The PACU supports 163 ECTs annually and two to three cardioversions per week. PACU has only one RN on after 1730. The area is isolated at the end of the OR and there is still significant patient activity until late in the evening. There is a call button to ICU and the OR but the nurse has to leave the patient to reach it.

To support the required changes to the post anaesthesia care unit, the following recommendations have been provided for consideration:

- *We recommend that the volume of activity be reviewed by time of day and day of week and that staffing be adjusted around this workload. VRH should consider consolidating surgical day surgery activity into the PACU at an appropriate time in the evening. This will provide the additional RN support for both areas that is necessary. Mobile screening could be used to artificially separate the areas for privacy. This would also allow day surgery to stay open later in the evening.*

Day Surgery

A review of day surgery identified the following findings:

- Day surgery workload for 2005-2006 was:
    - Anaesthesia clinic - 1024 patients
    - Endoscopy clinic - 1841 cases
    - PAC - 998 patients
    - Same day admissions - 1579 cases
    - Outpatient - 4838 cases
    - Medical day program - 1223 Procedures
- Day surgery hours of operation are 0700-2000 Monday to Friday. Staggered start times are appropriate. RNs flex hours based on the schedule (start times not end times).
- Endoscopy hours of operation are 0800-1530 Monday to Friday. The endoscopy clinic has an all RN staff: one for the procedure and one for scope cleaning. They also provide one RN for diagnostic imaging on Tuesday to Friday from 0800 to 1600. Staffing numbers are appropriate but the mix could be changed.
- Endoscopy and day surgery are geographically split for pre- and post-procedure care, but will be moving to the third floor with the redevelopment plan. The current space is inefficient and does not allow for effective patient flow, however, the redevelopment plan does not contemplate a complete redesign of day surgery.
- Patients are transported to the OR using the hospital-wide porter system. Multiple delays are encountered, especially with first cases.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend that an analysis be done on the number of evening cases done after 2000. If analysis warrants then day surgery hours should be extended to one hour after the last case. Staff can be cross-trained with PACU and day surgery activities could be provided in PACU so there is more than one RN in the post-surgical support area.*

- *We recommend that an inclusive redesign effort be undertaken to consolidate day surgery and Endoscopy to improve patient flow to various procedure sites, streamline documentation (particularly for ambulatory patients and frequent flyers), and strengthen communication between functional areas. Redesign should be completed soon so that it can influence renovations to new location.*

- *We recommend that when day surgery relocates VRH consider walking as many patients as possible directly to the OR theater. The third nurse in the room could pick up the patient and allay their anxiety during transport. Those patients requiring transport by stretcher could be portered.*

- *We recommend that when the endoscopy unit moves upstairs that the hospital consider hiring an instrument aide to clean scopes in both the endoscopy clinic and the OR. The position could also do other duties as time permits. This is a more cost effective use of budget.*

- *We recommend that when areas are relocated, wrap around procedure care is consolidated in day surgery for surgical procedures and endoscopy. The medical day program should relocate to ambulatory care. The philosophy of care for this area is interventional rather than pre- and post-procedure care. This physical relocation is not included in the scope of the redevelopment plan.*

Staffing

A review of staffing identified the following findings:

- AVH is well positioned to be a centre of excellence and has had notable success in physician recruitment and retention in the subspecialties. There is a stable and skilled perioperative workforce, which is a key factor in sustainability.

- Nurse staffing in perioperative services is quite stable and recruitment occurs from within. Inexperienced staff attend the Halifax perioperative program and then are mentored in the VRH OR. The OR targets three RNs per room Monday to Friday until 1530. Two RNs are scheduled per room for the add-on room and the weekend urgent /emergent schedule. On-call is provided after 2200 Monday to Friday and after 1530 on weekends. Staffing start times are staggered and appropriate.

- Perioperative services has a team leader assigned on a two week rotation to cover the OR, PACU and endoscopy. There are four senior staff who share the responsibility and seem to do a good job communicating with one another. The role is fairly new, working well and should be continued.

- The OR has a regular core staff of three cleaners who cover the hours of 0600-0000. It is reported that additional support is needed from 0600 to 1400.

- The OR has 1.5 FTE ward clerk to support the OR and PACU. The amount of support is appropriate but the role in relationship to PACU may need some modification, especially with communications.

- There is an all RN staff except for some clerical support in the OR and day surgery.

- Anaesthesia is concerned about their ability to recruit given the reported differences in pay scales between regional sites outside of HRM and the academic sites in Halifax. There are currently eight anaesthetists but several have opted to reduce their schedule and the Head of the Department is not optimistic about success with recruitment due to perceived inequities in remuneration. This is an issue that was raised at all sites throughout the province.

- Surgeons perceive that both anaesthesia and nursing tend to slow down efforts as 1430 approaches so they will not have to do next case and potentially stay later. Although they

understand the human tendency to do this, they are concerned that it is a pattern with some individuals.

- Both surgeons and anaesthesia are concerned about the expansion of the AFP in Halifax and are concerned that other areas/services may get it. If all participants in the room are not incentivized in the same way then competing agendas and tensions will result.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that OR management review the need for three RNs in a room at all times for all cases. Many cases require an RN to start and end a case only. Big orthopaedic and vascular cases usually require three RNs for the entire case. Normally a target of 2.5 RNs per room for other services is appropriate. However, the additional staff could be used to support giving the service leaders more time out of the room to manage their services.*

- *We recommend that the housekeeping workload be reviewed, particularly on days when five rooms are running. Additional support may be required from 0830 to 1400 on days when more than four rooms are running.*

- *We recommend that VRH consider developing aide/technical roles to do equipment cleaning, inventory management, anaesthesia support, endoscopy equipment cleaning, etc. See each area for more detail.*

- *We recommend that AVDHA continue working with the DoH and with the provincial anaesthesia society to develop a five year resource plan. This plan may need to consider consolidating general anaesthesia to a reduced number of sites across the province over that five year period. The plan can be tied to the resource plan developed in collaboration with the Anaesthesia Society.*

- *We also recommend that a plan be developed to create anaesthesia extender roles, both clinical and support.*

- *We recommend that OR management talk with surgeons about this and that OR slates are reviewed retrospectively for patterns of "slow-down." We also recommend that an analysis be done regarding a second late room so staff can plan accordingly.*

- *We recommend that DoH should develop a plan and a set of guidelines for the use of AFP. The contract should be tight with very detailed expectations and measurement of results.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- First case delays are audited periodically though not recently. The last audit resulted in changes to day surgery start time. No audit has been done since then. Surgeons report continued delays in moving patients from day surgery throughout the day.

- The OR uses an admission area similar to the old holding area concept. The area is too small, offers no privacy and should be eliminated.

- Day surgery assigns staff to a bed for both the pre- and post-surgical experience. Patients are aggregated into the 23 spaces by list and staff are assigned the day before according to the published scheduled. This seems to work well for the hours when there is an even flow of patients between lists.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend that the audit of first case delays be done more regularly and that after each change there be monitoring for improvement. Day surgery flow requires a complete redesign that should be based on relocation opportunity.*

- *We recommend that with the relocation of day surgery to the third floor, patients be brought directly to the OR theater. Anaesthesia can see the patient in day surgery before the case when the unit is across the hall. Surgeons can do surgical site marking in either place.*

- *We recommend that the practice of day surgery patient assignment be reviewed and alternatives discussed for those times when flow is uneven. Many facilities use a pre- and post-operative approach where staff flow with the workload. The current practice is similar to assignment practices on an inpatient unit. This can be part of the overall redesign discussed earlier.*

Documentation

A review of documentation identified that documentation flow is fragmented and the chart compilation and preparation are usually handled the afternoon before or the morning of surgery.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We recommend a complete redesign of document content, flow and final checking. VRH should consider an abbreviated version of documentation and work-up for frequent flyers. This could be part of day surgery redesign.*

Bed Management

A review of bed management processes identified the following findings:

- There are 37 surgical beds, of which 9 to 11 could be occupied with medical patients. Surgeons do a good job managing LOS and bed availability. Thirty one patients were cancelled from the OR list in 2005-2006 according to the OR stats from the manager. Eleven new surgical beds will be added with the redevelopment plan.

- Volume caps have been set by service and by day of week for number of admissions and number of outpatient cases. These are managed by utilization through the booking process. Some thought that surgeons use the add-on process to exceed the cap.

To support the required changes to bed management, the following recommendations have been provided for consideration:

- *We recommend that a formal clinical service planning process be undertaken to determine service bed need and best method for managing new bed allocations. Service recruitment plans should be factored in.*

- *We recommend that a procedure be developed to review questionable add-on cases retrospectively. The OR Committee can trend the review and take appropriate action if required.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- There is no capital replacement plan for basic room equipment. Three anaesthesia machines are old volume respirator types that may not be supported by vendor for much longer. Also these machines will not adequately ventilate certain patients (i.e. obese patients).

- The OR is on a full case cart system, has small but dedicated elevator service but minimal space in the sterile core to store carts for the day. Also there are multiple issues with the reliability of cart contents, and there is some gaps in confidence related to the training of SPD staff.

- SPD coverage is a real concern for OR staff, particularly on evenings and weekends. Urgent and emergent cases are done after these hours and OR staff have to go to SPD to pick cases. Since there are only two RNs on after these hours this creates delays in starting the procedure, thus increasing the probability that tired staff and tired surgeons will be performing complex procedures.

- New products procedures are defined and materials management is actively involved in the process. This seems to work reasonably well.

- There are significant issues with equipment conflicts. There is only one good C-arm and a limited number of hysteroscopes. This creates issues with case scheduling and sequencing. Because the scheduling system lacks an intelligent scheduler there are many manpower hours used in resolving these issues. Scheduling could be simplified with a new IS system and case sequencing and OR nursing time could be expedited if there were additional equipment.

- There is a limited number of laparoscopic instrument sets and this has resulted in significant flashing of instruments between cases.

- VRH has a significant investment in laparoscopic equipment. Much of this equipment is large, difficult to move and very expensive.

- The controlled substance process needs tightening in the OR. The OR uses standard unit dose cart with locked drawer. Nursing and anaesthesia controlled substances are not separate and nursing is responsible for distributing drugs to anaesthesia cart in the morning. There is no locked drawer to place them in. Anaesthesia signs out drugs to patient as used and nursing returns to unit dose cart at end of shift. The system is not well-controlled and nursing is taking an inappropriate role in the distribution of drugs.

- Materials management does inventory of stock items. An RN does non-stock inventory.

- An RN is assigned to provide anaesthesia technical support.

- New procedures and technology are available that will reduce LOS or eliminate an inpatient stay. However, they require investment in equipment and materials. VRH has been reluctant to adapt TAT procedures because of the increased supply costs, despite the fact that the procedure is outpatient with improved outcomes.

- Anaesthesia does not have service specific cart for equipment and documentation support. The changes in line management and needleless IV systems, etc. have generated an increase in support equipment. The current carts do not provide sufficient space to accommodate the changes is technology.

- The epidural program provides continuous infusion medication only. There is no patient controlled anaesthesia.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that these anaesthesia machines be replaced ASAP. At least one of these should be replaced immediately.*

- *We recommend that SPD designate a liaison to work with OR staff to strengthen communication, improve the reliability of the case cart contents and re-build confidence in the processes.*

- *We recommend a joint effort between SPD and OR to provide coverage on weekends or build a business case for additional SPD resources if required.*

- *We recommend that a prioritized list of needed equipment be developed by service including potential physician recruitment and service expansion plans. A business cases should be developed where appropriate, i.e. C-Arm.*

- *We recommend that the practice of flashing instruments between cases be eliminated because of the significant safety issues involved. Resources should be allocated to purchase additional sets. There is a significant amount of laparoscopic surgery being done currently and more is anticipated. Patients are more informed about the surgical options and are seeking laparoscopic treatment methods in greater numbers.*

- *We recommend that VRH explore the possibility of creating a dedicated laparoscopic room to be used by all services performing the procedure. The room could permanently house all the equipment, thereby minimizing the risk of damage to the equipment as well as physical injury to staff. A dedicated room would also facilitate turn-over between cases.*

- *We recommend a tackle box system for each anaesthetist that is directly distributed to them by pharmacy. Anaesthesia should sign for and return drugs directly to pharmacy. Nursing should not be functioning as the intermediary in this process. We have discussed this with OR management.*

- *We recommend that the OR consider developing an equipment technician position to do non-stock inventory, equipment cleaning and other non-professional duties.*

- *We recommend that VRH explore the role of anaesthesia technician to provide anaesthesia equipment support, anaesthesia case turn-over support and other appropriate duties.*

- *We recommend that a mechanism be set up at the DoH and/or DHA level to review the risk/benefits of new procedures. Criteria could include clinical efficacy, quality of life changes, demand for service, cost and potential risk.*

- *We recommend that a plan be developed to systematically replace the current carts. Specifications should include accommodation of a locked controlled substance box that is moveable for provision of narcotics by pharmacy.*

- *We recommend that VRH explore instituting the preferred patient controlled program.*

Waitlist

A review of waitlist identified that there is limited tracking of waitlists other than by physician offices.

To enable improved management of the waitlist, the following recommendation has been provided for consideration:

- *We recommend that a more formal process for waitlist tracking be developed within utilization. The general guideline could be that a patient goes on the waitlist at the time of case booking. Tracking should be done by service and physician and high volume procedures.*

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DHA 4: Colchester East Hants Health Authority

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as a review of quantitative data provided by each DHA.

The findings for Colchester Regional Hospital (CRH) are set out below.

General Information

Five thousand diagnostic and surgical procedures are performed annually at CRH. There is a capacity of four operating rooms, one cystoscopy room (located outside the OR footprint) and one endoscopy clinic (adjacent to the OR footprint).

On average, the hospital runs three general anaesthesia rooms and one local anaesthesia room Monday to Wednesday and two general rooms and one local room on Thursday and Friday.

The OR runs a fully block schedule Monday to Friday.

Governance

A review of governance and management identified the following findings:

- The perioperative committee is known as the "Surgical Services Committee". For the most part, the role of the committee is appropriately defined and the membership is interdisciplinary. However, the committee does not review OR productivity or utilization.

- Perioperative management does not routinely review room utilization. This is an excellent way of determining if scarce nursing staff and anaesthesia resources are appropriately utilized.

- The perioperative management model is reasonable. The nurse manager is responsible for the entire perioperative continuum. Based on the CSPD consulting review, the CSPD technicians currently managed by the OR will be reporting to the CSPD department.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the Surgical Services Committee set up a four to six month review of block utilization. If surgeons do not maintain at least 70-75% utilization of the block in a given quarter then they should receive notice that their block time will be reduced if they do not improve utilization over the next quarter. This policy and process should be in writing and well-communicated to the surgical staff.*

- *We recommend that management review staffed room utilization by day of week and time of day and reallocate cases or resources as required to maximize utilization.*

- *Although we do not question the decision to have the CSPD technicians report to the CSPD department. , we recommend that CRH reconsider the timing. In the new hospital the OR will move to a case cart system and all CSPD activities will be done in CSPD. There will be no need for CSPD staff in the OR per se. This could be a very appropriate time to integrate all the staff. In addition, CSPD will find it difficult to manage the technicians in the OR four floors away. OR management is present in the OR and has direct visual contact with these staff. Finally, given the*

recent tensions between the OR and CSPD, integration of staff at this time will be difficult and highly trained employees may leave. Therefore, we recommend that the formal integration of the two staffs be delayed but that staff has joint meetings, training sessions and communications.

Scheduling

A review of scheduling processes identified the following findings:

- Difficulties with RN and anaesthesia recruitment have resulted in the OR block schedule being modified frequently and published monthly. This creates problems for surgeons as they try to plan patient care.

- The OR booking is done in the Britech system for both the pre-case scheduling and post-case logging. CRH eliminated the manual book and manual scheduling procedure over three years ago. The system works reasonably well given the limitations of the Britech system. The hospital has asked the vendor repeatedly for report writing function and the vendor has not responded.

- The endoscopy clinic is not part of the block schedule and OR booking merely provides a secretarial support service to this area. The physician's office books the cases and forwards the list to OR booking. The clinic runs ten days per month in an apparently random pattern. The gastroenterologist was given free reign to book clinic cases around his call schedule as part of his recruitment arrangement. Therefore, the clinic schedule is irregular and cases are booked with little notice to perioperative services, which provides the staffing for procedures and recovery. This is in conflict with the OR's normal requirement of a minimum of two months' notice of case scheduling to conform to union contract stipulations.

- There is a perception by nursing staff that some surgeons schedule non-urgent cases on weekends, particularly when they are on-call. There is no retrospective review process to evaluate the appropriate use of weekend OR time. Since CRH does not routinely run an elective room on these days, all weekend cases are handled by the on-call team. Doing elective cases on weekends with an on-call team is a very expensive way of operating.

- There is no commonly understood and accepted definition of "start time". The Surgical Services Committee has discussed this repeatedly with no agreement.

- Cases are reportedly booked 2-3 days in advance by surgeons.

- Patients often have lab work done at a designated lab within Colchester East Hants DHA. If the results are not submitted with the OR booking form then their absence is not detected until the day of surgery. OR booking must then call outside labs by phone while the patient is in day surgery. This process results in case start delays.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend as the recruitment issues subside that the schedule be revised no more than quarterly. Any reallocation of block time should be based on wait list and block utilization. Surgeon recruitment planning could also require a change in schedule. The Surgical Services Committee should oversee the block reallocation decisions.*

- *We recommend that due to system and support limitations, the Britech system be upgraded or replaced as soon as possible.*

- *We recommend that the endoscopy clinic should become part of the block schedule and a more predictable block arrangement should be developed. Eventually the clinic could be housed as part of an expanded ambulatory service in the new building.*

- *We recommend that the Surgical Services Committee set-up a formal review process for any cases that anaesthesia and/or nursing identify as questionable. If it is found that elective cases are being done in on-call time, the practice should be eliminated and cases should be scheduled as part of the regular block on a weekday.*

- *We recommend that the published case start time be defined as "in room time", since this is generally the easiest time to keep track of and is accounted for by all automated OR systems. Case duration should be defined as "patient enter" to and "patient exit" time.*

- *We recommend that for the most part, surgical bookings should be completed by 7-10 days in advance. This allows sufficient time for a PAC visit, appropriate pre-screening by staff and compilation of pre-operative documentation. It also allows OR leadership time to review the anticipated slates for case estimates, equipment conflicts, and anticipated staff workload.*

- *We recommend a complete redesign of the perioperative documentation system to include OR booking, PAC, day surgery, admitting, and the ambulatory clinic. We suggest that a multidisciplinary group with representation from these areas design a chart completion checklist to be attached to the OR package in OR booking and then attached to the patient chart at chart preparation. Each area in the documentation flow should be checking the chart for completion based on the checklist. This will move the review and the responsibility for chart completion forward in the process providing an opportunity for missing items to be tracked down and put on the chart long before the day of surgery. The day surgery RN can then simply review the checklist to ascertain completeness.*

Capacity Management

A review of capacity management identified ongoing problems with room utilization, some of which is directly related to some of the recruitment challenges that the DHA has faced over time with both nursing and anaesthesia.

To support the required changes to capacity management, the following recommendation is provided for consideration:

- *We recommend that as staffing and recruitment improve that CRH attempt to move minor surgery and local cases to the cystoscopy room and that the main ORs be used for general anaesthesia cases.*

Pre-Admission Clinic (PAC)

A review of pre-admission clinic identified the following findings:

- The PAC is open from 0700 to 1700 and staffed with one RN and one clerk. The clerk works 5 days per week from 0700 to 1500; the RN works Monday to Thursday from 0700 to 1700. All patients who are admitted on the day of surgery are required to go through PAC prior to surgery. Cataract patients and patients facing breast biopsy are also seen. The PAC sees approximately 9 patients per day who spend from 30-45 minutes with the RN. Cataract patients are seen at a rate of 4 per hour and receive group teaching by the RN. On the whole, the PAC works quite effectively, although it is geographically separated from the rest of perioperative services.

- OR booking sends the booking forms for patients who are to be seen in the PAC. The clerk schedules the visit time directly with the patient. The PAC strives to book the visit at least two weeks in advance of the surgery. The patient is asked to bring all bottles of medication with them for the visit and a minimal phone assessment is done at the time of booking. The system seems to work well.

- Upon arrival, patients see the RN for assessment and individual patient teaching. The RN discusses preps, hospital stay, and post-op recovery. Patients are then sent for lab work and

testing ordered by the surgeon. The nurse will spend at least an hour with each patient undergoing breast biopsy. The care provided by the PAC is exceptional and patients seem to be well-prepared for their procedure.

- Clinic booking is manual, based on a balance of 30 minute and 45 minute slots. One hour slot clusters are interspersed for cataract patients with four patients per cluster for group teaching.

- Blood work is ordered by the surgeon on the booking form. PAC staff estimate that about 80% of the forms are complete. The remaining 20% require a good deal of clerical time to track down the surgeon to get the specific orders.

- Anaesthesia runs a pre-admission clinic on Wednesdays after the elective slate is finished. Because of scarce anaesthesia resources, only three patients are seen on a given day. Anaesthesia agrees that they are not seeing as many patients as would be appropriate.

- The PAC also sees urgent surgical cases for care. The unit staff is very flexible in fitting patients in to accommodate to the short-term surgical date.

- CRH is developing a screening tool for MRSA and VRE. The tool will be administered in the PAC but there has been no protocol established for what to do when the tool identifies a patient with a possible problem.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We strongly recommend that the planning for the new building develops a contiguous space for the PAC within the perioperative footprint.*

- *We recommend that PAC review the types of patients seen to ascertain if there are other opportunities for patient clustering for group teaching, such as by procedure, by surgeon, or by surgical type, etc. This would reduce the time needed for teaching but would increase the intensity and throughput of the day.*

- *We recommend that each booking form be reviewed as soon as possible to ascertain completeness of surgeon orders. The first review could occur in OR booking with appropriate clerical support. We also suggest that the PAC clerk review the OR package for completeness at the same time that she is checking for surgeon orders. Chart completion should be the purview and responsibility of all areas in perioperative services.*

- *We recommend that as anaesthesia resources expand more time be added to the pre-admission clinic. We also recommend that PAC protocols be developed with anaesthesia to define those patients that must be seen by anaesthesia in addition to those requested by surgeons.*

- *We recommend that the hospital develop a plan for dealing with surgical patients once they have been identified by the tool. PAC needs to know what the next steps are in a referral process if they identify a patient with a potential problem.*

Operating Rooms

A review of the operating rooms identified the following findings:

- The OR runs at least two rooms per day with a third late room until 1700. From the last week in June until the first week in September rooms are reduced to two for summer closures. This seems to be effective.

- General surgeons perform endoscopy procedures in the main OR. They do not have access to the endoscopy clinic facility or its staff. This seems to create a dual standard of care for this patient

population depending on whether a surgeon or gastroenterologist does the procedure. The disparity is further magnified by the differences in procedure location and recovery process.

- On average, there are two add-on cases per day. Surgeons are reluctant to cancel their elective cases to accommodate these cases and overtime results. This type of add-on situation is not unusual, especially if the cases occur at the end of the schedule and can be managed in the late room.

- First case delays are a significant issue at CRH. All interviewees generally agreed that no first case starts on time (e.g. a 100% delay in first case stats). There are a number of reasons for this problem, including the surgeons' desire to see patients before surgery and the surgeons indicating that nursing and anaesthesia are not ready.

- The OR currently performs a number of minor surgical procedures ("lumps and bumps") which would more appropriately be performed in an ambulatory clinic area.

- Given the age of the current building, there are a number of maintenance issues requiring attention, especially electrical and plumbing. The OR perceives that maintenance is not responsive to their needs and does not effectively communicate. There appears to be limited effort to coordinate maintenance activities with the OR and limited notice of the work, even if it involves closure of a room.

- After hours cases are admitted from the emergency room, the procedure is performed and the OR provides primary stage recovery. However, once the patient has recovered there is nowhere for them to go for second stage recovery. The OR believes the patient should go back to the ER and the ER believes they have done their part. This issue has created significant tension between the two departments. There is no easy solution to this issue.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend that the endoscopy clinic develop more formality around scheduling and access. If the schedule were treated as part of the block then each physician performing procedures could be given appropriate block time on a weekly basis and patients would enjoy the same standard of care.*

- *We recommend that OR management analyze the pattern of late cases by volume, day of week and surgeon to ascertain if there are regular trends. If these trends include significant overtime then more cost effective ways of performing the cases should be found. This can usually be accomplished by flexing the staff to match the regular workload, but the current complement of staff may not allow this. The preferred approach may be to determine the utilization of each surgical block and where block utilization is less than 85%, work with the surgeon to more efficiently schedule cases leaving some open time at the end of the block for add-on cases. This will need to be monitored carefully to be sure that the open time is used effectively and consistently and that the approach results in reduced overtime.*

- *We recommend that OR management conduct a detailed review of first case starts to determine the time delay, weekly trends and reported reason for the delay. Since a first case delay generally slows the room down exponentially throughout the course of the slate, it is imperative that maximum effort be made to start all first cases on time.*

- *We recommend that minor surgical procedures be moved out of the sterile OR and into the ambulatory area in the new hospital. In the meantime, the cases could be moved out of the main OR into the cysto room if sufficient waiting space could be designed.*

- *We recommend that the maintenance process be the immediate improvement focus through an interdepartmental planning effort. A combined group should identify ongoing maintenance needs and develop a process and plan to deal with them. The group should also design and agree to a*

communication approach and a process for dealing with issues if they occur. Finally, there should be a detailed plan in place for communication if a room needs to be closed on either a planned or emergency basis.

- *We recommend that both departments sit down to discuss the problem and create guidelines for the situation. A sample guideline might include there criteria: if the 2nd stage recovery period is minimal, i.e. under 30 minutes then the OR can recover the patient. If the recovery period is more than an hour then the ER can recover the patient if they have the space and staff. This will minimize extended overtime in the OR.*

Post Anaesthetic Care Unit (PACU)

A review of post anaesthesia care unit identified the following findings:

- The PACU is open from 0830 to1800 Monday through Friday. Staffing is as follows:
    - 0830 - 1630 1 RN
    - 0900 – 1700 1 RN
    - 1000 – 1800 2 RNs
- The staffing is reasonable for the workload.
- Electroconvulsive therapy is performed at 0730 under the auspices of anaesthesia in the PACU. There is limited notice provided and the procedure is done in a series of 10 for each patient on a Monday, Wednesday and Friday schedule.
- Cardioversions are done in the PACU as needed. There is no regular time or schedule for the procedure. They are plugged in during the day as the PACU space permits. The ICU provides the staffing for these procedures so scheduling requires interdepartmental cooperation. This program seems to work reasonably well; however, the limited physical space in PACU requires careful planning and flexibility. Cardioversion should be done in medical day care but this would place an additional burden on already scarce anaesthesia resources.
- Not all PACU RNs have completed a critical care course.
- PACU has limited square footage to provide care. There is no isolation space and very little capability to care for a special needs patient, i.e., MRSA. There is significant shell space directly behind the PACU and endoscopy area. A plan was developed to build a new Day Surgery unit and expand the PACU but the plan was shelved because CRH is building a new hospital.
- CRH rarely has OR holds related to PACU capacity because the OR is not operating at full capacity. As anaesthesia and staff recruitment improve, there may be problems with perioperative flow related to the size of PACU. However, it is not unusual to hold the OR nurse in PACU when she transports the patient to ensure that the PACU staff can handle the initial workload.
- Patients are transported to PACU by both the anaesthetist and the circulating nurse. The nurse stays and gives report to the PACU nurse. This is appropriate, but the PACU should be sufficiently staffed so that the OR circulator does not need to stay to provide patient care for any extended period of time.
- PACU has experienced overtime because the inpatient unit has multiple patient moves to make before a bed is made available for the surgical patient post-operatively.
- PACU staff is not assigned to any given patient. Because of the size of the room there is immediate visibility and very close proximity to patients. Every staff member can easily respond to care needs. The staff feels that this methodology allows flexibility and quick communication

with physicians without having to locate the assigned RN. All staff knows what is going on with each patient.

To support the required changes to the post anaesthesia care unit, the following recommendations have been provided for consideration:

- *We recommend that perioperative management work on a plan to schedule current and new staff into a critical care course without compromising the staffing resources available for care.*

- *We recommend that the hospital perform a cost/benefit analysis to consider potential interim options to utilize the shell space (possibly for additional support space rather than high cost patient care space) as a means to alleviate some of the pressures on the PACU.*

- *We recommend that CRH include a full manpower and resource plan as part of the planning for the new building. Currently, physical space and recruitment issues could be creating an artificial limit on capacity and flow. This will also be an issue as the hospital develops plans for a regional urology centre.*

- *We recommend that, whenever possible, planning for the elective surgical slate should take place the day prior to surgery. Perioperative leadership from all areas should meet the afternoon before to review the next day's slate and begin planning for the surgical day. A representative from admitting should join the group to provide input on bed control. Recent studies have shown that preservation and smoothing of the surgical slate can positively impact the management of beds in an acute setting.*

- *We recommend that the unit continue to monitor the issue of assigning patients. While we agree that the current approach works effectively given the very close physical proximity of patients and cramped care space, we note that this may not continue to be true if the unit is expanded. This will definitely need to be discussed and developed prior to moving into the new building.*

Day Surgery

A review of day surgery identified the following findings:

- The day surgery area is significantly undersized for the volume of patients and care needs. The area has no space for privacy or patient confidentiality. The unit has no capability to handle MRSA patients and has limited capability to handle current throughput.

- Day surgery is open from 0700-1900 Monday through Friday. The staff of two RNs and one LPN rotate through three shifts of 0700-1500, 0800-1600, and 1100-1900. If the LPN is on the later shift then the patients are moved to the endoscopy prep area, so that back-up can be provided by the inpatient surgical unit. The hours of operation, staffing mix and shift schedules seem to work well.

- Day surgery processes ambulatory patients only. Patients who are to be admitted on the day of surgery go to the inpatient unit for admitting, pre-op assessment and general acclimation.

- Day surgery has two patient rooms that have been converted into stretcher and chair space. There are no formal bays; chairs and stretchers are squeezed into available space. Each room is used for both pre-operative and post-operative care based on the surgeon. Patients for a specific surgeon are seen in a particular room throughout the day. Each room supports the patient population of two surgeons.

- Day surgery provides the final review for the completeness of surgical documentation on the morning of surgery. RNs are spending significant time in this process and perioperative flow is affected.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend that the area outside of the main OR be considered for expanding the day surgery area, increasing family and patient waiting space, expanding the current PACU and accommodating minor surgery in the cystoscopy room.*

- *We recommend that when the day surgery area is sufficiently sized, all patients be processed through the unit. This will ensure a consistent standard of care for pre-operative care as well as expedite surgical flow. Day surgery has a mind-set and an approach which facilitates patient throughput.*

- *We recommend that once space permits, day surgery allocate space based on pre-operative and post-operative care, rather than surgeon. The space can still be used as flow dictates but care can be organized more effectively by aggregating patients with similar care needs. If there is any possibility of expanding one of the existing rooms, that space should be allocated to post-operative care because more bays are needed for that function. Ratios of pre- to post-operative space are dependent on complexity of patients, number of OR rooms, case sequencing and the type of care provided.*

- *We recommend that the documentation process be reviewed in detail and completely redesigned. Chart preparation can be completed with support from both the 3N clerk and the OR clerk. A list of typical chart components can be place on the front of the chart at the time the chart is made up and clerical personnel can check off the materials as they arrive and are entered into the chart. A standardized chart order should be determined and adhered to by all areas. Finally, the review of chart for completeness and content should be conducted by the RN but no later than the day before surgery. This redesigned process will require submission of materials in standardized time frames, a common collection point for all materials and some training of the clerical staff to engage appropriately in the process. The documentation system is very broken and will require a formal redesign methodology to fix it.*

Staffing

A review of staffing identified the following findings:

- The OR has a staffing target of two RNs per room. There is an additional RN who does break and lunch relief for OR, endoscopy and PACU, and two RNs who come in from 1000 to 1800 and then take call. This pattern provides minimal support for bigger cases until later on in the morning and limited coverage for breaks for all three areas. Also, the staffing level does not provide any additional support to deal with untoward events and perioperative flow issues.

- The staff mix is primarily RN with one LPN who works in the endoscopy clinic. There has been some discussion about the use of operating room technicians, but this is not a common role in the area and the market may not support the recruitment and training of this role. Moncton, New Brunswick has inconsistently run a program to train staff in this role. Furthermore, OR nurses are very reticent to accept the role in an all RN service delivery model.

- Recruitment of nursing staff is difficult and usually comes from other nursing areas, particularly the ICU and the emergency room. Because this creates a hardship for these areas, there is usually a delay in transferring the staff member which compounds the resource problem.

- The OR is cross-training staff between PACU and day surgery. Senior staff does not participate in the cross-training, thereby assuring that experienced preceptors are available in the specialized areas. This is a very appropriate approach to cross-training, especially for second stage recovery. The approach allows new staff members to immediately begin working but could slow down their orientation for the OR.

- Staff orientation is informal and completely developed by OR personnel. There has been limited input from the nursing educator and staff does not take a formal OR course.

- Anaesthesia staffing is limited. There are three anaesthetists, who cover the OR, the epidural service on obstetrics and a chronic pain service. The issue of anaesthetic resources is a significant one across Canada. There are a number of vacant positions and many of the current anaesthetists will be retiring over the next five years.

- The day surgery area has no clerical support and a significant amount of clerical work is performed by RNs.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend a targeted staffing pattern of 2.5 for all rooms that run general anaesthetic cases.*

- *We recommend that CRH explore the market interest, candidate availability, and ongoing training options for an operating room technician role. If the market will support the role, then we suggest that CRH conduct an inclusive effort that involves all disciplines in the redesign of the model of care.*

- *We recommend that guidelines be developed for the transfer of staff and that these guidelines be strictly adhered to except in unusual circumstances. Orientation of OR staff is the longest in the hospital and requires appropriate lead times. Staff are usually anxious to get to the new area of choice and are less flexible in the old area. When the delay is too long, the hospital also runs the risk of losing the staff member to another organization.*

- *We recommend that there be a balance struck between the need to immediately utilize the staff and provide formal orientation time for an OR course and preceptorship. The sooner individuals complete their OR orientation, the earlier they can take call and assume a full workload to relieve other staff members*

- *We recommend that CRH send all inexperienced staff to a formal OR course, such as the one offered intermittently in Halifax. In fact, OR orientation could be developed across several DHAs or the entire province and then each facility could be assigned a certain number of slots. In this way the course could run on a regular basis with sufficient numbers of attendees to complete a class. There would also be a single standard of care for ORs across the province.*

- *We recommend that the Department of Health develop a detailed manpower plan for anaesthesia resources by site and region. The DoH should then overlay retirements on the manpower plan to determine future requirements based on current need. Population based requirements can then be factored in to determine estimated number of anaesthetists required. Once this analysis is done, the department can determine if further consolidation of surgical activity will be required. We believe that this will be needed as we suspect that the number of surgical sites may outweigh the available resources. An interim approach would be to limit the number of surgical sites doing after hours case, which would greatly reduce the amount of call performed, provide a better quality of worklife for anaesthetists and enhance the ability to recruit and retain anaesthetists.*

- *We recommend the addition of a .5FTE clerk to the day surgery area. This position could be shared by PACU and day surgery. We also recommend that the OR clerk assume some back-up and coverage support for OR booking.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- Documentation is a major issue for perioperative flow. A lot of time is spent in tracking documents, getting surgeons to complete consents and generally ensuring that the chart is ready for the surgery. There is no common collection point for surgeons' offices to send documents to and there is no formal timeline for the completion and delivery of documents by surgeons. Consents are often completed on the morning of surgery in the day surgery unit.

- The flow of perioperative documentation is not organized. Documents for patients who will be admitted go to PAC and the documents for ambulatory patients go to OR booking and the OR clerk.

- Surgical patients register in central admitting on the morning of surgery. They are not given priority and often get delayed in the registration process.

- Perioperative services has one cleaner who supports room turnover in the main OR and the cleaning needs of all other areas.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend that written policies and procedures be developed to deal with documentation requirements, timelines and aggregation of materials for chart preparation. The process should include performance targets which are monitored for compliance. Consents should be completed and forwarded with the OR booking form as part of an OR package. Many organizations will not book a case unless the entire OR package is complete. We suggest that initially the Surgical Services Committee set deadlines for receipt of documents rather than move immediately to refusing to book a case in the absence of documents. Histories and physicals (H&Ps) should be on a standardized form and the content requirements should be consistent.*

- *We recommend that a central collection point be established for the collection of pre-operative surgical documentation. Many organizations use the booking office for this function. Documents can then be routed to the appropriate area based on agreed upon process and protocols. A formal redesign should also include the ambulatory clinic since patients are seen there pre-operatively and their documentation sent to medical records.*

- *We recommend that once space allows, surgical patients report directly to the day surgery unit and register on site with an admitting clerk or cross-trained day surgery clerk. This would streamline the pre-surgical process on the day of surgery, reduce the admitting time and generally expedite perioperative flow.*

- *We recommend that as perioperative services returns to full capacity and the urology service is developed, there be a review the need for additional cleaning support based on case turnover requirements, hours of service and the needs of support departments. Usually one cleaner can support turnover between two rooms if the cases are of average length and complexity.*

Documentation

A review of documentation processes identified the following findings:

- The perioperative documentation process is very fragmented. There is no systematic method for aggregating information, preparing the chart or locating missing items. No one looks at the completeness of the documentation until the day of surgery when it is reviewed by the day surgery RN. Out of town lab work may need to be tracked down and consents and H&Ps may have to be completed prior to the case starting. Documents are sent to different places depending on the patient type and dictated H&Ps cannot be retrieved from the system until the day of surgery. All of this document tracking and completion delays surgery and results in late cases, irritated staff, frustrated surgeons and concerned patients and families.

- Chart preparation is performed by the ward clerk in the OR or 3N, but there is no standardized order for the chart, so day surgery staff are reordering the chart on the day of surgery.

- Perioperative documentation initially arrives in OR booking if sent with the booking form. The form goes to PAC if the patient is to be seen there, otherwise the form goes to the OR clerk who prepares the chart and then sends to it to the 3N clerk for consents, H&Ps, and internal lab results. External lab work is called for by OR booking on the day of surgery. The 3N clerk enters the patient's name and phone number on the chart in long hand but patient demographics sticker labels are put on the chart by the day surgery RN on the day of surgery. The pre-operative clinic charts are prepared from scratch by the clerk in the clinic but none of the perioperative documentation (up to 15 pages) is added until the patient arrives in day surgery.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We strongly recommend a complete redesign of the perioperative documentation system.*

- *We recommend that during the documentation redesign, a standardized order be established for the perioperative chart and that all areas are trained to maintain the order.*

- *We strongly recommend a detailed process redesign, standardization of order and type of documentation and the allocation of the work to clerical personnel. The RN should only be involved for the final review, assessment and interpretation of data to confirm patient readiness for surgery.*

Bed Management

A review of bed management identified the following findings:

- CRH has a placement problem with ALC patients. Over 35% of medical-surgical beds are occupied by patients awaiting placement. In addition, priority is usually given to decanting the emergency room when they reach over-capacity.

To support the required changes to bed management, the following recommendation has been provided for consideration:

- *We recommend that a surgical slate team be developed to include representatives from each of the surgical areas and Admitting. This team's responsibility would to ensure whenever possible preservation of the surgical slate. The group should meet in the mid-afternoon to review the slate for the following day. If necessary, adjustments could be made in sequencing of cases to provide time for patient discharges. Plans could also be made to staff the PACU appropriately later in the day to hold a patient for a late discharge or late bed availability. As a last resort, a case can be cancelled and the patient notified the day before in order to avoid an unnecessary trip to the hospital. Surgeons could also plan their day more effectively.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- Over the past two years, CRH has experienced significant issues with foreign materials inside sterilized trays and discoloration of sterilized instruments. CSPD and facilities have undertaken a major investigation into the problem, including a detailed review by an outside expert. A number of recommendations have been implemented and the problem has decreased, but the root cause was never discovered. This issue has created a high materials cost because instruments have had to be replaced, filtering equipment purchased and additional surveillance procedures implemented. In addition, the OR staff now has limited confidence in CSPD and there is heightened sensitivity to any minor discoloring and bits of lint in sterilized trays and instruments.

- Inventory of stock items is performed weekly by materials management using bar code technology. The system works well.

- The patient care leader manages all vendor relationships and manual ordering of non-stock items. The workload is reasonable at this point because the ORs are not operating at full capacity.

- Preference cards are updated manually in Microsoft Word on an as-needed basis by one of the senior RN staff.

- Endoscopy equipment is cleaned by a part-time technician assigned to the endoscopy clinic. The technician only cleans scopes that are used in the clinic. Endoscopy equipment used by general surgeons in the main OR is cleaned by the OR CSPD technicians.

- Storage space is very limited in the OR. The OR has very expensive equipment (microscope and laser) that are stored in the shell space within the surgical footprint. Unfortunately, the door access to this space is very small and the equipment almost exceeds the height of the door.

- Surgeon scrubs are stored in an unrestricted corridor and the area is open to pilfering.

- CRH has computer hardware in every OR. Currently the functionality is limited to specimen ordering, label printing and some limited viewing of test results. This is a very limited use of expensive hardware. CRH will be introducing PAC and reporting of results. Other potential uses for OR room technology could include post-case data entry, and nursing and anaesthesia documentation.

- Controlled substances are managed very effectively using a lock box and tackle box system. Nursing has a lock box with individual tackle boxes for each area in perioperative services. Anaesthesia has a lock box with individual tackle boxes for each anaesthetist. Nursing has no involvement in anaesthesia drugs and anaesthesia has no access to drugs under the purview of nursing. There has been some problem with the coded locks on the primary box but the vendor has been responsive to the problem. We will recommend this system to Cumberland Regional Health Care Centre as a model to deal with their issues.

- Instruments come out of the OR and are pre-washed by OR CSPD technicians. Washed instruments are place on an open cart, covered with a drape and then brought down an open corridor to the public elevators. The carts are brought down four floors to CSPD. Since the OR has no dedicated elevator, there is very little that can be done about the process.

- Instrument lists are printed the day before from Britech. A cart comes up each day at 0700 based on the previous day's list and inventory replenishment needs. RNs pick the cases in plastic laundry baskets according to the system-generated pick list. The baskets stay in the sterile storage room until ready for the case. This system is not the most optimal, but is reasonable given the lack of storage space.

- The entire system will be changed to an efficient case cart system in the new building with CSPD technicians doing most of the instrument support and case picking activities. The OR patient care leader has ordered exchange carts for the basins and gowns used in all cases.

- There is a significant humidity problem in the sterile supply room. CRH has installed electronic humidity monitors and there are clear guidelines for humidity targets. There was one humidifier in the room attached to a surge protector. We were told that there can be up to three humidifiers in the area in the summer. Because of the lack of electrical outlets, there are wires and tubing running around the floor. This presents a safety hazard to staff and a potential contamination problem for supplies.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that CSPD and OR staff work together to establish acceptable standards of sterility and criteria for abnormal findings. The staff should also work together to establish a process for review and intervention when an abnormal result occurs.*

- *We recommend that as physician recruitment increases and the urology service develops, CRH should consider adding trained materials management support.*

- *We recommend that, when the hospital adds a scheduling system, the OR should use the automated preference card functionality of the program. In this way, updates will be easier to complete and maintain.*

- *We recommend that as general surgeons gain access to the endoscopy clinic and all scoping is moved out of the main OR that some OR CSPD time be assigned to the clinic for appropriate care and maintenance of equipment.*

- *We recommend that the door to this area be enlarged to more easily accommodate the equipment. Currently there is significant staff time involved in maneuvering the equipment and the process has a great potential for work-related injury. There is also significant potential for damage to expensive, one-of-a-kind equipment.*

- *We recommend that a review be undertaken to find a more suitable location for surgical scrubs If the MD locker room can be relocated to the shell space then the appropriate storage area can be designed.*

- *We recommend that planning for the new hospital should carefully consider traffic control patterns for dirty and sterilized materials as they enter and leave the OR. The planned case cart system will limit the current exposure issues but will require an investment in additional instrumentation.*

- *We recommend that CRH consider the use of CSPD technicians to pick cases. There are enough technicians to perform this task and it would allow scarce RN resources to focus on patient care activities and room turnover.*

- *We recommend that the hospital consider building out some of the shell space to accommodate a sterile supply area with appropriate ventilation and humidification and a case picking area for staff. There is risk to both staff and patients in leaving the current area unchanged.*

DHA 5: Cumberland Health Authority

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as a review of quantitative data provided by each DHA.

The findings for Cumberland Regional Health Care Centre are set out below.

General Information

There are two OR theaters scheduled by block Monday to Friday. There is one open access block on Friday. Three PACU bays are used on average. There are seven surgeons on staff including:

- Three general surgeons
- One ENT surgeon
- One OBS/GYN
- One ophthalmologist
- Two 0.5.FTE locums

There is also one internal medicine endoscopist.

Governance

A review of governance and management identified the following findings:

- The role of the Perioperative Committee is evolving. The Chief of Surgery chairs the committee and is working diligently to establish a collaborative model for managing perioperative services. There is no written description of the committee's role or the responsibilities of its members.

- There has been no perioperative manager with actual OR experience for quite some time. The position is now vacant and a new role of patient care leader has been created. This individual needs mentoring to transcend the role from expert staff to daily leadership. Such mentoring is better provided by a perioperative manager with actual experience in the setting. An experienced manager will more easily gain credibility with the staff, anaesthesia and surgeons.

- There is some dynamic tension between several surgeons and nursing, particularly as it relates to overall management of perioperative change initiatives.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the organization develop a written description of Perioperative Committee responsibilities and activities. This committee should be developing tactical approaches that support provincial planning for perioperative services, reviewing utilization of OR theaters and block assignment, reallocating block time as appropriate, responding to trended problems within perioperative services to name just a few. We can provide a more detailed description if requested.*

- *We recommend that CRHCC make every effort to recruit a perioperative manager with OR management experience or at a minimum 5 years of current operating room leadership.*

- *We strongly recommend a three discipline collaborative model for overall direction of the OR to include nursing, anaesthesia and surgical leadership. Each discipline has its individual responsibilities and the group work collaboratively to achieve strategic objectives and support major change initiatives.*

Scheduling

A review of scheduling processes identified the following findings:

- Currently there is no written definition of emergency and urgent case classification. Surgeons are not always available to perform a case once they declare the case an emergency. Anecdotally there is some concern on the part of nursing that all cases are not appropriately classified or performed in a timely manner. There is no post case review process for emergency cases that providers feel may be inappropriately classified.

- The OR scheduling process lacks rigour, clearly understood rules and guidelines, automated support and consistent application.

- Some surgeons are self-scheduling cases including sequencing and timing.

- Surgeons' offices fax the booking form to the OR booking office. The form is then used to enter data into a manual book and then same data is entered into the Britech software. All actual scheduling and slating is done using a coil notebook and all entries are done in pencil. The book is difficult to read and could be lost or damaged, thereby destroying all the work to date on the schedule. There is no back-up of the work and limited access to the result. The OR booking process is one of the most important planning tools for ensuring a "good day" on the day of surgery.

- The block schedule is not fully utilized on all days of the week. Currently Friday seems to have limited utilization. This is probably a result of surgeon preference and not bed utilization issues.

- Both elective and emergency sections are done in the operating room. Elective sections are booked like any other elective procedure. Emergency sections are done in the first available room. The system seems to work reasonably well.

- Case information is entered into Britech after the case is completed by OR booking. The database does not encompass the data usually included in post case log information and the definition of "Time Out" is interpreted as leaving PACU rather than time out of the OR theater. Also the post case data does not include the room in which the procedure is done, so it is impossible to track room utilization data. We have discussed this with OR booking, nursing management and the health data analyst. We have also suggested that the data definition be changed in the future.

- The OR booking process lacks discipline and is not protocol driven. There are no written guidelines circumscribing the process of scheduling, no automated intelligent scheduler to highlight inaccurate surgeon estimates of time, no protocols suggesting priority and sequencing of cases and no formal review process of the slate if the surgeon's self schedule is not realistic.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We strongly recommend that the Perioperative Committee establish a standard classification system for all emergency and urgent cases and written policies for the prioritization of these cases. The committee should also develop a review process for cases that are questionable. The*

policy and definitions should be promulgated to all surgeons and perioperative staff so that there is general understanding about how to classify a case, how the case will be slated and criteria for possible review if questioned. If there is serious question about the surgeon's view of the urgency of the case by both anaesthesia and nursing then the Chief of Surgery should be consulted.

- *This practice of surgeon's self scheduling of cases should be encouraged but protocols and guidelines should be established in collaboration with each surgeon and then used by OR booking to develop the final schedule and slate. The surgeon schedule should be seen as a reservation and only confirmed after slating by the OR booking office.*

- *We strongly recommended that a robust automated scheduling system be introduced and used regularly. The system should have intelligent scheduling, remote viewing for physicians, preference cards and pick list functionality as well as robust report writing capability. The system could be purchased and deployed across a number of DHAs to ensure equitability of access, effective monitoring of perioperative capacity and utilization and efficient scheduling capability for all surgical sites. The DHA could consider some regionalization or centralization of the booking process with appropriate local control over the slating and post case data process. In the interim, CRHCC should seek some assistance from Colchester Regional Hospital. They are using the same system without the use of a manual book and are also able to produce some minimal data reports.*

- *We recommend that the Perioperative Committee review block utilization on a regular basis and make adjustments as appropriate to ensure a more productive use of scarce resources. We note that the recruitment of a new physician with a Friday block should improve the utilization, but if this recruitment is not successful, we recommend that resources be reallocated to reduce the number of rooms running on Friday to 1.5.*

- *We recommend that the Perioperative Committee develop policies and procedures for OR booking for both elective and emergent/urgent cases. We recommend that the policies include review by nursing and anaesthesia before finalizing the slate on the day before.*

Capacity Management

A review of capacity management identified the following findings:

- There are no current efforts to manage utilization and capacity except through management of the daily slate on the day of surgery. Neither perioperative management nor the Perioperative Committee review room or block utilization on a regular basis. There is certainly a desire to manage these, but there are no data available to do so. Generally the Chief of Surgery and the Perioperative Committee would review the utilization of assigned blocks on a regular basis against an agreed upon standard of utilization.

- There are no policies and procedures governing the use of block time and block reassignment.

- There is no ongoing review of room utilization by perioperative management. There are no automated data available to facilitate the analysis. Since there is a critical shortage of anaesthetists and trained OR nurses, there is heightened need to ensure that all staffed hour of OR time of efficiently and effectively utilized.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend regular review of room and block utilization. In the case of CRHCC a quarterly review would be appropriate with a protocol for reassigning time after a surgeon had been given appropriate communication and time to increase his utilization.*

- *We recommend that the Perioperative Committee develop standards for the assignment of blocks, expected utilization levels, and the approach for reassigning block time if standards are not met.*

This will become more important as the third OR theater is opened and additional surgeons are recruited.

- *We recommend that once the manual data collection is complete, perioperative management analyze room utilization by day of week and time of day to best determine overall utilization and possible opportunity for augmenting case time or adjusting block time.*

Same Day Admission Surgery Clinic

A review of Same Day Admission Surgery Clinic identified the following findings:

- Patients are seen in the same day admission surgery clinic by surgeon referral and nurse referral. There are specific protocols for who needs to be seen and they are usually followed. The patient is assessed by the RN and then a determination is made if they need to see anaesthesia. Patients are sent for lab work and other testing and asked to return to see the anaesthetist. Anaesthesia see the patient in the afternoon for about 2.5 hours (usually 5 patients per session). This process seems to work well although patients could have their lab work drawn before presenting to the clinic so that the result could be reviewed by the anaesthetist in the afternoon session.

- Anaesthesia reports that they are often not told about the number of general rooms to be run until the week prior to the slate. This delayed planning creates logistical issues for the scheduling of the pre-anaesthetic clinic.

- Nursing would like all patients to come to the clinic for assessment, pre-op teaching and discharge planning. Senior surgeons do not send their patients to the clinic.

- Patients are scheduled by either the day surgery clerk or through ambulatory care. Patients are booked in individual appointments and all teaching is individual.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We recommend that once the third anaesthetist arrives, the slate be generated based on two general rooms on Monday to Friday and that cases be scheduled accordingly.*

- *We recommend that a set of guidelines be developed by anaesthesia and nursing for who needs to be seen in the clinic. These guidelines can then be approved by Perioperative Committee and promulgated to the surgeons and their office staff.*

- *We recommend that the day surgery clerk assume responsibility for booking all visits to the clinic according to predetermined slots. Some of these slots could be given to ambulatory care is it is easier to have them schedule visits to the clinic. Slots could be of different lengths based on estimate patient need. Slots could be categorized as long or short and varied in each session. CRHCC might also consider batching patients into common, frequently performed procedures to allow for group teaching. This will greatly reduce the time patients spend in the clinic and reduce the workload of the staff. With the time saved the staff might consider a pre-screening call program in which patients are assessed and decisions made about whether they even need to come to the clinic. This would mean that 100% of patients were contacted and screened but only certain patients selected by protocol would come to the clinic and an even smaller number would see anaesthesia.*

Operating Rooms

A review of the operating rooms identified the following findings:

- The staffing target for the operating room is three RNs per room.

- The OR also has one instrument technician and one cleaner for room turn-over as well as a technician to clean and maintain the scopes. This staffing seems appropriate for the current size of the OR.

- Several surgeons expressed the desire to do elective procedures until 1700. This may be desirable at the current time but when the third room opens there will be increased capacity in the system. If CRHCC opened a late room two days per week for example, the slate may have significant gaps during the day. Operating rooms are always trying to strike the most appropriate balance between a vertical and horizontal schedule. The more vertical an elective slate, the fewer rooms are needed; the more horizontal the slate, the fewer late cases are needed (except for emergencies).

- Surgeons are concerned that their last elective case of the day is often cancelled because staff want to go home or administration wants to avoid overtime. However, the patient and family have waited all day and then have the emotional crisis of the case cancellation. We were unable to obtain data on case cancellation but the perception is that it happens several times a week.

- There are currently two anaesthetists. A third anaesthetist will arrive in June to support the addition of the third OR theater. Currently, two theaters are run from Monday to Friday with a pre-anaesthetic clinic in the PAC on Monday and Friday. On those days, anaesthesia runs one general and one local room. They will also be starting an epidural service in June when the additional anaesthetist arrives. Given the current resources available, we believe that anaesthesia services are very efficient but limited. The addition of the third anaesthetist should allow epidural services as well as expanded pre-anaesthetic services.

- There is minimal storage space in the OR and most of it is small in square footage. The frozen section lab is rarely used because the equipment needs to be powered up, calibrated and manned. Most sections are done in the lab.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *Given the nature of the procedures performed, we recommend that new staffing targets be assigned based on case complexity. For most cases two RNs should be able to complete the case. There may need to be additional staff involved to open the case and close the case, including turn-over, but generally, 2-2.5 staff per case should be the target established for this OR. The current complement is greater than that required to support the third OR opening. Also, there needs to be additional flex in the staff to support new staff preceptoring, training and ongoing education. There also needs to be staffing for break and lunch relief. Given these requirements, staffing levels are appropriate.*

- *We recommend that the number of cleaners be revisited with the addition of a third OR. Additional part-time support may be required for instrument technicians. This support should be reviewed in the context of overall CSPD need, room utilization and instrument requirements.*

- *We recommend that the need for the addition of a late room be considered and analyzed only after the third OR theater is fully operational.*

- *We recommend that CRHCC always review case cancellations to determine root cause, trend the information, and take appropriate action to reduce cancellations where possible. By implementing the recommendations of this report, including improving first case start time, perioperative flow and advanced slate planning, this problem should be markedly reduced.*

- *Given the lack of use, we recommend that the hospital consider using this space for other purposes deemed appropriate by the OR.*

Post Anaesthesia Care Unit

A review of post anaesthesia care unit identified the following findings:

- PACU operates from 0730 to 1530.
- The PACU uses an average of 3 bays and staffs according to the number of ORs running as part of the slate. There are usually two RNs if more than one general room is running. There is only one RN if one room and the scope room are running. This is appropriate staffing as long as the PACU RN is not left without appropriate back-up in the near vicinity.
- When cases are performed after hours, the OR on-call team generally does the case then recovers the patient in the holding area, then does the next late case. This results in significant delays for later cases because of the gap required to recover the previous patient. It also significantly increases overtime costs and the time the on-call team is onsite.
- PACU recovers endoscopies and they often stay longer than needed. Usually these cases are recovered in day surgery.

To support the required changes to the post anaesthesia care unit, the following recommendations have been provided for consideration:

- *We recommend that the hours of operation for the PACU should be extended until at least 1700. There is sufficient staff in the current budget to do this if the operating room staffing targets are adjusted. The start time should also be reviewed to determine if there is sufficient work for PACU staff. A more appropriate start time might be 0800 or 0830. Most PACUs stagger the start time of staff to coincide with workload. This will become very important as the third OR increases workload.*
- *We recommend that a review be conducted on the amount and timing of after hours cases. If the number is significant, particularly is the cases are more than one in number per evening, then we suggest that a third nurse take call to recover the patient in the holding room area. If there is only one case scheduled after hours then the third nurse does not have to be called in. This will eliminate gaps between cases, move cases into earlier in the evening when everyone is less tired, and should reduce the amount of overtime costs currently incurred.*
- *We recommend that this practice be reviewed for the opportunity to shorten PACU length of stay and provide a more appropriate level of care for these patients.*

Day Surgery

A review of day surgery identified the following findings:

- The day surgery hours of operation are 0700 to 1530. These hours do not coincide with the workload in perioperative services, particular the work involved in post-procedure recovery.
- Because day surgery is closed, PACU is recovering all of the cases later on in the slate. This is appropriate only for those cases done after hours.
- Day surgery sees an average of 20 patients/day. Patients are registered in the ER and their registration documents are printed in day surgery. The unit is organized in clusters of four beds with one cluster for endoscopy, surgery and ophthalmology respectively.
- The unit currently has three RNs who work 0700-1500.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend that day surgery increase the hours of operation to 1800 at a minimum. As the operating room improves first case starts and adds work generated by a third OR theater, the start time of the day surgery should also be revisited. The recommended hours of 0645 to 1800 are much more typical of day surgery units. The current hours appear to be designed for staff convenience.*

- *We recommend flexible use of space on those days when one cluster may require more capacity than another.*

- *We recommend that the schedule be modified initially to two RNs from 0700 to 1500 and one RN from 0900 to 1700. The unit clerk could work 0900 to 1700 so the late RN is not alone. Eventually the unit should be staffed from 0645 to 1800, but this will require careful change management.*

Staffing

A review of staffing identified the following findings:

- Perioperative services is experiencing difficulty recruiting experienced OR staff and are now hiring people with no experience. These individuals need significant training and the OR can only accommodate a limited number of these. Training is done by other staff in an informal manner. Staff are also sent to a perioperative course in Halifax. Individuals in orientation cannot take call and are not usually considered fully deployable as part of the staff complement. In addition perioperative services will experience a number of retirements over the next several years. There has been no formal manpower planning to deal with these issues.

- The staffed hours of operation for perioperative areas are not aligned with the workload. The day surgery area concludes its day before the final case leaves the operating room and the PACU finishes at the same time as the OR. To accommodate to these hours, the OR plans to finish the elective schedule at 1430, thereby shortening the daily schedule by one hour.

- There is significant overtime usage in perioperative services. The operating room incurred $74,419 in overtime costs last year.

- Perioperative staff indicated that there are problems with chronic sick time. The problem is individual in nature but not dealt with.

- The perioperative manager role is currently vacant. The previous manager did not have any perioperative experience. There is a new patient care leader in the leadership structure and she is just getting oriented to her new responsibilities.

- The staffing target for the operating room is three RNs per room.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that perioperative management develop a manpower planning calendar that identifies retirements and calculates when it will be necessary to bring on staff to replace them. This planning effort should include formal orientation time for staff as well as informal service training.*

- *We strongly recommend that each area revise the hours of operation to align with patient flow. CRHCC could consider operational hours as follows:*

    - *Operating Rrom 0700-1530*

    - *PACU 0830 – 1700*

- *Day surgery 0645-1800*

- *In addition we would recommend the staggering of current staff shifts to achieve these new hours of coverage.*

- *We recommend a concerted review of all practices leading to the use of overtime. Probable causes are first case late starts, late urgent cases that might have been done earlier, unavailability of surgeon assists, gaps in daily slate, unrealistic surgeon estimate of case times, unplanned staff sick time or tardiness, equipment conflicts, incomplete documentation and patient readiness, to name just a few. Each one of these issues should be studied and analyzed by the Perioperative Committee for root cause determination and solution. All solution implementation should be multi-disciplinary in nature, with each discipline assuming responsibility for their part of the plan.*

- *We recommend that perioperative management conduct an analysis of employee sick time for both amount and trends. If one or two individuals are allowed to continue chronic sick time patterns this has a demoralizing impact on staff morale, productivity and willingness to "go the extra mile". It can also have a deleterious effect on perioperative flow and room utilization.*

- *We recommend that CRHCC consider sending the team leader to spend time with an established perioperative manager in an OR environment similar to the one that the hospital is trying to create. This will give the new leader an opportunity to learn in a mentored relationship and also establish ongoing contacts for future support. We have talked with the nurse executive and made some recommendations for possible opportunities.*

- *Given the nature of the procedures performed, we recommend that new staffing targets be assigned based on case complexity. For most cases two RNs should be able to complete the case. There may need to be additional staff involved to open the case and close the case, including turn-over, however, generally, 2-2.5 staff per case should be the target established for this OR. The current complement is greater than that required to support the third OR opening. Also, there needs to be additional flex in the staff to support new staff preceptoring, training and ongoing education. There also needs to be staffing for break and lunch relief. Given these requirements, staffing levels are appropriate.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- The overall flow for perioperative services is acceptable, however the first case start delays are significant. Everyone interviewed agreed that the first case of the day is delayed by 20-30 minutes. There are a variety of reasons for this, none of which is clearly documented. We fully support the manual study that the perioperative leadership is undertaking to review timing and duration of key milestones in perioperative flow. We would normally recommend ongoing analysis of variances but the lack of automated data requires manual collection and analysis of the data.

- There are perceptions among the surgeons that perioperative flow is not efficient. The data collection described above should provide parametric information to confirm the perception. In addition the data analysis should highlight areas of obstruction.

- CRHCC uses a community physician to assist surgeons during surgery. Recently surgeons have begun to assist one another rather than rely on GPs. The practice has created delays in surgical start time and a significant amount of schedule modification to accommodate the surgeon assistant. Although the policy requires surgeons to arrange for their own assistants, often the arrangements fall to OR booking or the patient care leader.

- Surgeons expressed concerns about the flow of cases, especially first case starts, turn-over time and the cancellation of the last elective case in their block. This has prompted the Perioperative Committee and the Chief of Surgery to undertake a manual data collection process that will be

both time consuming and difficult to monitor in terms of the accuracy and completion of the data collection tool. We have reviewed the tool and made some suggestions for modification. We have also suggested to the Chief of Surgery a methodology for collecting the data and we have discussed with the health research analyst possible approaches for analyzing the data. This data analysis is a very important step in developing a parametric approach to OR utilization and patient flow. It will be extraordinarily helpful in superseding the current speculation and guesswork around what actually happens regarding perioperative flow and efficiency. However, it cannot be sustained over a long period of time because of the work effort involved in a manual system.

- Anaesthesia will not induce a patient until the surgeon is physically present in the operating room. This results in surgical delays because the surgeon is elsewhere in the hospital. Although some anaesthetists will consider induction if the surgeon is "in this hospital", the standard at CRHCC is a higher standard than more typically practiced.

- Patients are called to the OR and placed in the holding area or the corridor where they are seen by anaesthesia and nursing. There is limited privacy and patients are exposed to views of post-op patients as well as general operating room conversation and noise. Many ORs now walk patients directly to the operating room and avoid the need for a porter. This would expedite the transport time, especially for first case of the day.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend a two to three month data collection with immediate analysis and solution development involving all disciplines (nursing, anaesthesia and surgical leadership).*

- *We recommend a multi-disciplinary approach to redesign of perioperative flow, and we caution the hospital not to jump too quickly to correct symptoms without fully understanding the root cause. Perioperative flow is very complex and involves multiple hand-offs, multiple departments, a supportive document flow and accurate and timely communication between a number of diverse constituents. When the problems are identified, we suggest a multi-disciplinary approach to resolution.*

- *We recommend a redesign of the first assist model. While we support the concept of surgeon's assisting one another, it cannot be at the expense of the planned surgical schedule. If a surgeon is not available at the scheduled time to provide the assistance, then another option should be arranged. Surgeons should make their own arrangements as the policy dictates.*

- *We recommend that the hospital put some effort into utilizing the post case side of the Britech system to analyze data for the longer term. This will require a complete change in the data collected and the definition of that data. The health research analyst can be very helpful in this effort and we would be happy to provide additional expertise and support if required.*

- *We recommend that the standard be reviewed surrounding induction be reviewed.*

- *We recommend that CRHHC consider a policy of walking patients directly to the operating room.*

Documentation

A review of documentation identified the following findings:

- The perioperative documentation system is not working well. Consents and histories and physicals are not forwarded to OR booking at the time of case booking. There is a lot of time spent by OR booking in tracking down the documentation.

- Documentation is completed at the time of visit and sent on to day surgery. OR package documents are forwarded by the physician's office to admitting and eventually reach the day

surgery unit where chart preparation is performed by the unit clerk often on the day of surgery. Usually OR packages are sent to the booking office for scheduling of the case and then forwarded to either a pre-admission clinic or the day surgery unit.

- Many physicians are not doing informed consent until the morning of surgery. This is not the best time for a patient to provide consent. The practice also delays the case start time and anaesthesia induction.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We recommend that the physician forward all consents and histories and physicals to the OR booking office at the time of booking a case. The Perioperative Committee should establish a cut-off date for receipt of delinquent forms. We also recommend that the Perioperative Committee establish appropriate times for booking cases that are elective. Many organizations with surgical complexity similar to CRHCC use 7-10 days at a minimum. Others use as many as 14 days.*

- *We recommend that chart preparation be organized and performed as documents arrive. A list of chart contents should be on the top of the chart and items checked off as they are place in the chart. Chart completion is usually performed no later than the day before the surgical date to ensure that all item including lab results are present on the chart and within normal limits. The surgical documentation process at CRHCC requires a more detailed review to establish root cause of the problems, ascertain appropriate support needed, streamline content of documents based on patient requirements and generally to improve the perioperative flow on the morning of surgery.*

- *We recommend that physicians do the informed consent at the time the patient has their last office visit prior to surgery.*

Bed Management

According to surgeons, surgical bed availability is a problem because medical patients occupy surgical beds. They believe that decanting the emergency room is a higher priority than maintaining the elective surgical schedule. This creates tension and increases perceptions around case cancellations.

Materials and Drug Management

A review of materials and drug management identified the following findings:

- Controlled substances are distributed by the pharmacy to the PACU. The PACU acts as a distribution center for endoscopy and anaesthesia with minimal tracking of drugs during the day. There is no signature process for controlled substances when they leave the PACU. PACU has no idea which drugs, how much or where the medications have gone. Anaesthesia controlled drugs are delivered by the OR nurse directly to the top of the anaesthesia cart. They are left unattended in open rooms. The controlled substance sheet is filled out by the anaesthetist during the case and includes the patients name, drug name, amount of drug and signature of the anaesthetist administering the drug. The sheet goes back to PACU at the end of the day and the count is performed and signed by both anaesthesia and nursing. The system is very open and provides any number of opportunities for loss.

- Preference cards are kept up to date as needed. There is an RN point person for each service who is responsible for this effort.

- Materials management does stock inventory control using a bar coding system. The system works well. RNs do the non-stock inventory once a week. The ward clerk does the ordering of office supplies. There is minimal inventory kept in the rooms. The system overall seems to work well.

- The OR is in the process of shifting to room carts with shelving to support case materials. Each cart will be color coded for each room. The cases would be picked the day before and materials stored on individual shelves on a room cart located outside the room. This is an attempt to better organize materials for the daily room slate once the cases are picked. Unfortunately the vendor delivered the wrong size cart after a long delivery time.

- Instrumentation is excellent. Surgeons are very happy with the type and amount of equipment and instruments available. There is very little flashing of instruments between cases.

- CSPD has two technicians from 0600 to 1400. Recently they have moved a third staff member to an 0800-1600 shift. The team leader indicated that they recognize the possibility of having to adjust their hours further as the third theater comes on-line.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We strongly recommend that the system be tightened immediately. We have already discussed a "tackle box" type of system, whereby anaesthesia picks up their own controlled substances directly from pharmacy, signs for them, records medications as they are administered and then returns the tackle box to pharmacy at the end of the surgical day. There is a very effective system in place at Colchester Regional Hospital and we have referred CRHCC management and the perioperative patient care leader to their counterparts.*

- *We recommend that regular attention be paid to updating of preference cards. An automated ORIS will allow more expeditious update and production of preference cards. Until the procurement of the system the manual system will suffice but more effort is required.*

- *We recommend a close monitoring of the stock inventory control approach as the third OR theater is opened.*

- *We recommend that the OR return the current oversized carts and wait for delivery of the appropriate type and size cart. Perhaps purchasing should negotiate a discount given the vendor mistake and prolonged wait times.*

- *We recommend that perioperative management examine their shift hours and plan for changes as well, particularly as utilization increases in the third OR.*

Waitlist

A review of waitlist identified that there does not seem to be any common database for waitlists that everyone feels is up to date and accurate. Nursing indicates minimal difficulty with waitlists as do some surgeons. On the other hand, the Chief of Surgery indicates that he has a six month wait list and that ophthalmology's list is one year.

To enable improved management of the waitlist, the following recommendation has been provided for consideration:

- *We recommend that as a case is booked the case also goes on a waitlist for a specific surgeon. In this way, the perioperative committee can begin to use waitlist and block utilization as a means for allocating OR time. When a physician's waitlist exceeds an agreed upon standard then additional OR time is provided to try to address the patient need.*

Data Concerns

CRHCC does not define "Time Out" data in ORIS as time out of room but rather time out of PACU. Therefore any case time comparisons with other facilities will be inaccurate. CRHCC OR staffing data includes endoscopy, operating room and PACU staffing. This will skew the data on the high side.

DHA 7: Guysborough Antigonish Strait Health Authority

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as a review of quantitative data provided by each DHA.

The findings for St. Martha's Regional Hospital are set out below.

General Information

Surgery for GASHA is consolidated at SMRH, which has a total of five theaters, one of which is used for storage.

The block schedule runs from 0800-1500. Three general rooms run on Monday and two on Tuesday to Friday, except Thursday, when the second room is a local room for cataracts.

One RN works 0700-1500 and the rest of the staff work 0730-1530. Targeted staff is three RNs per room, which includes breaks and lunch.

SMRH performed 4,227 surgeries in fiscal 2005. Eighty five percent of cases were ambulatory and 15% were inpatient.

Call backs are around 12-15 per month for appendectomies, bowels and C-sections.

The hospital provides ophthalmology, general surgery, plastic surgery, ENT, gynaecology and dental.

Endoscopy is run as part of day surgery.

Governance

A review of governance and management identified the following findings:

- SMRH has a surgical services team that meets every other month. The role and responsibility of this committee is not clearly defined.
- In an effort to develop a collaborative management approach in perioperative services, the hospital has established the OR User Committee. The committee meets regularly and is comprised of the surgeons and the manager.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the hospital establish a perioperative committee to oversee the strategic direction of perioperative services. The committee should focus on block management, policies and procedures, surgeon or staff issues and concerns, funding priorities for surgical services, and other oversight area. Membership should include each surgical service and each perioperative functional area as well as hospital management.*
- *We recommend that the OR User Committee membership be expanded to include anaesthesia.*

Scheduling

A review of scheduling processes identified the following findings:

- OR booking is open from 0730 to 1530 Monday to Friday. The office has one booking clerk.

- The booking form arrives from physicians by hand or fax. The information is entered into Meditech's Community Wide Scheduling System. Unfortunately this is not an operating room scheduling system, so much of the functionality required to automate perioperative services is missing.

- The booking clerk at SMRH is performing other functions besides the standard OR scheduling functions. She is also booking the same day and anaesthetic clinic visits, sending out pre-operative packets to patients, and booking CAT scans for the image guidance cases.

- Currently the gynaecology service does its own booking of cases and provides OR booking with a list for the surgical day. The service has asked that OR booking take over this function and SMRH has allocated an additional .5FTE to the booking office.

- First case delays are frequent. SMRH does not track the delays by volume or reason. Anecdotally, staff interviewed agree that all cases are delayed except for ophthalmology. Ophthalmology has no anaesthesia involvement, minimal room preparation and one surgeon who is on time and highly organized.

- SMRH has no generally agreed upon definition of start time. This creates significant frustration on the part of surgeons who believe the posted start time should be cut time.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend that GASHA consider working with the Department of Health and other DHAs to develop a plan to purchase a province-wide perioperative scheduling system that can be centrally supported by Information Systems but locally managed and administered within a DHA. This will give DoH direct access to generic, standardized data about surgical services across the province. Wait list management can be enhanced and resource allocation can be based on parametric data. At the same time local facilities can have access to the statistical information they require to manage OR time allocation, resource assignment and allocation and business case development. An alternative to a new purchase could be to rollout the new system at QEII across the province. This will make use of previous capital investments and strengthen the referral relationships between tertiary services and local facilities.*

- *We recommend that an analysis be done of the workload of the booking clerk position to determine if the number of FTEs is sufficient to support the work. If the clerk were not performing other related activities, we believe the level of support would be appropriate. Therefore an alternative might be to reallocate the unrelated activities to another area.*

- *We recommend that the booking office workload be reviewed and then allocated appropriately across both positions in the office rather than assuming that the additional clerk will perform gynaecology booking only.*

- *We recommend that the hospital start tracking first case start times, including the room, surgeon, service, time lag, anaesthetist and perceived reason for the delay. The circulator should be responsible for collecting the data and the clerk can compile the information. This is the most important case of the day to begin on time. Although the study will require manual collection of*

data, we believe it is well worth the effort, presuming the OR User Committee will take action on the findings.

- *We recommend that the OR User Committee (or the overarching Perioperative Committee assuming one is established) develop a definition of start time and begin to monitor first case starts based on the definition. Results of the study can be published and appropriate action taken.*

- *We also recommend that if the study of first case delays indicates that surgeons are late, then both nursing and anaesthesia should organize themselves to be on time before they hold surgeons accountable. Generally, surgeons use the slowness of anaesthesia and nursing as a reason for being late. By eliminating this problem it will be easier to hold surgeons accountable for their own behavior.*

Capacity Management

A review of capacity management identified the following findings:

- Anaesthesia resources have reduced the ability of SMRH to use its full capacity. They are actively recruiting for additional staff but are competing with a number of other DHAs.

- Due to some recent issues with medical staff, SMRH now finds itself with only two general surgeons. The hospital is aggressively recruiting for a third general surgeon but has been unsuccessful. This has impacted the number of referrals from primary care providers and there is a perception that patients may be going to other facilities such as New Glasgow.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend that the hospital do a detailed analysis on room utilization to ensure that those theaters that have anaesthesia staff are used to their fullest extent. Given the manual nature of the post case data this analysis may require some outside support.*

- *We recommend that SMRH review the credentialing process for physicians. We also support the hospital's intent to conduct a quality review of general surgery provided at the facility. Similar reviews have already been done on ophthalmology and ENT.*

Same Day Admission Clinic (PAC)

A review of same day admission clinic identified the following findings:

- The pre-admission clinic is called the same day admission clinic because most of the patients seen are same day admits. The clinic also sees cataract and sinus cases. Most ambulatory surgical patients are not seen unless there are co-morbidities. Patients are seen by nursing for an assessment and then lab work and appropriate testing is ordered. There is a separate anaesthetic clinic which operates on Thursday afternoons from 1300 to 1500.

- Patients are seen in the clinics based on criteria developed by anaesthesia and promulgated to the surgeons. Surgeons are responsible for requesting an anaesthesia consult based on these protocols. However, if the surgeon does not do the consultation then no one discovers this until the day of surgery. This results in additional time for anaesthesia prep.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We recommend that the Same Day Admission Clinic and the Anaesthesia Clinic be consolidated for purposes of clerical support, communication and patient flow. Anaesthesia can continue to run sessions as resources and patient volume allow. The nursing and clerical support for the same day admission clinic can also support the anaesthetists.*

- *We recommend that the same day admission RN review all bookings to determine the need for a PAC visit. This can be done by a documentation review or by a telephone screening using a pre-screening tool. We also recommend that this entire process be reviewed for potential redesign.*

Operating Rooms

A review of the operating rooms identified the following findings:

- The OR was built in the spring of 1990. There are five OR theaters with Room 5 being used for storage. The physical plant seems to work well for the volume and complexity of cases but there is limited storage available for the technology and equipment.

- The cystoscopy room is rarely used for urology procedures. The room is used for local cases and those requiring conscious sedation. There is no anaesthesia machine in the room, so it cannot be used for general anaesthesia. We support the use of this room for the current purposes.

- Each OR theater has computer hardware which is currently used for specimens ordering, results reporting, and PACS.

- The OR has one cleaner who facilitates case turn-around.

- The perioperative record is completed by the circulator and then is sent to the OR clerk, who checks the record for completeness. The post case info is kept in binders by date for reference. Reporting is done by a manual data extraction from individual hand-written records. The task is laborious and fraught with the potential for error.

- The OR drops to one theater for summer closure from the end of June to the first full week in September. Staffing is adjusted accordingly.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend that the province consider deploying a robust ORIS which has nursing and anaesthesia charting and post case logging.*

- *We recommend consideration of additional part-time housekeeping support to facilitate on higher volume days. They could also be used to support PACU on busy days.*

- *We strongly recommend the purchase of a robust ORIS with comprehensive reporting and executive dashboard capability.*

Post Anaesthesia Care Unit (PACU)

A review of post anaesthesia care unit identified the following findings:

- PACU runs from 0800-1600 Monday to Friday. All staff except casuals are cross-trained to the OR. Targeted staffing is two RNs. The OR charge nurse relieves for breaks and lunch. The staffing seems appropriate for the acuity and complexity.

- All patients who receive general and regional anaesthesia have an initial recovery period in the PACU. Patients receiving local anaesthesia usually bypass the PACU and go directly to the day surgery unit. This works well.

- There are a total of nine bays but only three or four are used on average. Only three of these bays are monitored. There is also a children's bay that is apart from the other bays. The bay is used children recovering from ENT and endoscopy procedures. The space seems sufficient for the volume and complexity of cases.

- ECT is performed in the PACU at 0745 as required. If a procedure is scheduled then an RN will start early to support the procedure and recovery. The process seems to work well.

- Staff are cross-trained in both the OR and PACU. Two RNs are assigned to PACU each day. They are generally the RNs that will be on-call that evening.

Day Surgery

A review of day surgery identified the following findings:

- Day surgery is open from 0700 to 1700 Monday to Friday. There are eight bays (six stretchers and two chairs) plus four bays for the endoscopy clinic. There is no waiting area and no privacy for patients or confidential discussion.

- The patient registers in admitting on the day of surgery and is then sent to the day surgery unit. The nurse reviews the patient data form completed by the patient and/or family, checks NPO status, completes the pre-op checklist and has patient change into a Johnny chair. This process seems to work well other than the issues with documentation, space, and patient privacy

- When the OR is ready, the third OR nurse picks up the patient in day surgery and walks them to the OR. Inpatients arrive on a stretcher. The process works well and eliminates the need for a porter to transfer the patient to the OR. In other facilities, all patients arrive on a stretcher and delays occur while day surgery waits for the porter.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend that the hospital proceed with the planned renovation for the Day Surgery area.*

Staffing

A review of staffing identified the following findings:

- There are 3.5 FTEs to cover both day surgery and endoscopy. One RN comes in at 0700, one RN comes in at 0730 and the other RN comes in at 0900. The unit also has a .5 LPN who works half

time in day surgery in the morning and half time in ambulatory in the afternoon. One of these RNs covers endoscopy Monday through Friday. The staffing seems reasonable for the number of cases.

- One FTE ward clerk covers the operating room and day surgery. She also supports OR booking by booking cataract patients. Since much of the scheduling and post case record keeping is manual, the level of support seems low.

- Recently the hospital has developed a proposal for an RN first assistant. The individual is currently used on long plastic surgery cases and the role appears to be working well.

- Generally, SMRH is not having nurse recruitment problems in perioperative services. Although they are not getting OR trained candidates, they are getting many applicants with ER and ICU background. Unfortunately they are coming from within the organization and depleting other areas. There is no formal orientation program and staff are not required to complete a formal perioperative course. The hospital uses and informal "buddy system" to train staff. The program takes approximately three to four months before staff are able to operate independently. Preparation for call can take longer.

- Two staff are on-call after 1500. These staff are responsible for the OR, PACU and endoscopy. If there is a second critical case that occurs after hours then they will call in a third RN to handle patient recovery. Otherwise the on-call team will do cases in sequence. The process seems to work well for the volume of cases handled.

- Three RNs share the designated charge role. This seems an appropriate number of staff to provide comprehensive coverage and ensure sufficient time for each RN to maintain skills in the position.

- There are three anaesthetists on staff. They cover the operating room, PACU and the OB epidural program.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that the hospital conduct a workload analysis of the clerical requirements for all three areas and determine if one clerical person is sufficient.*

- *We recommend that the RN first assistant position be funded as a demonstration project to assess the utility of the role, particularly in those areas where physician surgical assistants are difficult to find or difficult to schedule. We also suggest that a cost benefit analysis be performed on RN first assistant versus the physician first assistant, particularly for longer cases. The physician first assistant role seems to create some scheduling problems and disruptions of perioperative flow in some facilities throughout the province. Given the scarce anaesthesia resources, these facilities might benefit from a consistent, on-site first assistant, who can ensure that cases are not delayed because of problems with physician assistant schedules.*

- *We recommend that SMRH develop a formal orientation program and consider requiring staff with no previous perioperative experience to attend a course. We have recommended to the Department of Health that a standardized orientation program be developed across the province and that a province-wide perioperative course be offered.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- When the emergency room observation area is full, the day surgery takes the overflow. The day surgery reportedly can house as many as seven or eight patients awaiting admission, leaving no room for the day's OR slate of patients. The staff work creatively to ensure perioperative flow by putting patients in the corridor, in chairs or any space available. This results in a stressful experience for patients who are about to undergo surgery and is a negative experience for families. The approach is also a deterrent to effective perioperative flow. SMRH has a plan to expand the day surgery area to provide additional capacity and patient privacy. However, if the area continues to be used for ER overflow, the intent of the expansion will not be achieved.

- The OR has late cases that require overtime one to two times per week. The extended length of the day is usually 1-1.5 hours.

- Because of scarce anaesthesia resources, the department is taking a more active role in slate management. They review the slate the day before and will determine if the slate is appropriate, including accurate estimated case length, case sequencing and workload support. If not they will suggest canceling a case. They have also been more judicious about doing cases after 1500.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend that the hospital work creatively to find another area for patients awaiting admission. Housing these patients in day surgery after hours may be appropriate but an alternative spot should be found so that patients can be moved prior to the arrival of surgical patients. This will reduce the number of late cases and patient cancellations.*
- *We recommend that SMRH analyze the occurrences of overtime being required at the end of the day to determine if there is a pattern. If these cases occur on the same days each week then consider staggering staff for an extended day to eliminate the overtime.*

- *We support the concept of a slate review the day before, however, we recommend that the review be done jointly by anaesthesia and nursing. Nursing also has scarce resources and both groups should manage the slate collaboratively.*

Documentation

A review of documentation identified the following findings:

- An RN reviews the OR packages the day before surgery for completeness when workload permits. If there is not time, then the documents are reviewed the day of surgery.

- There are multiple problems with document accuracy and completeness. Both consents and histories and physicals are not always on the chart and need to be tracked down the morning of surgery. The RN will put a note on the front of the chart for the surgeon to remind him to complete the documents before starting the case. The RN will also call the patient to come in earlier on the day of surgery to complete all necessary documents and testing.

- Chart completion begins far too late in the document flow process.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We recommend that the process begin in OR booking and that each area involved with the documents take responsibility for completion of the chart. It should be a rare occurrence that the chart is incomplete by the time it reaches day surgery.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- SMRH does not have a formal process for introducing new services and procedures. Services and procedures can start without formal approval and funding. Nursing staff are not trained and CSR does not have the opportunity to ready themselves either.

- There is no formal approach to the evaluation of new products. Products appear and are used with no procurement process and no plan for effectiveness review.

- SMRH is on a case cart system. There is an Aide in the Operating Room who does the inventory against par levels and tops up case carts. Materials both sterile and dirty are transported on the public elevator system. There is no dedicated elevator. This process works well. The materials and sterile processing activities are handled by the appropriate department. Materials management activities in the OR are handled by support personnel rather than RN's. The process would be improved by a dedicated elevator but the case cart system provides reasonable protection of visitors and staff.

- The OR still does some flashing of instruments between cases due to the fact that there are not enough of certain instruments.

- Non-stock inventory and instruments are managed by designated RN's for each service. This is appropriate as long as support personnel complete requisitions and deal with purchasing.

- Controlled substances are stored in a locked drawer. Nursing and anaesthesia use the same drawer. An RN is assigned to the anaesthesia assistant role each day; the position is rotated daily. She prepares a palette of drugs based on a preference card system for each anaesthetist. The anaesthetist and the anaesthesia RN sign out the medication for the day together. The palette is then brought to the anaesthesia cart and placed in an unlocked drawer. The anaesthetist signs for each drug by patient as used. The count is then completed at the end of the day by anaesthesia and nursing. Inventory replenishment is done by the pharmacy, delivered to the OR and signed for by pharmacy and an RN. The system is not tight.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that SMRH develop a formal process for the introduction of new services and procedures, including a business case, full resource disclosure and a plan for training staff.*

- *We recommend that Materials Management develop a product standardization and evaluation process that is regional if not provincial. The process could be overseen at SMRH by the Surgical Services Team (Perioperative Committee).*

- *We recommend that SMRH make every effort to eliminate the practice of flashing instruments between cases. The OR should track which instruments and how often they are flashing them. Additional instruments should be purchased to eliminate the bulk of the practice.*

- *We recommend that pharmacy prepare each palette directly for each anaesthetist and that the medication be delivered by pharmacy to a separate locked drawer and signed for by anaesthesia. Each discipline should have its own locked area and should be responsible for its own controlled substances. Alternatively we recommend a tackle box system similar to that used at Colchester Regional Hospital.*

Waitlist

A review of waitlist issues identified the following findings:

- The OR booking office is responsible for management of physician wait lists. Unfortunately the wait list information is often not entered into CWS until two weeks after the booking form is forwarded to the OR booking. Therefore the wait list information is inaccurate and probably understated for this site. Other sites reviewed are using either Britech or a manual system.

To enable improved management of the waitlist, the following recommendation has been provided for consideration:

- *We recommend that a standardized approach to wait list management be developed province-wide, including definitions, timing of data entry, automated support and consistency of reporting. Wait list management is a national issue and requires diligent management on a regional and provincial basis. Wait list time and number is also an important variable to use in the assignment of block time by service or surgeon.*

Data Concerns

All perioperative data is recorded manually. Any analysis or extraction of data is also manual. Management expressed concern that the data is flawed and unreliable. We would agree with this analysis.

To enable improved use of data, the following recommendation has been provided for consideration:

- *We strongly recommend that a robust perioperative information system be purchased for use in scheduling, room and block utilization analysis and report generation.*

DHA 8: Cape Breton District Health Authority

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as a review of quantitative data provided by each DHA.

The findings for Cape Breton Regional Hospital are set out below.

General Information

At CBRH, there are 10 operating theatres but a full block schedule is run in only four rooms on Monday to Friday from 0800 to 1200 and 1230 to 1630. There is also one 24 hour emergency room. Note: Anaesthesia does a schedule up in blocks of 3 months which reflects coverage issues and the CBRH can sometimes run only 3 rooms as coverage at the other sites in the CBHCC is considered a priority.

At the other sites in CBHCC, there is one room Monday to Friday at North Sydney and one room Tuesday to Friday at New Waterford. Glace Bay runs one room Monday to Thursday (with anaesthetist present only two days). Annual closures are four weeks in summer and two weeks for Christmas at three sites, and March Break.

The complement of CBRH surgeons includes:

- 7 general surgeons (including 2 who focus on vascular and 1 who focuses on thoracic)
- 4 orthopaedic surgeons (plus 0.5 non-operating)
- 1 plastic surgeon
- 2 urologists
- 3 OB/GYN
- 3 ENT
- 4 ophthalmologists
- 1 neurosurgeon (with limited privileges for discs, backs, emergency burr holes, etc.)
- 1 part time surgeon at Northside General
- Dental surgery at New Waterford

There are two gastroenterologists with access to the endoscopy suite.

Governance

A review of governance and management identified the following findings:

– The Director, Perioperative Services reports to the Medical Director, which is an unusual model in the context of Nova Scotia. Perioperative Services in all other DHAs reports through VP, Clinical. This structure may reflect the experience and background of the current VP, Medical and therefore may need to be reviewed vis a vis longer term appropriateness.

- The Director's portfolio includes perioperative services at CBRH and the three peripheral sites. CBRH has an OR manager and a manager for day surgery and PACU. The peripheral sites each have an OR manager.

- The OR Committee is chaired by the Head of the Department of Surgery. Membership includes:
  - Head, Department of Surgery (Chair)
  - Director, Perioperative Services
  - Medical Director (ad hoc)
  - 4 OR Managers
  - Manager, Day Surgery & PACU
  - Head, Department of Anaesthesia
  - Staff anaesthetist
  - Surgical representatives from: orthopaedics, general surgery, OBGYN

- The composition of the committee seems appropriate but the mandate and authority of the committee is unclear. The committee is perceived as "sympathetic but ineffective". There is an absence of written policy and procedure and a lack of strong perioperative leadership.

- There are presently no division heads within the Department of Surgery and therefore no mechanism to enable education and development within each specialty area.

- There is a perception that the hospital places a heavy emphasis on orthopaedic surgery and that scarce resources are preferentially allocated to orthopaedics at the expense of other services. It is felt that the hospital lacks a clear vision and strategic plan for surgical services supported by the necessary resources. A strategic plan was recently developed, but has not yet been approved.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the organizational structure be considered for review in the longer term to confirm if the current model continues to be the most appropriate for CBRH.*

- *We recommend that formal terms of reference be developed and implemented for the OR Committee. The committee should be developing tactical approaches that support provincial planning for perioperative services, reviewing utilization of OR theatres and block assignment, reallocating block time as appropriate and responding to problems within perioperative services.*

- *We recommend that the hospital review the medical leadership model and consider the appointment of division heads with clear responsibilities and accountabilities and with appropriate remuneration.*

- *We recommend review and submission of the strategic plan for approval by the hospital board.*

Scheduling

A review of scheduling processes identified the following findings:

- OR elective time is allocated by service block. Blocks were historically assigned and reportedly have not been changed in many years.

- The OR slate is managed by the OR manager. There is no collaboration with anaesthesia slate planning. There are no consistent deadlines for booking elective cases and cut off times are not enforced. Cases are routinely overbooked and there are no consequences for repeat offenders.

- There are no standard practices for the release of block time by surgeons.

- First case delays were reported as common and represent a huge issue at CBRH. First case delays appear to routinely lead to overruns at the end of the day, which are covered by overtime. Anecdotally there did not seem to be an agreement on the definition of start time, nor on what constituted a "late" start.

- Anecdotally there was some concern that there is not an appropriate process to address "emergent" cases. While people are confident that "real emergencies" get done in a timely manner, questions were raised surrounding less urgent unscheduled cases (e.g. fractured ankles) that may present in the ED and require surgery. Some patients are reportedly kept waiting for long periods of time in the ER awaiting access to OR time. Past efforts to develop triage systems and have OR time available for less urgent cases have reportedly been unsuccessful and the organization is now considering having services hold some time at the end of the day to address the need for unscheduled cases to be done (e.g. having surgeons not book the entire slate).

- There was also some concern expressed that some cases that are being done in the emergency slate may not have been appropriately classified as emergencies, but there is no post case review process for emergency cases that providers feel may be inappropriately classified.

- Pacemaker procedures are often done as emergencies.

- Anecdotally, turnover time is consistently excellent, which appears to be the result of the corridor nurse role. There is no electronic information system and all statistics are gathered manually and entered retroactively.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend that the OR Committee set up a four to six month review of block allocation. If surgeons do not maintain 70 to 75% utilization in any given quarter, they should receive notice that their block time will be reduced if they do not improve utilization over the next quarter. This policy and process should be in writing and well communicated to surgical staff. Any reassignment of time should also consider allocation by day of week and the impact of simultaneous blocks, waitlist data and case cancellation protocols.*

- *We recommend that the OR Committee develop a booking policy that is written, clearly understood, communicated to surgical office staff and monitored for compliance. We suggest that for many services the booking deadline can be 7-10 days although for some services this time may need to be shorter.*

- *We also recommend that, whenever possible, planning for the elective surgical slate should take place 24 – 48 hours prior to surgery. Perioperative leadership from all areas should meet the*

afternoon before to review the next day's slate and begin planning for the surgical day. A representative from admitting should join the group to provide input on bed control.

- *We recommend that the OR Committee develop block release standards by service that are realistic and achievable. Some services may need a later block release time because cases are urgent or wait lists are negligible. Generally 48-72 hours is reasonable, however, surgeons may need more notice if time becomes available to plan office schedule changes. Both of these issues need to be considered and discussed with surgeons before a policy is finalized.*

- *We recommend that start time be defined as "in room time" and that a regular review of first case delays be conducted with results reviewed by the OR Committee. An acceptable standard of deviation needs to be established and performance results published for all to see. This is an issue that requires constant attention. If performance does not meet the agreed upon standard, a more detailed analysis needs to be done to identify root cause. We also recommend that consideration be given to assigning ECTs to the APS anaesthetist in order to eliminate the impact of these procedures on first case delays.*

- *We recommend that the OR Committee review and revise its policy on the classification of emergency and urgent cases, including developing a process for review of cases that are questionable. This written policy should be promulgated to all surgeons and perioperative staff so that there is a general understanding about how to classify a case, how the case will be slated and what criteria will be used for review. If there is a serious question about a surgeon's view of the urgency of the case by both anaesthesia and nursing, then the head of surgery should be consulted.*

- *We recommend that the OR Committee revisit the issue of emergency time and give consideration to the allocation of a regular blocks of emergency time from 1500 to 1800 for those services that consistently have emergency cases (e.g. orthopaedics).*

- *We recommend that the OR Committee undertake an assessment of utilization for these procedures with a view to adding regular dedicated elective time for this purpose.*

- *We recommend the acquisition and implementation of a robust, automated booking and scheduling system, which could be purchased and deployed across a number of DHAs. Functionally it should include intelligent scheduling, equipment conflict checking, wait list management, materials management, pick list generation and update, flexible report writing and an executive dashboard. The system should be web based to support surgeon remote reservations.*

Capacity Management

A review of capacity management identified the following findings:

- There is capacity for ten ORs at CBRH, however, two have been joined to create a larger orthopaedics room, one is used for storage, one for a pain clinic and one is dedicated for C-sections.

- There appears to be excess capacity at all peripheral sites. Anecdotally there was a preference expressed to consolidate surgical activity on fewer sites, however, there are obvious practical and political barriers to this.

- In our opinion, anaesthesia coverage represents a major long range issue related to sustainability on all sites. It was reported that anaesthesia coverage must be maintained at all sites at all times, and as a result, the CBRH site may experience some disruption of service (e.g. may only run three rooms) so that the coverage can be guaranteed at the other 3 sites. It was also reported that anaesthesia is guaranteed a minimum payment for covering the remaining sites and that the fee-for-service billings routinely do not reach the minimum amount. This suggests that CBDHA is subsidizing surgical time and requiring a limited resource (e.g. anaesthesia) to cover more sites than may be necessary.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend that CBRH initiate longer range planning to confirm if the current mandate to provide surgery on all sites of the CBHCC is sustainable in the long term.*

- *We recommend that CBRH initiate immediate planning to confirm if the current model of maintaining a surgical presence at each of the sites in the Sydeny area continues to reflect a viable and sustainable anaesthesia staffing plan. We also recommend that CBRH be re-prioritized as the number one priority for coverage should anaesthesia challenges in the future lead to a need to reduce coverage for defined periods of time. The order of priority for coverage at the remaining sites should be outlined in that plan. In the long term, we recommend that CBDHA consider reducing the number of sites that provide surgical services as we believe that further consolidation will ultimately improve efficiency.*

Operating Rooms

A review of the operating rooms identified the following findings:

- GI procedures are done at three sites. There is a desire to consolidate this activity at North Sydney where new space is planned adjacent to the OR suite in the old obstetrics area. Limited capacity for emergencies and ERCPs would need to be maintained at CBRH but such a reduction in endoscopy procedures would also help to decant the day surgery area (see below). There has been some cultural resistance to this plan and careful planning would be necessary to ensure adequate training and skills development.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend that endoscopy be consolidated at the Northside Site and that planning consider longer range implications for Day Surgery at CBRH.*

Post Anaesthesia Care Unit

A review of post anaesthesia care unit identified the following findings:

- The current PACU space has some facility challenges as the desk is at one end of the room and the beds are separated by a wall in the center. This limits the flexibility that exist in other DHAs.

- PACU supports all surgical case recovery as well as ECTs. The current model leads to first case delays as an anaesthetist from one of the main rooms is pulled out of service to provide support for these patients.

- The chronic pain clinic is run two days per week in the back of the PACU area, but is scheduled to move into the old renal dialysis area shortly. PACU has one isolation room which is also used by day surgery, when required. Endoscopy and ECT patients are recovered in PACU.

To support the required changes to the post anaesthesia care unit, the following recommendations have been provided for consideration:

- *We recommend a review of current space requirements for PACU and reconfiguration of the existing space to support its optimal use. The back of the PACU could be redeveloped into a cystoscopy suite, which would take some pressure off day surgery (see below). It will be important in any redesign to maintain access for PACU and day surgery to the isolation room.*

- *We recommend that ECT volumes be monitored to determine the impact on PACU staff workload issues. Consideration should be given to managing ECTs in an alternate location, possibly in conjunction with the Pain Service.*

Day Surgery

A review of day surgery identified the following findings:

- All planned inpatient and same day surgery patients are seen in the day surgery area. Patients register in the main registration area on the main floor and are then sent up to the day surgery unit where they are assigned to one of 15 bays. The pre-operative checklist, blood work and EKG are performed, as well as orientation for family and patient. After their surgery, patients may return to day surgery for discharge or go directly to an inpatient unit. ECT patients are also admitted to day surgery and emergency cardioversions are recovered in this area. Patients also include two interventional radiology patients per day, who require a 4-6 hour post procedure recovery. Endoscopy patients are registered and prepped in day surgery, as are four to five cystoscopy patients per day.

- Day surgery is open only until 1700. Day surgery patients whose procedures start later in the day recover in PACU and after 1615, all patients remaining in day surgery are transferred to PACU for discharge.

- The day surgery area is inadequate for current demands. There is no isolation room in day surgery and no dedicated child/family space. There are major issues with confidentiality and privacy and the waiting area is inadequate. Major space planning has been undertaken at CBRH and Northside General to address these requirements, however, relocation of day surgery at CBRH requires that the overflow of ALC patients be addressed and the temporary level II unit be reclaimed for this purpose.

To support the required changes to day surgery, the following recommendations have been provided for consideration:

- *We recommend that non-perioperative patients be recovered in a more suitable location elsewhere. Optimal patient care dictates that interventional radiology patients be recovered in a medical day care setting. We recommend that consideration be given to developing a free-standing cystoscopy suite to which these patients could be decanted. Endoscopy patients could be prepped and recovered in the endoscopy suite, however, this would require the additional nursing staff. Alternatively, endoscopy services could be consolidated at North Sydney.*

- *We recommend that the hours of operation for day surgery be extended to accommodate later discharges and eliminate the workload associated with end of day transfers to PACU.*

- *We support the ongoing review and redesign of patient flow and use of space in day surgery area to increase the capacity of the waiting area and move reception/intake to the entrance area for privacy. We also recommend the installation of a plexiglass screen around the nursing station to improve privacy and safeguard confidentiality.*

- *We also support the plan to consolidate endoscopic work at Northside General.*

Staffing

A review of staffing identified the following findings:

- The ORs at CBRH are staffed for four blocks to 1700. The orthopaedic room is staffed with 3 RNs; the others are staffed at 2 plus relief. There is a "corridor RN" on an 0800 to 1600 shift who checks and places case carts, prepares IVs, and assists with room set up.

- There is no core of replacement RNs being trained. It is reported that it is difficult to recruit young RNs to the island. There are often collateral problems related to the lack of employment opportunities for spouses. Staffing the peripheral sites is challenging and RNs do a significant amount of non nursing duties. The average age of RN staff is 47 and retirements are looming. In the short term, management is expecting a 25% turnover at CBRH and 50% turnover at the peripheral sites.

- While CBRH has been successful in recruiting CBU trained RNs, there has been considerable difficulty in recruiting to specialized areas. The process for recruitment is challenging in that once it is established that there are no applicants with training for a vacant position, the managers must post internally as "will train" rather than being able to hire qualified external applicants.

- The perioperative training course at QEII is considered inadequate. The managers prefer the George Brown program, however, it is only offered twice per year. There has been no clinical educator until recently however, she is an internal hire and it continues to be a challenge to get her out of the line. There are lots of training and orientation needs.

- Scheduled OR closures are intended in part to allow an opportunity for senior staff to take time off. It is intended that junior staff rotate through CBRH during these times, however, these staff are not well prepared for this exposure. Patient acuity is significantly lower at the peripheral sites and RNs rotate through all perioperative areas at those sites as cross training is essential in smaller facilities. This limits their experience in the OR.

- The ORs have recently trialed a "Service RN" for orthopaedics. This has been viewed as a very successful initiative.

- Although anaesthesia recruitment has been difficult in the recent past, the department head is now confident that the current complement of anaesthetists is stable and sustainable for at least five years. There are currently 6.5 FTEs, covered by seven anaesthetists (two are part time). The department has recently recruited an eighth anaesthetist to allow for the implementation of an acute pain service.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that the managers develop a plan for recruitment needs which factors in orientation needs including OR course time and specialty training timelines.*

- *We recommend that the recruitment policy be reviewed.*

- *We recommend that the successful candidate be immediately freed up for her new role. We also recommend that consideration be given to her teaching the AORN perioperative module to new RNs.*

- *We recommend the establishment of two RN pools, one for the OR and one for PACU, day surgery and endoscopy. This would result in more flexibility and would create an place for more junior RNs to start.*

- *We recommend the creation of two additional service RN positions for ENT, plastics and oral surgery and for general, thoracic and vascular surgery. The service RN could assist the clinical educator with the training of new RNs as well as manage equipment and instrumentation needs for each service.*

- *We recommend that consideration be given to expanding the scope of the APS anaesthetist to include ECTs (see above).*

Perioperative Flow

A review of perioperative flow identified the following findings:

- There is reportedly a bottleneck in ICU which will not take a direct admit from the ER, or a patient who has been sent over from ICU to the OR. If the patient is accepted back, the ICU reportedly expects the patient to be accompanied by an RN from the PACU. PACU is staffed from 1600 to 0000 then by callback. The ICU will reportedly require a PACU RN to be called in rather than having the patient return directly to the ICU. This process can delay cases in the OR.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend a review of the policies and procedures regarding transfers to and from the ICU and that practices that require PACU staffing to accompany a transfer be immediately discontinued.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- The surgical staff perceive a significant gap in technology. The hospital was an early adopter of laparoscopic procedures in the 1990s but has been unable to keep up due to equipment shortfalls. Surgeons are trained but do not have access to the equipment necessary to do these procedures. Funding is an issue as the OR must compete for scarce resources and the OR is restricted to 8 items on the list for new and replacement equipment. Typically only critical needs are addressed (equipment obsolete or in disrepair).
- Medical sales reps reportedly have relatively open access to the OR and this can lead to inappropriate ordering of supplies. Reportedly the controls surrounding ordering can be compromised because of personal relationships and we were advised that the Product Evaluation Committee is routinely by-passed and policies are not enforced.
- The OR buyer does an excellent job of managing the supplies inventory, increasing consignment, reducing direct purchases and managing inventory levels, however compliance with Med Buy is a constant challenge and there is no resource to work on standardization and negotiation of contracts. The buyer does not buy for all sites, which would facilitate standardization and increase purchasing power.

- There are some problems with shipping and receiving: some items not received are invoiced, there is difficulty sending items between sites and combined POs are not properly administered.
- There has been a lack of communication and coordination with SPD and standards are not consistent between the OR and SPD. There has been an increase in workload, volume and variety but no corresponding increase in staff. There has been a high turnover of staff in SPD due to retirements and training requirements are extensive. This is not reflected in the budget. Systems are manual. There is no electronic inventory, only a handwritten list, which is neither comprehensive nor accurate. Preference cards are difficult to manage. There are frequent changes and there is no formal process for sign off.
- SPD has recently assigned a dedicated liaison for the ORs which has significantly improved communication and confidence. Two part time RNs are working with SPD to improve practice by redoing sets, removing redundant instruments, replacing missing items and developing an order process (including process for sign off of preference cards).
- While progress has been steady, it has been slow because of difficult replacing the RNs in the OR (they currently do this work on their days off for approximately two days per month).
- There is no strategic plan for replacement of instruments.
- The current size of the department of anaesthesia is such that an anaesthesia technologist may be beneficial for assisting with equipment/inventory issues.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that a detailed capital replacement plan be developed.*
- *We recommend that the hospital place restrictions on medical reps access to the OR and OR staff.*
- *We recommend that purchase orders be signed off by the appropriate personnel*
- *We recommend that the Product Evaluation Committee be reconstituted and given a clear mandate.*
- *We recommend that a clerical position be created to assist the OR buyer, freeing up his time to buy for all sites and to focus on standardization and contract negotiation.*
- *We recommend that the processes for shipping and receiving be reviewed.*
- *We recommend that full time resources be dedicated to completing this task and that once processes and inventory are updated, the ongoing responsibility for the management of equipment and instrumentation be vested in the service RNs.*
- *We recommend that this be coordinated between sites and that an annual budget be established for this purpose.*
- *We recommend that CBRH explore the possibility of an anaesthesia technologist to provide anaesthesia equipment support, anaesthesia case turnover support and other appropriate duties.*

DHA 9: Capital District Health Authority (QE II Health Sciences Centre)

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as a review of quantitative data provided by each DHA.

The findings for Queen Elizabeth II Health Sciences Centre (QEII) are set out below.

General Information: VG Site

Hours of operation are 0730 to 1700 for all rooms. In addition, one room runs from 1500 to 2300 on 11A. Staff are on ten hour shifts except evenings. After hours and weekends are covered by call. OR theatres are on 3 floors: 11A has seven active theatres and one closed room (used for storage) for thoracic surgery, general surgery, ENT and GYN-oncology; 10A has three urology rooms, one OMF room, four cysto rooms, a urodynamics room and lithotripsy; 2B has four ophthalmology rooms.

HI Site

Hours of operation are 0730-1645, except cardiac surgery which operates from 0730-1900, Monday to Friday. One room runs until 2300. Two rooms run on weekends from 0700 to 1500 (one for orthopaedics and the other a wait list room). There are 16 OR theatres:

- 5 orthopaedic surgery
- 2 plastic surgery
- 1 general surgery
- 2 neurosurgery
- 4 cardiac surgery
- 1 vascular surgery
- 1 trauma (not used)

QEII has an average of six theatres per day closed across both sites. The closures originally stem from a decision to close two theatres as a cost cutting measure in 2003, and more recently from scarce anaesthesia resources. Closures are allocated based on discussions between the OR managers at each site. The system is cumbersome and should be automated.

Governance

A review of governance and management identified the following findings:

- QEII has a single OR Committee that reports to the VP Clinical. The Committee has an Executive Committee which manages issues related to the overall effectiveness of perioperative services. The OR Committee meets monthly and membership on the Executive Committee is appropriate.

- Perioperative services is managed by a director who covers all of QEII and DGH. She is assisted by a manager for the operating rooms at each site. The manager of same day surgery and PAC covers both sites, as does the PACU manager. OR booking also reports to the director and is

locally managed at each site. The management structure is appropriate and seems to work effectively.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that the Executive Committee get actively involved in quarterly monitoring of block schedules, block reallocation, efforts to improve first case starts and turn-over and development of a streamlined process for capital equipment review and prioritization.*

Scheduling

A review of scheduling processes identified the following findings:

- Scheduling is all service block with each service assigning time to individual surgeons. Room closures are planned around anaesthesia availability and allocated by service in a fair and equitable way. Each service gets an equal percentage of the cuts. The process for allocating cuts rests with the health services manager at each site. The process used is entirely manual and very time consuming.

- Anaesthesia is supposed to submit time for a three month period after which the closures are scheduled. Unfortunately, the schedule submitted has many variables and multiple changes over the course of the period covered. Changes result in a complete manual reworking of the schedule by the manager.

- Sullivan Health care data indicated a problem with first case starts at both sites. Only 50% of cases at HI start on-time, while 65% of cases at VG start on-time.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend that an Excel spreadsheet be developed for each site which automates some of the allocation calculations, distributes cuts automatically across the services and allows for scenario building as changes come in. This will greatly reduce management time, enable the tracking and trending of closures by service, and provide reporting capability for the OR Executive Committee.*

- *We recommend that significant effort be focused on the first case delay problem. The first case of the day is the one that management has the greatest control over and it also sets the tone for the day. The OR Executive Committee has commissioned an OR Efficiency Group at each site to deal with this issue. The group is currently working on reducing the number of delay codes into an easily measurable number of four to five.*

- *We recommend that the first case problem be addressed by service at each site by having anaesthesia and nursing deal with any issues they have first before working with surgeons to have them arrive on time. Once anaesthesia and nursing have met agreed upon targets, which starts with patient in room by 0730, then discussions can take place with service specific surgeons to develop and monitor arrival and start times. The targets should be monitored regularly and published weekly and then monthly for all to see.*

- *We recommend that quarterly reviews of first case start times be part of a regular agenda discussion at the OR Executive Committee.*

Capacity Management

A review of capacity management identified the following findings:

- Service blocks have been historically allocated and have not been changed. QEII plans to review blocks on a quarterly basis once the data from HSM are available and been confirmed to be accurate.

- HI runs an orthopaedic wait list room every day. The practice seems to limit the amount of callback after hours. Nursing schedules staff for an orthopaedic room every Saturday and Sunday. Anaesthesia covers this room by call. This is an expensive way of covering a room that is scheduled every weekend.

- HI also runs a plastic surgery wait list room on Wednesday and Friday. This works well.

To support the required changes to capacity management, the following recommendations have been provided for consideration:

- *We recommend that the OR Executive Committee establish block utilization targets by service and if a service falls below target in a given quarter there be a notification sent that the service has the next quarter to meet the utilization target. If they don't meet the target then time should be reallocated according to an agreed upon and clearly understood process. We recommend that the committee use a combination of block utilization and credible service and surgeon wait list data for this purpose.*

- *We recommend that anaesthesia consider assigning staff to the weekend orthopaedic room on a scheduled basis as anaesthesia resources increase.*

Pre-Admission Clinic (PAC)

A review of Pre-Admission Clinic identified the following findings:

- PAC at the VG site operates from 0700 to 1600, Monday to Friday. According to the manager, the area is staffed by 3.5 RNs and one clerk and sees 18-22 patients per day. All same day admits are seen in PAC. Lab work is ordered by protocols developed by anaesthesia. Teaching is done on an individual basis.

- Anaesthesia see patients by consult, RN review and referral, and by protocol. All ASA-1s are phone interviewed by an RN and determination is made by protocol if the patient needs to see anaesthesia. Any questionable patients are reviewed by the RN with anaesthesia before a final decision is made regarding a PAC visit.

- The OR booking form and a Patient Health Questionnaire (self-assessment) are sent to same day surgery and reviewed by an RN. Those patients requiring a PAC visit are sent to the PAC ward clerk for an appointment.

- There is a cap of 16 plus two add-on slots put on the daily clinic appointment schedule for anaesthesia assessments. There is significant variability in individual anaesthetist productivity so nursing management will assign a late shift if certain anaesthetists are scheduled.

- There is a significant problem with the timely forwarding of booking forms and Patient Health Questionnaires from the surgeons' offices. Certain services and surgeons are reported to be

chronic offenders. The practice of late booking forms prevents the nursing and anaesthesia team from thoroughly screening and assessing patients prior to surgery. This can result in surgical delays or case cancellations. The OR Efficiency Group has begun analyzing the practices of individual surgeons in order to identify areas of opportunity.

- All lab work and EKGs are done within the PAC at the VG site. Patients are also seen by enterostomal therapy, physiotherapy, blood conservation, and nutrition services as needed. The PAC clerk provides each of the clinical departments with a schedule of referrals (clinic list) the day before the PAC visit. There is no effort made to group patients by procedure, service or referral needs.

- HI site has three RNs in PAC. EKGs are done on the unit but lab work is done in the lab at a special draw booth. Hours of operation are from 0730 to 1600. This system works well.

- The PAC clerk coordinates scheduling of lab work and diagnostic tests. There is one clerk responsible for faxing lab work to outside facilities, notifying the patient of the location for lab work and acquiring lab results from outside facilities. The system works better than the one at the VG site because one individual is responsible for the entire process.

- Compilation of PAC documentation is done by the clerk and as long as booking forms are submitted in a timely manner, the system works well. Completed PAC charts are forwarded to same day surgery for incorporation into the perioperative chart. This works well.

- Anaesthesia sees patients at HI on a rotational basis. There is a cap of 12-15 patients. Several slots are held on Friday afternoon for last minute neurosurgery patients.

- Documentation at HI is a problem. There is no standard process for forwarding documentation from any service except cardiac surgery and this results in PAC staff not being able to properly plan or predict when documentation will arrive.

To support the required changes to pre-admissions, the following recommendations have been provided for consideration:

- *We recommend that specific targets be established for all anaesthetists to meet. If an individual anaesthetist is consistently behind schedule then anaesthesia leadership should work with that individual to develop more rapid skills.*

- *We recommend that the OR Efficiency group continue the analysis surrounding the timeliness of booking forms from individual surgeon offices as data access improves.*

- *We recommend that the clinic review the possibility of grouping certain patient types to expedite referrals, patient teaching and other screening issues. This grouping could significantly increase the number of patients seen and perhaps reduce the overall staffing requirements. No effort should be made to reduce any resources until the issue of late booking forms is addressed, however. This clinic makes every effort to accommodate patients who are booked at the last minute and the current level of staffing is necessary to do this.*

- *We recommend that VG consider implementing a system similar to the one used at HI to manage lab referrals and results reporting.*

- *We recommend that the documentation process used by cardiac surgery be shared with other services and efforts be made to customize the process for other services. It is very important that PAC receive timely pre-operative documentation to screen and assess patients appropriately.*

Operating Rooms

A review of the operating rooms identified the following findings:

- VG OR has call coverage on weekends. There is a significant amount of callback on Saturdays for urology procedures.

- In addition to the block schedule, VG provides a "scramble room" for general surgery to make up for room closures because of liver transplants. This is actually not a scramble room but an open block for individual surgeons to recoup lost time. The room is assigned to the individual surgeon who loses the time. The system seems to work well.

- HI OR also has a dedicated angiography suite which is well utilized. There are two imaging techs assigned to the OR Monday to Friday and there are four image intensifiers. This is reasonable staffing for the volume and complexity. There is a lot of inventory in the core related to this service.

- HI has a problem with traffic control in restricted areas. Staff and physicians enter restricted areas across from the OR theatre in street clothes and with food. This is highly inappropriate and should be discouraged.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend a review of the amount of callback to determine if it is more cost effective to schedule staff for a room on Saturdays. The analysis should also include Sundays but management's feeling is that there is less need for regular staffing schedules on Sunday.*

- *We recommend that the angiography inventory be reviewed with the possibility of standardizing product and reducing shelf items and par levels.*

- *We recommend that signage be placed in key demarcation areas and that restrictions be reviewed at anaesthesia, surgical department and nursing staff meetings, and the OR Executive should develop an approach for dealing with chronic offenders.*

Post Anaesthesia Care Unit: VG Site

A review of post anaesthesia care unit at the VG Site identified the following findings:

- VG hours of operation are 0700 to 2300, Monday to Friday. PACU has 21 bays plus one isolation area. Only 18 bays are in use. Staff are appropriately staggered. Staff are on call after 2300 and on weekends. Staffing ratios are one RN to two to three patients. This is adequate staffing.

- The monitoring equipment is no longer supported by the company and requires replacement. Since PACU provides ICU back-up and overflow this is a significant issue. PACU management has submitted an emergency capital request to replace the equipment.

- There are no recruitment or retention problems. If staff retire, they are replaced from within by ICU nurses, usually from CCU. All staff are critical care trained. VG has not had to hire a non-critical care trained RN in some time.

- PACU holds from the OR are minimal at the VG site.

- VG is experiencing more callback on weekends for urology, particular on Saturday.

To support the required changes to the PACU at the VG Site,, the following recommendations have been provided for consideration:

- *We recommend that the urgent capital request for monitorS be given the highest priority and replaced as soon as possible.*

- *We recommend that some effort be made to ascertain why staff are seeking to leave CCU, as PACU hires appear to be cannibalizing other critical care areas.*

- *We recommend a review of callback cases. If these are wait list cases then perhaps VG should consider assigning PACU staff for an eight hour shift on Saturdays. An analysis should be done of the cost of staffing the time versus using callback.*

HI Site

A review of post anaesthesia care unit at the HI Site identified the following findings:

- HI hours of operation are 0700 to 2300, Monday to Friday with the remainder of hours being on call. Capacity is 16 bays plus one isolation area. There are also an additional six bays in PACU B. This area was developed as part of the orthopaedic expansion plan, however it has not been used because of RN resource issues.

- Targeted staffing is one RN to two patients. Staff are staggered appropriately in the same pattern as VG site. This is appropriate given the complexity of patients.

- Other than six new Nihon Kodan monitors, the monitoring equipment is old and no longer supported by the vendor. PACU management has had an emergency capital request in since last fall to replace equipment at both sites.

To support the required changes to the PACU at the HI Site,, the following recommendations have been provided for consideration:

- *We recommend that the monitoring equipment be replaced. We also recommend that perioperative leadership seek anaesthesia's support and voice in sponsoring the emergency request.*

Day Surgery: VG Site

A review of day surgery at the VG Site identified the following findings:

- Day surgery (same day surgery) is divided into a pre-op and a post-surgical area. At VG the pre-op area is open from 0600 to 1400, Monday to Friday. The area is staffed by five RNs and a 0.5 clerk. There is a single charge nurse who coordinates both pre and post areas. The area is very small with no provision for privacy. Patients in gowns sit with the general public while waiting to be called for surgery. There are two to three stretcher bays to accommodate pre-medicated patients but this area is in close proximity to the waiting area. There is also a blood draw station for patients needing last minute blood work.

- The change area at VG is very small with one washroom. Patient lockers are not locked and patients are asked to bring their own lock. Lockers are used several times during the day and are at a premium.

- The post-op area (second stage recovery) is open from 0800 to 1900, Monday to Friday. The area is staffed by three RNs and a clerk. Staff are cross-trained for both pre- and post-surgical areas. Staff are also cross-trained in PAC after six months of experience. This area works well but the space is limited.

- Patient registration for both PAC and day surgery as well as admission on the day of surgery take place in this area. There are three or four registration clerks assigned to support day surgery and PAC activities. The system seems to work well.

To support the required changes to day surgery at the VG Site, the following recommendations have been provided for consideration:

- *We recommend that some effort be made to expand the area and redesign the waiting area and clinical space to provide more privacy, surgeon and anaesthesia interview space, etc. The current area cannot support the 35-50 patients a day that are seen without significant overcrowding and confidentiality and privacy concerns.*

- *We recommend that the change area should be redesigned as part of an overall renovation to the area.*

HI Site

A review of day surgery at the HI Site identified the following findings:

- HI registration for the entire hospital takes place within the footprint of same day surgery. Three clerks register patients for PAC, same day surgery and the rest of the hospital from 0545 to 1700. After 1700 registration is done by the emergency department. The system works well.

- Day surgery is organized into pre-operative and post-surgical areas. It is spacious and provides adequate patient flow.

- Pre-op is open from 0600 to 1600 with two RNs working from 0600 to 1400; one RN from 0700 to1500; and one RN from 0800 to 1600. There is also a clerk from 0600 to 1000. Staffing seems reasonable and is staggered appropriately.

- Charts are placed in a rack for RNs to pull and complete. Completed charts are placed in another rack for MDs to complete. Consents are usually taken by the surgeon the morning of surgery. Cardiac surgery is an exception to this practice since they take their consents in PAC.

- Second stage recovery is done in six bays with a staff of two RNs who work from 1100 to 1900. Staff are cross-trained between pre- and post-surgical areas. The staffing seems reasonable given that only 55% of patients are ambulatory.

- Pre-op documentation is not sent in a timely manner from MD offices. Orthopaedics and neurosurgery were identified as particularly problematic services.

- Chart preparation is done by clerical personnel and clerical review is ongoing based on a checklist placed on front of chart. Final review is done by the RN in the pre-op area on the day of surgery.

To support the required changes to day surgery at the VG Site, the following recommendations have been provided for consideration:

- *We recommend that HI review documentation and workflow through this area and determine how often incomplete MD charting results in case delays, especially first cases. If the data indicate a problem then work should be done with surgeons to complete charts before booking the case. This will minimize case delays related to documentation.*

- *We recommend that HI require all pre-op documentation to be sent with the OR booking form and patient health assessment before the case is booked. If a specific service or MD has unique issues then the OR Executive Committee could create policies by service.*

- *We recommend that an RN do an initial review the day before surgery to allow time to complete any outstanding activities. Every attempt should be made to acquire and complete all documentation prior to the day of surgery. An RN should initial the review at the time and then final review can be done on day of surgery.*

Staffing

A review of staffing identified the following findings:

- CDHA offers a perioperative course for inexperienced staff twice a year. The program is four and a half months in length. A specific module for orthopedics was recently added to fast track staff training in this specialty. All inexperienced staff are required to attend.

- RN staff working at QEII can float between sites, although this is usually done with casual staff. Staff cannot float to Dartmouth because there is a different union there.

- Staff begin the day at both sites at 0700 for a 0730 start. This is an appropriate start time. Most staff are on 10 hour shifts by personal preference since the union contract stipulates 8 hour shifts. Cardiac staff work 12 hour shifts by preference. The start times are appropriate and staff are staggered at the HI site appropriately.

- VG has no problem with nurse recruitment; there is minimal turn-over and open positions are filled from within. HI has a problem with recruitment. Currently there are 10 vacancies and recruitment has been a problem. The open positions have not been a resource problem because of room closures.

- Neurosurgery, cardiac surgery and orthopaedics use a closed staffing methodology whereby each service covers its own call. This has created a significant workload for neurosurgery in particular and staff are starting to leave. There are 10.4 FTEs in neurosurgery and four staff left last year. The frequent callback and reduced staff have started to affect case start times the next day.

- VG have staff cross-trained by floor and some cross-coverage between floors. The system seems to work well.

- Anaesthesia plans to develop a more horizontal schedule by reducing more rooms to 8 hours rather than 10 hours as room closures cease. This will require changes in nursing shifts and schedules and will place a burden on HI staffing.

- Targeted staffing at VG is 2.3 RNs per room. This provides for 2 RNs per room plus lunch and break relief.

- HI targets three RNs in cardiac surgery, neurosurgery and orthopaedics, three RNs in vascular and plastic surgery to start a case, and 3 RNs in the other rooms to start. Shifts are 10 and 12 hours by staff preference and service requirements. Given the complexity and teaching environment this is appropriate.

- OR Techs (ORTs) are long-term employees: There are two in cardiac surgery, one in neurosurgery and two in Vascular. ORTs are used in the scrub position and as the second circulator in rooms for bigger cases. HI has been trying to expand use of ORTs but it has been difficult to get experienced individuals and there is no regular training program available in the area. Also, RN staff have been reticent to accept the position as part of the perioperative team.

- Call is based on a closed staffing model within cardiac surgery, neurosurgery and orthopaedic services. Two RNs are on-site after 2300 and are augmented by service based call in cardiac surgery (three RNs), neurosurgery (two RNs); orthopaedics (one RN); and plastic surgery (one RN). When an ORT is on call they are the third call person, i.e. cardiac surgery. The system seems to work for all services except neurosurgery, which has significant call and callback requirements, particularly with unfilled vacancies in the service.

- HI support staff includes two clerks from 0700 to 1500; one clerk from 1500 to 1900; a weekend clerk from 0700 to 1500 and 11.9 patient attendants. Clerical support seems reasonable but patient attendant support is tight. HI targets two rooms per attendant, which is appropriate but the attendants serve both an inside and outside role. They are not always available inside the OR

for room turn-over. In addition attendants are stocking supplies and linens, holding limbs and portering patients.

- HI has an educator for the OR who does orientation, ongoing education, new technology, required training certification, etc. Staff meet every Wednesday from 0700 to 0800. One session per month is a staff meeting with the manager; two sessions are in-service and the fourth is a communication and feedback session. Staff do most of their own fund raising for external education and conferences. Staff attending conferences are required to present material at an in-service program. This system works well.

- Anaesthesia has a new chief who started in September. He has assigned two anaesthetists to serve as site chiefs. Most anaesthetists move between both sites but have a primary base of service. Anaesthesia also covers women's services at IWK. There is a collegial relationship between anaesthetists and surgeons.

- Anaesthesia recruitment has been a particular problem and has resulted in room closures across both sites at the QEII. Recently the department concluded a new contract which is more competitive and should make the hospital a more attractive place to work. In addition, the new chief is attempting to establish guidelines for improved work life by limiting the number of hours an anaesthetist works to 55/week.

- Anaesthesia recently acquired new anaesthesia machines and will be getting portable ultra-sound equipment. However, equipment in the rooms continues to be a major problem and a safety concern. VG has small rooms and cord location is a problem both overhead and on the floor.

- Anaesthesia plans to staff 50% of rooms until only 1500. This will result in a decrease of operating room time. The plan is to make this up by opening currently closed rooms, essentially running a more horizontal schedule.

- Anaesthesia has 30.4 anaesthetists. The department also uses anaesthesia technicians to set-up machines, assist with lines, and manage inventory and equipment. The role is appropriately utilized.

- Anaesthesia assistants are used as physician extenders in ophthalmology and the regional anaesthesia program to monitor blocks. The department plans to add anaesthesia assistants as the regional anaesthesia program expands. In ophthalmology an anaesthetist can cover four rooms or two general rooms.

- Anaesthesia has several people on call. There is the first call anaesthetist who covers all cases and then separate call anaesthetists for cardiac surgery and neurosurgery. The coverage seems to work effectively.

- Managers at both sites have developed a manpower resource plan that lays out retirements over the next four to five years. They are working closely with retiring staff and encouraging them to return as casuals.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that CDHA increase the casual pool of perioperative nurses and work with both NSGEU and NSNU to determine if agreement can be reached that would allow casual staff to be assigned as needed by management.*

- *We recommend that nursing management work closely with anaesthesia to plan for opening of rooms. As anaesthesia recruits resources, nursing will need to have filled existing vacancies with lead time for orientation. Otherwise room closures may persist due to nursing resource issues. This has been discussed in detail with perioperative management.*

- *We recommend that HI revisit the possibility of combining staff for several services for on call purposes to relieve the workload on neurosurgery. This can be done on a temporary basis until recruitment is successful.*

- *We recommend that an analysis of callback workload be done to ascertain if there are enough staff assigned to the neurosurgery service to cover the case requirements. The Sullivan benchmarks can be useful in supporting this analysis (if the data can be broken down by service).*

- *We recommend that any changes in block schedule and room hours be carefully planned by nursing and anaesthesia and agreed to by surgeons. Perioperative management should also analyze the impact on overall hours of surgery offered and staffing resources required. There may be unintended consequences to running a more horizontal schedule.*

- *We recommend that staffing levels at the VG Site be reviewed as room closures are eliminated and a more horizontal schedule is developed. Also, this staffing level does not allow the addition of a third RN to big cases at the beginning and end of the case to facilitate turn-over time. A target of 2.5 RNs per room may be more appropriate.*

- *We recommend that HI review the ORT role and work with local educational institutions to start a training program. RN staff need education regarding the use and value of the role before introducing new ORT staff. New ORTs should be introduced in a group as augmentation to current resources not as replacements for existing staff positions.*

- *We recommend that HI develop an inside role and an outside role for attendants at key times during the day and then staff appropriately, using the target of two rooms per attendant for cleaning support.*

- *We recommend an investigation and capital replacement plan (as described in the Materials and Drug Management section below).*

- *We recommend that perioperative management analyze the net gain or loss of operating theatre time resulting from the reduced coverage being proposed by anaesthesia. Anecdotally current room closures are increasing patient wait list times. A net loss in OR time will adversely affect patient surgical access further. At the same time the OR Executive Committee can analyze current block utilization patterns for opportunity to recoup unused time. The final agreed upon*

plan should be based on patient access needs, surgeon performance in block utilization and valid wait list data.

- *We recommend that perioperative management consider introducing other non-traditional roles such as mentors, preceptors, flow oversight for services, etc. Highly experienced staff have a wealth of knowledge and experience that can be passed on to less experienced staff. Many of the older staff are retiring because they cannot handle the physical strain of scrub or circulating roles. Non-traditional roles give the organization an opportunity to engage retirees in different ways to harness the experience.*

Perioperative Flow

A review of perioperative flow identified the following findings:

- QEII has issues with perioperative flow but management has done an excellent job identifying the road blocks. Sullivan has provided a baseline set of data and the new HRM should provide ongoing performance information. An infrastructure has been set-up through the OR Executive Committee to deal with root cause issues. The groups have wisely decided to prioritize the issues and correct each problem in sequence. This sequential approach allows people to do their regular jobs and work on a reasonable number of improvement efforts at the same time. The intent is to design a solution, implement and then measure results for success. This ensures that change actually happens rather than just being discussed. We strongly support this approach and commend the management group for their foresight.

- VG walks most of patients to the OR from same day surgery. The patients scheduled for first case are accompanied by the patient attendant. Patients scheduled for later cases are accompanied by one of ten volunteers. The system works very well.

- VG uses a holding room for patients in the OR. This creates an additional stop for patients and redundant documentation checks. HI does not use a holding room.

- Anaesthesia is working with nursing management to identify issues with first case delays at both sites. The OR Efficiency Group at both sites is chaired by the site Chief for Anaesthesia. The Chief of Anaesthesia has made it clear that anaesthetists are to be on time and there is discussion at department meetings about various sanctions such as fines that may be invoked for repeated offenders. We applaud the department for their aggressive stance.

- HI has a problem with turn-over times as perceived by all participants. The Sullivan data showed improvement from 47% to 50% between reports. The OR Efficiency Group will address this issue after implementing their plan for improved first case starts. Neurosurgery turn-over is the most problematic at 45-60 minutes. HI management is collecting data to try and ascertain the root cause of problems in this service.

- Perioperative slate management and daily flow is done by the charge nurse and the first call anaesthetist. The system seems to work well.

- VG has operating theatres on three separate floors but same day surgery, PAC and PACU are located on only one level. This creates serious issues with patient flow that can only be resolved by significant renovation or new construction.

To support the required changes to perioperative flow, the following recommendation has been provided for consideration:

- *We recommend review of the need for a holding room at VG and that multiple redundant checks on perioperative documentation be discontinued by using a checklist at the front of the chart. Using this system, an RN initials each documentation task and the next RN does not have to repeat it.*

- *We recommend that positive incentives be developed for those anaesthetists that do meet the schedule requirements regularly.*

- *We recommend that once data collection is done, HI work with anaesthesia, nursing and surgeons in neurosurgery to set standards for turn-over and then measure and publish results on a regular basis so the neurosurgery team can see the progress. Visibility of performance results is important to keep everyone's focus on the issue and prevent recidivism.*

- *We recommend that anaesthesia review the varying practice of anaesthetists in running the daily slate and consider developing a core group of anaesthetists who do this very well. This is only necessary if the practice of individuals falls outside of acceptable standards.*

Documentation

A review of documentation identified the following findings:

- There is a significant issue with timely arrival of OR booking forms to OR booking. Blood work and other testing is often done the morning of surgery resulting in case delays, many of which are first cases. Other effects of late booking forms on case delays and patient screening are addressed under the PAC section.

- Although the OR Efficiency Group at each site is analyzing the problem, the OR Executive Committee should begin to consider potential solutions to the problem.

- There is also a significant issue with histories, physicals and consents. Most of these are completed on the day of surgery either in the holding room or outside the OR theatre by the resident. Some services, such as ENT, and some general surgeons, are very good at having all paperwork completed at the time of booking. Other services, such as orthopaedics are reportedly rarely compliant.

- Because many outpatients are not seen in the PAC, they have their blood work-ups at other facilities throughout the province. Arrangements are made by the PAC and blood work results are faxed to the same day surgery areas at each site. The process seems to work well at HI because one individual is responsible for the entire effort. At VG the process is handled by several clerks and there are some issues.

- OR booking does not accept booking forms unless the Patient Health Questionnaire is attached.

To support the required changes to documentation, the following recommendation has been provided for consideration:

- *We recommend that a policy be developed that requires the booking form and other appropriate documentation to be submitted to OR booking before any case can be booked. The current practice of service and physician self scheduling should continue as a reservation system only. The final confirmation of the case booking rests with the booking office after appropriate documentation standards are met.*

- *We recommend that proper documentation regarding histories, physicals and consents be considered part of the OR booking package and that elective cases not be allowed to be confirmed for the schedule until the entire package is available.*

- *We recommend that VG consider implementing the same process as HI with one individual accountable for the communication surrounding faxing of lab orders and receipt of results. Each patient should be tracked according to an agreed upon timetable and receipt of results should be recorded on a checklist for all to see. Patients should be contacted directly to make arrangements with local facility for lab work and testing. Follow-up should occur.*

- *We recommend that the practice of not accepting booking forms unless the Patient Health Questionnaire is attached must be expanded to include other relevant documentation. Case booking should not be confirmed unless all relevant documentation is forwarded to the booking office. The OR Executive Committee can review services for any potential exceptions.*

Bed Management

A review of documentation identified the following findings:

- Bed access is reported to be a problem at both sites, particularly as it relates to the need to access IMCU beds. This results in PACU holds which can impact flow from the OR. The situation is less acute with anaesthesia closures. This problem will re-appear with more frequency as anaesthesia is successful in recruiting additional staff.

- At VG, beds are often available but not ready for transfer from PACU because a patient has not been discharged, additional bed moves are required, or a patient requires some form of treatment.

- Bed availability is a much bigger problem at the HI site. Patients are held overnight in the PACU creating difficulties with perioperative flow for the next day's slate. Beds are not ready in a timely manner resulting in PACU holds from the OR. The problem is particularly apparent with orthopaedics because patients are receiving treatments prior to discharge.

- ICU beds and IMCU beds are a particular problem at HI. Anecdotally there is a practice by some intensivists of holding these beds for a possible emergency.

To support the required changes to bed management, the following recommendation has been provided for consideration:

- *We recommend that an overall plan be developed to ensure that other scarce resource issues are resolved as anaesthesia staffing issues are addressed. In addition to nursing resources, IMCU beds will be a constraining force.*

- *We recommend that the newly constituted Surgical Flow Group look at the reasons for lack of bed readiness closely. We also recommend that an on-site bed optimizer be assigned on days when beds are projected to be tight. This individual should physically visit the projected discharge areas and determine timing of discharge. If there is a delay, the individual should be empowered to do whatever is necessary to expedite bed readiness. This process should be instituted at either site as needed.*

- *We recommend that the Surgical Flow Group focus on orthopaedic patient flow at the HI Site since this is a huge volume service with complex inpatient requirements.*

- *We recommend that the practice of holding critical care beds be reviewed. The bed should be filled if required and if an emergency occurs then protocols should be in place to enable transfers between critical care and PACU to create flex capacity in the appropriate level of care. There is ample time to get PACU staff in and to work out patient transfers to create a critical care bed. This has been discussed with perioperative management.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- Capital equipment is a major problem. There is no capital replacement plan for standard room equipment and many pieces of equipment are very old, particularly at the VG site. Much of the equipment is no longer supported by the vendor and biomedical engineering is significantly challenged to keep equipment useable.

- Anaesthesia machines were recently replaced but there is no plan for future replacement as equipment is amortized. This is a very serious issue, since equipment purchase is always an emergency request and the hospital can never deal with equipment in a planned manner. Currently emergency replacement requests are at the $8-9 million level and funding is usually at the $2-3 million level. The situation requires management to make difficult decisions that may compromise care and efficiency. For example, many of the OR tables cannot be positioned to accommodate modern operating techniques leading to longer surgeries and potential for staff injury.

- QEII has a limited budget for instruments. The ceiling for operating equipment is $5,000 and most instrument sets today will exceed this limit. Therefore routine purchase of instrument sets competes with major capital requests or are dealt with through emergency requests.

- HI is on a full case cart system and it works very well. SPD is competent, effective and staff perceive that case carts are usually complete. On the other hand, VG RNs are picking their own cases. The system is streamlined by a number of custom packs but scarce RN resources are used inefficiently.

- At HI inventory management is done by materials management personnel. There are two dedicated SPD technicians who do stocking and cart placement for cases. Par levels and shelf items appear appropriate. OR management has worked very hard to reduce inventory and develop a system for minimal hoarding. Orthopaedic prosthetics is an exception. There were large numbers of shelf items, multiple vendors and what appeared to be an absence of established par levels for each shelf item. We were also told that vendors are performing inventory management for individual products.

- VG has inventory management done by patient attendants. Sterile supplies are brought to the OR by a porter in boxes and left outside the OR. Patient attendants bring the cart inside and stock shelves against par levels. The OR has 0.49 patient attendants per room. This staffing is low given that they are performing inventory management roles as well as cleaning and portering functions.

- HI has minimal supplies in rooms. Replenishment is done by SPD based on list provided by RNs in the service. This system works well.

- VG has a significant issue with controlled substances. The stock is kept in a double locked closet in the OR but is distributed to anaesthesia by nursing. There is no signature for what medications leave the closet and no signature by anaesthesia for receipt of the medication. Anaesthesia does fill out administration record as the drugs are administered to individual patients but all drugs are picked up by nursing and returned to the closet at the end of the day. Nursing's role in this process is inappropriate.

- HI has a very good system for managing controlled substances.

- HI has a number of emergency carts as well as pharmacy carts. SPD reviews for outdated items and manages inventory on the emergency carts and pharmacy does the same for their carts. The system works very well.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that a detailed capital replacement plan be developed for each site that includes basic room equipment, i.e. table, ESU, lights, anaesthesia machine, etc.*

- *We recommend that the level of funding for instruments be revisited in the operational budget and established at a level consistent with ongoing need. The amount of flashing should be reviewed and an effort made to move toward a "no flashing" policy by purchase of additional instrumentation. As always new technology should require a business case and be handled outside of normal operations.*

- *We recommend that the hospital move to a case cart system as soon as possible. Given the square footage available in SPD at the VG site it might be more realistic to look at a modified case cart system. VG SPD and perioperative leadership are in discussions now regarding an appropriate solution.*

- *We recommend that a complete review be done by materials management in conjunction with orthopaedics staff and nursing management on the number of shelf items and par levels. Product standardization should be effected and decisions enforced. Discussions should be held with each vendor regarding their role in inventory replenishment against agreed upon par levels and product standardization decisions. Vendors who do not comply should lose access to the core. The amount of product in the core suggests that some vendors may be using the area as a sub-storage point for their product. This is an inappropriate use of hospital space.*

- *We recommend that as the case cart system is developed the role and number of patient attendants be revisited.*

- *We recommend a tackle box system for each anaesthetist based on individual preference or a tackle box based on case types that is distributed by pharmacy, picked up by anaesthesia and then returned to pharmacy at the end of the day. There is a satellite pharmacy just outside the OR that could be manned at key times during the day to accomplish this task. We have discussed this with nursing management and they will immediately begin discussions to change the practice.*

- *However, we recommend that when the tackle box is delivered to anaesthesia that anaesthesia must sign the receipt. Currently pharmacy is allowing either anaesthesia or nursing to do this. We have discussed this with the director of perioperative services and she will work with pharmacy to change the practice.*

Wait List

A review of waitlist issues identified the following findings:

- Surgeon wait list information is kept by each individual office. There is no commonly understood definition of wait list, when a patient is considered eligible for wait list and what are standards of acceptability across services/procedures.

- QEII has recently acquired ACCESS RX as a tool to track and manage wait list information. The data will be compiled in the MD office. Policies and procedures are currently being developed for this. At this time the only service with credible wait list data is cardiac surgery.

To enable improved management of the waitlist, the following recommendation has been provided for consideration:

- *We recommend that the DoH develop guidelines for wait listing of patients as well as a process for compiling, trending and monitoring the information. Note: this is an ongoing focus for DOH and the DHAs and we understand that new guidelines are either in process or have been developed.*

- *We recommend that a clearly understood process be developed to support this effort and that information is made available to the OR Executive Committee as a factor to consider in the management of block time.*

Data Concerns

A review of data issues identified the following findings:

- QEII is in the midst of a perioperative services information systems installation. The implementation has been in progress for two years. This is a long time for an implementation of this kind. OR scheduling has been up for a year and is working well. The preference card build is almost complete. Documentation is scheduled to go live in September, 2006. The project was never funded appropriately to include dedicated staff for coordination, data dictionary and screen build, or entry of retrospective data.

- There is no plan to provide ongoing support for the HSM system.

- A resource position for HSM would ensure appropriate administration of the system, provide custom report capability, act as a liaison with IT for technical and vendor support issues and act as a super user/trainer for new staff. In particular, training will be a challenge because the

manpower plan forecasts an average turn-over of 20 people per year over the next five years. We believe this is a conservative number.

- The province has just made the decision to implement SAP as a resource management system.

- Like other departments, anaesthesia has no support for their IS system.

To enable improved use of data, the following recommendation has been provided for consideration:

- *We recommend that QEII consider hiring temporary help to expedite the completion of the project. Currently there is no post case data available from the system and management is using manual data collection, compiling and trending. Hiring short term support to accelerate at least the intra-operative charting component will give management the reporting capability needed to examine block and room utilization, start times and turn-over. This is essential information for effectively managing and reallocating OR capacity. The charting for other areas can be phased in immediately after.*
- *Given the importance of the HSM system to perioperative efficiency and resource management and the lack of application support from IT, we strongly recommend that a resource be added to the perioperative management team to provide cross-site application support.*

- *We recommend that appropriate time and support be built into the implementation plan for perioperative services materials management issues, including data clean-up coding and interface build. The materials management build for HSM may need to be revisited during this process.*

- *We recommend that some level of support be assigned directly to anaesthesia to support their IS needs.*

DHA 9: Capital District Health Authority (Dartmouth General Hospital)

Introduction

The RFP for the PHSOR called for a targeted and focused assessment of perioperative services. In order to accomplish this objective, CSI consultants spent one to two days with perioperative leadership in each DHA and were therefore able to assess operations and present recommendations at a much more detailed level. Findings are based on interviews with staff, management and physicians as well as a review of quantitative data provided by each DHA.

The findings for Dartmouth General Hospital are set out below.

General Information

There are five ORs at DGH; four are currently running from Monday to Thursday and Fridays alternate between three and four ORs. On Mondays there are three general rooms and one local. The fifth room is closed for budgetary reasons.

There is full anaesthesia coverage for this schedule. The anaesthetists are paid on fee for service. DGH is considered a community hospital. The surgical program addresses the needs of the community. Its focus is on orthopaedics and general surgery. There is no cardiac, vascular or neurosurgery, no paediatrics and no transplantation. It is mostly secondary care.

Governance

A review of governance and management identified the following findings:

- The OR Committee meets five times per year. Its membership includes:
    - Vice President Clinical Care, Acute
    - Director, Perioperative Services
    - Manager, Perioperative Services
    - Manager, OPD & Surgical Floor
    - Chiefs of Surgical Services
    - Anaesthesia x 2
    - GP (representing Family Practice, who assist)
- The committee is considered to be effective and moving forward.
- Integration with Halifax has been a challenge. The staff report feeling "lost" within the system and struggle between the desire for autonomy and a connection with the district. Operationally, some policies and procedures have been standardized, but trouble spots remain, e.g. the integration of surgical services. For example, orthopaedics does no weekend call and there is no coordination with Halifax peers. There is uncertainty as to how these issues should be addressed.

To support the required changes to governance and management, the following recommendations have been provided for consideration:

- *We recommend that ongoing issues regarding integration be reviewed at the OR Committee and then taken forward to the senior executive. Expectations need to be clearly articulated and policies and procedures developed to support implementation. District-wide approaches are*

encouraged, but DGH should not be viewed as an extension of the QEII and academic structures (and costs) may not be appropriate.

Scheduling

A review of scheduling processes identified the following findings:

- OR time is 100% blocked by surgeon. One room is designated the call room and is subject to bumping. This designation rotates by service so that the effects are evenly distributed.

- Time allocation was historical, however, blocks are periodically readjusted based on utilization. Unbooked time is informally reassigned based on need. This is sometimes arranged between surgeons and sometimes facilitated by perioperative management.

- DGH is currently implementing a new electronic OR information system. There have been many delays as the project was underfunded for implementation. The booking/scheduling component is currently live and documentation is in process.

- Formal start time is 0745. Late rooms close at 1700. Anecdotally, at least 50% of first cases start late. The OR Committee is planning to undertake a review of late starts using Sullivan benchmarks as soon as the data is available.

- Turnover time is variable and could be improved. There is a perception that additional resources for cleaning staff are required.

- The slate is managed by the clinical leader and the manager, perioperative services with occasional assistance from anaesthesia. The chief of anaesthesia is supportive when called upon to intervene.

To support the required changes to scheduling, the following recommendations have been provided for consideration:

- *We recommend that the OR Committee regularly undertake a quarterly review of block utilization by service. Targets for utilization should be established and communicated. If targets are not met, time should be reallocated accordingly.*

- *We also recommend that the OR Committee develop standards for block release by service that are realistic and achievable. Generally 48-72 hours is sufficient, although some services may need less time because cases tend to be urgent or wait lists negligible. Some surgeons may need more time to plan office schedule changes.*

- *We strongly support the planned of start times by the OR Committee and recommend that a regular review/audit of first case delays be conducted with results reviewed by the OR Committee.*

- *We recommend that turnover time be tracked and analyzed by perioperative management to identify issues contributing to variability.*

- *We recommend that, whenever possible, planning for the elective surgical slate should take place the day prior to surgery. Perioperative leadership from all areas should meet each afternoon to review the next day's slate and begin planning for the surgical day. A representative from admitting should join the group to provide input into bed control.*

Pre-Admission Clinic

A review of pre-admission clinic identified the following findings:

- PAC operates Tuesday, Wednesday and Friday and sometimes Thursday if additional coverage is required. On each operational day there is one RN for eight hours who also does cardiac cath patients. All patients are seen by anaesthesia; orthopaedics three to six weeks ahead and other services two to three weeks prior. There are two casual RNs who can cover. The program seems to work well.

Operating Rooms

A review of the operating rooms identified the following findings:

- Elective cases are scheduled from 0745 to 1700. Add-ons are done in the call room and the OR is staffed until 2000. Staff starts are staggered appropriately. Nights and weekends are covered by callback only.

To support the required changes to the operating room, the following recommendations have been provided for consideration:

- *We recommend a review of the amount of callback to determine if it is more cost effective to schedule staff for a room on Saturdays and or Sundays.*

Endoscopy suite:

A review of the endoscopy suite identified the following findings:

- A new gastroenterologist/intensivist has recently been hired to cover ICU and funding has been approved for redevelopment of the endoscopy suite, currently located in the OPD. The proposed location is adjacent to the recovery room, in space that was the old day surgery area.

- The redevelopment of this space for this purpose will take away washroom access for patients in recovery and will severely limit future expansion of perioperative services. Orthopaedics currently runs one clinic per week in this space, which is also used for families after the day surgery area closes at 1900.

- Endoscopy patients are currently prepped and recovered in OPD. It is proposed that with the new suite, patients would continue to be prepped in OPD but would recover in day surgery. It is felt that while the current workload (one room) could be managed in day surgery, the new two room suite will be difficult to accommodate. There is also a transport problem, in that the recovery area is located between day surgery and the planned endoscopy suite, making access difficult.

- Endoscopy is not part of the perioperative services portfolio at DGH; it falls under ambulatory care, however, the potential impact of this plan is significant for perioperative services.

- There is a fully equipped, brand new and currently unused endoscopy suite at Cobequid, which might be suitable for use by the new gastroenterologist for his elective patients, however, there has been political resistance to this suggestion and enquiries in this regard have been met with the response that the Cobequid suite is reserved for the exclusive future use of "Halifax" surgeons and gastroenterologists.

To support the required changes to the endoscopy service, the following recommendations have been provided for consideration:

- *We recommend that the renovation plan be reviewed in light of the potential impact on perioperative services.*

- *We recommend that the Endsocopy Suite at Cobequid be optimally utilized and not reserved for any one group of surgeons/physicians.*

Post Anaesthesia Care Unit

A review of post anaesthesia care unit identified the following findings:

- PACU is staffed from 1200 to 2100 with callback thereafter. Staff starts are staggered appropriately. There are ten bays, nine of which are used. The staff is all RN. In addition to patients returning from the OR, cardiac cath and ultrasound patients are also recovered in the PACU. Lengthy recovery for interventional radiology patients can require an additional RN and sometimes contributes to OR delays. No additional resources are budgeted for these patients. Delays may also be caused by ECTs done at NSH. Although start time is delayed to 1000 to accommodate these patients, it is not uncommon for the anaesthetist not to arrive until noon.

- Pain blocks and IV infusions are also done in recovery as there is no pain clinic. Cardioversions are also done in recovery.

- The physical space in PACU is problematic. The area is cluttered and disorganized and the nursing station faces away from the patient bays.

- PACU is in the process of changing from an exchange cart system for supplies to permanently stocked storage bins. This will improve organization and free up some space.

To support the required changes to the PACU, the following recommendations have been provided for consideration:

- *We recommend that non-perioperative patients be recovered in a more suitable location elsewhere. Optimal patient care dictates that interventional radiology patients be recovered in a medical day care setting.*

- *We recommend a review of ECT procedures and consideration of alternative practices which would minimize delays.*

- *We recommend redesign of the PACU space to increase capacity and improve quality of care by relocating the nursing station to the centre.*

Day Surgery

The day surgery area was rebuilt 18 months ago. It has a capacity of 15 bays and three private rooms. Four stretchers have been designated for endoscopy patients. Local cystos are done in day surgery. Day surgery is open until 1900.

Staffing

A review of staffing identified the following findings:

- The ORs are staffed at an average of 2.5 RNs per room for all services except orthopaedics which is staffed at 3 per room. The clinical leader assists with big cases as required. This staffing level is appropriate.

- Recruitment has not been an issue for OR RNs at DGH as there is no scheduled night or weekend work; call only. The average age of OR RNs is 35 to 40. Looming retirements had been an issue in recovery but new recruits have reduced the average age to late 40 and it continues to come down. There are currently no vacancies.

- The perioperative training program is run out of the QE II and is offered twice per year as long as enrolment is sufficient. The program is four and a half months and includes a specialty orthopaedics module. All inexperienced staff are required to attend.

- There are two different unions for RNs in CDHA. NSGEU represents VG and HI and NSNU represents DGH. Policies are not consistent with respect to cross coverage. While NSNU will grant a leave for nurses to work in Halifax, the NSGEU requires an RN to resign in order to work at DGH.

- The implementation of the ORIS has been a challenge. Replacement for staff seconded to the project was unbudgeted and the impact of real time computerized charting is still unknown.

- Call coverage is not consistent or continuous. Divisions are small (1-2 surgeons) and call coverage is limited. When no surgeon is available on call, patients are either transferred to Halifax or wait long periods in the ER. For example, orthopaedic surgeons take call from Monday to Thursday only and patients may wait over the weekend. There has been little or no integration with peers in Halifax.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that CDHA explore the possibility of obtaining agreement from NSGEU that staff can be assigned as needed by management.*

- *We recommend that additional resources be budgeted to ensure smooth implementation of future modules and ongoing support of the system.*

Bed Management

A review of bed management identified the following findings:

- Anecdotally surgeons and staff feel that there are not enough beds for either surgery or medicine. Patients often back up in ER and recovery which results in surgeries being delayed or cancelled. It is estimated that there are 6-7 of these patients each day.

- Surgical beds were reportedly "capped" four years ago because the hospital reached capacity. There are 25 designated surgical beds on weekdays, 21 on weekends.

- There can be up to 6 medical off service patients per day. These are mostly social admissions and ALC patients.

- Surgical staff express some concerns about admitting practices of some of members medical house staff as they feel that there is a tendency to over-admit to medical beds, which leads to blockages for surgical beds. There is also a reported tendency for consultants to come in late in the day and not at night, which causes patients long stays in the ER and also blocks beds.

- The hospital discharge policy is not enforced and the first bed is often not assigned until noon.

- The role of the bed coordinator is unclear. She seems inaccessible during particularly busy times when most needed. It is not uncommon for it to take two hours for a page to be returned.

- Other hospitals in the district will not readily accept a transfer and will not permit a direct admit, although Halifax hospitals send patients to DGH as direct admits.

- There are difficulties with discharge to the community. Agencies are not responsive to hospital referrals and patients can wait in an acute care bed. Patients with an inpatient bed are seen as low priority. Mental health patients are also difficult to transfer to NSH and there is no where else for them to go.

- There is a lack of home care resources, especially for palliative patients (up to a six month wait) and IV antibiotics (return to ER for treatment). There is one palliative care physician two days per week for consults only. There is no in house palliative care physician and there are no dedicated palliative care beds. These patients are not prioritized and there is no hospice facility. They end up in an acute care bed waiting to die and often do not survive the LTC process.

- There is no access to geriatric activation/restorative services. The only option for patients who need these services is the rehab clinic. Patients wait longer in an acute care bed because no rehab services are available. For example there is no SLP to assess and treat which has a particularly deleterious effect on the stroke population. There is an inequality of these services available in the district. Respiratory is only available on call after 2000. Pharmacy is only

available 6 days/week, with no coverage after 1600 or on Sundays. Social work hours are Monday to Friday only.

To support the required changes to staffing, the following recommendations have been provided for consideration:

- *We recommend that a formal clinical service planning process be undertaken to determine service bed need and best method for managing new bed allocations.*

- *We recommend that the discharge policy be reviewed, communicated and enforced.*

- *We recommend that the role of bed coordinator be reviewed and that expectations be clearly defined and communicated.*

- *We recommend a district wide review of community resources and the development and implementation of appropriate policies and procedures to facilitate timely discharge.*

- *We recommend a review of in house rehabilitation and pharmacy services with a view to facilitating timely discharge.*

Materials and Drug Management

A review of materials and drug management identified the following findings:

- Capital funding is limited. The process is long and drawn out. It can take five to six months for approval before the tender process. There is no budget for the annual replacement of instruments or basic room replacement strategy including anaesthesia machines.

- There are some process problems in that the OR is not able to single source items when only one product is available without extensive justification. This can cause long delays. No purchasing resources are available to assist with this process.

- Online requisitions and regular deliveries have improved the management of supplies, however, DGH is not always advised of upcoming changes and there have been some problems with back orders. A small stores department was initially maintained at DGH however, full centralization to Halifax was planned for September 2006.

- Standardization has been a challenge. Regular initiatives have been undertaken to effect standardization, however, at the earliest opportunity new items are brought in as “trial/research”. Policies are not enforced. This has a significant effect on the budget. Standards are not consistent between DGH and Halifax for basic equipment including ESUs, lights and tables.

- The OR uses a case cart system which works well. Each specialty has a supply cart. There are two technicians who do the picking, ordering, stocking and special orders.

- There is currently a manual process for preference cards, although automation is a future implementation phase of the ORIS.

- There are space issues in the prep/sterilization area. It is a small area easily impacted by increased service. The recent change from exchange cart to permanent supply stocked regularly will free up some space. DGH does sterilization for NSH, Cobequid and Hants.

To support the required changes to materials and drug management, the following recommendations have been provided for consideration:

- *We recommend that a detailed capital equipment plan, including basic room equipment, be developed and that an annual budget be established for instrument purchases.*

- *We recommend a review of the purchasing process for single source items to simplify the process and minimize the requirements for justification.*

- *We recommend that a strategic plan for standardization and replacement be developed and that policies and procedures be introduced and strictly enforced.*

SUPPLEMENTARY REPORT #5: SMALL AND RURAL EMERGENCY DEPARTMENTS

A review of Emergency Department Services was included within the general assessment of the PHSOR initiative and this work flagged some potential concerns about the long term sustainability of these services, particularly in non-urban centres outside of the Halifax Regional Municipality (HRM). Notwithstanding that some initial concerns were raised, it was agreed at the CEO planning session in September 2006, that the issues surrounding non-urban Emergency Departments (ED) were identified as a longer term issue that could potentially be addressed through the development of a broader Rural Health strategy. Given this, it was decided at the time that the current model of ED care need not be a major focus of the PHSOR recommendations.

Prior to and since that planning session in September 2006, some of the non-urban ED's have however been experiencing increasingly common challenges related to periodic closures of the ED or reductions in hours of service. This resulted in increasingly significant concerns regarding the immediate and long-term viability of ED services in rural communities and this led to a decision to re-focus PHSOR to include direct examination of ED services in non-urban centres to confirm key issues and identify options surrounding potential changes to current models of care delivery.

SUSTAINABILITY OF 24/7 EMERGENCY DEPARTMENTS

Several communities have been unable to sustain ED services due to a lack of physicians to cover on-call requirements during weekends specifically. Physician on-call expectations for many hospitals impede recruitment, contribute to physician burn-out, and do not make the most effective use of limited and valuable human health care resources.

The availability of nursing staff across the province is decreasing, and expectations of nurses in small communities to "be all for all" is not sustainable. In several small hospitals nurses working night shift are expected to cover both Acute Medical units and Emergency Departments often acting as the sole RN for the entire facility and without adequate administrative and/or nursing supports. Although the acuity of some of the medical units is not the same as that experienced in regional hospitals, the pressures on acute care beds across the province has resulted in a greater number of medical patients remaining in their home communities and being either hospitalized locally or presenting to local, smaller emergency departments. The complexity of care delivery required for rural hospitals is increasing. These combined issues contribute to an environment that is not sustainable for nurses and does not provide the best care for all patients.

Many communities are experiencing pressures on ED services, but it is worthy to note that ED sustainability is of particular concern for the following facilities. This list does not exclude other communities who are also experiencing pressures, but those identified have either experienced recent temporary closures, or are significantly impacted by current or upcoming labour shortages.

- Fishermen's Memorial Hospital, Lunenberg (DHA 1)
- Digby General Hospital, Digby (DHA 2)
- Soldier's Memorial Hospital, Middleton (DHA 3)
- Lillian Fraser Memorial, Tatmagouche (DHA 4)
- North Cumberland Memorial Hospital, Pugwash (DHA 5)
- Inverness (DHA 8)

Although closures have not been occurring across the entire province, for many locations, the possibility of temporary closures becoming a reality is an increasing concern as the nursing workforce

ages and temporary nursing staff pools do not exist. While nursing shortages remains a significant issue, the majority of planned closures have been due to insufficient physician coverage and this can be expected to increase in frequency at sites that are already experiencing issues and can be expected to be an issue at an increasing number of sites over time. In many communities, physicians themselves expressed serious concerns about the ability to maintain coverage given expected retirements that are likely in the future and the barriers to recruitment to smaller towns that are being experienced nationally. The increasing provincial physician shortage, complemented by the inconsistencies in physician compensation across the province, has magnified the need to develop immediate solutions in order to ensure both the short and long term sustainability of primary health care services.

The roles and utilization of nursing and support staff in EDs across the province is inconsistent and nurses are increasingly reporting to be delivering non-nursing duties. Emergency department services need to be included within a complete model of care redesign to address role inconsistencies and ensure that staff are appropriately hired, and trained, to deliver effective and appropriate care. The introduction of non-RN nursing staff into EDs has been successfully implemented in some hospitals while in others, system-wide or DHA cultural barriers prevent consideration of alternate models.

Data from selected sites in the province indicates that nearly 50% of ED visits between 0000 and 0800 are Less Urgent in nature and 16% are non-urgent. This means for a large number of visits during the "night", they may be more appropriately served at times other than during the night, and in community clinics rather than an emergency department. For small sites, the overall volumes seen during the night are so small that staffing both physicians and nurses is becoming cost prohibitive and stress resources available during day and weekend hours. Overtime and excessive on-call is impacting the entire health care delivery system.

RECOMMENDATIONS:

1. DHAs should develop District Emergency Departments Services Models which utilize staff across DHA sites as required. Physicians and nurses would provide coverage at sites alternate to their home sites in order to address temporary shortages or as required in maintaining sufficient staffing levels.
2. Develop cross-District responses to the delivery of Emergency Department Services where geographic realities support a shared service model. we should be quite specific about areas where we are encouraging immediate action (Digby/Annapolis and Pugwash/Tatamagouche) as well as areas that we link will require some contingency planning to head off any issues down the road (Baddeck/Strait-Richmond),
3. Initiate a Primary Health Care model of care redesign process including a redesign of Emergency Department services, including health care provider role redesign. This would be undertaken to complement existing primary health care renewal initiatives underway across the province.
4. Realign physician compensation structures as a component of primary health care renewal by consistently implementing an Alternative Payment Plan (APP) as opposed to a fee-for service basis including for ED visits. This will serve as a physician recruitment tool and should include incentives for developing and expanding family practices as part of the primary health care system. Performance indicators need to form part of an APP with measures that go beyond the traditional "visit-based" fees incentives.
5. Initiate an immediate detailed review of ED services in all facilities outside of Regional Hospitals with the intent to identify operational efficiencies and care delivery improvements. Review outcomes would include recommendations to support evidence-based changes to service delivery. (i.e. Hours of service, levels of service by community and facility, roles of health care professionals, the role of ED services within Primary Health Care, etc.)
6. Define and confirm the standard for access to 24/7 emergency department service and complete a geographic service delivery assessment to inform decisions to transfer 24/7 ED services to other facilities where necessary to ensure the sustainability of services across the non-urban areas of Nova Scotia.

LACK OF DATA AND INFORMATION SYSTEMS

Across the health care system there is a general lack of data collected using common data elements for data management purposes. Technology to support data management is often inadequate and fragmented with systems across DHAs and with the Department of Health (DOH) not being integrated (may want to more fully describe this as not being connected in. Also with the focus on access, wait times (province just got 24M, the impetus for greater and more robust tracking and reporting is a reality). Individual DHAs have varying levels of data to support primary health care decisions, for comparative purposes, and to establish performance and health outcomes standards.

In completion of this ED report the inability to collect and analyze data was a result of the overwhelming lack of available and appropriate data. In many cases the data was a matter of "apples vs. oranges" and significant data manipulation across DHAs would be necessary to reconcile discrepancies. In order for Nova Scotia to be able to consider and expand population-based health care initiatives, improved data management must be a priority. Data management initiatives must:

- Collect, process and analyze data for components of care delivery including timeliness and standardization factors;
- Support management decision making at the facility, DHA, and provincial levels;
- Facilitate provincial and national comparative reporting;
- Support related approved analysis and research; and
- Support the development and use of case-mix and utilization grouping methodologies.

Recommendations to address this issue include:

RECOMMENDATIONS:

7. Emergency Department services must be included within DHA and provincial health information technology planning.
8. Provincial standards must be set for Emergency Department services data reporting (as part of a complete health data management strategy) including (a) adoption of the National Ambulatory Care Reporting Standards (NACRS) across the Nova Scotia Health Care System; and (b) adoption and reporting according to Canadian Triage and Acuity Scale (CTAS) for all Emergency Room visits with reporting linkages to NACRS data.

IMPACT OF THE AGING POPULATION

The population across Nova Scotia continues to see an increasing percentage of older persons per capita. As of October 1, 2006 the population of Nova Scotia is reported at 934,172, with the estimated population 55 years and older at 27.3% of the total population[55]. In the previous 10 years

[55] Nova Scotia Department of Finance. (2006). *Nova Scotia Statistical Review*. (24th ed.). Halifax, NS.

this age group grew by approximately 6% and by 2013 this age cohort will be nearing 35% of the population.

As identified in the Public Health Review report of April 2006, community services have continued to erode over the last 30 years. Amongst other issues, this has resulted in the frail elderly becoming increasingly unsupported, and as a result requiring more frequent hospitalization and utilization of ED services has also increased for this population. With the lack of home support services, many seniors who would otherwise be able to remain or return to their own home, end up requiring long-term care placements. In the absence of an adequate number of long term care beds, acute care beds in hospitals are increasingly being used for patients awaiting placement. This creates a downward spiral with acute and ALC patients remaining in EDs for longer periods of time, as there are not enough beds for all requiring either acute medical treatment or those awaiting placement outside of an acute care setting. The lack of access to medical/surgical beds is also impacting surgical services for some DHAs. The impact of the aging population on the entire health system is staggering.

Individual DHAs are at varying stages of developing and implementing strategies to address the ALC issue. Although there is some level of collaboration and information sharing across the province, the approaches remain fragmented and economies of strategy sharing and/or inter-DHA solutions are not being maximized.

RECOMMENDATIONS:

9. Rapid development and implementation of the 832 long-term care beds as recently announced by the DOH as part of the Continuing Care Strategy.
10. Continued implementation of recommendations of the June 2006 Continuing Care Strategy, including the identification of recommendations that can be implemented immediately.
11. Encourage ongoing province-wide dialogue to create solutions for common issues, as demonstrated through the recent initiatives of the Long Term Care Summit.
12. Improved discharge planning processes with greater collaboration between management and physicians in managing patient flow.
13. Improved communication and processes between DHAs and the DOH in ensuring that DHA facilities requesting priority variances for long term care placement are responded to in a more timely manner.

The province of Nova Scotia has been undergoing a process for Primary Health Care Renewal including the development of Community Health Centre models. Participation in this process is voluntary and determined by individual DHAs, with development and implementation of initiatives prioritized by each DHA. Development of Community Health Centre Models has been inconsistent and there is a wide variance between DHAs concerning implementation of these centres.

The inclusion of Nurse Practitioners and other allied health professionals within Community Health Centre and Primary Health Care models is inconsistent. Nova Scotia reflects the trends across Canada whereby there is strong political and legislative support, research evidence, need, and availability of training programs for Nurse Practitioners. There remains however, to be many operational challenges when implementing this role including funding, regulatory barriers, and a lack of awareness and understanding of the nurse practitioner role.[56] Community based care must include the Nurse Practitioner role if there is to be success in reducing ED visits and improving the health of communities. As expanded primary health care initiatives need to take priority in meeting population health needs, roles and types of health care professionals must also evolve to meet these needs. As the focus shifts from acute and curative care to health promotion, the health care system must also fundamentally shift.

[56] Canadian Health Services Research Foundation (2006). *Sustaining Primary Health Care Renewal*. Ottawa, ON: Author.

Efforts to implement the recommendations from the May 2003 report, *Primary Health Care Renewal: Action for Healthier Nova Scotians*, has been inconsistent and as previously indicated, are at the discretion of individual DHAs. The significant demands on DHA budgets and planning have continued to be Acute care focused and the priority that needs to be put on developing Primary Health Care alternatives to EDs has, for the most part, remained secondary. There have been some advancements in pockets of the province to push forward this priority but new funding required for initiatives also remains limited or non-existent.

RECOMMENDATIONS:

14. Conduct and compile a review of access to care challenges across the province to inform the development of community-based alternatives to EDs. i.e. Development of community clinic models and health care centres to improve access to appropriate levels of primary health care.
15. Increased funding and planning for the integration of Nurse Practitioners across the province.
16. Implementation of A 1-800 Nurse-by-phone service would provide greater access to primary health care services across the province and may decrease the dependency and ultimately volumes on EDs for non-urgent cases.
17. An increased emphasis must be placed on further developing and implementing the recommendations of the May 2003 report, *Primary Health Care Renewal: Action for Healthier Nova Scotians*. The sporadic emphasis to date has resulted in little change in DHAs, and a consistent provincial approach is lacking.
18. A provincial approach to developing a plan for Community Health Centres must be developed and implemented. Successes obtained in some DHA's must be shared, an extensive review of population health needs must be conducted to address regional discrepancies, and a redesign of primary health care services must be undertaken.

Supplementary Report #6: Provincial Program Specific Findings

This section of the report includes detailed findings for each of the provincial programs that were in place at the time of the review.

Cancer Care Nova Scotia

OVERVIEW

Cancer Care Nova Scotia (CCNS) was established in 1998 in response to the perceived degree of fragmentation in care delivered, a lack of coordinated research, and less than appropriate education of providers. There was a general challenge in navigating patients through the cancer system to ensure the right services were received in a timely and appropriate manner. As a result, CCNS has developed and supported a vision of reducing the effects of cancer on individuals and families through research, prevention and screening, and to lessen the fear of cancer through education and information. CCNS strives for Nova Scotians diagnosed with cancer, together with family, friends, and community, to view services as high in quality, professional in focus, compassionate in delivery, and caring in spirit. Key goals of CCNS are:

- To have high quality cancer care across the province;
- To reduce the number of people diagnosed with cancer, and dying from cancer;
- To enhance cancer research in Nova Scotia; and
- To bring reliable and helpful cancer information to Nova Scotians.

Over the eight years since being established, CCNS has set and met ambitious targets with key goals in the coordination of services, education, with an increased research focus and development of new models of care. However, while there have been increases in operational funding of CCNS ($3.6 million in 1997; $4.2 million in 2001; just over $4.3 million in 2006), it was noted that there has been no operating dollars for salary increments or cost of living which were made available to DHA's and to selected provincial programs.

CCNS reports to the Deputy Minister of the DOH and has an Advisory Board, appointed by the Minister. It has a two-person Executive Team comprised of the Commissioner, and Chief Operating Officer. Roll out of services is done through meetings with Council of CEOs, senior leadership and in collaboration with clinical leaders. Some of the key services provided by CCNS include:

- Provincial Cancer Registry. Surveillance and epidemiology program developed as a partnership across Canada and the US with the goal of rigorously looking at data and results to support research and education.
- Cervical Cancer Screening. Ongoing extended reach and depth of the screening program with the aim of early detection of Cervical Cancer. This successful program has been applied to a number of other screening models (e.g., Sun Safe, breast).
- Interdisciplinary Cancer Site Teams (CSTs). Supporting the development and deployment of best practices throughout Nova Scotia.
- Cancer Patient Navigation. The navigation model for patients diagnosed with cancer was developed by CCNS, and later modeled across Canada. The program had its roots in the NS Breast Screening program which initiated the concept for patients with abnormal screening results to guide them through to diagnosis. CCNS's model is for patients who have been diagnosed to take them through care and treatment. The program has been rolled out to five of the nine DHA's.
- Direct and Indirect Support of District Providers. To enable all Nova Scotians to have the same standard of cancer care – no matter where you live, CCNS developed the District Cancer Program. Each DHA will have a DCP that will form a network of cancer services across the

province. The DCPs are designed to bring cancer prevention, screening, diagnosis, some types of treatment, support and palliative care closer to home for patients and families. In addition, DCPs brings together people and organizations that provide cancer services within each district to collaboratively reduce gaps in services and duplication. DCPs will also be initially supported by the District Cancer Committees, which includes patients and families.

- Promote areas like palliative care, survivorship, psychosocial and a number of patient, family and provider education programs.

MANDATE

Cancer Care Nova Scotia's vision is to reduce the effects of cancer on individuals and families through research, prevention and screening, and to lessen the fear of cancer through education and information. CCNS has as its DoH assigned mandate to coordinate, evaluate and strengthen cancer programs and services across the cancer continuum.

Cancer Care Nova Scotia's objectives are to coordinate, evaluate, and strengthen cancer services. Working with others in the field of cancer and health, CCNS's programs cover prevention, screening, education, treatment, follow-up care and palliation. CCNS aims to be community-focused, patient-centred, cost-effective and to deliver care based on sound evidence.

The following outlines key activities related to each of the Provincial Program mandates, as set by the DoH, and assesses CCNS's adherence in each of the mandates' accountabilities.

DOH Mandate for Provincial Program	**Adherence to Provincial Program Mandate**
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers. Recommend service delivery models	✓
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	✓
Implementation Support. Work with provider organizations to ensure uptake	✓
Evaluator. Participate in program evaluation	✓

Legend: ✓ - meets most or all. ✗ - meets few or none. ⊕ - unknown, further info required

Advisor to the DOH

CCNS and the DOH must maintain the required relationships and interactions to ensure all relevant and key issues are discussed and addressed. Specifically, CCNS must have access to the Acute and Tertiary Care Branch of the Department of Health, and ultimately have access to the Deputy Minister of Health to provide necessary advice and input, and to work with the Acute and Tertiary branch to support relevant initiatives. *See the Linkages with the Department of Health (Section 7.0) for a more complete description of the relationship.*

To support CCNS in the advisor capacity, CCNS has developed a number of programs and tools to enable it to meet its vision. The following points outlines activities for how CCNS supports this mandate role:

- **Cancer Registry Infrastructure** To help Nova Scotians understand the magnitude of the cancer problem it faces and the impact it has on the community and to conduct necessary research, CCNS maintains a Cancer Surveillance and Epidemiology Unit. A critical component of the surveillance effort is the operation of the Cancer Registry. The Registry was established in 1964 and collects and analyzes data on all diagnosed cases of cancer in Nova Scotia. This Registry is a key data source to support CCNS as an advisor to the DOH as well as to providers.
- **Cervical Cancer Registry.** CCNS is currently on the 4th iteration of this registry. When the Cervical Cancer Prevention Program (formerly the Gynaecological Cancer Screening Program) and its registry joined CCNS, there was no disk space and little support under the existing program. As a result, CCNS funded a re-write. This Registry is a key data source to support CCNS as an advisor to the DOH as well as to providers.
- **Prevention and Screening Programs.** Prevention and screening programs are instrumental in decreasing the incidence of cancer in Nova Scotia through primary prevention, early detection, and appropriate management. There are a number of successful prevention programs. These include ACT (Action in your Community against Tobacco); the provincial Tobacco Free Sport and Recreation Initiative and the NS Alliance for Healthy Eating and Physical Activity. Each of these programs has played a key role in the development and evolution of the provincial Chronic Disease Prevention Strategy and its components, such as the Healthy Eating Strategy. CCNS has also established a coordinated and collaborative approach to skin cancer risk reduction through the development and support of the provincial coalition, Sun Safe Nova Scotia. In addition, through the development, implementation, and ongoing use of guidelines, screening for cancers resulting in earlier identification and treatment has become possible. CCNS has responsibility for cervical screening and has prepared for the DOH a proposal on implementing a population-based colorectal screening program. CCNS has developed guidelines for the management of a number of cancers including prostate, kidney and adult testicular. Prevention and screening programs provide useful information to support CCNS in its advisory role to DOH and providers.
- **Supporting Information Management (IM) Infrastructure, Processes and Strategy.** Information is key enabler to support the early identification of cancers, the appropriate management of cancers, and the ability to learn from past experiences to affect future decisions by leveraging research. While CCNS has made investments in IM infrastructure (e.g., Registry), these investments have been targeted and have not created the broad infrastructure necessary to fully leverage information effectively and efficiently across the care continuum. To go further with IM requires health system, not just the CCNS program's, investments; particularly those investments which require leveraging access to and data form other databases in the system. It is believed that a stronger IM infrastructure could enhance CCNS's role as an advisor to the DOH. In addition, such an IM infrastructure would facilitate cost savings in the system by stream-lining functions, increasing quality and ensuring a value-proposition.

Advisor to Care Providers

A key accountability of CCNS is to provide advice on recommended service delivery models and approaches to care providers. As identified in the Advisor to DOH section above, CCNS has developed a number of mechanisms to keep care providers in the loop (e.g., prevention and screening programs, guidelines, surveillance and the registry). The challenge is to provide meaningful information to the providers in a manner that is easy for them to use. This is further complicated by the diverse geography and variability amongst providers. As CCNS is not a service provider, CCNS must establish communication mechanisms to communicate information and build a collaborative environment for exchanging information. The following points outline activities for how CCNS supports this mandate role:

- **Cancer Site Teams (CSTs).** CCNS adopted the Cancer Site Team (CST) approach to cancer care. There are 13 Cancer Site Teams, each comprised of a multidisciplinary group of providers from across Nova Scotia, that are organized around a particular disease site or a specific non-treatment issue (e.g., paediatric, supportive care). CSTs meet regularly to review clinical cases, clinical trial proposals, and develop clinical practice guidelines for aspects of cancer care in Nova Scotia.
- **Education Programs.** CCNS has developed and partnered on a number of education programs aimed at improving health care for cancer patients and their families. CCNS has also developed the Excellence in Cancer Care – Oncology Education for Health Professionals suite of programs which includes: the Inter-professional Core Curriculum, which is 10 modules for community-based and primary health care professionals; the Communication Skills Program, ; developed with a grant from the Lawson Foundation; the Provincial Palliative Care Volunteers Training Program; and the Front-line Palliative Care Education Program A catalog of education material for patients and their families is available in addition to the OIES (Oncology Interactive Education Series) for patients and families. .

Standard Setter

CCNS is accountable for identifying, developing, reviewing and supporting dissemination of standards of care based on evidence and best practices. The following points outlines activities for how CCNS supports this mandate role:

- **Cancer Site Teams** CCNS's cancer site teams are responsible for developing guidelines and protocols. This is made more manageable due to the fact that only two sites are involved. One limiting factor is the specialization of equipment however if the equipment is not highly specialized then quality standards are the same.

  While CCNS supports, but is not responsible for the provision of cancer care, it is responsible for setting standards for care delivery through their level of care framework. CCNS's role should be to provide advice to districts regarding service delivery. For example, what information should providers in chemo units have, who should mix chemo drugs, and what is the common policy for ordering chemo drugs across all units. However, CCNS's role is currently only to set policy and advise with no requirement to ensure adoption. There is currently a lack of authority and/or responsibility that makes the evaluation mandate very difficult. For example, while there are 22 locations currently mixing chemo, it was noted by CCNS that few are doing it right except within the regional cancer centers. There are also a number of issues including education and certification, and RNs that are not certified as there is no current process. As a result there is a higher degree of confidence in the regional sites than the smaller community hospitals. The realities of delivering services in rural areas and history for doing things a certain way also challenge implementing CCNS recommendations. While CCNS's role is to make decision makers aware of best practice, districts can choose not to meet/adhere to standard. In these cases, the Department of Health also must be involved in arbitrating when a centre wants to do more or less than what Level of Care Model suggests. The ability to measure what is going on with systemic therapy was noted as at best crude. This is partly due to the lack of tools in districts to effectively measure what is going on. Need to continue to develop and implement the Levels of Care work to clearly identify what

can/should be delivered in a region, and identify the supporting infrastructure and investments required (e.g., equipment, education, service providers).

- **Palliative Support Services.** Palliative care and supportive care is a primary focus of CCNS. CCNS has conducted a needs assessment and through a roundtable on Palliative Care, a provincial set of priorities and an action plan were developed. The Palliative Care program. A dominant focus of the program is on professional and volunteer education. The programs are designed to enhance the care provided to palliative care patients and their families in all care settings in Nova Scotia. It is focused on the provision of education for all members within the inter-professional front-line care team. The program is offered in each health district and through the Nova Scotia Community College, where it is core curriculum for Practical Nurses and Continuing Care Assistants. CCNS has identified survivorship as an area for further development and investment.
- **Research.** Research is a critical element in the fight against cancer. To support this, Nova Scotia has invested in the development of a short to medium term strategy, being implemented through the Dalhousie Cancer Research Program, that is predicated on the recruitment of leading researchers. Funding to realize the strategy has been forthcoming initially from private endowment, not provincial dollars. However, research is a long-term strategy that requires consistent and constant support and investment. CCNS has initiated, largely with funds from competitive grants, a number of research initiatives in a number of areas including survivorship, end of life and a number of disease specific programs. For survivorship and long term follow-up care, a number of studies have been initiated, including multi-centre randomized trials to support the implementation of evidence through the development of guidelines to support community physicians with follow-up; End of life care measure quality indicators for palliative care to both use evidence to inform future policy and to ensure effective use of resources to support better quality of care; and development of a continuum for screening has been established for colorectal cancer.

Educator

CCNS is also accountable for developing education and communication strategies and material to support awareness and dissemination of standards and best practices. The following points outlines activities for how CCNS supports this mandate role:

- **Educator-Role.** CCNS does a good job at providing education. District can access education resources if they wish. For example, 2,800 people in Nova Scotia participated in 3-day front line palliative education program. Additionally, over 600 health professionals have participated in ICC modules. However, there are challenges to ensure all programs and providers receive the education and meet the standards of Levels of Care. There has also been a partnership with Nova Scotia Community College to offer pre-service education for LPN training as part of the core certification and diploma process. CCNS also makes series of sheets of educational material available including a generic booklet about the cancer program, district specific material, and program specific information. Every district also has an Oncology Interactive Education Series (OIES) computer based program with 25 titles providing instructional material.
- **Patient Navigation.** The Cancer Patient Navigation Program is considered a low tech - high impact solution. With over 4,000 referrals in five districts to date, there is continuous feedback the program is making a huge difference in people's lives. The program meets annually to review and update practices. The community liaison is also a significant complement to the program that ensures improved awareness by groups that may be less likely to utilize the cancer services (e.g., First Nations, and other ethnic groups). There has also been the development of innovative service delivery approaches. For example, in GASHA, the navigator has developed effective links with palliative care to more efficiently and effectively deliver services. Currently, Capital, Cape Breton, Cumberland and Colchester are non-navigator sites. However, Capital and Cape Breton have identified this role as a priority for the $15 million in new cancer funding announced by the DOH in fiscal year 2006/2007.

Monitor

CCNS is responsible for monitoring adherence to approved standards. The following points outlines activities for how CCNS supports this mandate role:

- **Cervical Cancer Prevention Program.** The Cervical Cancer Prevention Program (CCPP) monitors the performance of all aspects of cervical cancer screening and management of abnormal Pap smears in the following ways: (a) Physicians, nurse practitioners and specially trained nurses who provide Pap smear services are provided with annual report cards. These reports assess the numbers and quality of smears and rate individuals against provincial and peer performance. (b) Support for adherence to management guidelines is provided through the Provider Reminder Letter process. Letters are sent to Pap providers (MDs, RNs, NPs) regarding patients who appear not to have been followed up or managed as per guidelines following a significant abnormality on Pap. (c) All laboratories performing gynecologic cytology submit records of their quality assurance activities to the program annually. The activities have been defined and approved by all seven laboratories in the province and the CCPP. (d) Site visits to all colposcopy sites and all laboratories performing gynecologic cytology and histopathology are conducted at regular intervals. Adherence to provincial guidelines and quality standards are monitored during these visits with reports sent to DHA senior management and site personnel. Site reviews have, for example identified safety concerns in facilities (e.g. lack of fume hoods in labs) and practice concerns (e.g. a physician who "sees and treats" without confirmation by pathology). CCNS need to work in partnership with the DOH to identify, modify, and address these situations.

- **Cancer Surveillance/Registry.** Cancer staging and the ability to link administrative data with clinical data will improve the ability to monitor outcomes, both at the patient/treatment level and the system level. Registry also maximizes the use of existing data available in the system. Through the Registry CCNS is able to produce for the DOH wait time data for the two cancer centres.
- **Development of Performance Indicators.** CCNS has been working with DHAs to develop performance indicators for the cancer system. Additionally, CCNS has been requested by the DHA's to develop indicators for Palliative Care in the province. Palliative Care is not unique to cancer but CCNS has worked extensively in this area and is recognized for its contributions.
- **Surgical Oncology of CCNS.** CCNS has developed standards and delivered educational programs for physicians and pathologists to introduce new evidence based practices and standards for sentinel node biopsy and the treatment of thyroid cancers. A database has been implemented with CCNS support and the data are monitored to ensure compliance with new standards.

Implementation Support

CCNS is responsible for providing support and resources to assist organizations with the update of standards and best practices. Many groups indicated that they feel that CCNS should have a larger role in advocating for funding for the implementation and operation of DHA cancer programs. . The following points outlines activities for how CCNS supports this mandate role:

- **Patient Navigation.** The Navigation program was designed with input from the DHA's. The evaluation, designed through a peer-reviewed process, was conducted to assess the benefits of the function, its ability to assist patients in accessing and integrating care as well as improving the efficiency and use of clinical caregivers. CCNS continues to monitor the program through maintenance of a database that records all encounters with the Patient Navigator and on-site reviews of the service provided.
- **Annual Reports.** CCNS provides Annual Reports to the DHAs on cancer incidence. Reports provide a mechanism to communicate expert interpretation and to describe opportunities and

benefits of implementation. It was noted that DHAs have grown to understand and see the value of the use of the reports and the data for program planning, evaluation and monitoring.

- **Prevention and Screening –** Implementation support is provided by CCNS to DHA's particularly in the implementation of prevention programs. For example, through ACT, tobacco-control stakeholders are trained and supported to deliver effective community-based programs. Through Make a Move, health care providers are trained to deliver physical activity counseling programs, and through efforts to encourage healthy public policy, sport and recreation leaders have received training and policy development assistance through CCNS.
- **Implementation of Guidelines/standards/policies.** CCNS has developed disease and symptom management guidelines, provincial polices and procedures for the ordering, administration and mixing of chemotherapy and infrastructure standards for systemic therapy delivery. CCNS works with all DHAs to support the implementation of the guidelines and the provincial policies and procedures by meeting with local staff to explain, discuss and strategize on how to implement.

Program Evaluator

Finally, CCNS is responsible for participating and supporting the evaluation of its programs to meet the mandates and objectives established. The following points outlines activities for how CCNS supports this mandate role:

- **Board Evaluation of CCNS.** The Board of Cancer Care Nova Scotia is expected to report regularly to the Minister of Health through its Chair. An annual written report concerning the activities of Cancer Care Nova Scotia and accomplishments and concerns in the cancer system will be submitted to the Minister of Health.

- **Program Evaluation.** Evaluation of programs initiated by CCNS is an intrinsic function and public reporting is the norm. Evaluations have been conducted of key activities and program areas including: Cancer Patient Navigation, the Assessment of Levels of Care for implementation; evaluations of the impact of the ICC on changes to practice; the education needs assessments; ACT evaluation ad the evaluation of the Norah Stevens Oncology Studentship program.

- **Evaluation Information to DOH.** CCNS provides regular and routine evaluation reports to the DOH through the Executive/Commissioner reports which are prepared five times per year. These reports are also distributed to the CEO's of all districts. The reports use a standardized format and link results and activity to the mandate and objectives of the organization.
- **CCNS's Evaluation of Cancer Providers.** While CCNS has a standard setter and monitor role for cancer services and delivery, the most difficult role to maintain is the evaluator role. This role is difficult to support due to the limited ability to legislate or designate authority to mandate changes in practice. As a result, the evaluator role is viewed as a "tooth-less" role. The ability to enforce and support change is limited to persuasion, and not authority. While reviews are conducted in a positive, not punitive manner, there is no authority to ensure that change occurs to improve outcomes. [Note: CCNS does produce for physicians and providers who perform pap smears a profile of their quality performance. Colposcopy site visits review practice and outcomes at all sites and report the information back to the labs and to the CEO's of the DHA's. It needs to be mentioned that it is too early to report on evaluating the "cancer system" as this is tied to the implementation of Levels of Care. The requirement for compliance with Levels of Care is not until April 2008 so it is too early to conduct system evaluation.]

PROGRAM OPERATIONS

DOH Mandate for Provincial Programs	Alignment with Guidelines
Authority	✓
Legal Status	✓
Liability	✓
Host organization	✓
Human Resources	✓
Financial Reporting	✓
Reporting and Approval of Health Systems Standards	✓

Legend: ✓ - meets most or all. ✖ - meets few or none. ⍰ - unknown, further info required

Authority

CCNS has an advisory Board of 18 individuals plus the chair that is appointed by the Minister of Health. The Board of Cancer Care Nova Scotia's role is to strengthen the cancer system and cancer services in Nova Scotia by identifying key priorities for CCNS. The Board will provide advice to the Department of Health through the Minister on matters related to the delivery of cancer service and the cancer system, and exercise fiduciary responsibility over the resources and activities of Cancer Care Nova Scotia. Specific responsibilities of the Board include:

- To ensure that a strategic plan and a statement of annual priorities to support the development and implementation of a comprehensive, integrated, province-wide patient-centered cancer management program are developed and implemented;
- To oversee the development of a complete continuum of cancer programs;
- To provide leadership in the development of an integrated cancer informatics system;
- To ensure that standards and processes to both accredit and monitor cancer providers and facilities are developed;
- To facilitate the development and maintenance of linkages between and amongst provincial, regional and community health services to ensure the continuing development of quality programs and support service for cancer patients and their families;
- To facilitate the provision of sufficient resources to implement and sustain the provincial program of cancer control, care, research and education;
- To advise on the provision of adequate cancer services to be offered in the province;
- To approve the annual budget of CCNS prior to its submission to the Department of Health;
- To delegate responsibility and authority to the Commissioner for the management and operation; and
- To develop appropriate communication strategies to receive and disseminate information on programs and activities of *CCNS*.

The Board's membership is comprised of a mix of health professionals with representation from professional and voluntary groups in addition to cancer survivors and their family members. Each member has a three-year term, with a one-third of the board turning over annually. Members are

solicited through a public call for applications, are screened by CCNS and recommendations are put forward to the Minister based on diversity, including geographical and other considerations. The ex-officio members include: Head, Medical Oncology; Chief, Radiation Oncology; Chief Medical Officer of Health and CCNS Commissioner and Chief Operating Officer. The Canadian Cancer Society and the IWK also have designated seats on the Board, within the 18 seats allocated. The Board meets approximately six times per year, with the Priorities and Planning Standing Committee acting as an executive of the Board for agenda setting and advice to the senior leadership of CCNS.

Legal Status

CCNS is a provincial program of the DOH but is not considered a separate, legal entity. CCNS is housed at the Bethune site of Capital Health. CCNS employees are Capital Health employees "for ease of administration", and consequently are on Capital Health's payroll. CCNS funds are rolled into the biweekly transfers to Capital Health but are non-portable funds, and are not at the discretion of Capital Health. The DOH holds the intellectual property, and the assets of the program are owned by CCNS/DOH, not Capital Health. However, there is no MOU or agreement between CCNS and Capital Health or amongst DOH/Capital Health/CCNS with respect to hosting, use of HR and Finance, etc.
Liability

There appears to be some questions related to liability. While the staff of CCNS are all employees of Capital Health, there are some questions as to whether Capital Health would be liable for injury, damage etc. Capital Health has stated that due to the nature of CCNS services, and the extent to which they are conducting services outside of Capital District's geographic boundaries, Capital believes that they are not liable for some of the services of CCNS. The scope and details of liability will require further clarification.

Human Resources

As identified above, CCNS employees are Capital Health employees "for ease of administration", and consequently are on Capital Health's payroll. Some employees are cross-appointed and have functions with CCNS and with CDHA. The staffing complement and structure are approved by the DOH through the business planning and approval process. If there is significant changes that would require a re-allocation, CCNS would be responsible for notifying and discussing with DOH.

Financial Reporting

As identified above, CCNS funds are rolled into the biweekly transfers to Capital Health but are non-portable funds, and are not at the discretion of Capital Health. Provincial Programs are responsible for submitting a Variance Analysis and Forecasting Report to the Department of Health on a quarterly basis for the 1st, 2nd, and 3rd quarter. In the 4th quarter the Program will submit monthly Variance and Forecasting Reports. In addition, routine meetings are held between the CCNS Director of Administration and Special Projects and the Financial Analyst of the DOH responsible for our program.
Reporting and Approval of Systems Standards

The plan is for CCNS to provide written documentation through the appropriate Director, Acute and Tertiary Care Branch related to reporting and approval of standards. Depending on the scope, magnitude and nature of the standard, the Director will submit and represent the Program at the Department Quality committee. However, there is no clear list for what goes to the DOH. This is due to the process being relatively new, and that there is some general learning for all parties as to what quantifies a standards change, and what degrees of change must be included within this step. Some examples of standards that have utilized this new process include:

- Development of Levels of Care. The LOC standard was reviewed by the DOH Quality Committee, and a full impact evaluation process was completed to determine the impact of applying the standard.

- DOH Systemic Therapy Policy Committee. The DOH Committee is responsible for reviewing the introduction of new and expensive cancer drug therapies, and as a result, takes the approval and even the evaluation and ethical review out of the hands of CCNS.

CHALLENGES/BARRIERS

Need for Consistent Leadership for CCNS and Clearer Understanding of Leadership Role

- With the resignation Dr. Padmos, there will be a both a challenge and an opportunity to find a new Commissioner for CCNS. While Dr. Padmos successfully led the organization from its inception, identification of a new leader will create an opportunity for renewal and change. In addition, Dr. Padmos maintained several roles while Commissioner at CCNS. He was also Head of the Cancer Care Program at the QEII Health Sciences Centre, and Associate Dean for Cancer Programs at the Dalhousie University's Faculty of Medicine. With a new incoming Commissioner, there may be an opportunity to change or manage perceptions around key areas of responsibility and accountability.

Processes and Technology are Inadequate

- CCNS has done a good job at establishing a registry and required data collection processes however the processes and technology have been identified as old and antiquated. For example, the cancer registry cannot accommodate new technologies and sources like ePath (electronic pathology system). The addition of these improvements would likely result in system efficiencies, cost savings, and the decreased use of scarce staffing. In addition, it is noted that CCNS's maximizing the utility of the data to the greatest potential of existing technology and infrastructure. Relatively minor changes and a strategic investment and intent would ensure that "a goldmine" of data is not missed, with the concomitant data power realized, due to the lack of attention paid to administrative databases. To improve utilization, there is a need for investment in infrastructure, development of a vision, and clarity of the role and purpose/use of the registry.

Lack of an Information Management Strategy and Infrastructure

- There is a need for investment in both an information management (IM) strategy and supporting infrastructure. There is a need for an integrated cancer information management strategy and plan. The strategy would clearly identify the key components of the cancer IM infrastructure and build a plan for appropriate development and growth. A plan would also define the linkages between the cancer system and the provincial care delivery system (e.g., Meditech) that would help to ensure provision of needed information in a standardized format. For example, the registry could be extended to include not only demographic data, but also treatment and staging data. Currently, it was noted that there has been limited ability to pull data from Meditech into the registry. For example, there is a need to develop integrated systems that extend across districts, and that has appropriate interfaces between key systems to support improved information flow and reduce redundant actions (e.g., STAR and OPIS). This is also limited ability to develop measures to track and monitor access, efficacy, and efficiency. Generally, the current tolerance/receptivity for working on IM strategy appears to be a priority for CCNS but is not supported or funded through other bodies. Meanwhile, much opportunity to realize compliance with standards, improved outcomes and cost savings is being lost. .

Perception that QEII and CCNS are one in the same

- One of the challenges facing CCNS is the perception that CCNS and its role within QEII and more broadly may be one in the same. This perception breeds feeling that there may be bias in the system and some degree of preference. It is important to note that this feeling is not only with cancer care but also is reflective of other programs. As a result, buy-in and support outside of Halifax is sometimes more difficult, and rollout of educations programs and guidelines can sometimes be more challenging. It is important for CCNS to have a provincial identity.

Need to Improve Linkages Between Acute Care, CCNS, and DHAs

- While CCNS has been able to develop a number of programs and supporting services, it was viewed that there is a further need to improve linkages between the CCNS and Acute Care services. Currently, it is perceived that there are some disconnects between agendas within the acute care sector and those within CCNS that may be misaligned.

- Another challenge facing CCNS is that DHAs may not view CCNS as part of the solution. While CCNS has physically centralized services, a key role of CCNS staff is to interact directly with district providers and to, in collaboration, help to build programs. The purpose of centralization in a provincial program is not well-communicated by the DOH to DHA's and therefore not always well-understood ad supported. Centralization is an effective means of managing scarce resources and creating a critical mass of expertise that is leveraged and therefore available to the DHA's. This is also believed to be a less expensive model in the long term. Finally, one challenge facing CCNS is the ability of engaging district people in provincial work as it is currently challenging to get representation to support initiatives as there are only so many working in oncology that can be released from their clinical duties to address development issues. Distance and the need to travel to meetings, when telehealth or teleconferencing is not an option, often results in a preponderance of Halifax personnel participating at meetings. This increases the perception that CCNS is more focused on Halifax.

Need Financial Support for Developing and Rolling Out protocols

- While CCNS creates a number of standards and guidelines, a complaint from the districts was that while these protocols or guidelines are very good, funding to support implementation is not tied to their release. Districts felt that CCNS had done their job, but also needed to help to lobby for additional funds or support from the DOH.

Need Increased Focus on Standards of Care

- As a key element of CCNS strategy is for Nova Scotians to have the same standard of care, it is important for providers to be delivering the right services to the right people at the right time. CCNS has been very successful at the development of the Levels of Care approach. However there are some areas that further standardization may be required. For example, there are some examples where a change may be required as to what services should be available

Lack of Monitoring Authority

- While a mandate established for provincial programs is to monitor delivery of services, a key challenge for CCNS is authority. With the exception of Radiation Therapy, cancer services are decentralized provincially. And while CCNS is charged with developing and setting standards, there is only so much it can do in monitoring the successful implementation of guidelines or protocols. This is also challenged by the broad geographic locations and in some cases remoteness from CCNS, the lack of perceived funding for some districts to support implementation of protocols, and a long history where some providers have been responsible for delivering care with little or no direction from a central group.

Lack of support for Roll out of Cancer Patient Navigation Program

- While the rollout of the Patient Navigation program was successful at the first three sites, there was some pushback at additional districts due to the lack of monies to fund navigators. It was perceived that the DOH might have backed off funding as there was a fear that all disease groups may want navigators. There was belief that the DOH changed the rollout into pilots midway and while these rollouts were deemed at providing positive value and results including better use of resources more efficiently, Districts were unwilling to find the funds to pay for these roles. As a result, there are still four districts that have not implemented Navigators.

RELATIONSHIPS

Cancer Care Nova Scotia works with a number of key health and community based organizations to build sustainable relationships with key partners. The following points outline partnering relationships to support CCNS:

- Department of Health and the Dept of Health Promotion and Protection
- District Health Authorities, the Community and Tertiary Hospitals, and providers directly
- Doctors Nova Scotia
- Dalhousie University's Faculty of Medicine
- Cape Breton Cancer Centre
- Canadian Cancer Society
- IWK
- Post-Secondary health professional education providers

RESOURCES

While CCNS receives adequate funding for the development of programs and services there is a general lack of funding for implementation and support of these initiatives. A review of funding needs is required to address the following:

- Lack of technology to support data collection;
- Need for investment in both an information management (IM) strategy and supporting infrastructure;
- Need supporting funding for CCNS and DHAs to support implementation of standards and guidelines;
- Need to roll out Patient Navigation program beyond initial three sites. DHAs require funding from DOH for implementation.

STANDARDS

CCNS is accountable for identifying, developing, reviewing and supporting dissemination of position statements, standards and guidelines based on evidence and best practices. CCNS works with health professionals, Cancer Site Teams, and other formalized groups from across the province to develop, review and implement guidelines and protocols. Guidelines, standards and position statements have been developed across the continuum of prevention, screening, diagnosis, treatment (radiation, systemic therapy, surgery), to palliative care and symptom management. CCNS is also responsible with supporting and leading research initiatives.

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH & HEALTH PROMOTION AND PROTECTION

The formal and informal linkages to the DOH are numerous. The Commissioner reports directly to the Deputy Minister. For example, the Commissioner is responsible for communicating the Board Report and bringing key issues to the Deputy Minister's attention during bi-monthly meetings, specifically, and via phone and email as required. In the past, the reports from the Commissioner to the Deputy Minister were perceived as not going beyond the Deputy Minister's office, and no action was ever taken or knowledge transferred beyond the Deputy's office. However, there has been a noted improved relationship between the current Deputy and the Commissioner. Since the resignation of the Commissioner, reporting to the DOH has been primarily to a Director of Acute Care. In recent months, CCNS has noted that there has been a change in the Director which has required ongoing work to develop relationships and to support information is transmitted in a timely fashion.

CCNS is the only provincial program with a Commissioner and a Chief Operating Officer. While no position has been taken whether this is a good or bad model, it is raised as being a unique

management model relative to other Nova Scotia Provincial programs. However this model is similar to other provincial cancer programs in provinces across the country.

Staff across CCNS also has working relationships with numerous positions and individuals at the DOH, for example, they may sit on common committees that are project focused, such as Privacy.

There was a noted opportunity to improve the overall coordination and communication between the DOH and CCNS to reduce redundancy, duplication of effort, and improve overall processes. For example, CCNS initiated the development of a privacy policy regarding data from the Registry, communicated the policy to the DOH, and when CCNS was ready to present the final draft, the DOH determined that they would undertake a privacy policy to govern all provincial programs and that there was actually significant work which had been undertaken that would overtake ours. Situations like this that exhibit a lack of coordination and communication must be eliminated. Opportunities to leverage routine meetings amongst provincial providers and the DOH should be investigated to support information sharing, planning coordinated activities and resolving common challenges.

There is also a noted need to ensure information that is communicated between provincial programs to the DOH is acknowledged and acted upon. For example, while the wait time data has been critical to supporting the wait time initiative, there are a number of other key reports that are perceived to have not had any response by the DOH even though the Department was involved in their initiation and/or development. These include the External Review (2001), Master Space Plan and Functional Program (2002), Evaluation of Patient Navigation (2004), Governance and Financial Review (2005) and Scoping Requirements for Cancer Information (January 2006).

REVIEW RECOMMENDATIONS

1. **Investigate a Maritime Cancer Planning Model.** While CCNS has made significant contributions for Nova Scotia, there was an opinion that CCNS could serve a broader role within the Maritime context. Further investigation of the feasibility for developing an inter-Maritime Cancer Agency should be conducted.
2. **Confirm Role of Commissioner.** The Commissioner model is unique to CCNS. With the recent departure of Dr. Padmos, there is an opportunity to step back and review this role and ensure that it continues to be the best model for this program. Note: this model is not aligned with the overall model for Provincial Programs however is similar to other provincial-based cancer organizations.
3. **Define and Agree on the Authority of CCNS.** Authority of CCNS exists in the Commissioner's contract but not tested yet. Need to extend accountabilities to not only define the "what" but also to influence the "how". Currently, this is in the hands of the DHAs to enact where it may be given higher or lower priority. Important that there is some consistency across providers. CCNS has developed the Knowledge Broker Role to describe their role in monitoring and evaluating the system. The Knowledge Broker role formalizes CCNS role as the cancer control authority and standard-setting body, from both a patient and population perspective, with mechanism in place for the delivery organizations to achieve the standards (see CCNS Strategic Operational Plan – January 2007).
4. **Further Investment in the Level of Care Model.** Need to continue to develop and implement the Levels of Care work to clearly identify what can/should be delivered in a region, and identify the supporting infrastructure and investments required (e.g., equipment, education, service providers). Specific attention should be placed on specific sites where the Level of Care Model would identify that specific services should be discontinued or care delivery changed.
5. **Identify Core Service Requirements at Provincial and Local Levels**. During the brief review of Provincial Programs, people noted that there are gaps in the service delivery system and that some service development is required (e.g., psychosocial oncology). While this review was not sufficient to identify all relevant areas, it was identified that key gaps in services should be identified and prioritized and that strategies to manage these gaps developed.

6. **Develop a Research Plan.** It was noted that while research is a major thrust for cancer care, there is a need for a research strategy that will clearly identify key areas for research but also identify opportunities for endowments to chairs, recruitment, and where it should provide researchers with financial assistance. A research plan will also support recruitment and retention initiatives.

7. **Establish a Visible Commitment for Funding and Administrative Authority.** There is a critical need to allocate supporting funding and administrative authority to support implementation of common standards and guidelines, and to realize the vision of CCNS. Need to clearly identify CCNS role and authority in lobbying or approving the allocation of funds.

8. **Develop a Cancer Information Strategy.** The cancer information management strategy will develop a multi-year roadmap that defines specific directions, needs and information-infrastructure requirements. This strategy will be a multi-sect oral strategy that extends beyond just OPIS technology, extends beyond just acute care, and links into the provincial health information management strategy. A key to developing the strategy will be broad input and buy-in to the strategy, and dedicated funding for implementation.

9. **Leverage and Invest in Registries.** The Registry provides an important information foundation to support both administrative and clinical decisions. Need to enhance access to databases for research, surveillance, and operational management.

10. **Increase Coordination and Communication with the DOH.** Formalized coordination and communication mechanisms must be established between CCNS and the DOH to ensure alignment and pro-active support for key initiatives that will be useful to all parties. It was felt that the DOH does not directly identify what is specifically useful and/or beneficial. This will also be supported by clarity of accountabilities. Suggest the development of accountability matrices to support the discussion and agreement on roles.

11. **Further Investments in Education.** CCNS should continue to support and develop their education role to staff in different communities and patient education materials, and where possible, bring care providers together to share experiences and stories. While there has been a significant amount of good work in this area, CCNS should leverage improved marketing and communication strategies to support greater penetration and adoption of services.

12. **Support Development of Innovative Care Delivery and Evaluation Models.** CCNS should assist centers to adopt and leverage new models of care delivery. By bringing a redesign mindset, the current delivery practices should be challenged and where possible, redesigned to be more efficient and effective. CCNS, in its role, can become a knowledge centre of various approaches (nationally, internationally) and can make this information available to providers. This recommendation will help to offset the increasing volumes with the limited additional monies, and enable cancer providers who also have limited physical and financial resources.

Reproductive Care Program of Nova Scotia

OVERVIEW

The Reproductive Care Program of Nova Scotia (RCP) is a provincial program established in 1973. The RCP works directly with health care facilities, hospitals, and community-based health professionals to promote excellence in the provision of reproductive care. The RCP has taken a leadership role in perinatal care by facilitating the interpretation and implementation of national standards of practice at local levels, and by responding to the education and professional needs of care providers across the province. The program is funded by the Nova Scotia Department of Health; supported by the Departments of Obstetrics & Gynaecology and Paediatrics at Dalhousie University, and when established, was endorsed by the Medical Society of Nova Scotia.

The mission of the program is "to contribute to the health of Nova Scotians by promoting excellence in the provision of maternity and newborn (perinatal) care throughout the province." The vision for the maternal and newborn health system is to be an accessible, sustainable system that demonstrates, through programs and services, the importance of optimal health for women, infants and families to the future of Nova Scotia.

The RCP provides best practice standards to care providers across the province. Program participants have worked hard to build solid relationships and garner the respect of providers throughout the province. Program activities are focused on building collaboration with clinicians and health information professionals as the RCP's 'philosophy' is that this approach is more successful than being seen as 'enforcers'. The program completes annual reviews of hospital-based mortality and morbidity in each DHA with that DHA's perinatal care team. Until recently RCP has had very little ability to influence policy. The recent establishment of a formal link with the DOH through the Acute and Tertiary Care Branch is seen as a way to resolve this.

Births in the province have stabilized at approximately 8,500 annually, which is a substantial reduction from the 12,000 annual births the province experienced in the mid-1990s. As in the rest of Canada, Nova Scotia now has fewer teen births while mothers over 35 are increasing.

The program functions of the RCP are:

- Development and dissemination of clinical standards and guidelines for the perinatal population. This includes antenatal laboratory screening and testing, breastfeeding, care of women during labour and birth, labour analgesia, maternity services, primary maternity care and "Back to Sleep" national guidelines.
- Clinical audit and peer review with physicians and nurses who work with the maternal and newborn population. This includes perinatal surveys, morbidity and mortality reviews, workshops and education sessions, ad hoc visits to address specific clinical or care delivery issues.
- Continuing education for clinicians providing maternal and newborn care. This includes ongoing educational sessions such as workshops on unanticipated birth, fetal health surveillance and newborn jaundice.
- Management and administration of the Nova Scotia Atlee Perinatal Database on behalf of participating health care facilities and groups. It contains demographic variables, procedures, interventions, maternal and newborn diagnoses, and morbidity and mortality information for all pregnancies and births occurring in Nova Scotia hospitals since 1988. RCP maintains strict data management policies to ensure confidentiality of information. Hospitals receive regular reports on morbidity and mortality and selected outcomes. A provincial report including demographic, intervention and outcome data is produced annually.
- Distribution and interpretation of perinatal health information from the Atlee database including annual and standardized reports and data retrieval resulting from specific queries.

The RCP has ten staff members. Retirements in the next five to ten years are anticipated and succession planning is underway. The two physician advisors have been involved with the program for two and four years respectively.

The program has strong collegial relationships both within and outside the province and feels valued by government and other colleagues.

The *Rh* Program of Nova Scotia*, while distinct from the RCP, is closely affiliated and shares some resources. The Rh Program is a Maritime resource providing surveillance and treatment for women in Nova Scotia and treatment only for women in New Brunswick, Newfoundland and Labrador, and Prince Edward Island. The Rh Program is endorsed by the Medical Society of Nova Scotia and is also supported by the DOH. It focuses on the prevention and management of problems caused by Rh and other blood group antibodies and provides education and consultation services for health caregivers.

*(*Rh refers to the Rhesus blood protein factor.)*

MANDATE

DOH Mandate for Provincial Program	Adherence to Provincial Program Mandate
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers. Recommend service delivery models	✓
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	×
Implementation Support. Work with provider organizations to ensure uptake	✓
Evaluator. Participate in program evaluation	×

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Advisor to the DOH

The advisory body of the RCP is the RCP Provincial Advisory Board. The Board is made up of representatives from all DHAs, IWK, Perinatal Epidemiology Research Unit, Doctors Nova Scotia, and Dalhousie University Obstetrics and Paediatrics departments. Board members are involved with the provision of, and planning for, perinatal health care. RCP staff attends for communication purposes but are non-voting members. The Provincial Advisory Board meets two to four times per year. The RCP Action Group is a multidisciplinary team, which meets regularly and is responsible for review and critique of all written materials generated by RCP. They also participate in the development of program goals and objectives and approve directions taken by the RCP. Membership includes representatives from Dalhousie University, DOH, Doctors Nova Scotia, practice representatives from regional and community centres and the RCP staff.

Advisor to Care Providers

The program provides education to care providers in the area of reproductive health throughout the province. The program completes annual reviews of hospital-based mortality and morbidity in each DHA with that DHA's perinatal care team. The program conducts more comprehensive reviews every 3-5 years and organizes issue-specific reviews as requested.

Standard Setter

RCP is accountable for identifying and promoting best practice. While the Program does not have the authority to enforce clinical standards, a more collaborative approach has been effective in most circumstances. Program staffs work hard to get "buy in" and develop relationships with each community of practitioners in order to advocate for best practice.

The Nova Scotia Atlee Perinatal Database contains provincial information from 1988 onwards and is considered one of the premier perinatal databases in the country. It is used for both clinical review and research purposes.

- **Clinical Review and Evaluation.** The RCP collects a large amount of data on reproductive health, including detailed information about pregnancy events and clinical care for childbearing women and newborns. More recently RCP has added variables to assist with monitoring specific standards of care, for example HIV screening in pregnancy and Maternal Serum Testing. Unfortunately the information about HIV screening is missing close to 50% of the time, due to shared care arrangements and anticipated difficulties with transferring documentation between care providers. Although a plan for obtaining more complete data is in progress, it is a challenge to monitor standards of care when several data sources are required
- **Research.** There are a number of challenges facing the program in the area of data collection:
  - There is a growing shortage of Health Records Technicians, who abstract charts and code data for the Nova Scotia Atlee Perinatal Database as well as for provincial CIHI requirements. Pressure for more timely data and staff shortages were the impetus for RCP to reorganize the Atlee coding system to utilize the data being captured for CIHI and reduce or reorganize the Atlee codes being captured. This change was implemented as of April 1, 2003. Subsequent to this decision concerns were raised nationally about the quality of CIHI data. These data quality issues also impact RCP as some data points now come from that source.
  - The CIHI system collects information that pertains to hospital stay and course of care. Underlying conditions or pregnancy complications may not be captured if they do not influence length of stay. The Atlee coding system captures all significant clinical conditions and care events, regardless of whether they alter length of stay. Thus some clinical conditions may no longer be available for research purposes if the data source is CIHI. Reabstracting charts and reentering these data would be costly and time consuming.

The changes described above have taken several years to implement. RCP delayed scheduling a system audit until the changes were complete and the provincial coders have had time to become familiar with the new system. An audit is planned in mid-2007.

Educator

The RCP provides education on a wide range of topics. They are very responsive to the need for the development of new programs, and will work with any group or individual who submits a request.

Monitor

While RCP is able to monitor many standards of care using information in the Nova Scotia Altee Perinatal Database, one area of limitation is monitoring of family practitioner care as data is not available from these providers at this time. For data that is available, some consideration should be

placed on determining the appropriate level of authority RCP has to change or enforce practices as a result of the monitoring. Without authority or some degree of influence, the usefulness of monitoring is limited. When multiple data sources are required new data sharing agreements are required, some of which are in development. All of Nova Scotia suffers from a dearth of information about community-based care, including care for pregnant women and newborns.

Implementation Support

RCP staff travel throughout the province to provide education when requested, or to support the implementation of new practice standards. They are available via telephone to all providers for support and guidance whenever necessary.

Program Evaluator

RCP carries out annual regional reviews with community-based perinatal care teams. These are seen as opportunities to continue to build relationships as they review practice. RCP also publishes a number of regular and standardized annual reports based on data from the Nova Scotia Atlee Perinatal Database. However, there still remains further opportunity to improve the evaluator role through better and more timely access to data.

PROGRAM OPERATIONS

The RCP operates utilizing the IWK Health Centre as its host organization. The RCP is not a separate legal entity and operates under the IWK Health Centre and is funded through the Department of Health. As such, the program meets fully with most of the operational guidelines of the 2004 Provincial Program Model. In instances where they do not, progress is underway to more closely align the program with the guidelines set out in the accountability framework.

The accountability framework sets out operational guidelines for each provincial program as indicated below. Where concerns were identified, further comments follow the table.

DOH Operational Guidelines for Provincial Programs	Alignment with Guidelines
Authority	✓
Legal Status	✓
Liability	✓
Host organization	✓
Human Resources	✓
Financial Reporting	✓
Reporting and Approval of Health Systems Standards	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Authority

RCP's primary authority rests with the development of metrics and provision of advice to xxx. Based on discussions conducted, RCP appear to be appropriately managing their day-to-day operations and appropriately advises the DOH as required.

Liability

Most issues regarding liability are clear. However there is a lack of clarity at the program level as to how and if RCP staff and Advisory Group members are adequately covered in their role of establishing provincial guidelines and standards. Other liability issues relate to more operational factors such as liability insurance while driving, etc. and these are being addressed through the current host organization MOU planning.

Host Organization

At present there is no MOU with IWK Health Centre who serves as their functional host. Discussions and planning are underway however and an MOU is expected soon.

Human Resources

RCP staff are not employed by the DOH and there is some lack of clarity in this regard. Staff perceive that they are employed by IWK as their "paystubs" and other HR policies are administered by IWK. Further clarification will be achieved through the completion of the MOU.

Financial Reporting

Financial Reporting to the DOH is achieved through IWK regular reporting. RCP is currently considered a cost centre under IWK and as such do not report separately to the DOH. The program is fully prepared to provide additional reporting to the DOH if it is identified as necessary.

CHALLENGES/BARRIERS

Sidelining of Program Priorities

- People interviewed noted that the priorities of the program can get sidelined or repositioned on the priority list due to the need to support provincial "hotspots". This occurred recently with HIV/AIDS which was viewed as a priority by a DOH Infectious Diseases Advisory Group but may have been viewed as a lower priority within the program. While the program recognizes the need to be flexible to respond to emerging issues, this particular situation was described as putting a strain on the program due to resources available.

Expanding Coverage

- The Rh Program is now providing some coverage for the other Maritime Provinces (treatment only in NB, NL and PEI) and this places some stress on the program in terms of resources.
- RCP Physician Co-directors struggle with maintaining a balance between clinical demands and program needs.

Host Organization Relationship

- There is frustration regarding the relationship between the RCP and the IWK in some areas. For example IWK administers the program from a financial perspective and applies the same rules for travel to the RCP as for other IWK programs. The RCP is thus compelled to use the travel agent designated by the IWK. The arrangement is that the travel agent contributes a set amount from every transaction to the Foundation of the hospital. The RCP is often able to get better travel deals elsewhere, and does not receive any of the benefits from the Foundation.
- Although the employment status of RCP personnel is not completely clear, staff receive excellent support from the IWK IT technicians. RCP manages the Nova Scotia Atlee Perinatal Database but in situations where IT support is needed it is always available.
- The relationship with the IWK from a practice perspective is different than it is with other practice communities. The relationship has developed along a different path although there have been recent discussions about RCP offering programs for the IWK that have been useful in other parts of the province. One example is the proposed C-section review, planned with IWK in the Fall of 2006.

Financial Pressures

- While the RCP has been able to operate within its budget in the past, it is anticipated that this is going to be difficult to maintain. The program has seen limited budget increases for the past few years and there is pressure to expand to support more areas, notably the other Maritime Provinces. It is noted that the DOH does not have the expectation of service provision beyond provincial boundaries, however peer provinces often look to Nova Scotia as a Maritime leader in reproductive care.
- The RCP enjoys significant involvement from the two medical Co-Directors who are involved in clinical, database-related, and administrative activities. Much of this is "invisible" work that is carried out to support the program. Although there is a stipend for these positions, the level of involvement requires significant commitment from their respective departments. There is inequality in how the physicians/Clinical Advisors to the program are paid. The neonatologist is on an APP, although the stipend paid actually goes to the Department of Paediatrics. The obstetrician is on fee-for-service. The stipend goes to the Department of Obstetrics and a portion is turned back to the obstetrician. However, the amount does not make up for lost clinical earnings. Compensation for clinical advisors is an issue that spans all provincial programs and needs to be addressed through provincial program development.

Rh Program Challenges

- There is no clerical support for this program.
- The program nurse is paid at a lower rate than any other nurses in the province. This has an impact on recruitment and retention, and the impact of losing the RN would be significant.
- This group needs to begin to consider succession planning.

RELATIONSHIPS

The RCP has built strong relationships with districts and most providers throughout the province. The biggest challenge has been in maintaining a relationship with primary care providers who offer prenatal and postpartum/postnatal care only (no longer attend deliveries). Although they receive mailings from RCP, these care providers may not have strong linkages with the network of perinatal care providers throughout the province and may not be as aware of changes in practice or new standards of care.

- **Inter-provincial Cooperation in Providing Best Practice.** The RCP works collaboratively with communities in the area of reproductive care and has made substantial progress by working collaboratively with communities and providers in the area of reproductive care.
- **Practitioners.** The staff are active within the community and participate in numerous provincial committees: e.g., Nova Scotia Newborn Screening Service Advisory Group, Prenatal Diagnosis Group Advisory Group, Healthy Beginnings Evaluation Committee, Prenatal Education & Support Working Group (Co-chair), Parent Education Resource Working Group. The physicians and nurses all sit on various national committees
- **Cooperation with Districts.** The program has developed excellent working relationships with the DHAs, and has experienced the good results by positioning the Program staff as collaborators rather than enforcers.

The Rh Program, as a Maritime resource, has excellent relationships with providers throughout the Atlantic provinces. The integration of better computer programs (i.e. Meditech) has meant an improvement in the quality of data they are now receiving, which supports better monitoring.

RESOURCES

RCP considers the work they do important. The health of babies and mothers as they progress through pregnancy has a huge impact on later health care needs. While the birth rate has declined over the

last decade in the province this reflects a trend seen throughout the rest of the country. The RCP offers a valuable service within a limited budget and is a high functioning, forward thinking group. An identified limiting factor has been in having sufficient resources to implement standards in a timely way.

The Rh Program, although small, is critical. Diligent surveillance has kept costs to the health care system down. A slip in monitoring for this condition can result in significant costs to the province both in terms of treatment for affected newborns and the resulting impact of long term health care treatment needs.

STANDARDS

The program staff works continuously with reproductive health care providers throughout the province to promote best practice in the area of reproductive care. This is done through telephone contact and outreach visits to all communities within the province. Although the program can set the expected standard for practice, they have no authority to enforce it. Compliance is currently effected through goodwill and collaboration. While this is a challenge and can be a frustration, Program staff believe that this approach promotes better uptake of standards in the long run and creates a solid network of care givers across the province.

The Rh Program offices are also located at IWK. The mandate of this program is to monitor pregnant women and to organize treatment for those who need it. Monitoring is done by collecting data and determining antibody status (either + or -) which is reported back to the patient's physician. The program then guides and prompts providers in the area of care provision and follow-up.

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH

- Support for the program from DOH comes through funding and the direct reporting of the Program Manager to the Acute and Tertiary Care Branch. Program staff also participate with DOH representatives on the Provincial Advisory Board and the RCP Action Group.
- Support for the Rh Program comes directly from funding by the DOH.

PARTICIPANT IDEAS/SUGGESTIONS

- **Midwifery.** The RCP's approach is to respect the choice of a woman to involve a midwife in her care and to encourage their participation in discussion and education as well as to encourage acceptance of this role amongst other providers.
- **Maintaining Competencies for Deliveries.** RCP does not focus on the number of deliveries a particular practitioner does. Instead they are supportive of any practitioner who has a plan for continuing education and can access regional care for higher risk deliveries. Using this model, competency hinges on experience and concerns may arise with newer physicians who have done few deliveries.
- **Epidurals.** RCP staff meet with all anesthetists in all regions to advocate for epidurals when there are adequate services. Program physicians also actively work to encourage the availability of epidural services.
- **C-sections in the OR.** The RCP believes that mother-baby bonding may be adversely affected by the separation that occurs when the mother is required to recover alone in the general recovery room. The program is currently gathering evidence to support a model whereby baby and mother can recover together on the unit with one to one nursing.
- **Booked C-sections Being Done Monday to Friday.** The RCP supports this model in that additional medical and anaesthesia resources are available during these times.
- **Inductions.** This process is staffing limited and there are usually no more than 1 or 2 inductions a day in all facilities but the IWK. Given this limitation, it is important to be able to

'prioritize' the induction list regularly as clinical indications may change unexpectedly. This can be a challenge with some physician coverage models. The RCP speaks with practitioners about this on a case-by-case basis.

REVIEW RECOMMENDATIONS

1. **Undertake Review to Confirm Mandate.** With declining birth rates, the review raised questions regarding the mandate for RCP (as currently defined). Suggestions were made that the mandate should be broadened to encompass issues surrounding early childhood development as well as the continuum of perinatal care. Further investigation of the feasibility for broadening the mandate should be conducted. As part of this broadening discussion, RCP in collaboration with the DOH and other stakeholders should complete a strategic planning exercise and implement the directions.
2. **Confirm Maritime Role.** The program provides some service to other provinces, but the consultants had a sense that this has evolved somewhat informally. This role should be clearly articulated and resourced as required.
3. **Develop Framework for Defining Priorities.** Staff expressed some concern that it is sometimes difficult to ensure that priorities for maternal and newborn health care remain specific to the needs of both. Need to consider if funding needs to be designated to ensure that priority issues are appropriately resourced.
4. **Maintain Diligence Surrounding Rh Program**. Recommend continued focus and expansion of reproductive health monitoring. It is critical to recognize that this potentially costly disease has been kept under control because of the diligent monitoring. It is essential to not lose sight of this, as a single case missed will cost more in treatment than the annual budget of this program.
5. **Confirm Baseline Standards and Model of Care.** PHSOR identified significant variation in the service delivery models in each DHA and variation surrounding induction and c-section rates. While this variation may be acceptable/appropriate, RCP could review and confirm if there are thresholds that must be met in each DHA (i.e. need to confirm where consistency across providers is required).
6. **Leadership Structure.** The role for Program Directors (Administrative and Medical) needs to be reviewed and confirmed.
7. **Define and Agree on the Overall Authority of RCP.** Need to confirm role and authority of RCP regarding enforcement of provincial standards.
8. **Attention to Data Collection Needs.** Continue with plans to conduct an audit in 2007 and consider more regular audits in future to support consistent and accurate data collection processes. This will ensure good data for evidence- based care planning and perinatal research and may result in fiscal efficiencies for the health care system.

Nova Scotia Breast Screening Program

OVERVIEW

The Nova Scotia Breast Screening Program (NSBSP) was established as part of a joint national initiative. Nova Scotia was the fifth province to provide an organized breast screening program. It began in 1991 as a single pilot in Halifax modeled after the program in British Columbia. The NSBSP now has a strong presence in all DHAs. There are currently nine screening sites across the province (three mobile and six fixed) and four interpretation sites. Two more fixed sites are scheduled to open this year. All sites are accredited by the Canadian Association of Radiologists and meet the minimum standards for inclusion in a quality screening program.

The NSBSP was developed to assist in the early detection of breast cancer by offering women information on breast health and access to mammography examinations. The vision of the program is to provide high quality, standardized mammography access in a timely basis; to provide effective patient navigation and assessment services to assist and educate women; and to assure appropriate follow up of women who have abnormal mammograms on screening through diagnostic workup in accredited workup centres before consideration of surgical alternatives.

The target population for the program is women aged between 50-69 years, while women over 40 are accepted. The goal is to reduce cancer deaths by maximizing early detection and ensuring equitable access to breast screening services for women in the target population. It is estimated that 70% participation by the target group is projected to prevent 30% of deaths in 10 years. Early detection also significantly reduces the need for and cost of subsequent treatment and intervention, as well as reduces pain and suffering. Screening is done in otherwise healthy women with no signs or symptoms to promote early detection, and initiate earlier treatment which results in a better outcome (fewer deaths).

Specific objectives of the program include:

- Increasing first time recruitment to 70% of the target;
- 100% attendance for re-screening;
- Timely reporting of results;
- Adoption of best practices for all aspects of breast screening services; and
- Development and maintenance of a provincial database for Nova Scotia.

The NSBSP provides central coordination, education, information, data collection and analysis. It is also the link to follow-up surgical and post-surgical care for women with malignancies.

The NSBSP leverages a two-step process. The first step focuses on the identification and recruitment of the target population. This is done by letter, physician referral or self referral. The second step is the screening visit, which includes a mammogram of both breasts, a clinical breast exam and the provision of educational materials. Results are sent to the patient and her physician within 14-30 days of the visit. If the result is normal, the woman will be contacted for her next screen in two years. If the result is abnormal, further assessment will be coordinated by the NSBSP.

The program provides an administrative infrastructure including medical/clinical and education expertise, a program-specific database, and monitoring/analysis of data to guide program development.

The program has experienced significant growth between 2000 and 2005.

- Booking and registration clerks — 4.8 to 8.3 *(Increase of 73%)*
- Screens — 35,262 to 50,896 *(Increase of 44%)*
- Bookings — 47,518 to 123,089 *(Increase of 160%)*
- Abnormals requiring further follow up — 2,126 to 2,844 *(Increase of 24%)*

Some of the key services provided by the NSBSP include:

- Central booking (1-800 number) for screening and diagnostic mammograms which results in better continuity of care and higher retention of patients.
- Coordination of breast screening program.
- Mammography examination of breast tissue by x-ray to detect non-palpable masses or lesions. Leads to early detection and reduces the number of premature deaths. Includes:
  - Screening mammography: Rapid volume, two view, no radiologist present, to identify cancer in women with no symptoms; and
  - Diagnostic mammography: Two view under guidance of radiologist to evaluate symptoms and assist in diagnosis, determine significance of lesion.
- Provincial program database (maintenance and reporting).
- Direct and indirect support of district providers through development of standards, guidelines, and policies, and access to medical and education expertise. Includes:
  - Development and implementation of clinical practice guidelines (per National Committee) to ensure standardized, evidence-based, high quality care across Nova Scotia; and
  - Development and implementation of quality standards for radiology – minimum volume of screen reads per year (2,500 in program vs. 480 national mean).
- Patient navigation via the formalized Navigator role to assist and guide physicians and women with abnormal breast detections efficiently through the medical system.
- Program evaluation.
- Patient education.

MANDATE

The NSBSP was established in response to an identified serious health issue. Its mandate is:

- To provide cost effective breast screening for Nova Scotian women aged 50-59 (who numbered approximately 100,000 in 2001).
- To develop standards, guidelines and policies to support a decentralized model of breast screening at multiple sites throughout Nova Scotia.
- To monitor and evaluate dissemination, uptake, application and outcome of standards and guidelines.
- To review the delivery of certain clinical services.
- To provide continuing education for professionals and general education to the public.

The NSBSP works closely with other provincial and national committees and organizations in the fulfillment of its mandate. These include:

- National Committee on Breast Cancer Screening
- Clinical Practice Guidelines Writing Committee
- National Database Committee
- Technical Database Committee
- Expert Advisory Mammography Committee
- Canadian Association of Radiology Accreditation Committee
- Canadian Breast Cancer Foundation

- Run for the Cure
- Canadian Cancer Society
- Canadian Breast Cancer Initiative
- National Committee for the Canadian Breast Cancer Screening Initiative
- Canadian Breast Cancer Network
- Health Canada

The program enjoys close ties with all DHA coordinators and is well-networked into other provincial programs. The NSBSP adheres to all of the current provincial program mandates.

DOH Mandate for Provincial Program	Adherence to Provincial Program Mandate
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers. Recommend service delivery models	✓
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	✓
Implementation Support. Work with provider organizations to ensure uptake	✓
Evaluator. Participate in program evaluation	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Advisor to the DOH

NSBSP maintains a provincial database and collects and reports provincial statistics on breast health and screening. This includes tracking wait times, monitoring and analyzing data to guide program development; and participating in the development of national and provincial standards for breast screening.

Advisor to Care Providers

Participants in the NSBSP are actively involved at provincial, national, and international levels with advisory groups, committees, expert working groups, survivors' networks, etc. They are the authors of scientific presentations and publications and participate as national accreditors for the Canadian Association of Radiologists. NSBSP rounds are conducted regularly with screening team members.

Standard Setter

NSBSP is responsible for identifying, developing, reviewing and supporting the dissemination of standards of care based on best practice. These include:

- Standards and clinical practice guidelines for the care and treatment of breast cancer are developed according to national standards.
- The Patient Navigator position helps to ensure implementation of these standards by working closely with family practitioners.
- Standards for screening and diagnostic mammography.
- Standards for stereotactic needle core biopsy.
- Protocols for surgical and post-surgical care.

The program has required and maintained consistently high standards for mammography, ultimately ensuring national accreditation of all screening sites (both fixed and mobile).

Educator

NSBSP is responsible for developing education and communication strategies and material to support awareness and dissemination of standards and best practice. The program has pursued a population health/well woman approach to screening. The following points outline NSBSP's activities to support the educator role:

- NSBSP provides continuing education for professionals regarding breast health and screening.
- NSBSP develops and provides the most current information on early detection of breast cancer to all women at their screening visit.
- The Pink Rose Project, a component of the NSBSP, is a system of information and guided support developed to assist the patient diagnosed with breast cancer. It is a collection of written information assembled into a kit provided to all women with an abnormal screen. The program has been well-received and surveys indicate a high patient and physician satisfaction with the materials.
- The Patient Navigator has also been a high-value educational resource. The Patient Navigator works closely with women and their physicians prior to diagnosis and combines education with clinical practice guidelines to ease patients through the process. The introduction of this position has helped improve retention rates and reduce time to diagnosis by half. It has also greatly improved both patient and family practitioner satisfaction with the process by ensuring better continuity of care.

Monitor

NSBSP is responsible for monitoring adherence to approved standards. This is accomplished by regular monitoring and reporting of screening data. Four mechanisms are used to monitor. These include:

- Radiologists' Reports include abnormal detection rates, cancer detection rates and positive predictive values;
- Report of provincial averages for benchmarking purposes;

- Annual performance reports for fixed and mobile sites; and
- 10% of mammograms are formally blind double reads (independently reported by two radiologists). 5% more are unofficially double read.

Implementation Support.

NSBSP is responsible for providing support and resources to assist organizations with the update of standards and best practices.

Program Evaluator.

NSBSP is responsible for participating in and supporting the evaluation of how the program is meeting the mandates and objectives established. This is done by monitoring activities (as described above) and through geographic information systems to evaluate service provision relative to need and planning to address inequities.

PROGRAM OPERATIONS

DOH Operational Guidelines for Provincial Programs	Alignment with Guidelines
Authority	✓
Legal status	✓
Liability	✓
Host organization	✓
Human resources	✓
Financial reporting	✓
Reporting and approval of health systems standards	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

CHALLENGES/BARRIERS

- Lack of control over clinical staffing. The Program relies on budgets and staffing which are outside of its control (e.g., hospital technologists and equipment, fee for service physicians).
- Disincentive for radiologists to participate. The professional fee for screening is lower there creating a potential disincentive for radiologists to participate. However, new technology allows for batch reporting, which is starting to reduce the disincentives.
- Inadequate control over quality of radiologists' performance. No consequences for consistently poor performers.
- Regional ownership of mobiles. As the schedules for mobile screens are determined regionally, there is a perception of inequitable services and inefficient use of resources. GIS mapping is now being used to better deploy mobile units.

- Increase % target population screened (overall 43% although varies by district).
- Increase screening capacity. Would like to screen all 50-69 with proper follow up.
- There exists a culture clash with CCNS. NSBSP focuses on detection and follow up and generally avoids the focus on disease. The Program also adopts a more population health approach. The Program is seen as "diagnostic" as a way to reduce fear and anxiety.
- Difficult to compare with other countries that are nationally funded. There are 10 programs in Canada. It would be more efficient to have a single, national program but not feasible where health care is under provincial jurisdiction. Provinces do collaborate and meet nationally, and are working to centralize data and make collection more uniform.
- Infrastructure and equipment needs to be brought up to standard. For example, an upgrade from analog/film to digital is required as this can results in increased capacity by 50-100% (faster to read, fewer re-dos). As a result, historical issues related to radiation dosage in mobile vs. fixed units will be resolved by replacement and standardization of equipment. This transition will require a five year rollout planned. A plan is currently in place to address equipment and infrastructure needs.
- Ongoing engagement of physicians and RNs in the community is difficult. It is a challenge to keep physicians supporting the program. In addition, a shortage of radiologists whose time is precious (no protected time in peripheral centres) limits many radiologists ability to participate.
- Inadequate research funding to gather evidence necessary to support requirement financial and supportive investments.
- Additional funds for screening is required. Currently, limited financial resources, outgrown infrastructure, insufficient program management capacity, and lack of administrative resources are key operational challenges. The Medical Director is funded only 1 day/week

RELATIONSHIPS

- NSBSP maintains relationships with key organizations and stakeholders including provincial, national and international groups.
- NSBSP fosters communication and collaboration with participants including DHA coordinators, Technologists, Radiologists, Pathologists and Surgeons.

RESOURCES

- The NSBSP is funded by the DOH. $800,000 in non-portable funds which allows for planned expansion, protects from resource reallocation at the host facility and ensures the Program follows provincial policy and mandate as opposed to the more limited objectives of the host organization.
- The program has grown in spite of funding constraints although there is some concern that it has outgrown its infrastructure.

STANDARDS

- See above.

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH

- DOH is seen as committed to, supportive of, and involved in the NSBSP. The DOH is responsive to program needs although there is some frustration regarding capital funding, especially for computer equipment (no replacement or upgrade since 1991).

PARTICIPANT IDEAS/SUGGESTIONS

The accomplishments of the NSBSP are as follows:

- Improved patient outcomes. Provincial outcomes have been identified to be in the top percentile. The program has resulted in a reduction of surgery from 25/1,000 screens to 7/1,000 screens. This represents a 72% reduction. In addition, the Program has achieved a 89% retention rate where the national target is only 75%. The Program also supports a benign to malignant ratio for open surgery (1:3.9) that is lower than the national target (2:1). This reflects reduced surgery rates. Participation in some regions is close to meeting the national target of 70%.
- The Programs minimum radiologist screens of approximately 2,500/year exceeds the national mean of 480/year and typically results in an improved quality of read.
- Established high profile nationally and provincially. The program is considered to be on the leading edge and a credit to Nova Scotia. It is described as a well organized program that has shown leadership nationally and which benefits the population overall
- Introduced innovations that have been copied in other jurisdictions, e.g. patient navigator role, clinical practice guidelines.
- Developed a state of the art database and tracking tool. Includes centralized booking, standardized booking, follow-up profiles on abnormal screens, and monitoring of retention rates.
- Active role in professional education for medical students, GPs, and ongoing staff education.
- The NSBSP is the first program to encompass all mammography – screening and diagnostic.
- Screenings completed as part of the Program as opposed to separate hospital-based tests result in a cost savings and improved patient outcomes. For example, Bridgewater is estimated to save $55,000 per year and Kentville estimates a Year 1 savings of $84,000.

REVIEW RECOMMENDATIONS

1. **Confirm Linkages with Women's Health.** Breast screening programs in other provinces are formally developed under a Women's Health umbrella which helps to identify breast disease as a health issue beyond breast cancer (which is only identified in a minority of the women screened). One way to promote this larger view would be to formally link the program to the IWK.
2. **Increase Collaboration with CCNS.** NSBSP should investigate opportunities for enhanced collaboration with CCNS (particularly the Cervical Cancer Screening Program). While the two organizations have different philosophies and cultures, their mandates are closely related and there may be advantages gained through a closer working relationship. The appointment of a new head of CCNS may present an opportunity for closer collaboration. It must be emphasized, however, that the NSBSP provides an extremely good service on a relatively small budget. The participants are very dedicated, highly motivated and passionate about the program. Any changes need to be sensitive to these issues.
3. **Confirm Leadership Structure.** The role for Program Directors (Administrative and Medical) needs to be reviewed and confirmed. Ensure allocation of resources for roles matches expected time to fulfill role.
4. **Define and Agree on the Overall Authority of NSBSP.** Need to confirm role and authority of NSBSP regarding enforcement of provincial standards. The program currently lacks authority for non-compliance and its role and accountability as a provincial program are unclear. DOH needs to clarify expectations.

Diabetes Care Program of Nova Scotia

OVERVIEW

The Diabetes Care Program of Nova Scotia (DCPNS) was established by the DOH in 1991 as a non-profit agency under the *Societies Act*. The program is funded by the DOH and is endorsed by the governing bodies of health care disciplines directly involved in the provision of services to people with diabetes. This program promotes improved standards of care for people with diabetes, improved continuing education for health care professionals directly involved in the delivery of diabetes care and education, and the collection and analysis of information related to diabetes and diabetes care in Nova Scotia.

According to the most recent figures, diabetes has been diagnosed in approximately 7% of the adult population (age standardized) in Nova Scotia. This percentage varies across the District Health Authorities (DHAs) with the highest rates reported in South West Nova DHA (DHA 2) and Cape Breton Regional DHA (DHA 8). This new figure (7%) represents an absolute increase of 8% in the prevalence rates since last reported for 2002/03. The increase in prevalence is somewhat expected due to the aging of the Nova Scotia population and the chronic nature of this condition. Inactivity, poor nutrition, and overweight/obesity also contribute to the growing prevalence numbers. Prevalence is noted to increase with age for both sexes, peaking in the 70-79 age group with one in four people in this age group having a diagnosis of diabetes. The rates decrease slightly in the oldest age group 80+. This may be the result of mortality associated with diabetes or increased co-morbidity at older ages. Aging of the population, along with increasing rates of inactivity, poor nutrition and overweight/obesity, are linked to the projected doubling of the provincial prevalence by 2025. Strong support should be given to risk factor reduction through both targeted and population health initiatives aimed at the broader determinants of health.

Program goals:

- To assure Nova Scotians with diabetes access to advances in diabetes care as soon as possible after they become available. This requires the application of recent advances in diabetes research to daily clinical practice.
- To ensure that the same high standard of diabetes care, including patient education, is available throughout Nova Scotia.
- To maximize the prevention of complications of diabetes. In those who already have complications, to delay their progression by instituting appropriate interventions.
- To develop and promote continuing education for physicians and other health professionals involved in diabetes care.
- To develop and promote cost-effective delivery of diabetes care.
- To promote self-care leading to better health.
- To prevent diabetes mellitus in persons at risk.
- To prevent the development of diabetes through collaborative partnerships aimed at the determinants of health.
- To identify gaps in the provision of diabetes care.
- To develop a means of measuring outcomes for all of the above.

MANDATE

The mandate of DCPNS is to promote improved quality of care for people with diabetes, improved continuing education for health care professionals directly involved in the delivery of diabetes care and

education, and the collection and analysis of information related to diabetes and diabetes care in Nova Scotia. Working closely with all Diabetes Centres in the Province, this DCPNS advises the Ministry on service delivery models; establishes, promotes, and monitors adherence to diabetes care guidelines; provides support, services, and resources to diabetes health care providers; and collects, analyzes, and distributes diabetes-related data for Nova Scotia.

DCPNS meets most criteria of the 2004 Provincial Program Model in terms of program mandate. Since its inception in 1991, DCPNS has been operating with a Program Manager under a dual reporting relationship to the program's board of directors and the Acute and Tertiary Branch of the Department of Health.

DOH Mandate for Provincial Programs	Adherence to Provincial Program Mandate
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers. Recommend service delivery models	✓
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	✓
Implementation Support. Work with provider organizations to ensure uptake	✓
Evaluator. Participate in program evaluation	×

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Advisor to the DOH

The program reports to the DOH as requested and the operational relationship with the Acute and Tertiary Care Branch is described as generally good. However, there are opportunities to further build relationships between the DOH and the Program to develop a more collaborative working model necessary to address the needs of this growing chronic disease.

Advisor to Care Providers

The program provides standards of care, clinical practice guidelines and general information to providers. In 2004/2005 the program focused on application and implementation of the *Canadian Diabetes Association (CDA) 2003 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada.* This was accomplished through medical education events, and the review and revision of DCPNS resources and diabetes management manuals for health professionals.

Standard Setter

The program is considered a national leader in the setting of diabetes standards. These standards have been developed using the DCPNS expert subcommittee structure and national sources. Other activities include:

- Management of the DCPNS registry,
- Guidelines for the care of special populations such as pregnant women with diabetes and children and adolescents with diabetes
- Establishment of the Long Term Care Subcommittee, and
- Pilot of the revised DCPNS survey process in Annapolis Valley Health Authority during 2004.

Educator

Through its role as advisor to the DOH and care providers, DCPNS fulfills this mandate in the most part as described above. There continues to be a need to expand initiatives with Primary Health care initiatives.

Monitoring, Implementation Support, and Evaluation

These three areas continue to be a challenge for the program as there is no existing accountability framework requiring DHAs to comply with standards set by the program. Only 15 of 38 Diabetes Centres use the DCPNS registry for collection of information. This registry has been recognized nationally as a successful resource in diabetes data management. However, due to competing priorities, DHAs do not consistently provide the resources required to use the registry. Where the registry is not used, data are captured using a paper-based system, which is not as comprehensive as the registry and results in increased workload associated with data entry. As a result, reporting to the DHAs not using the registry is limited as a result. The program encourages all DHAs to implement the database but in the absence of clear authority this is the extent to which the program can influence the DHAs.

The DCPNS Survey Process of diabetes services is currently undertaken as a voluntary exercise and must be requested by the DHAs. As a result, monitoring of practices, approaches, and uptake of guidelines and recommendations at the DHA level (outside the survey process) is sporatic at best and often based on quick surveys or phone contact. The DCPNS survey is now solutions focused and supported by an onsite advisory group. This increases both the reach of the recommendations and ability to affect change.

PROGRAM OPERATIONS

In 2006, DCPNS has been encouraged by the DOH to dissolve its board and form a Program Advisory Council, as required by the accountability framework. While the program has agreed in principle, the board has been reluctant to make the change as it felt the Program has operated effectively with the current structure. The DOH should provide clear direction and timelines regarding when the Program Advisory Council is implemented and to ensure the program adheres to all elements of the Provincial Program Model.

The provincial accountability framework sets out operational guidelines for each provincial program as indicated below. Where concerns were identified for this program further detail is provided below the table.

DOH Operational Guidelines for Provincial Programs	Alignment with Guidelines
Authority	✓
Legal Status	×
Liability	×
Host organization	×
Human Resources	×
Financial Reporting	✓
Reporting and Approval of Health Systems Standards	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Authority

The program reports that, under the new accountability framework, its autonomy has been reduced in day-to-day decision making, including human resources and administrative decisions. The absence of detailed operational policies for all provincial programs has resulted in these types of inconsistencies. There is a resulting lack of clarity both within the program and the DOH as to "who does what".

Legal Status

Nova Scotia provincial programs are intended to be programs administered under the Department of Health. They are not to be separate legal entities.

Contrary to this requirement of the Provincial Program Model, the DCPNS continues to operate as a separate legal entity and is incorporated under the *Societies Act as this was the original request by the DOH.* The program is proceeding to dissolve its board and comply with this requirement, but progress is slow for various reasons.

Liability

This requirement attempts to mitigate the responsibility of the DOH and the host organization regarding claims resulting from program operations. Because there is no formal MOU with CDHA, these liability concerns have not yet been addressed. This is expected to be addressed with the signing of an MOU tentatively scheduled for April 2007.

Host Organization

The DOH has not entered into a contract or Memorandum of Understanding with Capital Health as required by the provincial program model. This has created difficulties for the program in securing adequate space and other support required to operate this program. This is not an issue unique to the DCPNS and has been identified by other provincial programs. There is a draft MOU under development by the DOH. Finalization of the MOU is urgent, in order for the program to comply with this mandate.

Human Resources

The provincial program model calls for each leadership team to include a clinical advisor. The DCPNS has identified the need for four clinical advisors to meet the needs of managing diabetes in both urban and rural settings. In addition to a pediatric endocrinologist and an internist, the DCPNS is in the process of appointing a GP to one of these positions. It was noted that relationships between the QEII Department of Endocrinology and the program has hindered co-programming and has delayed involvement of an adult endocrinologist in a clinical advisory capacity to the program.

While DCPNS continues to be a separate legal entity, it hires staff through Capital Health, and these staffs are recognized to be non-union staff of the hospital and receive all the benefits of the hospital staff.

CHALLENGES/BARRIERS

Need Increased DHA Participation in Program Planning

- DCPNS has been attempting to solicit a DHA VP Community and a CEO for their board with no success. This stronger link with the community is essential to the program's success in working with the DHAs.
- There is no two-way communication link with DHA leadership. Standards are provided to the DHAs and the Diabetes Centres are staffed but there is no requirement for standards to be implemented or for communication with the program.

Need Diabetes to be Included in Provincial Chronic Disease Management Strategies

- While DCPNS has been involved in all discussions around both a chronic disease prevention strategy and the chronic disease management strategy, provincial chronic disease management strategies have not sufficiently addressed diabetes. Opportunities to further utilize DCPNS to provide a leadership role in building a chronic disease management strategy should be investigated.

Lack of Administrative Communication Across Provincial Programs

- There is lack of communication amongst provincial programs other than informal, ad hoc discussions. While some effort was made by the DOH two years ago to establish formal opportunities to discuss common administrative issues and successes, this has not continued. As a result, there is a lack of knowledge between programs regarding what each one is doing and the challenges that they face.

Relationship and Responsibilities with Host Organization is Unclear

- An MOU needs to be signed with CDHA as host organization. DCPNS needs to be further involved in the development of that agreement.
- Capital Health often holds up purchases approved by the program. For example, if the program needs equipment and has approved the expenditure, but Capital Health has a general hold on all new purchases, then the requisition will not be processed. The role of the host organization is to administer independent, non-portable funds for the program; however, this is clearly not well understood. Similarly, in years when there has been a program surplus, it has been applied to the CDHA bottom line, which is contrary to the philosophy of non-portable funds. This has resulted in a practice by DCPNS of spending all available resources prior to fiscal year end.
- The technology infrastructure of Capital Health makes it difficult for local Diabetes Centres to use the database application. CDHA provides limited bandwidth for DCPNS in the Halifax and surrounding areas, although other services in the district have been able to obtain better access. This makes it difficult for Diabetes Centre staffs to use the DCPNS database, resulting in paper records being sent to the program office for data entry, and limiting the amount of information captured.

Program Physical Space is Inadequate

- While national grants are available for new projects, there is no space for additional staff. Program development is limited by space availability in the Bethune Building of QEII.

Industry Funding Allocation Promotes Friction Between Physicians and Departments

- Currently industry funding goes directly to physicians rather than programs. As a result, in some situations, this creates friction amongst a few physicians and the program. This becomes more problematic when funds are allocated to projects which are in direct conflict with program priorities. The DOH is encouraged to develop clear policies regarding industry funding to avoid this conflict.
- The relationship with the Division of Endocrinology has been strained and often their priorities appear to be in conflict or direct competition with the provincial program.
- Physician advisors have not been compensated consistently for their involvement in the program. This matter needs to be addressed to ensure that physician advisors remain available to the program.

Lack of Data management as a Priority Within Provincial Program Model

- DCPNS has the most extensive diabetes database in Canada. One of the goals of the program is to conduct data analysis and publish results nationally in peer reviewed journals. However, this is limited by a lack of funds for data analysts and other supporting staff. The DOH needs to make funds available for this purpose, in order for the DCPNS to accomplish this important goal.
- To date, only 17 of 39 Diabetes Centres in Nova Scotia have implemented the DCPNS Registry. Data reporting for the 17 participating centres is much better than for the others who rely on a paper based system. While DCPNS encourages all DHAs to implement the database, in the absence of clear authority this is the limit to the influence the program can have on DHAs.

RELATIONSHIPS

- **Nova Scotia Diabetes Centres**. As reported by program leadership, the DCPNS relationship with 39 Diabetes Centres across the province is strong. The program works hard to ensure that there is a consistent standard of care in all areas of Nova Scotia.
- **Cardiovascular Health, Reproductive Care, and Foot Care.** Good relationships and strong collaboration with health providers in these specialties continue to advance care for patients.
- **Canadian Diabetes Association**. The DCPNS is well integrated with the Canadian Diabetes Association and its national and international counterparts, and is recognized as a leader in setting standards for diabetes care. DCPNS has undertaken a number of initiatives to standardize care (standard documentation and statistics keeping forms), promotion of team based care, guidelines for special populations, survey/audit process, and build a comprehensive database. However, the program lacks sufficient infrastructure and resources to effectively manage these data. A higher priority needs to be given to data management by the DOH.
- **Host organization.** The relationship between DCPNS and CDHA is tenuous. The absence of an MOU between the DOH and CDHA has resulted in the program being subject to the priorities of CDHA rather than those of the DOH. The operational priorities of CDHA are often imposed upon DCPNS in the absence of an agreement that would clearly set out expectations.

RESOURCES

- There is a perception that diabetes receives a low priority for provincial program funding.
- Additional resources are required for pilot projects in DHAs that could then be rolled out across the province.

- While the program has carefully managed its budget and ended some years in a surplus position, this surplus has not been returned to the program but rather has been applied to the CDHA health system as is government policy.

- In order to advance evidence-based practice across the DHAs, and to establish the program as a national leader in diabetes care, additional resources are required for data management and analysis.

- The DCPNS has not been able to take advantage of national funding to support program development because it is constrained by its physical space and cannot accommodate the associated staffing increases.

STANDARDS

DCPNS clearly understands its role in the development of standards for diabetes care. However, although standards have been developed and furnished to Diabetes Centres across the province, there is no mechanism by which the DCPNS can ensure implementation, or monitor adherence to these standards.

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH

- In spite of these challenges, DCPNS feels well supported by the DOH.
- Primary health care and Health Promotion and Protection relationships need to be strengthened by the creation of formal linkages.
- Expectations and communication from DOH have been inconsistent. Interest in provincial programs has fluctuated in the past and intentions at times appear unclear.

PARTICIPANT IDEAS/SUGGESTIONS

- Program needs greater autonomy in day-to-day decision making (e.g. human resources planning, marketing and communications, data management).
- Increased communication amongst provincial programs and the DOH.
- Increased resources for data management infrastructure.
- Increased space for program staff.
- Increased resources for pilot projects in DHAs.
- Responsibility for budget should be formally designated to program. CDHA role should be limited to host organization.
- Compensation for physician advisors needs to be addressed.

REVIEW RECOMMENDATIONS

1. **Confirm Legal Status.** The organizational structure for this program does not meet the Provincial Program Model as defined by DOH. We understand that this is in transition but feel it is important to note the discrepancy and reinforce recommendation to either (a) proceed with the formal dissolution of program as an entity with legal status and move to the model or (b) articulate why this should not occur.
2. **Leadership.** Ensure that program leadership, clinical advisors and DOH work in collaboration for program planning and priority setting. This increased degree of collaboration and communication is expected to be supported by the transference of the board to a program advisory council.

3. **Confirm Relationship with Endocrinology.** Recommend that DOH become involved in resolving ongoing difficulties with the Division of Endocrinology to facilitate the appointment of a clinical advisor. DOH should also investigate issues related to industry funding.
4. **Finalize Host Organization Memorandum of Understanding (MOU).** Recommend that an MOU be immediately established with Capital District Health Authority that clearly identifies expectations and responsibilities of the host organization and its relationship to DCPNS.
5. **Increase Attention to Data Collection Needs.** Recommend that all DHAs implement the DCPNS registry to improve program planning and data reporting both centrally and for DHAs.

Nova Scotia Hearing and Speech Centres

OVERVIEW

The Nova Scotia Hearing and Speech Centres (NSHSC), was established in 1963 as a not-for-profit society under the *Societies Act*. The program is governed by a volunteer board of directors and operates 29 centres. All sites provide speech-language services and 14 include both speech-language pathology and services. This program has developed a strong infrastructure to support the provision of direct services.

The mission of the Nova Scotia Hearing and Speech Centres, in partnership with its clients and communities, is to provide effective, efficient, comprehensive and quality speech-language and hearing services, encompassing prevention, promotion, identification, intervention and education. Their vision is to be an internationally renowned centre of excellence providing speech-language and hearing services to Nova Scotians when and where they need them.

The program provides direct speech-language pathology and audiology services throughout Nova Scotia. The program sets standards for clinical practice and evaluation, and has developed new programs in response to the needs of the community, particularly for children under 36 months. NSHSC has met aggressive workload targets (24,704 audiology visits and 26,059 speech-language visits in 2004/05). The clinical work of the program is done by 35 full time equivalent speech-language pathologists and 23 audiologists. Through the provincial, standardized service delivery model, equal access to services has been enabled, an ability to re-allocate staff as required to ensure equivalent access, and staff are able to professional network to avoid professional isolation.

Some of the key services provided by the speech-language pathologists are:

- A full range of diagnostic and therapeutic services, across broad areas of speech, language, voice and swallowing, including group and individual therapy, home program materials and techniques and consultation services
- Specialty services and expertise in regional centers includes: Voice lab and clinic, Oncology Clinic, Traumatic Brain Injury Program, Neuromuscular Clinic, Stroke Rehabilitation Program, Alternative and augmentative communication consultation services, Autism assessment and treatment, Swallowing clinics, and Cochlear Implant Program.

Some of the key services provided by the audiologists are:

- Diagnostic activities includes: Hearing sensitivity measurement in all age ranges, Auditory processing ability testing, Newborn hearing screening, Testing and checking of middle and inner ear function, Special assessment of the auditory nervous system, Balance function testing.
- Rehabilitative activities includes: Assessing candidacy for hearing aid amplification, Hearing aid evaluations, Cochlear implant surgery evaluations and follow-up, Evaluation of other assistive listening devices, Counselling of patients and families.

MANDATE

The NSHSC's mandate is to provide speech-language services to all preschool children and adults, and hearing services to Nova Scotians of all ages. NSHSC is unique amongst other provincial programs in its role as a service delivery organization. This is done through the many hearing and speech centres located throughout the province. The program is a standards setter for prevention, promotion, identification, intervention and education for preschool children and adults. Services for school age children are provided by staff of the Ministry of Education.

The NSHSC complies with most of the requirements of the Provincial Program Model, however, there is some conflict between its role as standards setter and evaluator with its mandate to deliver direct care. Unlike the other provincial programs, the NSHSC sets standards for and evaluates compliance of its own service providers.

DOH Mandate for Provincial Programs	Adherence to Provincial Program Mandate
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers. Recommend service delivery models	✓
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	✓
Implementation Support. Work with provider organizations to ensure uptake	**n/a**
Evaluator. Participate in program evaluation	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Advisor to the DOH

The program reports to the DOH as requested and the operational relationship with the Acute and Tertiary Care Branch is described as good. This program operates much more autonomously than other provincial programs, partly as a result of its executive structure and partly as a result of its existence as a separate legal entity. There is some concern from the DOH that the Board prefers to remain operationally autonomous from the DOH despite the program funding coming from the DOH. Some tension is created by continuing discussion about the role and fit of the NSHSC within the Provincial Program Model, which may result in a reluctance to share all information freely.

Advisor to Care Providers

As NSHSC is a service delivery organization, staff in speech and hearing centres across the province are employees of the program and as such the program acts as an advisor to its own staff of care providers. Speech-Language Pathology managers participate on a number of advisory and program development committees including:

- Cardiovascular Health – Addressing development and implementation of integrated stroke strategy;
- Early Intensive Behavioural Intervention – Serving on 5-6 standing committees related to provincial implementation of this service;
- Early Learning Language Nova Scotia – Department of Community Services initiative – served on advisory board for developmental phase; and

- Clinical Staff sit on a number of advisory boards and committees related to stroke, head and neck oncology, dysphagia, early childhood development initiatives and wellness clinics.

The NSHSC Quality Assurance Program ensures that audiology and speech-language pathology staff use clinical practice guidelines based on best practice in all centres.

Standard Setter

NSHSC is involved in provincial and national standard setting initiatives. These initiatives include:

- Member, National Coalition on Noisy Toys
- Development of protocols for tinnutis, auditory processing and musicians' evaluation.
- Development of standards for evaluating balance disorders, defining categories of hearing loss, and providing earplugs to children with autism.
- Adoption of "PHASING", a treatment standards protocol for the provision of multiple speech-language treatment options for preschool children.
- Increased collaboration between speech-language and audiology departments to ensure cross referral.

Educator

NSHSC is well recognized as an educator provincially and throughout the Atlantic provinces. Recent education initiatives include:

- Nova Scotia Hearing and Speech has a formal affiliation agreement with Dalhousie University to provide clinical education for graduate students speech-language pathology and audiology. This relationship supports a high degree of success with recruitment.
- Nova Scotia Hearing and Speech in partnership with the Nova Scotia Community College has developed the first training program in Atlantic Canada for supportive personnel (Communication Disorders Technicians).
- Presentations and seminars, open houses and mall displays to professional and student groups with corresponding publications.
- School visits by audiologists during Speech and Hearing Awareness month to reinforce hearing conservation messages.
- Development of hearing and speech-language developmental milestones calendar for families.
- Provision of specialized training to health care professionals across the Atlantic provinces.
- Screening training for hospital staff by audiologists and technicians.
- Demonstrations to Early Childhood Educators (at preschools throughout Nova Scotia) in early language facilitation techniques.

Monitor

The program monitors its own adherence to established standards and conducts client surveys to assess the effectiveness of the program. Ninety-nine percent satisfaction was reported with the 2004/05 survey, however, wait times for preschool speech-language pathology services continue to be a concern.

In addition to internal monitoring, the program has been reviewed and achieved national accreditation. Accreditation reviews (site visits) occur every five years with interim standard reviews every 18 months, and ensure practice standards at or exceeding level of program peers. Standards for national accreditation are rigorous and apply to all provincial jurisdictions across Canada. NSHSC was granted a five-year accreditation in June 2003 – this is the maximum accreditation potential.

Implementation Support

The program is responsible for implementation of standards by its own staff in the program centres.

Evaluator

The NSHSC Quality Assurance Program ensures that audiology and speech-language pathology staff use clinical practice guidelines based on best practice.

PROGRAM OPERATIONS

This provincial program is different from other provincial programs in that its staff are responsible for the delivery of services in addition to the program being the standard setter. NSHSC is not technically consistent with the Provincial Program Model, which has resulted in close scrutiny of the program and an emphasis on non-adherence to program guidelines. While the issues have often been raised (particularly the legal status of the organization) there has been some reluctance by the DOH to formally resolve them. If it is a priority to have this program fit within the provincial program model, several actions need to be undertaken including;

- Enforce changes to NSHSC structure to bring it into compliance with the model;
- Revise the Provincial Program Model to allow for service delivery; or
- Recognize the program as an exception to the model and de-emphasize non-adherence.

Under the current provincial program model, NSHSC does not meet most operational guidelines.

DOH Operational Guidelines for Provincial Programs	Alignment with Guidelines
Authority	✓
Legal status	✗
Liability	✗
Host organization	✗
Human resources	✗
Financial reporting	✓
Reporting and approval of health systems standards	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Authority

The NSHSC manages its own day-to-day operations. The program follows a business planning cycle with the DOH but does provide detailed operational reports. There is concern from the program that some autonomy may be lost with closer alignment with the DOH. The program continues to maintain a significant reporting relationship to the society's board of directors outside of its relationship with the DOH.

Legal status

Contrary to the requirement of the Provincial Program Model, the NSHSC continues to operate as a separate legal entity and is incorporated under the *Societies Act*. The program is a direct employer of staff and assets are owned in its name. There has been little to no movement toward making the

changes necessary to come into compliance with this requirement, due largely to the unsettled issue of service delivery and the reluctance of the society board to restructure it's capacity from a governing body to one of a program advisory council.

Liability

This requirement attempts to mitigate the responsibility of the DOH and the host organization regarding claims resulting from program operations. NSHSC does not currently have a host organization. It leases its own space in a commercial building and administers its own budget. Liability of the host organization is presently not an issue.

Host Organization

At present, the NSHSC does not need to establish a relationship with a host organization for its administrative offices are located in a commercial building away from the QEII site. Services are delivered at speech and hearing centres within DHAs but no host agreements have been established. In some situations, the lack of clarity regarding these hosting agreements has led to some challenges however this is an area of further development for NSHSC through more direct relationships and communication with DHAs. Also, as this program is unique in its delivery of services, the staff, although located within DHAs are viewed as employees of "Halifax" which was noted in some situations to restrict their relationships with some DHA staff. Further development of relationships with DHAs needs to include amongst other factors, a provision of adequate practitioner space.

Human Resources

The NSHSC organizational structure includes a CEO, three vice presidents and nine associate vice presidents. The associate vice presidents are not full time and the incumbents carry clinical case loads where applicable. The leadership team reports to the NSHSC board of directors and to the DOH. This structure does not comply with the Provincial Program Model, which calls for a program manager and clinical advisor to form the leadership team. There is no clinical or medical advisor to the program and there is no Program Advisory Council. It is reported that with the split reporting structure between the board and the DOH there are instances where the board may be taking human resource decisions contrary to DOH policy and Ministry of Health direction.

The current organizational structure of the program appears to be "top-heavy" and this perception is shared by at least one DHA. The structure is not consistent with the provincial program model and appears to have evolved over time under the direction of the board. In addition Significant savings could be made by reorganizing to comply with the model.

Contrary to Provincial Program Model guidelines, the program is a direct employer of staff.

Financial Reporting

Funds are transferred directly to the program, which reports regularly to the DOH as part of the budget process. As a result, fiscal decisions are more directly the responsibility of the program executive and board.

Reporting and Approval of Health Systems Standards

Standards are annually reported to the DOH . There is little interaction with the Acute and Tertiary Branch of the DOH in this regard, and members of the executive team represent the program at planning tables.

CHALLENGES/BARRIERS

Clarity and More Transparent Operations Between the Ministries of Health and Education Related to the Provision of Speech-Language Pathology Services

- The current two Ministry model for speech and language pathology services results in a potential for a child to slip through the cracks. For example, there are gaps when preschool children transition to school services and then back to adult services. Under health, services are available throughout the year however under education, services are only available once the child becomes of school age and then only available during the school day or school year.

In addition, some specialized services may not be available in the schools. There is also a compensation and benefit disparity noted by NSHSC where a speech and language pathologist FTE in the Ministry of Education is equivalent to a 0.75 FTE in the Department of Health. The current and future impact of separate education and health speech-language services should be assessed and evaluated.

Lack of Hearing and Speech Services for Seniors

- There is no dedicated funding for seniors outreach to homes and nursing homes, which is especially critical for audiology. Many seniors go without service as they have difficulty traveling to program centres. The result is inadequate assessment and support for assistive communication devices.

Lack of Prevention and Promotion Initiatives

- There is a need for an increased focus on prevention and promotion. Most hearing loss and voice disorders are preventable; however, limited budgets have meant that there are few programs in existence.

Lack of Budget for Staff Continuing Education

- There have historically been inadequate funds for continuing education for staff, particularly in relation to new technology training. In order to address the need for continuing clinical education, the program has promoted internal skills development opportunities and in-house continuing education.

Lack of Access to ENT OR Time

- Lack of access to OR time for ENT can result in lengthy delays for cochlear implant surgery. Thirty two implants were done in 2005/06. There are currently 45 – 55 on the waiting list, and this is growing. Funding for these procedures is not sufficient to manage the waiting list. Lack of surgeons is not an issue as Halifax has two surgeons world renowned in this field.

Staffing and Human Resources

- A significant number of audiologists and speech-language pathologists will be retiring over the next ten years. Close affiliation with Dalhousie University has increased the number of trainees, however, there is some concern that this still may not be sufficient to deal with the anticipated turnover.
- Program administration has identified that a full time human resources specialist is required to address needs related to increased recruitment, and employment and benefits issues of unionized staff.

Aging Technology

- Technology for the audiology program is aging. There is no capital plan for replacement of equipment. Equipment is now replaced by necessity and only if approved by the DOH. There is concern that the critical need for replacement equipment may jeopardize the provision of certain services, and that without the acquisition of new equipment the program may be unable to offer the best standard of care.
- A client management system is needed to better manage delivery of care and monitoring of standards.

Lack of MOUs with DHAs

- The DOH has been reluctant to allow the NSHSC to enter into formal leasing arrangements, leading to uncertainty regarding space allocation. The DOH maintains that the DHAs are required to provide space and that leasing of space would be a double cost to the DOH. No formal MOUs exist between the program centres and the DHAs, which has increased the poor communication and a lack of understanding regarding expectations. Program leadership has developed MOUs/contracts with some facilities/DHAs for service/space expansion (namely IWK and South West Health) and is currently negotiating contracts for space and staffing for

restorative care beds in DHA 1 and 7. In 2003, the NSHSC leadership team requested meetings with DHAs for the purpose of providing an overview of service and discussion of issues of mutual interest. As a result, meetings with DHAs 1, 6, 7 and 8 were completed. This approach may again be leveraged to further develop open-communication and awareness.

Extensive Organizational Structure

- Then NSHSC organizational structure has been described as "top heavy" and different from most other provincial programs. For example, NSHSC has a CEO, 3 vice-presidents and 7 associate vice-presidents. While this structure may be required due to the service delivery nature of the organization, we highlight it only as being different as a detailed assessment of roles, budget and activities was not conducted.

RELATIONSHIPS

- **Nova Scotia Hearing and Speech Centres.** Internal relationships between the hearing and speech centres are described as good by the program executive. There are strong relationships between program staff and administration, however, communication between the DHAs and the program centres is poor. It is not understood how program centres should work with DHAs, which hinders access to services. There is a perception at the DHA level that the program is "Halifax centred".
- **IWK.** NSHSC collaborates with IWK on preschool children initiatives and recently expanded paediatric speech-language services including assessment for assistive communication devices and expansion of paediatric swallowing services.
- **Atlantic Provinces.** NSHSC collaborates with the other Maritime provinces to develop inter-provincial research and educational programs.
- **Host Organizations.** There are no MOUs between the NSHSC and DHAs where speech and hearing centres are located. This has led to some confusion regarding responsibility and accountability for program needs. For example, space is often inadequate but with no formal agreement, or solid understanding of expectations, there is little encouragement for the DHA to respond to requests for space and the program's need remain low priority. Communication gaps have also arisen between program centres and DHA staff.

RESOURCES

- **Financial.** The program feels generally well supported by the DOH regarding operational budget requests. Increases requested for 2006/07 total approximately $1,000,000 for the implementation of A Sound Start – the provincial initiative to address early identification and intervention. Additional funding has also been requested and provided for the implementation of a new Client Management System. At the time of the PHSOR, these increases had not yet been approved.
- **Equipment.** NSHSC has significant equipment needs which have not been funded by the DOH. In 2003 a foundation was formed to raise funds for equipment replacement and emerging technologies. However, to date success has been limited. The DOH will fund emergency replacement but this has been on an ad hoc basis. There is great concern that the critical need for replacement equipment may jeopardize the provision of certain services and that without the acquisition of new equipment the program may be unable to deliver the best standard of care.
- **Space.** Twelve thousand square feet is leased in Halifax, divided approximately evenly between a clinic and the program's administrative offices. The lease on this space is due for renewal in 2008. The administrative space appears generous and out of context in comparison with other provincial programs and with DOH and Ministry of Health priorities. Alternatives should be considered to this space in the context of any changes made to the administrative structure of the program. There are significant potential savings here that could be reallocated to service delivery.

STANDARDS

NSHSC continuously sets and measures standards for service delivery. This program is different from other provincial programs in that is responsible for policy, standards setting and delivery of services according to the standards set. To help ensure objectivity and reduce the perception of bias, the program participates with national counterparts in the development of standards. Standards are reviewed externally through the national accreditation process operated by the Canadian Accreditation of Service Programs (CASP).

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH

- The CEO feels well supported by the DOH.
- This program operates quite independently from the DOH, other than with respect to budgetary matters. The budget is authorized by the DOH and administered by the program and the society board. Significant variances require DOH approval. There have been some issues with respect to the timing of this approval.

PARTICIPANT IDEAS/SUGGESTIONS

- The capital equipment needs of NSHSC are significant and need to be addressed by the DOH. There is a legitimate concern that future service delivery may be affected if this does not happen.
- An HR specialist position needs to be added to the program
- In order to improve data collection, service delivery and program planning the client management system needs to be implemented.

REVIEW RECOMMENDATIONS

1. **Confirm Legal Status.** The legal status and organizational structure for this program does not meet the Provincial Program Model as defined by DOH. While arguments could be made to maintain the current structure, we feel it is important to note the significant discrepancy and reinforce recommendations to either (a) proceed with the formal dissolution of program as an entity with legal status and move to the provincial program model or (b) articulate why this should not occur. If rationale for keeping NSHSC in a separate model cannot be articulated, the following steps need to be taken:

    a. Recommend that the separate legal status of the organization be dissolved. The board of directors should become a Program Advisory Council and shift its membership from a community to a clinical focus with no operational governance accountabilities.

    b. Recommend appointment of a clinical advisor to the program.

    c. Recommend that the organizational structure be changed to reflect the Provincial Program Model. This change will be necessary step towards fulfillment of the provincial program mandate and important to appearances and receptivity in that model.

    d. Recommend MOUs between speech and hearing centres and DHAs be established to clearly set out expectations for the program and "host organization".

    e. The Provincial Program Model requires that staff be employed by the DOH. This change would eliminate the requirement for a full time HR specialist for the program and HR services would be provided through the DOH.

2. **Confirm Mandate.** Within the context of recommendation #1, we note that Hearing and Speech services are somewhat unique in that the delivery of these services across the age continuum cuts across different Departments within the government (Health and Education). This is seen by many in the field to lead to fragmentation of care, and quite different philosophies of care, as children enter the school system. While there is no clear precedent to suggest that this should be changed (e.g. models in all provinces have some degree of

fragmentation), we believe that Nova Scotia has a unique opportunity to move to a new model and develop one program on a province-wide basis. The current and future impact of separate education and health speech-language services should be assessed and evaluated If this is seen as desirable, then the move of the program to the Provincial Program model may be inappropriate (as this is within DOH). This also presents a challenge to the ministries involved to strive for increased collaboration and planning.

3. **Review Administrative Cost Structure.** The focus of the provincial program review did not allow for a detailed review of the administrative costs for this program but an initial high level observation suggests that the program has invested significantly in administrative costs and that this level of investment may be higher than necessary. Further investigation is recommended and savings can likely be accomplished through a reorganization of the executive structure. In addition, opportunities to outsource non-core services (e.g., payroll) should be investigated where these services could be provided more efficiently by a third party or host organization.

4. **Consider "Relocation" of Halifax clinic space and Administrative Offices.** NSHSC leases significant space for clinic operations and administrative offices. As identified previously, this needs to be reviewed to confirm if it is appropriate and as the existing lease expires in 2008, it is also timely.

5. **Capital Equipment.** Recommend that capital equipment needs be identified and addressed by the DOH. Failure to do so may affect service delivery and compromise delivery of the best standard of care.

Cardiovascular Health Nova Scotia

OVERVIEW

Improving Cardiovascular Outcomes in Nova Scotia (ICONS) established in February 1997, was one of the largest studies ever undertaken to document and improve cardiac care. Approximately 40% of Nova Scotians were known to die from cardiovascular disease, close to the national average of 38%. Seventy percent of Nova Scotians were known to have had one or more of the major risk factors for cardiovascular disease. ICONS aimed to determine whether the cardiac health of Nova Scotians could be measurably improved by employing an evidence based approach.

The study partners were the Government of Nova Scotia (Department of Health), Community Health Care Professionals (physicians, nurses, pharmacists), the QE II Division of Cardiology, QEII Health Sciences Centre, and Merck Frosst Canada Inc. (Patient Health Management Division). The budget for the study was six-million dollars over five years, contributed by Merck Frosst Canada Inc.

In March 2002 the ICONS research project ended and the DOH agreed to fund ongoing data collection and to be the custodian of the data. Between 2002 and 2004, the QE II Division of Cardiology and the DOH, in conjunction with stakeholders around the province led the transition of ICONS into a provincial cardiac program called the Nova Scotia Cardiac Advisory Council (CAC). The Cardiac Advisory Council comprised a group of stakeholders and was intended to implement and monitor standards of cardiac care.

Concurrently and independently, an integrated stroke strategy was being developed for Nova Scotia. Since cardiac and stroke health have much in common, there was consensus to include stroke in the mandate of the CAC. DOH supported the integration into a single program which has recently been re-titled "Cardiovascular Health Nova Scotia" (CVHNS). This integrated provincial program has been in place since the last quarter of the 2005/06 fiscal year.

In 2005/06 the DOH funded the South West Health Stroke Program to pilot the recommendations of the Nova Scotia Integrated Stroke Strategy. During the 2006 provincial election, the sitting government undertook to provide an additional $7,000,000 for province-wide implementation the stroke strategy over the next 4 years.

MANDATE

Goals, strategies and outcomes have been defined for the new expanded program. Several working groups are concurrently addressing different components of the program. The program has 4 goals:

- Promote accessible, comprehensive, high quality cardiovascular care through collaborative development of standards and service delivery models;
- Work with partners on initiatives to reduce the risk and burden of cardiovascular disease;
- Promote the ongoing development of cardiovascular health service providers; and
- Provide leadership in monitoring, reporting, and recommending improvements to cardiovascular health promotion and health care.

DOH Mandate for Provincial Programs	Adherence to Provincial Program Mandate
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers. Recommend service delivery models	✓
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	✓
Implementation Support. Work with provider organizations to ensure uptake	✓
Evaluator. Participate in program evaluation	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Advisor to the DOH

The program has acted appropriate as an advisor to the DOH. Information provided by CVHNS to the DOH has been the impetus for increased funding for the program. DOH support for cardiovascular health initiatives has increased since ICONS began in 1997.

Advisor to Care Providers

Through its Working Groups, the program has been developing best practice guidelines for stroke and acute coronary syndromes. Core activities over the next few years will relate to dissemination of guidelines and assisting care providers and DHAs to put guidelines into practice. The Program has also been working on improving the provision of cardiac data to the DHAs and assisting DHAs to utilize data to identify areas for quality improvement. The program is working toward funding part-time coordinators in the more rural DHAs to assist with local implementation of guidelines and to facilitate systems change.

Standard Setter, Educator, Monitor, Implementation Support, Evaluator

As it evolved from the ICONS project, through the Cardiac Advisory Council and subsequently to Cardiovascular Health Nova Scotia, the program has been a leader in data collection and standard setting across Canada. The development of provincial guidelines for stroke and cardiac care is underway. Nova Scotia is considered a leader in cardiovascular health research and planning as a result of the work of Dalhousie University, the QE II and the Heart and Stroke Foundation of Nova

Scotia and their contribution to the provincial program. The provincial program is well placed for continued success.

PROGRAM OPERATIONS

The operations of the program are consistent with the Provincial Program Model. The program currently includes a Program Manager, Part-time Stroke Coordinator, Administrative Assistant and four clinical advisors, in addition to data collection and analysis staff. The administrative and operational structures are expected to evolve further and the existing spaces for cardiac and stroke staff will be combined for program efficiencies. Continued leadership from DOH will be required in order to establish priorities, oversee planning and provide appropriate resources.

DOH Operational Guidelines for Provincial Programs	Alignment with Guidelines
Authority	✓
Legal status	✓
Liability	✓
Host organization	✓
Human resources	✓
Financial reporting	✓
Reporting and approval of health systems standards	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

CHALLENGES/BARRIERS

What are the challenges/barriers in fulfilling your mandate?

Priority Setting and Planning for Cardiac vs. Stroke Service Delivery.

The development of the stroke strategy made the business case for providing funding for stroke service delivery. As a result, the election promise of $7,000,000 over four years for stroke has been perceived by some that stroke is receiving more attention than cardiac. It is important to note that this funding is for service delivery (i.e., provincial implementation of the stroke strategy). Similar strategies are required to build the case to secure funding for improvements in cardiac health and service delivery throughout the province.

Lack of Standardized Service Delivery Models

The development, dissemination and implementation of evidence-based best practice recommendations must be a priority for CVHNS. A key priority will be to ensure adequate resources for the roll-out of best practices to the province are secured. CVHNS is recommended to build appropriate business cases to support resource requests.

Alignment with Capital Health vs. DOH

Perception within and outside of the program that provincial programs are really aligned with Capital Health and not with DOH. This was repeatedly identified as an issue amongst a number of provincial programs and thus should be an area of further dialog and discussion.

DHA Relationships Need to be Developed.

MOUs need to be completed with DHA regarding District Coordinator positions and expected deliverables. It should also be the responsibility of the DOH and DHA for defining planning and surveillance needs, and for the DOH to clearly communicate expectations for implementation of service delivery standards by DHAs.

Resources

A three year strategic plan was developed in October 2004 with supporting annual action plans with timelines outlining priorities for the year. While the CVHNS mandate has grown to be more than the original strategy of data collection, it was reported that funded of the operational budget has remained essentially the same for the 2002-2004 budget.

CVHNS believes that it is under-resourced as a provincial program considering the burden of vascular disease disease and its risk factors. The funding for the program remains similar to that during the transition years when only the costs of data collection were covered. More internal program resources will be required to meet the full provincial program mandate. CVHNS believes that funds need to be allocated for working groups and to compensate physician advisors and others for participating in groups. Fee-for-service physicians are reluctant to participate due to the poor compensation and the growing number of requests for committee participation. Some AFP physicians are reluctant to give more time because the new AFP agreement is FFS-based and does not allow for time spent on clinical administration. Physicians want to participate, but compensation issues could potentially impact development of the program.

Communication with Other Provincial Programs

There is no venue for provincial programs to come together regularly at an operational level. There are efficiencies that could possibly be identified across programs and resources that could be shared among programs such as epidemiological, communication and policy support.

Provincial programs all report data. A collaborative approach, such as one provincial "report card" might be useful. In addition, CVHNS should be better connected with Office of Health Promotion and Prevention and aligned with chronic disease prevention strategies.

Lack of Inclusion of Stroke Care in Restorative, Rehabilitative Care and Chronic Disease Management Strategies.

Definition of restorative care and rehabilitative care is not consistent across programs. Stroke has not been included in restorative care planning. They should know what is being planned, in order to share standards and ensure that stroke care is included in provincial rehab planning.

Lack of Coordinated Data Management Strategies.

Need to streamline data collection for cardiac. Data being collected exceeds what is required or used in planning and quality improvement processes. Clarity regarding what data is collected, with a clear plan for how it will be used should be established.

A process for collecting stroke data needs to be developed that incorporates the quality indicators recommended by the Canadian Stroke Strategy.

Need to develop a common and sustainable data collection, reporting and measurement process for the program. Different philosophies of data collection will need to be discussed. The cardiac data has been collected continuously on all relevant admissions since the inception of ICONS in 1997. With the addition of stroke surveillance and monitoring, alternate approaches to data collection may need to be considered with an opportunity for data collection synergies.

There may be opportunities to streamline the current data collection through linkages with MediTech, CIHI, or other through other collection means.

RELATIONSHIPS

- **Peers and Providers.** The program has relationships with: Canadian Stroke Strategy, Canadian Stroke Network, Heart & Stroke Foundation and Diabetes Care Program of Nova Scotia. The diabetes program relationship is new and reflects the common risk factors amongst both patient groups. Diabetes education has an excellent infrastructure throughout the province that could be of co-benefit for cardiac disease and stroke. CVHNS reports that the relationship is moving along well.
- **DHA's.** While there is a valuable linkage between CVHNS and the DHAs, there is an opportunity to further improve the communication. It was noted that there are relationships at the senior leadership level, but still opportunity to further develop relationships with operational and planning staff.
- **Continuing Care.** Need link/relationship to Continuing Care because of the need to better address the care requirements of disable persons living in the community.
- **Cardiac vs. Stroke.** As a result of the recently announced additional stroke funding, and the potential for more, there is concern stroke will end up being a bigger focus of the new program and that cardiac issues will be subordinated. At the time of this review, the Cardiovascular Advisory Council has met only twice since it expanded to include stroke and are starting to revisit priorities and how to best achieve full integration of the two. When asked about successes of the last year, stroke was quick to list them, including the pilot project in South West Health. Cardiac had none to mention. Because of the evolution of this program and recent expansion, attention is required to ensure collaboration between the program manager, consultants and clinical advisors. An effective, regular process for discussion and decision making is required to ensure all are appropriately engaged in program planning

RESOURCES

- Cardiovascular disease is among the leading causes of death but funding does not reflect that as a DOH priority.
- There is the sense that the new stroke funding may help address inequities but may not be sufficient to fully roll out an integrated stroke strategy.

STANDARDS

The program clearly sees its role as developing and monitoring the implementation of standards. Like other provincial programs, CVHNS does not have the ability to enforce compliance with standards. DHAs are still free to set their own priorities and approaches and as a result there is a lack of consistency across the province. The program hopes that monitoring and reporting the uptake of standards and outcomes, in the form of score cards will encourage improvements in care at the DHA level. There may need to be DOH leadership to put "teeth" into the surveillance such as linking funding for cardiovascular initiatives to deliverables and outcomes.

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH

- Expectations of DOH in terms of clearly communicating the role of program are not well understood. The program mandate is a moving target in terms of specific deliverables. It is clear that stroke and cardiac are coming together under one program, but specific deliverables for the combined program have not been clearly articulated. Given the current resources, a focus must be kept on the priorities established by the Advisory Council, if the program is to be effective. Recent inquiries from the DHAs through the DOH have included procurement of equipment for all DHAs which is a new area for this program.
- DOH provincial program framework was a move in the right direction in terms of providing guidelines for provincial programs.

- DOH does not lead communication between provincial programs aimed at enhancing administrative and planning efficiencies.
- Perception that DOH initiates leadership on development of programs but does not follow through with support. DHAs reluctant to buy into DOH promises. DOH "drops the ball".
- Always an increasing expectation from DOH despite same limited resources. A cardiac consultant is being hired similar to that for stroke which will help with the integration and priority setting, but further resources will be required in establishment of the program.

PARTICIPANT IDEAS/SUGGESTIONS

- Need for increased communication across provincial programs.
- Need for increased leadership from the DOH to facilitate further development of CVHNS.
- Need for assurance from DOH that priorities for stroke and cardiac will be addressed equitably.

REVIEW RECOMMENDATIONS

1. **Develop Framework for Defining Priorities.** Staff expressed some concern regarding the need to ensure that priorities for both cardiac and stroke care are articulated and resourced. Need to consider if funding needs to be designated to ensure that priority issues are appropriately resourced.
2. **Focus on Leadership.** Recommend increased leadership from DOH to ensure a smooth integration of cardiac and stroke teams. DOH needs to provide assurances that both are valued equally and priorities of each will be maintained.
3. **Confirm Expectations.** Recommend increased communication between DOH and program in terms of deliverables expectations. Operational management need to be more intimately involved in the planning process.

Nova Scotia Provincial Blood Coordinating Program

OVERVIEW

The Nova Scotia Provincial Blood Coordinating Program (NSPBCP) was created in January 2003 to support the safest and most appropriate management of blood products and their alternatives for the province of Nova Scotia. Prior to this the Nova Scotia Blood Liaison Committee was the advisory committee and by the end of 2003 the new program set out to operationalize that committee's mandate. The program as it is today was a test case for the provincial program mandate/structure developed in April 2004.

The mission of the program is stated as: *"The NSPBCP supports the health system by optimizing the safe and cost effective use of blood therapies and related products through a multidisciplinary, evidence-based approach. We accomplish this through utilization management, surveillance and quality assurance initiatives."*

The program was a response to the need to improve the quality and utilization of blood products in the province. Prior to this program being formed there was no formal process for managing blood products and the system consisted of Canadian Blood services distributing products to DHAs and tertiary facilities. The DOH received the invoice at the end of the year (believed to be a cost of $30,000,000), but had no involvement in the management or utilization of products. The program was initiated to ensure the quality of blood products and strive to contain blood and blood product costs.

This program is unique in Canada, with only British Columbia having a similar program. Nova Scotia has also taken the lead nationally by acting as the secretariat for the National Advisory Committee. Nova Scotia has taken national leadership in initiative development and has undertaken to develop a Provincial Contingency Plan for Blood Component/Blood Product Shortages in Nova Scotia which has also been shared with national peers. There currently is no national contingency strategy. Already Nova Scotia is gaining the attention of its national colleagues as a potential leader in national policy development.

The 2006/2007 business plan and budget document sets out funding requests of ~ $544,000 most of which represents staff salaries. Over the last two years the program has identified opportunities for several million dollars in savings through utilization management initiatives. For example, Intravenous Immune Globulin (IVIG) utilization was reduced by $1.125M in 05/06. This is only one example of an area where savings have been identified through this new program. This is significant in determining appropriate patient care as IVIG has the potential to be a limited resource as utilization throughout Canada increases exponentially.

There is a strong business case for investment in this program with potential utilization efficiencies. In addition, health outcomes and the quality of handling and storage of blood and blood products can be improved.

MANDATE

Program developed since the formation of the provincial program strategy. Program strategic plan reflects provincial program objectives.

DOH Mandate for Provincial Programs	Adherence to Provincial Program Mandate
Advisor to the DOH. Act in an advisory capacity to the DOH – Acute and Tertiary Care Branch	✓
Advisor to Care Providers.	✓

Recommend service delivery models	
Standard Setter. Develop draft standards	✓
Educator. Educate and communicate about standards and best practice	✓
Monitor. Monitor approved standards	✓
Implementation Support. Work with provider organizations to ensure uptake	✓
Evaluator. Participate in program evaluation	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

Advisor to the DOH

This program was developed to advise the DOH in management of blood and blood products. Since its inception in 2003, significant recommendations have been made, changes have been initiated and several million dollars in savings have been identified.

Advisor to Care Providers

The program has been successful at developing structures to address utilization management, surveillance and quality assurance initiatives. Program staff works with DHA labs, physicians and staff, to collect data and to develop and recommend strategies for safe transport and storage of product from regional to community sites, as well as appropriate usage including dosing.

Standard Setter, Educator, Monitor, Implementation Support and Evaluator

Work over the last two years has shown that there is significant wastage of product, concern over proper handling and transport, lab standards, and inappropriate non-label usage of product, all of which need to be addressed through provincial policies, standards and surveillance initiatives.

PROGRAM OPERATIONS

This program has been put in place since the provincial program model was established and, as such the operations of the program are aligned with the model. The program currently includes a Program Manager, Clinical Advisor, Lab Standards Coordinator, Transfusion Practice Coordinator, Utilization Management Coordinator, Database Coordinator and some support staff. As previously indicated there are significant efficiency opportunities to be realized by further investment in this program. The expansion of this program is currently limited by the human resources available.

DOH Operational Guidelines for Provincial Programs	Alignment with Guidelines
Authority	✓

Legal status	✓
Liability	✓
Host organization	✓
Human resources	✓
Financial reporting	✓
Reporting and approval of health systems standards	✓

Legend: ✓ **- meets most or all.** × **- meets few or none.** ◇ **- unknown, further info required**

CHALLENGES/BARRIERS

What are the challenges/barriers in fulfilling your mandate?

Lack of Accountability for Utilization

- The DOH pays for blood and blood products for the DHAs. The DHA's budget does not cover its blood needs; as a result there is little incentive for DHAs to comply with usage standards.
- Need to do further work developing utilization indicators (specifically for wastage) to identify further efficiencies. For example, in 2004/05 red cell wastage was estimated at 10.9% = $1,250,000. Strategies need to be developed to address this, and further analysis will be required. This is only one area where further work is needed.

No Compensation for Program Clinical Advisors

- Currently the clinical advisor is not compensated for participating in the program. The clinical advisor feels that enough time cannot be dedicated to the program while it also fulfills the national responsibilities that Nova Scotia has taken on. The 06/07 business plan recommends a 0.5 FTE clinical advisor but to date this has only been agreed in principle. Program would like to recruit into this position if funds could be confirmed.

Lack of Authority

- Provincial program has no authority for non-compliance. If DHAs do not meet standards, who holds the "hammer"? DOH?

Lack of Communication Between Provincial Programs and with DOH

- There is a lack of knowledge amongst program managers as to what is going on in other provincial programs. There is an opportunity to share learning experiences between programs (especially experiences of established programs with the new programs). There is a need for programs to consider all initiatives of provincial programs and the pressure that this is putting on DHA's. A more coordinated approach (or at least awareness) could assist with DHA buy-in and could help to reduce the excessively large number of committees that staff is expected to attend. There may not be an opportunity to alter planning priorities or timelines; however it may increase awareness of pressures on DHAs.
- There may be an opportunity to have collaborative provincial program report cards for CEOs, rather than DHAs reporting individually on provincial program progress.
- Need for increased understanding of the national role that Nova Scotia plays in blood coordination and the significant efficiencies that the program has identified and could potentially still be identified, given increased resources.

Lack of Appropriate Space

- NSPBCP operates in CDHA space in the QEII Centennial site. Space may be "rent-free" but the program is always at the risk of having to move. Currently there are four staff per office. The program would like to remain in CDHA space as they are the users of 50% of NSPBCP services. However, the disadvantage is that other districts view the program as a CDHA program and not a provincial program.

Accreditation Standards are Inconsistent

- QEII Blood Transfusion Services currently obtains quality system accreditation through the American Association of Blood Banks. In March 2004, the C.S.A. Z902-04 Blood and blood components standard was released providing standards for all blood transfusion services and blood centers in Canada. All blood transfusion services in Canada should be working towards meeting these standards through adoption of a quality system approach in preparation for accreditation. Currently in Nova Scotia there is no laboratory accreditation program thus only the QEII has a fully functioning accredited quality system.

Lack of Lab Technologists

- Shortage of lab technologists in province is impeding quality initiatives. Not enough front-line staff to monitor standards. As a result only able to meet minimum standards.
- Difficult for DHA staff to conform with standards where volumes are low. In 2003 there were 42 blood banks in Nova Scotia. This number appears too high relative to usage. The ability to transport blood products should allow a reduced number of blood banks.

Blood Transport Standards are Inconsistent

- Canadian Blood Services (CBS) has indicated in Nova Scotia that due to liability issues the CBS transport containers should not be used for the transport of blood and blood components between facilities. Since the CBS transport container is labeled with CBS logos, an assumption could be made that the container has been packaged according to CBS validated procedures and thus safe. This would not be the case if facilities had packaged the transport container. Although indicated that this initiative was to be communicated nationally this has not happened. Through collaboration with CBS, packing configurations have been obtained and a standardized process for transport using CBS transport containers is in development. Eventually a provincial mechanism will be instituted using new updated transport containers obtained by the facilities. This will be determined by the release of new container specifications developed by CBS.
- Home Transfusion – Continuing care procedures for VON need to be standardized. In collaboration with Continuing Care, VON and NSPBCP, a standardized protocol is in development.

Lack of a National Blood Contingency Strategy

- NSPBCP has developed a contingency plan which has gone forward for approval by DOH.

Need to Improve Physician Education Regarding Blood Product Dosing

- Off label usage of IVIG products and Niastase have resulted in greatly increasing costs for the province. Savings have been identified in IVIG dosing efficiencies totaling $1.125M for 05/06 fiscal year alone. Need to be able to continue to work with physicians in sharing updated dosing information. Niastase costs for province ~ $150K in 05/06. Still working to determine off-label compassionate use (massive bleeds) and impact on budget. No work is being done to suggest curtailment of use in these circumstances. Estimated 90% is for off-label use. (Label use is for hemophiliac patients).
- Potential for savings in IVIG use ($1,250,000 for 2005/06).
- Need for more work on use of Niastase – only 10% for label use in hemophilia, 90% for off-label use.

Data Management Insufficient

- Need funding for ongoing web-based data collection. A data collection tool, with interfaces to MediTech and CDHA information systems would streamline data collection and ensure more efficient use of staff time. Currently data is collected using multiple software and paper-based systems, which is time consuming and expensive. Funds have been received for the development of a website for public information and database entry for stakeholder use. NSPBCP has also suggested that they require resources to support the development and analysis of data infrastructure (i.e., transition to a full-time database coordinator, information management coordinator, and transition to a full time utilization nurse).

RELATIONSHIPS

- **Canadian Blood Services (CBS).** The relationship locally with CBS is reported as good. However, there is a need to improve the relationship nationally to facilitate collaboration on initiative provincially.
- **DHAs.** There is a need for improved communication with DHA leadership to enhance standards compliance. Presently there are no consequences for non-compliance with C.S.A. Z902-04 Blood and blood components standards.
- **International and National Relationships**. NSPBCP is recognized as a leader in utilization management, surveillance and quality management.

RESOURCES

There is strong DOH support for the program. Further funding is needed to fully realize the program's potential to improve quality of blood and blood products and achieve savings with standards implementation.

Expansion of this program is currently limited by the human resources available. There is a direct return for invested funds.

- It may be advantageous to increase DHA funding to support quality management coordinators. Current provincial budget cannot support these extra positions. Funding via the DHAs would increase their buy-in.
- DHA labs will be required to meet CSA Z902-04 and Z15189 standards to obtain hospital accreditation through the Canadian Council on Health Services Accreditation starting in ~~by~~ 2008. The DHA's have responded to this by indicating that any funding associated with accreditation will have to be new.

STANDARDS

- Since establishment in 2003, the program has made significant advances in standards development for utilization and quality management. Utilization management guidelines have been established for IVIG, Niastase, and Palivizumab. NS has also adopted BC utilization guidelines for red blood cell transfusion and platelet transfusion.
- NSPBCP is working collaboratively with Canadian Blood Services in implementing and monitoring quality management initiatives. Standardized provincial policies are currently being developed to meet the requirements of the Blood and Blood Components Standard.

RELATIONSHIP WITH THE DEPARTMENT OF HEALTH

- DHAs are not presently required to comply with utilization and quality management standards. The program looks to the DOH to obtain assurances that DHAs will improve compliance.
- Although the program reports that its relationship with the DOH is strong, the program feels unsupported in new initiatives. The program has identified significant financial resource

savings in the 05/06 fiscal year and project that additional savings could be found with additional human resources to conduct research and monitor standards.

PARTICIPANT IDEAS / SUGGESTIONS

- "Buy-in" is improving at the front-line lab level but in order for compliance with standards to be successfully monitored, DHAs need to develop ways to ensure compliance with standards.
- Funding for individual DHA blood products needs to be transferred from the DOH to DHAs. This would establish accountability with the DHA for blood products, and non-compliance with standards would have a direct financial impact on DHAs.

REVIEW RECOMMENDATIONS

1. **Blood and Blood Product Budget.** Need increased DHA accountability and compliance with care standards that directly impact the provincial budget for blood and blood products. DHA compliance and performance with standards needs to be monitored more closely.
2. **Confirm Accreditation Standards.** Recommend the development of common accreditation standards which are similar for QEII and IWK as part of the 2008 CSA provincial accreditation.
3. **Develop a "Toolkit" to Assist DHAs Prepare for the Accreditation Standards.** NSPBCP should consider developing a toolkit to assist DHAs to prepare for the upcoming accreditation standard. Once a toolkit has been developed, NSPBCP may leverage workshops to provide timely and appropriate training and education.
4. **Develop DHA Level Reports.** NSPBCP should develop district-level reports outlining utilization of blood products, discard rates, monies spent with comparisons to national and provincial averages.
5. **Confirm / Strengthen Relationship with CBS.** Recommend initiatives be undertaken to improve communication and partner with the PT liaison of CBS, specifically in development and adoption of standard/shared packing schemes for blood/blood products.
6. **Expansion of Program.** Recommend assessment of business case for expansion of the program, with a view to provide funding for additional FTEs.
7. **Technology Investment.** Recommend investment in technology to support provincial program data collection and management.

St. Anne's Health Centre

OVERVIEW

St. Anne's Health Centre in Arichat, Nova Scotia is not a provincial program, but is included in this clustering of services for the purposes of PHSOR.

St. Anne's is a stand alone organization providing a mix of long term care and acute care, including a 24 hour emergency/outpatient department as well as primary health care. Historically, when DHAs were created, St. Anne's was left outside of the model and its Board continues to have a direct relationship with the DOH. The reasons for this are not clear, and the PHSOR review team could not determine any reason or rationale for this model to be maintained on a go-forward basis. Changing the model; however, is not a straight forward issue as the organization is a hybrid of a long term care provider (which presumably will need to maintain its relationship with the Continuing Care branch of the DOH) and an acute care provider (which presumably should be formally aligned with DHA #7). That being said, once Continuing Care is devolved, the relationship will be fully with DHA #7. Given this, the PHSOR team proposes the following:

RECOMMENDATIONS

1. That the operational and funding relationship for St. Anne's Health Centre be immediately devolved to DHA 7, resulting in funding for operations of the Centre being provided through DHA 7 and not by DOH.
2. That GASHA confirm the range and scope of services to be provided by St. Anne's Health Centre. Within this context, the 24 hour Emergency Service should be reconsidered in accordance with the Rural Health Strategy that will be developed.
3. The Executive Director role at St. Anne's should be reviewed and formal accountabilities to an appropriate senior executive at GASHA should be defined.

GLOSSARY

AEs	Adverse Events
AFP	Alternate Funding Plan
ALC	Alternate Level of Care
CAC	Cardiac Advisory Council
CCNS	Cancer Care Nova Scotia
CDA	Canadian Diabetes Association
CDHA	Capital District Health Authority
CHBs	Community Health Boards
CHCs	Community health centres
CLSCs	Centres locaux de services communautaires
CLXTs	cross-trained in x-ray
CPOE	Computerized Physician Order Entry
CSHP	Canadian Society of Hospital Pharmacists
CSPD	Central Sterile Processing Department
CSSC	Clinical Services Steering Committee
CSTs	Cancer Site Teams
CTAS	Canadian Triage and Acuity Scale
CVHNS	Cardiovascular Health Nova Scotia
CWS	Community Wide Scheduler
DCPNS	Diabetes Care Program of Nova Scotia
DHAs	District Health Authorities
DOH	Department of Health
DS	Decision Support

EDs	Emergency departments
EHS	Emergency Health Services
HBS	Hospital Business Services Corporation
HHR	Health Human Resources
HITS-NS	Health Information Technology Services Nova Scotia
HPPD	Hours of Care per Patient Day
HRIS	Human Resource Information System
ICONS	Improving Cardiovascular Outcomes in Nova Scotia
IOM	Institute of Medicine
JPPC	Joint Program and Policy Committee
LHAs	Local Health Authorities
LHINs	Local Health Integration Networks
MAR	Medication Administration Record
MLAs	Medical Laboratory Assistants
MLTs	Medical Laboratory Technologists
MOU	Memorandum of Understanding
NACRS	National Ambulatory Care Reporting System
NSAHO	Nova Scotia Association of Health Organizations
NSHPCA	Nova Scotia Hospice Palliative Care Association
NSPBCP	Nova Scotia Provincial Blood Coordinating Program
NSHSC	Nova Scotia Hearing & Speech Centres
OH&S	Occupational Health & Safety
PHSOR	Provincial Health Services Operation Review
RHAs	Regional Health Authorities
RCP	Reproductive Care Program
RIWs	Resource Intensity Weights
SAP	Systems Applications and Products
UM	Utilization Management