

The Renewal of Public Health in Nova Scotia:

Building a Public Health System to Meet the Needs of Nova Scotians



Mid Course Review - 2011

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The Renewal of Public Health in Nova Scotia: Mid-Course Review

February 2012

**Public Health
Nova Scotia Department of Health & Wellness**

EXECUTIVE SUMMARY

Purpose: This mid-course review is intended to address what has been done to-date with respect to public health system renewal, what is left to do, and in doing so, assist in setting priorities for future system development.

Background: In 2006, the findings and actions for system renewal emanating from a comprehensive review of Nova Scotia's public health system were released. Addressing strategic, structural, capacity and process-related findings, *The Renewal of Public Health in Nova Scotia: Building a Public Health System to Meet the Needs of Nova Scotians* (Renewal Report) provided 21 actions for the renewal of the province's public health system. Over the past 5 years, there has been concerted effort to strengthen the design and functioning of this system. It is an opportune time to take stock of renewal efforts and priorities considering: i) the system is at the mid-point of the estimated timelines to implement the report's actions for system renewal; ii) the recent merger of the former Departments of Health and Health Promotion and Protection; and, iii) the fiscal pressures on government budgets.

Approach: Information gathering for this mid-course review was conducted through a series of 13 key informant and 6 focus group interviews with a range of stakeholders. In addition, relevant strategic processes and progress documents were reviewed. Mirroring the design of the initial review, a project advisory committee was established and two external expert reviewers also agreed to be a sounding board for the review's findings. The preliminary findings have also been shared and discussed with a series of key system teams and individuals.

Findings: There was considerable consistency among key informants regarding issues that they identified with these falling into three main groups.

- Areas of progress/success over the past 5 years:
 - Continuing relevance of the Renewal Report's actions for system renewal
 - Progress in implementing renewal actions – particularly the establishment of a consolidated structure at the provincial level with single leadership
 - Identification of a strategic vision/direction for public health
 - Readiness and desire to move forward.

- Areas for action in the coming 5 years where there is consensus and clarity:
 - Environmental health – capacity for routine public health inspections and investigations rest within two non-health departments. While considerable effort has been expended in seeking collaborative processes, these have proven to be ineffectual in achieving a comprehensive and integrated environmental health program. Several major system gaps continue to exist representing a considerable vulnerability and risk to human health due to the fundamental structural misalignment of responsibility and resources. An environmental public health program with dedicated public health inspector capacity within the health system is required to fulfil legislated mandates.

- Achieving an efficient and effective public health model – With the size and distribution of Nova Scotia’s population, having nine District Health Authorities (DHAs) presents a fundamental challenge for public health system design. The Shared Service Area model has been disliked and perceived not to work. The Renewal Report indicated the need to transition to a new model in a controlled manner. Different approaches are being pursued in an independent fashion across the province with an increasing trend towards ‘districtization’ with the establishment of DHA-specific public health leadership positions. While this trend has been viewed positively by DHAs, many of these leads have no formal training in public health and have additional healthcare service responsibilities. Furthermore, DHAs are increasingly unable to individually support more specialized expertise that was previously possible on a shared basis. Landing on an efficient and effective model for public health design needs to reflect current realities of fiscal constraint, risk and adequate capacity recognizing the inter-dependency of action among system actors to achieve public health functions. It requires a rethinking of how to conduct the required work across the various programmatic areas of public health in order to align the right skills for the right actions at the right system level. A collaborative process is needed to seek mutual understanding of the work and required critical processes of each major public health responsibility area in order to identify innovative and creative ways to achieve efficiency and effectiveness in public health.
- Public health IT systems – despite the significant effort in planning for the implementation of *Canada Health Infoway’s* Panorama IT system, there has been little net progress in the deployment of modern information management tools to support public health functions. Immunization records continue to be held on cards and an information system for communicable disease surveillance, investigation and control has not been implemented. This situation is a major source of inefficiency and vulnerability. With the decision to not pursue implementation of Panorama, an alternative public health information system needs to be selected, funded and its implementation supported. While immunization and communicable disease control information needs are the most urgent, the information management needs of other public health programmatic areas also need to be addressed.
- Public health information and surveillance – population health assessment and surveillance are core public health system functions to understand the health of the population and inform priority setting, planning, implementation and evaluation. Nova Scotia’s capacity in this area has been under-developed and the Renewal Report envisioned creating centralized epidemiologic/surveillance capacity that would serve public health needs at the provincial and DHA levels. While progress has been slower than anticipated, continued investment is required to build assessment and surveillance capacity to efficiently support public health understanding and action at DHA and provincial levels.
- Public health workforce capacity and competencies – the Renewal Report emphasized that efforts in Nova Scotia will ultimately depend on the extent to which a sufficient and competent public health workforce is achieved. This includes attracting and hiring people with the right knowledge, skills and attitudes, as well as supporting staff’s continuing development, which is a critical aspect of achieving effective and efficient operations. Furthermore, pursuing the identified strategic shift with an emphasis on understanding and upstream action demand new competencies for frontline staff and

managers. Valuing and supporting the development of staff needs to be actively pursued at both DHA and provincial levels on an ongoing basis.

- Complex issues for which there is a mix of perspectives:
 - Working as a system – while there is improved conceptual understanding of working as a system, key informants noted that there continues to be considerable variation and inconsistencies in practices across the province accentuated by the trend to districtization. Similarly, while progress has been made in establishing provincial level responsibility centres, uncertainty remains regarding their roles and outputs. Overall, trust, roles and responsibilities, and, accountabilities were common themes identified by key informants.
 - Public Health System Leadership Team – while poised for leadership, some key informants stated that this team is failing because key issues such as budgets, staffing, planning and evaluation are not coming to the table. Overall, trust, respect, openness, and, honesty were key issues described by key informants.
 - Public health and primary care – public health is one of several providers of some primary care services and such services are but one part of public health’s overall responsibilities. The identified strategic direction is one of shifting the balance of current public health efforts from a predominance of clinical service delivery to a greater focus on upstream work with populations. A variety of perspectives exist regarding how this should be resolved. Through the strategic planning process there is clarity that public health’s vision is focused further upstream and should be focused on primordial prevention while primary care work is more focused on primary prevention. Through collaborative work, with the client in the center, clarity on the most appropriate role for each partner must be achieved. Discussions focused on the interface of primary care and public health related to support for young children and families have begun.
 - Translating the vision: from theory to practice – a consistent theme among key informants was that the strategic shift in emphasis had not yet penetrated the front lines of the system and needs to do so. Furthermore, pursuit of this shift can be expected to be more challenging than the first five years of system renewal.
 - Structural change – while the merger of the Department of Health and Department of Health Promotion and Protection provides opportunities, it also presents potential challenges. Achieving a consolidated, provincial public health organization under single leadership reporting to the deputy minister was a fundamental goal of the Renewal Report regardless of whether public health remained within or outside the Department of Health. This goal remains valid. While communication and collaboration between public health and relevant parts of the Department needs to be assured, caution needs to be exercised in considering consolidation of public health capacity or functions with other Departmental units. Previous experience indicates that the net impact of such actions typically results in diversion of those resources from serving public health responsibilities.

Analysis: The review of progress towards achieving the Renewal Report's actions for system renewal is timely having reached the mid-point of the originally estimated timelines in order to take stock of what has been achieved and what is still left to do. The context has also changed with the recent merger of the former Departments of Health and Health Promotion and Protection, as well as the increase in fiscal pressures on government budgets.

Befitting a mid-course review, implementation of the Renewal Report's actions for renewal is partial and ongoing. Key informants were unanimous that the renewal actions continue to be valid. Progress has been made in a number of areas, particularly for those items of a structural and strategic nature. These successes need to be preserved and are important since they provide a foundation for tackling more challenging items. The Departmental merger does not alter the actions for system renewal since they were written for whether public health remained within the Department of Health or as a separate Department was established.

It is important to recall that a key impetus for the initial review was concern following SARS of public health's ability to address a major public health emergency, to be able to address key threats to the health of Nova Scotians, and to contribute to the sustainability of the healthcare system. The frank assessment at the time of the Renewal Report was that Nova Scotia had considerable deficits with respect to the design and functioning of public health that did not bode well if challenged by a major event. Furthermore, the fragmentation, lack of role clarity, and lack of resources would also limit the ability to effectively promote and protect the health of Nova Scotians.

While improvements have been made, there are many fundamental areas where there has been little or no progress. As noted in the original Renewal Report, all 21 of the the actions for system renewal require action; all are inter-related and none can be isolated from the other and cannot be 'cherry-picked' for action. The progress made to-date only somewhat mitigates the system deficits identified in the Renewal Report. Continuing gaps include:

- Lack of a comprehensive environmental health program with timely and competent routine and problem-based inspections (Action #6)
- Lack of an efficient and effective system model between DHA and provincial levels compounded by unilateral structural changes within DHAs and decreasing local expertise (Action #5)
- Lack of modern information systems to support public health responsibilities – the most urgent priorities are communicable disease surveillance, investigation and control, as well as an immunization registry (Action #10)
- The slow development of public health assessment and surveillance workforce capacity (Action #8)
- The need for active support of workforce development throughout the system (Actions # 17, 18, 19).

The Auditor General's reports in 2008 and 2009 as well as the Lessons Learned from H1N1 (2010) illustrate the need to strengthen in these areas, but also continuing gaps. Having a consolidated provincial level structure with a single point of leadership, visibility and accountability was clearly an improvement, as were the strengthened relationships across the system. However, the absence of a modern public health information system hindered the assessment and surveillance function to provide timely analysis of what was occurring in order to inform decision making. It should also be stressed that as a public health event, the main challenge with H1N1 was in managing the delivery of a mass immunization initiative, particularly in the absence of an immunization registry. However, H1N1 was not a scenario in which public health needed to detect an outbreak, investigate it,

identify cases and their contacts, and implement control measures on a large scale. Such an emergency would likely expose to a greater degree existing gaps in information systems, diminishing expertise within DHAs, role clarity challenges, lack of a public health environmental health program, and limitations in existing epidemiologic capacity.

Many of these issues have existed for a long time, which can prompt complacency regarding their impact. These gaps have clear implications for the efficiency and effectiveness of public health and are major sources of vulnerability. While improved structures and processes were key elements of the Renewal Report's actions for system renewal, the underlying challenge was the lack of system capacity. That lack of system capacity continues to exist. The issues are complex and the solutions are complex. Their nature requires support, and in some cases, leadership across the broader health care system. The actions required on the identified gaps are neither discrete nor sequential but require a strategic approach, extensive engagement with other departments/sectors, district health authorities and others. They will also require investment, support and tenacity. This review offers clarity around priorities for action to feed into the business planning cycle.

The Renewal Report estimated that only 1.2% of the government's health services budget was allocated to public health. The identified goal was to double this over the subsequent decade and in the early years a third of this additional funding amount was invested. In recent years, funding has leveled off and actually been clawed back so that as of 2010/11, public health funding represents 1.5% of the total health services budget. If 'an ounce of prevention is worth a pound of cure', then Nova Scotia is currently investing less than a quarter of an ounce.ⁱ

There are clearly structural and process issues that still must be resolved to achieve a more efficient and effective public health model. These types of issues are resolvable within the public health system, with direction, authority and support from senior health system leaders. However, several issues are not resolvable solely within the sphere of influence of public health. The selection and implementation of information systems is a health system wide issue in which public health communicable disease and immunization information system needs to be identified as a priority by the health system overall and funded accordingly. The continuing gap in environmental health similarly needs to be finally addressed. Likewise, the limited ability to analyze data to inform priority setting and action needs to be rectified. These are all items that will require system leadership and investment in order to be resolved.

A key observation from the post-SARS report by Dr. David Naylor was that "there was much to learn from the outbreak of SARS in Canada – in large part because too many earlier lessons were ignored." Public health in Nova Scotia continues to have major vulnerabilities with resulting inefficiencies and gaps. Furthermore, without adequate pre-event resolution, a major event will eventually expose these gaps likely leading to significant adverse outcomes.

ⁱ An ounce is 6.25% of a pound. $1.5\%/6.25\% = 24\%$

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Public Health Renewal in Nova Scotia – Mid-Course Review

INTRODUCTION

In 2006, the findings and actions for system renewal emanating from a comprehensive review of Nova Scotia's public health system were released. Addressing strategic, structural, capacity and process-related findings, *The Renewal of Public Health in Nova Scotia: Building a Public Health System to Meet the Needs of Nova Scotians* (Renewal Report) provided 21 actions for the renewal of the province's public health system (see Appendix 1).

During the past five years, there has been concerted effort to strengthen the design and functioning of the province's public health system. Since the intended system improvements were anticipated to take 7-10 years to implement, this mid-point is an opportune time to take stock of the province's renewal efforts, particularly considering the recent merger of the former Departments of Health and, Health Promotion and Protection, and the fiscal pressures on government budgets. Overall, this mid-course review is intended to address what has been done, and what is left to do, and in doing so, assist in setting priorities for future system development.

APPROACH

Information gathering for this mid-course review was conducted through a series of 13 key informant and 6 focus group interviews with a range of stakeholders including a District Health Authority (DHA) Chief Executive Officer (CEO), DHA Vice-Presidents (VPs) of Community Health, Chief Public Health Officer, Medical Officers of Health (MOHs), DHA Public Health Directors, Public Health Managers, public health staff, Primary Care Director, and Departments of Agriculture and Environment Directors. In addition, relevant strategic and progress documents were also reviewed. This included such documents as the Auditor General's reports, Report on the Nova Scotia Health System H1N1 Lessons Learned and other strategic documents produced since the original Renewal Report was released.

Mirroring the design of the initial review, a project advisory committee was established with as many of the original committee members as possible. Furthermore, two of the original three external expert reviewers also agreed to be a sounding board for the review's findings. Appendix 2 provides a listing of advisory committee and external expert panel members.

In addition to sharing and discussing preliminary findings with the project's advisory committee and external experts, a series of presentations were made to share and validate what had been heard with key groups including:

- District Health Authorities CEOs
- District Health Authorities VPs of Community Health
- Public Health System Leadership Team
- Department of Health and Wellness (DHW) Chiefs: IT; and, Programs, Standards and Quality
- DHW Associate Deputy Minister (ADM).

FINDINGS

There was considerable consistency among key informants regarding the issues they identified. Key themes are summarized and will be presented in three groupings:

- Areas of progress/success;
- Areas for action where there is consensus and clarity; and,
- Complex issues for which there is a mix of perspectives.

Representative quotes from key informants are shown in text boxes in this section.

Areas of Progress and Success

Overall, there have been clear areas of success and a sense of momentum.

“When we look at the whole we have come a long way.”

“Huge amount of alignment in public health. We did not have that two years ago.”

“Getting the work of public health out of the shadows and putting a voice to what needs to be done.”

Continuing Relevance of the Renewal Report’s Actions for System Renewal

Key informants consistently indicated that the package of system renewal actions outlined in the Renewal Report remained highly relevant for Nova Scotia’s public health system. The successes achieved to-date needed to be retained and the outstanding items pursued. No additional actions for renewal were suggested nor were any suggested for removal.

Progress in Implementing Actions for System Renewal

Overall, there has been clear progress in pursuing or achieving several of the Renewal Report’s actions for system renewal. Appendix 3 summarizes the status of each renewal action. The sense of many key informants was that the relationships among system actors had improved in many instances and that there seemed to be an improved understanding, at least, of working as a system. Particularly in the initial years, an increase in system funding occurred representing about a third of what had been identified overall (#16).

Structural Improvements

Several of the Renewal Report's actions for system renewal focused on achieving critical structural improvements of the system and these were addressed in early implementation steps following the release of the Renewal Report. These included establishing an integrated public health organization at the provincial level (#3) under a single provincial leadership position (#2).

"CPHO had visibility during H1N1. As a leader can make public health visible."

In addition, improved clarity and accountability regarding provincial public health laboratory functions has also been addressed (#13).

"Creation of the public health lab – having that lab with a connection and strong relationship was a small investment for huge return."

Strategic Vision/Direction for Public Health

Articulating, and being guided by, a collective vision for the public health system (#1) was pursued through recent strategic planning efforts. There was widespread agreement that the strategic planning initiative had provided a direction that was clear, correct and well articulated. The purpose statement states:

Public health works with others to understand the health of our communities and acts together to improve health.

In addition to the identification of an agreed-to purpose statement, strategic planning also highlighted taking leadership on issues of social justice and determinants of health.ⁱⁱ

While some key informants admitted to some frustration regarding the process that was utilized, these same informants acknowledged that the successful outcome would not have likely been achieved otherwise.

"Visions usually get created and stated by a few. This is different. This is rich and robust. It was a long road but a great product. It is owned and clear by all."

"Clear directions from community partners has given us a different motivation to move forward differently."

Furthermore, work in 2011 resulted in the establishment of a set of public health standards applicable to provincial and DHA levels (#11). Planning has also commenced to achieve a comprehensive public health legislative framework (#14).

ⁱⁱ Further details are available in Departmental publications: *The Six Stakes: Moving Forward – A Commitment to Public Health's Future (2010)*; *A Journey Towards Renewal (2010)*.

Readiness and Desire to Move Forward

Many key informants described a readiness and desire to move forward to tackle the issues still ahead.

*“We can do it. We just need the ** to do it.”*

“We have already renewed so now it’s time to ‘do’”

Areas for Action Where There is Consensus and Clarity

Environmental Health

Environmental health is a core public health responsibility. In 1994, all of the public health inspector (PHI) capacity that had resided in the Department of Health was transferred to the Department of Environment. A subsequent split of this capacity occurred with a team of inspectors focussed on food safety transferring to the Department of Agriculture and Fisheries.

Considerable concerns were heard over the course of the initial review regarding the fragmentation of responsibilities and resources among the three departments. The inspectors in Agriculture and Fisheries had become a food safety ‘silo’ with little or no involvement in other issues. The remaining inspectors in Environment no longer conducted any routine public health inspections and were only available on a specific request/complaint basis. The net result was that while Medical Officers of Health (MOHs) have legislated health protection responsibilities, there is a total reliance upon the staff in the non-health departments to investigate complaints and conduct routine inspections, which were limited in scope to detect, investigate and manage health risks to the public.

While acknowledging the misalignment of responsibility and resources, there was no interest among the Deputy Ministers to pursue any structural solutions at the time of the review. Renewal action #6 reflected the agreement achieved among the three Deputy Ministers that they would collectively conduct further analysis and develop an implementation plan to identify the optimal distribution of responsibilities and resources required to address the range of public health issues and corresponding programming that needs to be provided.

Despite considerable efforts to gather information and build relationships, no progress has been made and there is unanimity among the key informants that environmental health is still broken and needs fixing. No overall environmental health program exists and routine inspections are limited to food premises and selected settings. There continues to be a decreasing cadre of remaining PHIs in the Department of Environment with ever more remote public health practice experience such that there are challenges mounting even basic public health investigations such as investigating children’s lead exposures, conducting pool inspections, or investigating the potential sources of public exposure to Legionella organisms (the cause of Legionnaire’s Disease). The PHIs in food safety remain focused solely on that area.

“We tried to make it all about relationships and we finally realized that we cannot move forward until the structure is addressed.”

“We need to give up on the relationship building reclaim public health inspection, and create our own capacity.”

“A whole discipline is missing – public health inspection – for DHAs to do public health work.”

“People don’t even know what public health inspectors do anymore, and inspectors don’t understand what the broader public health system is about.”

“An inquiry waiting to happen.”

The current split of focus between essentially food (Agriculture) and water (Environment) is problematic since: i) there are other settings where health risks to the public may exist (e.g., personal service settings such as tattoo parlors, as well as public swimming pools); ii) waiting for a public complaint or incident does nothing to prevent risks to the public; and, iii) public health can be faced with scenarios where the source of a hazard is unknown and needs to be investigated. For example, clusters of human cases of enteric disease (e.g., E.coli, salmonella, campylobacter, etc.) may be reported to public health where the source is unclear and needs to be identified in a timely fashion. However, implementing investigations of this nature have proven to be highly problematic. The food safety inspectors will only investigate if a food source is in question. But in these types of scenarios, this may be unknown until an investigation occurs. The inspectors within Environment have many other duties and their involvement with public health issues so infrequent, that their knowledge, skills, and experience to inspect/investigate are increasingly dated. The result is that public health staff are placed in the untenable position of needing to investigate the risk to the public and requesting assistance from other departments with different areas of focus and priorities to fulfill for what are elsewhere in Canada, routine public health responsibilities.

An additional concern is that the lack of direct involvement of PHIs in the initial investigation of cases of enteric illnesses is potentially problematic. It means that the staff with the greatest training and understanding of the potential sources of exposure to these diseases are not involved in the investigation of cases potentially leading to less effective and efficient detection. In contrast, in many other jurisdictions, PHIs are actively involved in the investigation of human cases of enteric illnesses. This type of integrated work of public health communicable disease control teams is not possible in the current set of fragmented structures and capacity.

The difficulties experienced by public health staff in addressing environmental health issues are currently being managed within the public health system. Key informant interviews with DHA CEOs and Community Health VPs indicated that they are not aware of the occurrence and extent of these difficulties or of specific incidents occurring in their geographic catchment areas. They expressed interest in being made aware of these situations and this is being addressed. DHA

interest is highly appropriate since there are a multitude of scenarios in which it will be the DHA that will be front and centre in addressing the health aspect of an environmental event.

The findings from this mid-course review only serve to reinforce the assessment of the initial review that from the perspective of fulfilling public health legislated responsibilities and protecting the health of the public, the initial decision to transfer the PHIs out of the Department of Health was ill-advised. It created a structural design flaw that cannot be solved with relationship building and memoranda of understanding (MOU). As one observer remarked in a recent Environmental Health renewal/engagement process,

“A serious environmental situation will arise and the ineffectiveness of the environmental health program will be exposed. Finger pointing and name calling will be our environmental health response.”

While considerable effort has been expended in seeking collaborative processes, these have proven to be ineffectual. A public health environmental program with dedicated public health inspector capacity within the health system is required to fulfil legislated mandates. In theory, a number of PHIs still exist within the Department of Environment, but they were diverted to other duties very quickly after the transfer almost 20 years ago and have not been actively involved in public health duties since then. Reinvestment will be required to establish PHI positions within the public health portfolio to fulfill the expectations of an environmental public health program and satisfy the legislated mandate of the Department of Health & Wellness. This should encompass routine inspections (e.g., personal service providers; swimming pools), integration with communicable disease control efforts (i.e., enteric case investigations), and the investigation of potential health hazards/risks to the public.

In terms of implementation, while PHIs would need to be geographically distributed, careful consideration of employer and reporting relationships will be required. With nine DHAs, it is unlikely that inspectors would be distributed and limited to working within individual health authorities. Either public health inspector capacity would be held centrally or through some multi-DHA model that is yet to be identified. Therefore, allocation of any new PHI resources is linked to the broader issue of finding an efficient and effective public health model, which needs to grapple with similar issues for multiple public health programs. This issue is addressed in more detail below. The re-establishment of PHI capacity within the public health portfolio should also prompt a re-examination of environmental health roles and responsibilities among the three Departments.

Achieving An Efficient & Effective Public Health Model

With the size and distribution of Nova Scotia’s population, having nine DHAs presents a fundamental challenge for public health system design. Typically, the minimum population size for a ‘public health unit’ to support a critical mass of expertise and capacity is 250,000. While similar issues are faced by the rest of the health system in order to support optimal efficiency and

effectiveness, public health functions entail unique design requirements necessitating tailored solutions.

The Shared Service Area (SSA) model was the initial approach utilized following the creation of the 9 DHAs. This model had been disliked in many parts of the province and is perceived to not work. The Renewal Report considered a variety of options to attempt to resolve the fundamental challenge of nine DHAs. It described, from a public health perspective, the potential to think of Nova Scotia as being a single region with a series of devolved health authorities with strong vertical integration with the provincial level since more specialized expertise would need to be held centrally.

Furthermore, the renewal action #5 stated that the system “transition the sub-provincial public health system level in a controlled manner from the existing Shared Service Area model to one based within DHAs”. Seven sub-bullets were included in this renewal action including the need for clear roles, responsibilities and accountabilities, as well as directors of public health with highly developed public health skills that could provide leadership to their public health teams and population-level analysis and advice to DHA senior executives and boards.

Since then, a highly variable range of approaches have evolved independently across the province with a net result of increasing districtization, but without addressing the full range of critical success factors. DHAs are increasingly establishing district-specific public health leadership positions, which is viewed positively by DHA executives. However, DHAs have either not been able to recruit or do not have the resources to hire stand-alone public health directors with public health training. Increasingly, these directors also have responsibilities for primary care. This may facilitate integration between public health and primary care, but is less likely to foster a greater perspective to upstream work as identified in public health’s strategic direction. It is also less likely for these directors to be able to provide the necessary leadership to their public health teams and population-level analysis and advice to DHA senior executives and boards.

The trend to increasing districtization also presents a problem in supporting content expertise. DHAs are increasingly unable to support their own communicable disease managers/coordinators with some key informants suggesting that these positions should be uploaded to the provincial level. However, how the communicable disease work would be conducted and coordinated locally is unclear if this was to be implemented and when pressed, key informants had clearly not yet thought through all the complexities and inter-dependencies of this program area. While there is dawning recognition of the potential implications of districtization on supporting expertise for communicable disease prevention and control within DHAs, the same issue applies for other major content areas of public health practice (i.e., assessment/surveillance, environmental health, emergency management, healthy development, healthy communities).

“As we move away from a shared service model, our ability to stem the tide [of a focus on treatment services] dwindles as our voice becomes smaller and smaller.”

“We’re hiring key positions with no public health experience.”

“Public health at the DHA level doesn’t have capacity to do communicable disease control (CDC) call – “no wonder””

“Together we have skills that support 3 DHAs”

“If you have small volumes of anything complicated – centralize it.”

“We’re not the experts we thought we were [in CDC], now as DHA, we have to go to others.”

Landing on an efficient and effective model for public health design needs to reflect current realities of fiscal constraint, risk and adequate capacity. It requires a rethinking of how to conduct the required work across the various programmatic areas of public health in order to align the right skills for the right actions at the right system level. It is not as simple as deciding on whether to access expertise in an ad hoc fashion from another DHA or just uploading to the provincial level. While the desire for a DHA-specific public health lead has been the predominant focus of the changes to-date, there are a range of other factors that need to be considered (e.g., how to support a critical mass; supporting operations as close to the ground as possible; importance of local relationships; aligning resources with accountability; etc.).

An additional, but important issue is that the preferred balance between DHA, multi-DHA and central approaches may differ for different public health ‘work’ (e.g., surveillance vs. communicable disease prevention and control vs. environmental health vs. healthy development vs. healthy communities). The work or business of each of these areas needs to be clearly understood in order to find the optimal model. In other words, the ‘devil is in the details’, and the work that needs to be done should drive system and organizational design decisions (i.e., form follows function).

Overall, there needs to be an openness to engage in a process to seek mutual understanding of the work and required critical processes to identify innovative and creative ways to achieve efficiency and effectiveness in public health. The Renewal Report’s action statement to transition to a new structure and associated processes in a controlled and thought-through manner still holds and needs to be urgently addressed. Sorting out who does what in the context of an overall systems approach appears to be a natural next step following upon the development of the new public health standards. With respect to possible mechanisms, an option would be to include public health in the current initiative involving the Vice Presidents of Acute Care, Community Services and Medicine, or else a parallel process could be established.

Public Health IT Systems

There has been little progress in the deployment of modern information management tools to support public health functions. Despite the extent of investments in providing immunizations, the increasing complexity of immunization schedules, and the reappearance of vaccine preventable disease outbreaks in Nova Scotia, across Canada and other parts of the world, immunization records continue to be held in manually written records (i.e., cards). This creates inefficiencies in providing quality services to the public, identifying coverage rates and gaps in coverage, and the timely implementation of control efforts when cases of vaccine preventable diseases occur.

The ability to manage information is of critical importance to monitor and detect outbreaks of communicable diseases, and to inform and manage their investigation and control. Populations are increasingly mobile providing opportunities for exposure and transmission of diseases, and the need to recall previous immunizations. Furthermore, considering the pervasive introduction of modern information management throughout society, there are corresponding public expectations for the ability to detect and effectively respond to risks to the public.

The SARS outbreak illustrated the hazards associated with poor information management, which undermined control decisions, as well as public communication. While Ontario had a communicable disease information system at the time of SARS, it was antiquated and quickly overwhelmed, such that Toronto Public Health had to resort to using an Excel spreadsheet created on the fly to try and manage information on cases and contacts. In contrast, the implementation of an improved information system post-SARS allowed the Listeriosis outbreak to be detected in Ontario because timely analysis of communicable disease reports from across the province indicated a potential elevation in the number of cases that may not have been recognized within individual local public health units.

Concerns for the lack of adequate public health information systems to support surveillance and disease control functions, and immunizations, were identified in the 2008 Auditor General's Report. Despite the clear and pressing need for information systems to support these core business areas of public health, Nova Scotia continues to not have a modern information system for either. This situation is a major source of inefficiency and potential vulnerability for not only public health and the rest of the health system, but for Nova Scotians overall. One cannot rely on 19th century information management approaches to detect, analyze and address problems in the 21st century.

“Five years later I cannot believe we still do not have the money for the IT piece. It is so embarrassing.”

“Whether it’s Panorama or our own [system], we need something to move us into the 21st century.”

“It’s a big hole in public health in Nova Scotia.”

“Public health wants to move further upstream yet they do not even know who has been immunized.”

“It’s not a public health system problem, it’s a health system problem.”

Nova Scotia has invested considerable time and effort and been awaiting development of the modular Panorama IT system being developed by *Canada Health Infoway*. This system is intended to be a pan-Canadian solution for provinces and territories for not only immunizations and communicable disease surveillance, investigation and control, but eventually other public health responsibility areas as well. The decision to abort Panorama’s implementation in Nova Scotia at this time now puts in serious jeopardy the Department’s ability to address this system vulnerability and the Auditor General’s concerns. It also eliminated a modular solution that was intended to eventually address broader public health information needs. An alternative public health information system needs to be urgently pursued.

While it is appreciated that there are many IT solutions needed and underway for the broader healthcare system, a public health information system is urgent and must be viewed as a priority by the healthcare system to become a reality. Reinvestment is required to select, fund and implement a modern, information system to support the critical core business of communicable disease surveillance, investigation and control, as well as immunizations. Furthermore, immunizations and communicable disease surveillance and control are just the most urgent among public health’s information needs.

Public Health Information/Surveillance

Two of public health’s core system functions are population health assessment and health surveillance. Distinct from the analysis of health services’ data, these are the ‘query’ functions of public health to understand the health of the population and to use this information to inform action. Akin to an individual health care provider taking a patient’s history, performing a physical exam and conducting laboratory tests in order to make a diagnosis and recommend an appropriate treatment plan, these functions are critical for public health’s identification and understanding of an issue and to inform action.

Whether preparing a health status report or seeking understanding regarding a particular issue, multiple sources of data need to be accessed, integrated, and analyzed. Furthermore, analysis needs to occur not just at province-wide and DHA levels, but within DHAs as well since the

disparities between neighbourhoods or population groups need to be identified and addressed if health inequities among Nova Scotians are to be reduced. While health services utilization data is an important data input for public health analysis, it provides only part of the picture for public health analysis. For example, understanding the adverse impacts of, and contributors to, alcohol misuse would need to consider relevant hospitalizations and addiction treatment rates. However, this analysis would also need to access law enforcement, alcohol sales, survey measures of drinking behaviours, and seek understanding of the social context of risky drinking to inform potential actions.

Nova Scotia's capacity to do this type of data integration and analysis has been minimal and considering the developmental work required and the relative size of the DHAs, the Renewal Report envisioned creating centralized epidemiologic/surveillance capacity that would serve provincial and DHA levels' needs. Development of centralized capacity has been slower than expected with delays encountered in creating epidemiologic position classifications at an appropriate salary range, although progress is being made. In addition, what analyst capacity has existed has been focused primarily on communicable disease surveillance, which has distinct characteristics and requirements compared with broader analysis focused on other types of health outcomes and health determinants. This analytic capacity will be particularly critical to support the understanding and increased upstream emphasis that is central to the public health strategic direction.

"We need capacity for better surveillance and assessment. We need better data and a better sense of data we need. "

"We do not have enough epis in the system"

"Surveillance data beyond CDC to the social determinants of health is needed."

Continued new investment is needed to build capacity to fulfill broader public health assessment and surveillance functionality. Furthermore, this enhanced capacity needs to be protected from diversion to communicable disease surveillance demands, although would be a source of surge capacity in an emergency. In addition it is essential that public health assessment and surveillance capacity is protected from diversion to broader healthcare system information analysis and management. Public health requires the ability to support fulfillment of its core functions, and current capacity continues to be not sufficient to fulfill this need.

Public Health Workforce Capacity and Competencies

Mirroring the consistent themes of public health renewal documents across Canada and other countries, the Renewal Report emphasized that efforts in Nova Scotia will ultimately depend on the extent to which a sufficient and competent public health workforce is achieved. Three Renewal Report actions for system renewal addressed the public health workforce:

- Establish and implement a public health workforce development strategy
- Expand overall size of the workforce and those with specialized skill sets including epidemiologists, professional Masters trained public health professionals (MPH), and DHA directors of public health
- Partner with the academic sector to expand/establish training programs and practicum settings.

The public health workforce, compared to the rest of the health system, possesses unique disciplines and unique competencies. Challenges include: the extent that new staff possess required competencies at the time of hiring; the need for the maintenance and development of skills over time; and, specific capacity needs. The latter includes epidemiologists and MPH-prepared staff, as well as recruiting a cadre of PHIs to establish an environmental health program. One note of progress is that recruitment of MOHs has shown steady progress in recent years.

As previously noted, challenges have been experienced in hiring epidemiologists and the vision for public health formal leaders to be Master of Public Health (MPH)-prepared has not been fulfilled. Furthermore, the expected development of a MPH program at Dalhousie University has not yet materialized. Not only was this viewed as being critical for the planned preparation of future directors/managers, as well as increasing the cadre of staff with formal public health training, it would also have anticipated spin-offs such as certificate/diploma training (microprograms), continuing education offerings, summer schools, teaching health unit, etc. While delays in the development of the MPH program at Dalhousie are unfortunate, the increasing development of distance-based MPH programs provides an alternative option in the interim.

“People are not ready for the new realities and they see that in themselves”

“We’re being told to do more advocacy, but not given the training”

“We can’t make an ask of staff without the tools and skills to do it.”

“Skill set gaps in certain disciplines (advocacy, community development, understanding data) means we have to pull up and educate people.”

“Staff need basic foundation of public health.”

“Still need to develop expertise in our own staff.”

“We’re hiring key positions with no public health experience.”

The strategic direction to increase the emphasis on understanding and upstream action will place particular demands on the workforce. For frontline staff, such a shift has implications for

population-focused practice that require competencies quite different than those for providing primary care services to individuals and families. For managers, this strategic direction requires much more than management skills. It requires deep understanding of the intended shift and the provision of leadership in order to explain the change in practical terms, model desired behaviours, coach new practices, and, identify and leverage opportunities. The implication is that managers need a combination of highly developed public health, leadership and management competencies.

Valuing and supporting the development of staff competency needs to be actively pursued at both DHA and provincial levels. In times of fiscal restraint, restricting travel and training are commonly considered options. However, there are adverse consequences to not investing in the development of professional staff when seeking effective and efficient operations. Learning and development is a key strategy for achieving effective organizational/system change. The use of innovative and creative approaches need to be part of this planning/approach.

Complex Issues with Mix of Perspectives

Over the course of the interviews, a series of issues emerged that were frequently mentioned and for which a mix of perspectives existed.

Working as a System

As noted earlier, one of the successes to-date has been the improvement in relationships among system actors and improved understanding of at least the concept of working as a system. However, depending upon an informant's role and the specific issue spoken to, a mixed picture emerged as to whether things were better or not compared to five years ago. For example, several key informants pointed to the considerable variation and inconsistencies in practices that are continuing to occur across the province. Furthermore, the independent pursuit of different structural models by DHAs without attention to the potential impact on core businesses, and the continuing lack of clarity regarding the roles of provincial responsibility centres (RCs), are indicative of the work still required to think and act like a system. Key informants noted that the new public health standards will hopefully be helpful in addressing consistency. This will only occur if the standards are used to seek mutual understanding of the work to be done, who will do what, and the inter-dependencies among system actors. Overall, key informants' comments point to issues of trust, roles and responsibilities, and, accountabilities as barriers to working better as a system.

“We need to let others see how the public health system works.”

“We are acting as a system, sure there are challenges. But we are working better.”

“We still have a local-provincial schism.”

“It's challenging how different things are around the province. We are not really a system.”

“The roles of the RCs versus the DHA public health staff – it's frustrating, hit and miss with the RC's and my own interpretations. This causes frustration for me.”

“Why do we have 9 totally different roles for health promoters in Nova Scotia? It's crazy!”

“Look at accreditation – I bet the yellow and red flags are just about all the same – yet we address it by 9.”

Public Health System Leadership Team

The Public Health System Leadership Team (PHSLT) provides a province-wide table for public health leadership and coordination and therefore is an important mechanism to foster understanding and system development. However, some key informants described their perception that the ‘real stuff’ (i.e., budgets, staffing, planning, evaluation) is not coming to this table. Key informants indicated that while PHSLT is poised for leadership, it is failing. Overall, a lack of sufficient trust, respect, openness, and honesty were key issues described by key informants. The functioning of this table however, will be critical for pursuing the strategic changes being envisioned by the system.

“Public health is not working as a system, people come to the table, walk away, and do another thing.”

“It is not strategic. There is a lack of trust in conversations that need to be had.”

“We need to take the reality to the PHSLT table – it's the real stuff – budgets, staffing, evaluation, planning.”

“So do we just do the superficial stuff and carry on?”

“The distance is growing now that we're not meeting face to face as much.”

“PH system leadership needs to be accountable – accountable for implementation, meeting standards, and working together.”

“Relationships are not about being polite. It is about making hard decisions and getting through it together.”

Public Health ↔ Primary Care

Primary care is the first point of contact a person has with the health system and is where people receive care for most of their everyday health needs. There are numerous primary care providers including family physicians, nurses, dietitians, mental health professionals, pharmacists, therapists and others. Public health is therefore one of many primary care providers, although clinical service delivery to individuals and families is only a part of its overall responsibilities. Public health's historical involvement as a primary care provider relates to gaps in the structure and delivery of primary care services, which has tended to be greater in more rural provinces.

The identified strategic direction is one of shifting the balance of current public health efforts from a predominance of clinical service delivery to a greater focus on upstream work with populations. In other words, decreasing the extent of efforts on individual education, counseling and clinical services, to a greater focus on influencing the social and physical context to make individuals' default decisions healthy and address upstream determinants of health. For example, this may mean public health having less emphasis on directly supporting mothers on how to breastfeed and putting more emphasis on having public places such as shopping malls and workplaces becoming more friendly for breastfeeding mothers. It may mean public health spending less time giving classroom presentations to school children and exerting more effort to support policy development for health related curriculum and creating healthier school environments that support, for example, the implementation of policies for regular physical activity, healthier foods in cafeterias, and alcohol and other drug policies in communities.

“Need to pull back the layers of the onion – housing, income, poverty – and getting those conversations going... That’s what makes public health different.”

“We need to stay focused...break it down and decide who is doing what.”

“What percentage of public health staff are doing primary care work?”

“We are largely a primary care system, needing to move upstream.”

“[upstream work] hard to describe at this point for me... practicality side – what does this mean? I’m not there yet”

“We need to bring things around public health and primary care together...the overlap is the prevention with individuals. And public health needs to do the prevention with populations.”

“We’re a small province so we need to get on the same page about how we’ll work together.”

“Public health needs to focus upstream and pass over the primary care piece and resources to primary care.”

Two implications of this shift in emphasis will be highlighted here. First, it is not an indication of the lack of role or importance of individual level interventions. Part of the challenge will be to determine who will take on some of the primary care services that public health has historically provided in Nova Scotia. A variety of perspectives exist regarding how to pursue this shift particularly where limited primary care capacity exists or where other limitations exist in transferring responsibility to other primary care providers.

Some key informants see simple solutions, such as just move existing public health resources to other service providers, while others see the issue as a continuum and not simply as a black and white demarcation between the two fields of practice. A further complication is that how this situation is resolved may vary by different parts of the province depending upon local capacities. Another consideration is the readiness of the existing workforce to make this transition since the competencies to provide individual level services are quite different from analyzing community needs, identifying policy options, partnership development, and supporting policy change within communities.

Translating the Vision: From Theory to Practice

A consistent theme among key informants was that the strategic shift in emphasis had not yet penetrated the front lines of the system. While the strategic planning process was inclusive and participatory, the identified strategic direction amounts to a re-engineering of what and how the work of public health is conducted. As one key informant observed, “the first five years [of system renewal] were easy compared to what’s ahead.”

While the strategic direction that has been identified is highly consistent with public health theory and major policy documents of the past 25 years, very few staff have formal training in public health and most of their professional training and experience have involved individual level service provision. Furthermore, the key leaders on the ground (i.e., DHA public health directors and managers) to lead and model this change are being hired from other fields and without formal public health training.

“Staff haven’t processed this change and cannot see themselves in this. We need to be able to relate this to them, engage them with examples of what we’re doing that contribute to this vision.”

“The district model is care driven. What makes public health unique to the health care system is the as-a-whole approach. Districts don’t have that focus – it’s individual, better care, services to change lifestyles and behaviours. Just a different focus.”

“The language of primordial/upstream – I need to understand what exactly this means.”

“We have an opportunity with the [public health standards] work to help shape this understanding.”

“Staff are doing it, but most staff are PHNs and are still doing primary care work. They may get it but don’t have time or skills set or evidence on where to start.”

“[We need] to say to staff: this is the work (stakes etc.), this is the knowledge, skills and competencies to do the work, we’ll help you get them, but this is the work, no more debate.”

This item is strongly linked to many of the other themes identified in this mid-course review including: the public health/primary care continuum; workforce competencies; the development of a public health information system; working as a system, and the PHSLT.

Structural Change

The Renewal Report’s actions for system renewal emphasized the importance of achieving structural integrity of public health under single leadership with reporting to the deputy minister. The key was to achieve a consolidated, provincial public health organization with the option of either including it within or outside the Department of Health. Pros and cons of both options were provided to senior decision makers. The decision at the time of the release of the Renewal Report was to create a separate Department of Health Promotion and Protection, while more recently, public health has been re-integrated into a new Department of Health and Wellness.

Consistent with the Renewal Report, key informants stressed that the recent merger does not alter the importance of retaining the structural integrity of public health at the provincial level with a single point of leadership and accountability for public health. Being part of a larger Department again brings some potential opportunities, but also challenges. Healthcare services are an immediate, constant, and increasing source of pressure on government, while public health is a relatively small programmatic area with a longer term time perspective.

“Merger provides opportunity to shine, shift focus to prevention and promotion and upstream work”

“There is a danger of two departments coming together that promotion and renewal will get lost due to the [treatment] side”

While the amalgamation of the two Departments may prompt consideration of opportunities for stronger alignment or consolidation with the broader healthcare system, the repeated experience elsewhere is that realignments of this nature occur at the expense of public health integration and capacity. This is not to indicate that public health should function as a silo and not communicate or collaborate with others, but rather that the public health orientation and function becomes quickly swamped when blended with services focused on the other 98% of the health system.

Whether public health assessment and surveillance, chronic disease prevention, workforce development or emergency preparedness, rational arguments can be made that better integration with other aspects of the Department will be advantageous for the health system as a whole. Similar arguments were made regarding the transfer of the PHIs to the Department of the Environment in the 1990s and the system is still suffering from that decision. One of the benefits of the past five years has been focus on building public health capacity and functionality that had not occurred previously. Prior to renewal, public health did not have any dedicated capacity for public health emergency planning and as such, there was very little if any public health emergency planning occurring in the Department. Prior to renewal there was no dedicated public health capacity for workforce development and there was no public health workforce development occurring. Public health is already an under-resourced program area and capacity it has been developing should not be diverted elsewhere. As this mid-course review has demonstrated, renewal is only partially achieved and new resources are required.

ANALYSIS

The review of progress towards achieving the Renewal Report's actions for system renewal is timely having reached the mid-point of the originally estimated timelines in order to take stock of what has been achieved and what is still left to do. The context has also changed with the recent merger of the former Departments of Health and Health Promotion and Protection, as well as the increase in fiscal pressures on government budgets.

Befitting a mid-course review, implementation of the Renewal Report's actions for renewal is partial and ongoing. Key informants were unanimous that the renewal actions continue to be valid. Progress has been made in a number of areas, particularly for those items of a structural and strategic nature. These successes need to be preserved and are important since they provide a foundation for tackling more challenging items. The Departmental merger does not alter the actions for system renewal since they were written whether public health remained within the Department of Health or a separate Department was established.

It is important to recall that a key impetus for the initial review was concern following SARS of public health's ability to address a major public health emergency, to be able to address key threats to the health of Nova Scotians, and to contribute to the sustainability of the healthcare

system. The frank assessment at the time of the Renewal Report was that Nova Scotia had considerable deficits with respect to the design and functioning of public health that did not bode well if challenged by a major event. Furthermore, the fragmentation, lack of role clarity, and lack of resources would also limit the ability to effectively promote and protect the health of Nova Scotians.

While improvements have been made, there are many fundamental areas where there has been little or no progress. The progress made to-date only somewhat mitigates the system deficits identified in the Renewal Report. Continuing gaps include:

- Lack of a comprehensive environmental health program with timely and competent routine and problem-based inspections
- Lack of an efficient and effective system model between DHA and provincial levels compounded by unilateral structural changes within DHAs and decreasing local expertise
- Lack of a modern information system to support public health responsibilities – the most urgent priorities are communicable disease surveillance, investigation and control, as well as an immunization registry
- The slow development of public health assessment and surveillance workforce capacity
- The need for active support in workforce development throughout the system.

The recent H1N1 pandemic illustrates strengthening in some of these areas, but also continuing gaps. Having a consolidated provincial level structure with a single point of leadership, visibility and accountability was clearly an improvement, as were the strengthened relationships across the system. However, the absence of a modern public health information system hindered the assessment and surveillance function to provide timely analysis of what was occurring in order to inform decision making. It should also be stressed that as a public health event, the main challenge with H1N1 was in managing the delivery of a mass immunization initiative, particularly in the absence of an immunization registry. However, H1N1 was not a scenario in which public health needed to detect an outbreak, investigate it, identify cases and their contacts, and implement control measures on a large scale. Such an emergency would likely expose to a greater degree existing gaps in information systems, diminishing expertise within DHAs, role clarity challenges, lack of a public health environmental health program, and limitations in existing epidemiologic capacity.

Many of these issues have existed for a long time, which can prompt complacency regarding their impact. These gaps have clear implications for the efficiency and effectiveness of public health and are major sources of vulnerability. While improved structures and processes were key elements of the Renewal Report's actions for system renewal, the underlying challenge was the lack of system capacity. The Renewal Report estimated that only 1.2% of the government's health services budget was allocated to public health. The identified goal was to double this over the subsequent decade and in the early years a third of this additional funding amount was invested. In recent years, funding has leveled off and actually been clawed back so that as of

2010/11, public health funding represents 1.5% of the total health services budget. If ‘an ounce of prevention is worth a pound of cure’, then Nova Scotia is currently investing less than a quarter of an ounce.ⁱⁱⁱ

There are clearly structural and process issues that still must be resolved to achieve a more efficient and effective public health model. These types of issues are resolvable within the public health system, with direction, authority and support from senior health system leaders. However, several issues are not resolvable solely within the sphere of influence of public health. The selection and implementation of information systems is a health system wide issue in which public health communicable disease and immunization information system needs to be identified as a priority by the health system overall and funded accordingly. The continuing gap in environmental health similarly needs to be finally addressed. Likewise, the limited ability to analyze data to inform priority setting and action needs to be rectified. These are all items that will require system leadership and investment in order to be resolved.

A key observation from the post-SARS report by Dr. David Naylor was that “there was much to learn from the outbreak of SARS in Canada – in large part because too many earlier lessons were ignored.” Public health in Nova Scotia continues to have major vulnerabilities with resulting inefficiencies and gaps. Furthermore, without adequate pre-event resolution, a major event will eventually expose these gaps likely leading to significant adverse outcomes.

ⁱⁱⁱ An ounce is 6.25% of a pound. $1.5\%/6.25\% = 24\%$

APPENDIX 1 - SUMMARY OF ACTIONS FOR SYSTEM RENEWAL (2006)

The Renewal Report provided 21 actions for system renewal. These items were described as being highly inter-dependent and needed to be viewed as a package of strategic actions to be implemented over a multi-year period.

1. Articulate and be guided by a collective vision for the public health system that integrates and supports the fulfillment of public health's core functions that effectively contribute to:
 - a. Improving levels of health status of the population and decreased health disparities
 - b. Decreasing the burden on the personal health services system and thereby contribute to its sustainability
 - c. Improving preparedness and response capacity for health emergencies.

2. Establish a single leadership position for Nova Scotia's public health system:
 - a. Lead provincial public health organization and be responsible for overall system coordination and development
 - b. Reporting to DM
 - c. Highly developed competencies: public health, leadership, and management (may also fulfil legislated CMOH responsibilities if appropriate)
 - d. Clearly defined roles and responsibilities
 - e. Independence – reporting to public, legislature
 - f. Competitive, transparent selection process with renewable 5-year term

3. Establish integrated public health organization at provincial system level
 - a. Created by consolidating current 3 public health "entities" (i.e. Office of Chief Medical Officer of Health; Population and Public Health Division; Nova Scotia Health Promotion)
 - b. Fulfills 5 public health core functions in integrated fashion: population health assessment, surveillance, health promotion, disease prevention and health protection
 - c. Structure similarly to other leading domestic and international public health agencies by programmatic area
 - d. Choose name for the public health organization that clearly identifies its responsibilities to staff, decision makers and the public.

4. Decide whether the consolidated provincial public health organization is best located within or outside the Department of Health and establish appropriate Ministerial oversight.

5. Transition the sub-provincial public health system level in a controlled manner from the existing Shared Service Area model to one based within District Health Authorities. This will require:
 - a. Being guided by the vision of a public health system that is vertically integrated between the provincial and DHA system levels, each of which are integrated horizontally with the rest of the health system
 - b. Clear roles, responsibilities and accountabilities of the two system levels
 - c. Directors of public health in *each* DHA to manage and be responsible for public health programming within the DHA and to provide population-level analysis and advice to senior executive and the board of the DHA
 - d. Maintaining an intact public health team headed by the Director of Public Health
 - e. Adequate capacity at both system levels in order to fulfill roles and responsibilities
 - f. Expectations and commitment for mutual aid among DHAs to address surges in demand (e.g. outbreaks, emergencies)
 - g. Medical Officers of Health to have dual roles:
 - i. Be MOH for one or more DHAs
 - ii. Be member of a provincial programmatic team.
6. The Departments of Health, Environment and Labour, and Agriculture and Fisheries embark on a collaborative process to achieve the following:
 - a. Identify, from the perspective of the three departments, the key issues and concerns regarding the current distribution of public health responsibilities and resources.
 - b. Identify the range of public health issues and corresponding programming that needs to be provided.
 - c. Identify the optimal distribution of responsibilities and resources required to address the findings identified in “b” above.
 - d. Develop an implementation plan to achieve “c” above.
7. Establish and implement a public health workforce development strategy with particular emphasis on critical gaps in the existing workforce.
8. Expand overall size of the workforce, as well as those with specialized skill sets including, but not limited to:
 - a. Epidemiologists
 - b. Professional Masters trained public health professionals
 - c. DHA Directors of public health.
9. Partner with the academic sector to expand/establish training programs and practicum settings including supporting the development of a teaching health unit.

10. Review, update and implement an IT strategy to improve the information infrastructure to support public health core functions and programming.
11. Establish evidence-based standards for Nova Scotia's public health system applicable to provincial and DHA levels that provide flexibility for tailoring to local circumstances and that support local and provincial level planning.
12. Establish a multi-component accountability mechanism for the public health system:
 - a. Planning, priority setting and implementation of evidence-based interventions
 - b. Financial tracking of system investment and its application
 - c. Reporting on system performance
 - d. Reporting on health of the public.
13. Develop and implement strategic plan to ensure high quality public health laboratory services in Nova Scotia by the provincial public health laboratory and a provincial laboratory network that are accountable for public health functions to the public health system.
14. Prepare public health legislation to comprehensively describe the public health system's functions, approaches, structures, roles and accountabilities.
15. Ensure the preparedness of the public health system to address outbreaks and other public health emergencies by:
 - a. Resources to plan, train and exercise for emergencies
 - b. Sufficient ongoing and surge capacity.
16. Implement a multi-year plan (i.e. 5-10 years) to achieve a doubling of current public health system funding to improve the capacity of the province's public health system to optimally promote health, prevent disease and injury, and be prepared to address the occurrence of public health emergencies. [Current public health system funding accounts for approximately 1.2% of provincial health system expenditures, or \$31 million].
17. Engage the academic sector within Nova Scotia to discuss opportunities for collaboration with the public health system in training, applied research and service.
18. Engage Atlantic Canada regional bodies and other Atlantic provinces to discuss opportunities for collaboration with mutually beneficial public health system functions and infrastructure development.

19. Partner with the federal government and the Public Health Agency of Canada to collaboratively strengthen public health system in Nova Scotia.
20. Engage the non-governmental sector to discuss opportunities for greater collaboration between the formal and informal public health systems in Nova Scotia.
21. Establish a dedicated team to project manage the implementation of the foregoing strategic actions. This will be a multi-year undertaking requiring a minimum team of 5 individuals to manage the implementation of the foregoing actions.

APPENDIX 2 – PROJECT ADVISORY COMMITTEE AND EXTERNAL EXPERT PANEL

- Advisory Committee
 - Peter MacKinnon, Chief Executive Officer, Colchester East Hants District Health Authority
 - Madonna MacDonald, Vice President, Community Health Guysborough Antigonish Strait Health Authority
 - Carol MacKinnon, Director Public Health, South Shore, South West, Annapolis Valley District Health Authorities
 - Dr. Gaynor Watson-Creed, Medical Officer of Health, Capital District Health Authority
 - Nancy Hoddinott, Director, Healthy Communities, Department of Health and Wellness
 - Marie McCully-Collier, President, Public Health Association of Nova Scotia

- External Expert Panel
 - Dr. Richard Massé, Past Director School of Public Health University of Montreal; Past President National Public Health Institute (Quebec)
 - Dr. André Corriveau, Chief Medical Officer of Health, Alberta Health and Wellness

APPENDIX 3 – UPDATE OF ACTIONS AND PROGRESS REGARDING PUBLIC HEALTH REVIEW’S ACTIONS FOR SYSTEM RENEWAL (SEPTEMBER 2011)

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 1:</u></p> <p>Articulate and be guided by a collective vision for the public health system that integrates and supports the fulfillment of public health’s core functions that effectively contribute to:</p> <p>a) Improving levels of health status of the population and decreased health disparities b) Decreasing the burden on the personal health services system and thereby contribute to its sustainability c) Improving preparedness and response capacity for health emergencies.</p>	<ul style="list-style-type: none"> ▪ Strategic planning process completed using Theory U approach. Over 60 dialogue interviews, 7 in-depth site visits (learning journeys) and 4 stakeholder gatherings (approximately 450 people) provide insight, direction and clarity around purpose. (<i>See A Journey Towards Renewal, 2011</i>) ▪ PHSLT identifies six stakes that frame public health in Nova Scotia. These flow from what we learned in Strategic Planning. (<i>See Moving Forward – A Commitment to Public Health’s Future, 2011</i>) ▪ Vision for public health articulates a commitment to work that is focussed upstream (primordial prevention), on populations and addressing the determinants of health. <p><u>Mid-course Review:</u> Strategic planning provided the product of a collective vision and direction for public health. While the process and time required to achieve the outcome may have been long, it achieved what it set out to do. There is also recognition that without Theory U, this clarity of vision may not have been achieved. The collective vision is a focus upstream, on populations and on the determinants of health.</p>
<p><u>Action 2:</u></p> <p>Establish a single leadership position for Nova Scotia’s public health system:</p> <p>a) Lead provincial public health organization and be responsible for overall system coordination and development b) Reporting to DM c) Highly developed competencies: public health, leadership, and management (may also fulfill legislated CMOH responsibilities if appropriate) d) Clearly defined roles and responsibilities e) Independence – reporting to public, legislature f) Competitive, transparent selection process with renewable 5-year term</p>	<ul style="list-style-type: none"> • 2007: Dr. Robert Strang, Chief Public Health Officer (CPHO) appointed in August. The CPHO also has the responsibilities of the Chief Medical Officer of Health under the Health Protection Act. • CPHO reports to the Deputy Minister, sits at the Executive table at DHW, attends Vice President of Community Health, attends Council of CEOs (at/upon request), and represents Nova Scotia at the FPT Public Health Network Council and Council of Chief Medical Officers of Health. <p><u>Midcourse Review:</u> Importance of single leadership position affirmed.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 3:</u></p> <p>Establish integrated public health organization at provincial system level</p> <p>a) Created by consolidating current 3 public health “entities” (i.e. Office of Chief Medical Officer of Health; Population and Public Health Division; Nova Scotia Office of Health Promotion)</p> <p>b) Fulfills 5 public health core functions in integrated fashion: population health assessment, surveillance, health promotion, disease prevention and health protection</p> <p>c) Structure similarly to other leading domestic and international public health agencies by programmatic area</p> <p>d) Choose name for the public health organization that clearly identifies its responsibilities to staff, decision makers and the public.</p>	<ul style="list-style-type: none"> • 2006: integrated and consolidated public health organization at provincial level established when the new Department of Health Promotion and Protection created. 5 Responsibility centres created: Communicable Disease Prevention and Control, Environmental Health, Healthy Communities, Healthy Development, Population Health Assessment and Surveillance; each headed by a Director. Health Services Emergency Management reporting to Health and HPP • January 2011: New Department of Health and Wellness announced – Public Health under the CPHO stayed intact as an integrated unit. Health Services Emergency Management now reporting to Chief, Program Standards and Quality <p><u>Mid-course review:</u> Capacity at provincial level increased; roles and interface with districts requires some clarification; this structural change has been positive and should remain.</p>
<p><u>Action 4:</u></p> <p>Decide whether the consolidated provincial public health organization is best located within or outside the Department of Health and establish appropriate Ministerial oversight.</p>	<ul style="list-style-type: none"> • 2006: Department of Health Promotion and Protection created. Consisted of public health, addiction services (prevention) and physical activity, sport and recreation. • 2011: Merging of Department of Health and Department of Health Promotion and Protection into Department of Health and Wellness. <p><u>Mid-course review:</u> opportunities for collaboration given newly integrated department. Caution that broad health system issues often trump public health work or public health work gets lost in broader health structures (Surveillance with health system utilization analysts, chronic disease prevention with chronic disease management, public health workforce development with health human resources workforce development, public health emergency preparedness with broader health system emergency preparedness), particularly when staff/units structured to serve both. Dedicated resources for public health aspects should remain.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p>Action 5:</p> <p>Transition the sub-provincial public health system level in a controlled manner from the existing Shared Service Area model to one based within District Health Authorities.</p> <p>This will require:</p> <ul style="list-style-type: none"> a) Being guided by the vision of a public health system that is vertically integrated between the provincial and DHA system levels, each of which are integrated horizontally with the rest of the health system b) Clear roles, responsibilities and accountabilities of the two system levels c) Directors of public health in <i>each</i> DHA to manage and be responsible for public health programming within the DHA and to provide population-level analysis and advice to senior executive and the board of the DHA d) Maintaining an intact public health team headed by the Director of Public Health e) Adequate capacity at both system levels in order to fulfill roles and responsibilities f) Expectations and commitment for mutual aid among DHAs to address surges in demand (e.g. outbreaks, emergencies) g) Medical Officers of Health to have dual roles: <ul style="list-style-type: none"> i) Be MOH for one or more DHAs ii) Be member of a provincial programmatic team. 	<ul style="list-style-type: none"> • 2008: Organizational review of local level of the system, sponsored by the Vice Presidents' of Community Health and CPHO had two meetings - October 22 and November 13, 2008. There was agreement that there is a need to strengthen local level public health management and a continued need to collaborate across DHAs and with HPP to create a public health system. • 2010: AVH, SSH, SWH maintains a shared service public health director. Each District has a local public health leader and there are shared content leads for healthy communities, healthy development and communicable disease prevention and control content, epidemiologists, medical officer of health at the shared service level . • 2011: CEHDHA, CHA, PCDHA continuing with a shared service Director and managers for each DHA. There was a trial of a shared service team lead position in Communicable Disease Prevention and Control that was discontinued and one manager is the link for the 3 districts. • 2011:GASHA has appointed a Director of Public Health and Primary Health Care. • 2011: CBDHA has appointed a Director of Community Health. • 2011: Capital Health has reorganized its structure to geographic community, Health Protection Unit and Understanding our Communities units. <p>Mid-course review: working as an integrated public health system has yet to be fully realized; increasing districtization has been positively viewed by DHAs however, public health capacity and expertise has been impacted. Shared portfolios at Director level has impact for leadership and mentoring for staff. Increasing MOH presence at more DHAs has/will have positive impact. The importance of understanding the business of public health at all levels of the system is crucial in addressing how best to share resources across districts. A process that supports innovation and creative ways to achieve efficiency and effectiveness needs to be undertaken. The vertical integration (ie. working as a system) was identified as an issue with a recognition that the Public Health system leadership team was poised for success but failing in providing the leadership and mentoring of working and acting as a system. DHAs are working closely together on system and shared service issues through the VP3 meetings which may support public health as it proceeds with discussions on how to optimally work. manner.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p>Action 6:</p> <p>The Departments of Health, Environment and Labour, and Agriculture and Fisheries embark on a collaborative process to achieve the following:</p> <p>a) Identify, from the perspective of the three departments, the key issues and concerns regarding the current distribution of public health responsibilities and resources.</p> <p>b) Identify the range of public health issues and corresponding programming that needs to be provided.</p> <p>c) Identify the optimal distribution of responsibilities and resources required to address the findings identified in “b” above.</p> <p>d) Develop an implementation plan to achieve “c” above.</p>	<ul style="list-style-type: none"> • In 2007 the Joint Environmental Health Protection Committee (JEHPC) was established. Through this committee an environmental health human resources working group was established to improve practicum opportunities for individuals entering the profession. • JEHPC, lead by HPP, engaged stakeholders throughout 2009/2010 to assess key issues and concerns regarding distribution of public health responsibilities among the three departments and developed a plan to address those issues. The plan was not supported by Agriculture or Environment due to human resource demands. • Since 2008 the Environmental Health Responsibility Centre within the Department of Health & Wellness has enhanced focus on environmental health within the public health system with the addition of 2 environmental health consultants and 2 program officers who directly support environmental health issues response, health hazard mitigation, program and legislation development in several environmental health areas. <p>Mid-course review: Despite intense efforts to improve communication and collaboration among the three departments, significant gaps still exist with respect to data collection, exchange, capacity and training development. These gaps impede timely response to health hazards and are a vulnerability to the health system. Establishment of a public health environmental program with dedicated public health inspector capacity within the health system is required. This will require a significant investment of resources.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 7:</u></p> <p>Establish and implement a public health workforce development strategy with particular emphasis on critical gaps in the existing workforce.</p>	<ul style="list-style-type: none"> • Completed a pilot project at CDHA for assessing organizational readiness to integrate the Core Competencies for Public Health in HR processes and tools. • Completed enumeration pilot of public health staff in NS as part of FPT Task Group. • Workforce Development identified as a Foundational Standard of Public Health to address key element of managing the size and composition of the work force, retaining and managing the workforce and developing skill capacity in the workforce. <p><u>Mid-course review:</u> workforce development continues to be identified as a major issue especially given the new vision and direction of public health. Coupled with increasing fiscal restraint, developing workforce capacity is a challenge but is fundamental infrastructure for public health capacity.</p>
<p><u>Action 8:</u></p> <p>Expand overall size of the workforce, as well as those with specialized skill sets including, but not limited to:</p> <p>a) Epidemiologists b) Professional Masters trained public health professionals c) DHA Directors of public health.</p>	<ul style="list-style-type: none"> • Increase of public health FTEs during establishment of Department of Health Promotion and Protection (17 FTEs) and increasing capacity for DHAs (26 FTEs). • Establishment of Population Health and Surveillance Responsibility center. Market analysis for epidemiologist role completed. Separate classification developed by PSC for epidemiologists. Recruitment underway for epidemiologists. • Evaluation of Coaching Workshop for Public Health Inspectors and Practicum Placements completed. • DHA Director of Public Health (DHAS 4,5,6), Director of Community Health (DHA 8) and Director of Primary Care and Public Health (DHA9) hired – each having different skill sets. • 2 MOHs hired with Public Health and Preventive Medicine specialization <p><u>Mid-course review:</u> Ability to recruit and retain staff with specialized training in public health has been challenging. While there has been some investment, surveillance capacity to address communicable and non-communicable disease and injury needs enhancement. Support of the entire public health system needs to be a priority. Ability to locally access Master’s level training has not materialized. The investment of financial resources has to date primarily be related to FTEs. Medical Officers of Health have been recruited and capacity of MOH team has increased.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 9:</u></p> <p>Partner with the academic sector to expand/establish training programs and practicum settings including supporting the development of a teaching health unit.</p>	<ul style="list-style-type: none"> • Significant time, energy and resources invested with Dalhousie University (faculties of Health Professions and Medicine) in developing a MPH proposal. Program outcomes and course outlines developed collaboratively reflecting the vision and direction of public health in Nova Scotia. A focus on distance education and flexibility in coursework has been a hallmark of planning. • Collaboration with Department of Education in developing MPH proposal with Dalhousie University. • Engagement with Dalhousie University School of Medicine related to curriculum re-design for medical students. • Strengthening relationship with Community Health and Epidemiology since appointment of new Director, Dr. Adrian Levy. • Exploratory meetings with Cape Breton University regarding establishment of Population Health Research Unit. <p><u>Mid-course review:</u> despite ongoing work with Dalhousie University a collaborative proposal for an MPH degree has yet to be fully developed. A comprehensive approach to cross appointments for public health practitioners has not been accomplished.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 10:</u></p> <p>Review, update and implement an IT strategy to improve the information infrastructure to support public health core functions and programming.</p>	<ul style="list-style-type: none"> • Since 2006, Nova Scotia actively participated in the Pan-Canadian CDC Case Management/ Surveillance Infoway Project (PANORAMA). • In 2009 the PANORAMA project was put on hold in NS as a result of the pandemic response, the required HR resources necessary for the project and the alignment of the NS implementation plan with the national project. • In the fall 2010 HPP (now DHW) asked Treasury Board for funds to restart the project. Given the costs associated with Panorama, TB asked that a due diligence exercise be undertaken where other applications that were previously not on the market at the time Panorama was developed be assessed. This exercise was completed in Spring 2011. ▪ In 2011, this information was presented to the Panorama Executive Steering Committee (now sunset) with a recommendation that in order to advance the work of Communicable Disease Prevention and Control in the 21st century, a comprehensive electronic public health information system inclusive of outbreak management, surveillance, immunization registry, inventory remains a requirement. <p><u>Mid-course review:</u> The lack of a comprehensive public health information system continues to be a major gap and vulnerability. While a pan-Canadian approach was felt to be the best approach, given this is no longer proceeding, other options need to be identified. This requires the province to select, fund and support implementation of an alternative. This needs to be identified as a priority from a health infrastructure perspective as well as investment in its development and implementation.</p>
<p><u>Action 11:</u></p> <p>Establish evidence-based standards for Nova Scotia’s public health system applicable to provincial and DHA levels that provide flexibility for tailoring to local circumstances and that support local and provincial level planning.</p>	<ul style="list-style-type: none"> • In 2009 work related to a core program framework was undertaken which fed into strategic planning and contributed to the development of standards. Development of the 6 stakes and the clarity of vision for public health provided the foundation of the development of public health system standards (2011-2016). <p><u>Mid-course review:</u> Standards for public health based on the results of strategic planning were developed in 2011. Work to develop further detail (ie. protocols) is required to support provincial and local work. These standards should assist in having a stronger system approach to public health work.</p>

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 12:</u></p> <p>Establish a multi-component accountability mechanism for the public health system:</p> <p>a) Planning, priority setting and implementation of evidence-based interventions b) Financial tracking of system investment and its application c) Reporting on system performance d) Reporting on health of the public.</p>	<ul style="list-style-type: none"> • In 2008/9, public health budgets were consolidated into 1 lead-sheet for DHAs for 08/09 budget year. Realigned budgets at DHA level consistent with CIHI MIS Guidelines. • Evaluation of the Public Health Funding Approach completed. Presented at American Public Health Association meeting in November 2009 and at Canadian Public Health Association in June 2010. <p><u>Mid-course review:</u> The need for an accountability framework continues and is fundamental work that needs to be accomplished. This interfaces with public health standards, roles and responsibilities, and legislation.</p>
<p><u>Action 13:</u></p> <p>Develop and implement strategic plan to ensure high quality public health laboratory services in Nova Scotia by the provincial public health laboratory and a provincial laboratory network that are accountable for public health functions to the public health system.</p>	<ul style="list-style-type: none"> • The Public Health Laboratory Network funded and now in place. It continues to address technical and capacity issues across the system. <p><u>Mid-course review:</u> The investment into laboratory services is identified as a success.</p>
<p><u>Action 14:</u></p> <p>Prepare public health legislation to comprehensively describe the public health system's functions, approaches, structures, roles and accountabilities.</p>	<ul style="list-style-type: none"> • Public health legislation has been identified as part of government's 5 year legislative plan. • New legislation (Safe Body Art Act (2011), Tanning Beds Act (2011) and Snow Sport Helmet Act (2011) has been developed. Health protection and tobacco legislation currently exist. Legislation that reflects all functions of public health is required. <p><u>Mid-course review:</u> A public health legislation working group has been established.</p>

Action for System Renewal as outlined in Report (2006)	Update																							
<p>Action 15:</p> <p>Ensure the preparedness of the public health system to address outbreaks and other public health emergencies by:</p> <p>a) Resources to plan, train and exercise for emergencies b) Sufficient ongoing and surge capacity.</p>	<ul style="list-style-type: none"> ▪ H1N1 provided the opportunity for the public health system along with the broader health system to demonstrate its response to planning and surge capacity within the system. ▪ Overall, the public health system was responsive and an in-depth process to learn from the event has been undertaken. ▪ Business continuity planning was implemented and identified opportunities for improvement. ▪ The event identified some areas of vulnerability specifically related to epidemiology and surveillance capacity, information systems (lack thereof), and opportunities for mutual aid. <p>Mid-course review: There were structural and process improvements demonstrated with H1N1. However, H1N1 was not truly a test of communicable disease surveillance, investigation and control (it was predominantly an exercise in managing mass immunization) – therefore did not test/expose current gaps in DHA capacity/processes or information systems. It did test the gap in the lack of an immunization registry and impacted the quality of our vaccine coverage data. It also tested DHA capacity to manage processes related to vaccine inventory in a timely manner.</p>																							
<p>Action 16:</p> <p>Implement a multi-year plan (i.e. 5-10 years) to achieve a doubling of current public health system funding to improve the capacity of the province’s public health system to optimally promote health, prevent disease and injury, and be prepared to address the occurrence of public health emergencies. [Current public health system funding accounts for approximately 1.2% of provincial health system expenditures, or \$31 million, not including vaccine or PHI costs].</p>	<table border="1" data-bbox="1119 805 1906 1117"> <thead> <tr> <th data-bbox="1119 805 1241 846">Year</th> <th data-bbox="1241 805 1694 846">New PH System Funding</th> <th data-bbox="1694 805 1906 846">New Vaccines</th> </tr> </thead> <tbody> <tr> <td data-bbox="1119 846 1241 911">06-07</td> <td data-bbox="1241 846 1694 911">\$3.3m = \$1.1m (renewal) + \$2.25m (programs)</td> <td data-bbox="1694 846 1906 911">0</td> </tr> <tr> <td data-bbox="1119 911 1241 951">07-08</td> <td data-bbox="1241 911 1694 951">\$3.6 m</td> <td data-bbox="1694 911 1906 951">\$3.2 m</td> </tr> <tr> <td data-bbox="1119 951 1241 992">08-09</td> <td data-bbox="1241 951 1694 992">\$2.7 m</td> <td data-bbox="1694 951 1906 992">\$1.2 m</td> </tr> <tr> <td data-bbox="1119 992 1241 1032">09-10</td> <td data-bbox="1241 992 1694 1032">\$3.1 m</td> <td data-bbox="1694 992 1906 1032"></td> </tr> <tr> <td data-bbox="1119 1032 1241 1073">10-11</td> <td data-bbox="1241 1032 1694 1073">(\$1.0m)</td> <td data-bbox="1694 1032 1906 1073"></td> </tr> <tr> <td data-bbox="1119 1073 1241 1114">11-12</td> <td data-bbox="1241 1073 1694 1114">(\$0.438m)</td> <td data-bbox="1694 1073 1906 1114"></td> </tr> </tbody> </table> <p>Mid-course review: While there were some gains initially, there have been cuts to public health in the past 2 fiscal years. Major investments required to address environmental health, public health information systems, public health surveillance capacity, and workforce development. These are all major areas of investment.</p>			Year	New PH System Funding	New Vaccines	06-07	\$3.3m = \$1.1m (renewal) + \$2.25m (programs)	0	07-08	\$3.6 m	\$3.2 m	08-09	\$2.7 m	\$1.2 m	09-10	\$3.1 m		10-11	(\$1.0m)		11-12	(\$0.438m)	
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<p>Action 17:</p> <p>Engage the academic sector within Nova Scotia to discuss opportunities for collaboration with the public health system in training, applied research and service.</p>	<ul style="list-style-type: none"> • Ad hoc work in this area <p>Mid-course review: very little progress on this action has been achieved despite efforts at developing MPH program at Dalhousie University.</p>																							

Action for System Renewal as outlined in Report (2006)	Update
<p><u>Action 18:</u></p> <p>Engage Atlantic Canada regional bodies and other Atlantic provinces to discuss opportunities for collaboration with mutually beneficial public health system functions and infrastructure development.</p>	<ul style="list-style-type: none"> • Ad hoc work in this area. <p><u>Mid-course review:</u> very little progress on this action has been achieved. Action item had optimistically envisioned parallel strengthening of public health in other provinces.</p>
<p><u>Action 19:</u></p> <p>Partner with the federal government and the Public Health Agency of Canada to collaboratively strengthen public health system in Nova Scotia.</p>	<ul style="list-style-type: none"> • In 2009/10, during H1N1, Nova Scotia played a strong role in the Special Advisory Committee (SAC) and all the issues surrounding H1N1 vaccine and vaccine supply. • Continued active participation on the Public Health Network (PHN). <p><u>Mid-course review:</u> this action requires ongoing attention. PHAC's role and role of regional office still seem to be in evolution. Nova Scotia has taken advantage of public health officer positions and graduate training for MOHs.</p>
<p><u>Action 20:</u></p> <p>Engage the non-governmental sector to discuss opportunities for greater collaboration between the formal and informal public health systems in Nova Scotia.</p>	<ul style="list-style-type: none"> • Collaboration with multiple partners is central component of local and provincial level action. CPHO responsive to requests of NGO community/sector partners to collaborate on shared areas of interest <p><u>Mid-course review:</u> this action requires ongoing attention</p>
<p><u>Action 21:</u></p> <p>Establish a dedicated team to project manage the implementation of the foregoing strategic actions. This will be a multi-year undertaking requiring a minimum team of 5 individuals to manage the implementation of the foregoing actions.</p>	<ul style="list-style-type: none"> • The Public health Renewal team has been fully staffed with the Project Executive- Public Health System Integration position filled on a 1 year secondment basis. This provides opportunity for system learnings at both levels of the system. • This team has provided leadership and continuity on system wide initiatives (strategic planning, standards development, etc) <p><u>Mid-course review:</u> This leadership and coordination function has been required to move complex system work forward. The Project Executive- PH Integration as a secondment position has been viewed as very positive.</p>