

April 2014 - March 2015

The Drug Evaluation Alliance of Nova Scotia (DEANS) provides Nova Scotia with a structure to identify, develop, implement, and evaluate educational interventions that address drug utilization issues in Nova Scotia (NS). These educational interventions are often, but not always, coordinated with policy interventions in the NS Pharmacare programs to facilitate change and to provide the rationale for change.

Most DEANS interventions are multi-faceted and inter-professional, using presentation vehicles such as live online classrooms, didactic presentations, small-group workshops, and academic detailing to disseminate evidence on best practices. To measure the impact of interventions, DEANS establishes linkages with academic evaluators and encourages evaluations that generate new evidence to inform drug policy.

DEANS is coordinated by a volunteer Management Committee which oversees all activities and is responsible for establishing and managing partnerships. Much of the success of DEANS is due to its ability to build a framework of key partnerships and to engage these partners in the implementation and evaluation of initiatives.

Health Technology Assessment

DEANS continues to pursue ways to encourage the use of health technology assessment as a bridge between research and clinical decision-making.

The *Katie* Program, which was launched in 2009, continues to support innovative methods of transferring knowledge from learning activities to clinical practice. The aim of the *Katie* program is to encourage all learners to be critical learners. Educational tools have been developed to help learners enhance their critical appraisal skills.

Workshops were developed to encourage presenters to incorporate *Katie* principles in their presentations and to encourage moderators to pose *Katie* questions during the question and answer portion of educational programs. Moderators are encouraged to access the tool "*Tips for Moderators*". The goal of this tool is to help session moderators engage the audience and facilitate learning.

Funding from the Canadian Institutes of Health Research (CIHR) through a Meeting, Planning and Dissemination Grant under the Knowledge Translation Supplement competition facilitated the further development of the *Katie* tools, including the production of *Katie* videos for the website and for use in educational programs. Two videos were completed and posted in 2013: *The Katie Program: Introduction*; and *Characterizing the Evidence*. A third video was created and published in 2014: *Absolute? Relative? What's the Difference? Calculating and Presenting Evidence*.

The *Katie* team has also developed two online tools that support the clinical interpretation of study data. The *Katie Calculator* is applicable to dichotomous data and allows the user to enter study data and calculate the relative risk reduction (RRR), the absolute risk reduction (ARR) and numbers needed to treat (NNT) or harm (NNH). A second calculator tool, the *Gardner's Effect Size Illustrator* is useful for clinically interpreting continuous or scale data. In 2014, two videos that help users understand and use the *Katie Calculator* were created and are now posted on the *Katie* website.

During 2014/15, the team updated the *Katie card*. The card was developed to support effective, critical, dynamic, action-oriented learning at continuing education programs and other clinical

learning experiences. The *Knowledge Translator*, on the front side of the card, focuses on key clinical questions for reflection when appraising the information presented or discussed. The *Appraisal Tool*, on the back side of the card, provides more specific questions to guide the user to critically appraise the new clinical information.

As in previous years, *Katie* principles were incorporated into the Dalhousie Continuing Pharmacy Education Refresher (November 2014) and the Dalhousie Medical Refresher Course (November 2014). *Katie* principles were also incorporated into the 2014 CADTH Symposium: The Realities of Health Care Decision-Making: Evidence, Values and Collaboration. April 6 – 8, 2014, Gatineau, Quebec.

For information about *Katie* and to access *Katie* tools, go to: <http://katie.dal.ca/>

Oral Anticoagulants in Atrial Fibrillation

In 2014/15, the Academic Detailing Service (ADS) developed an educational intervention “*Oral Anticoagulants in Atrial Fibrillation*”. This topic addresses the following questions: Who needs anticoagulation? How effective is warfarin? What are the advantages and disadvantages of the direct anticoagulants (DOACs) compared with warfarin? What are the current recommendations? What are the special considerations for the elderly (≥ 75 years)?

The academic detailers began their educational visits in fall 2014. During 2014/15, the detailers saw 274 family physicians, 23 medical students, 22 nurse practitioners, 16 RNs, 4 pharmacists and 2 other health care professionals through office visits. In addition, 77 family physicians participated in a webinar.

As with other Dalhousie ADS programs, the materials were modified and delivered through *Academic Detailing Rx*, Dalhousie Continuing Pharmacy Education. Forty-seven pharmacists participated in a webinar on March 4, 2015, and an additional 9 pharmacists accessed the archived webinar.

The topic was presented at the Dalhousie Continuing Pharmacy Education Refresher (November 7, 2014), the Family Medicine Forum sponsored by the College of Family Physicians of Canada (November 2014) and the Dalhousie Continuing Professional Development Emergency Medicine Refresher (February 2015).

All materials are published online and are available through the following link:

<http://medicine.dal.ca/departments/core-units/cpd/programs/academic-detailing-service/AC-Service-Resources.html>

Gout: Update 2013

In 2013/14, the ADS developed an educational intervention, “*Gout: Update 2013*”. This topic addressed issues regarding some current recommendations for the management of gout, and a review of the supporting evidence. The academic detailers began their educational visits to family physicians in January 2014 and continued through 2014/15. The detailers have seen 423 family physicians, 23 medical students, 24 nurse practitioners, 31 nurses, 15 pharmacists and 5 other health care professionals through office visits.

As with other Dalhousie ADS programs, the materials were modified and delivered through *Academic Detailing Rx*, Dalhousie Continuing Pharmacy Education. The topic was presented by webinar on April 29, 2014; 46 pharmacists participated and an additional 18 pharmacists accessed the archived webinar.

The topic was presented at the Forum for Family Medicine in November 2014, in Quebec City, Quebec, the Dalhousie Continuing Pharmacy Education Refresher (November 7-9, 2014) and the Dalhousie Medical Refresher Course (November 2014).

In addition, materials are published online and are available through the following link:

<http://medicine.dal.ca/departments/core-units/cpd/programs/academic-detailing-service/AC-Service-Resources.html> .

Acute Pain Management in Common Conditions

As previously reported, DEANS supported the development of an initiative to promote optimal pain management – with a focus on acute pain. Work on this initiative began in 2012/13 and continued through 2013/14 and 2014/15. This program was developed in follow-up to the Dalhousie *Academic Detailing Service (ADS)* educational intervention, “Opioids in Chronic Non-cancer Pain” based on the National Opioid Use Guideline Group (NOUGG).

The acute pain program is case-based; each case is designed to incorporate issues that complicate pain management. Three cases have been developed at present. These cases were presented at the Dalhousie Pharmacy Refresher (November 7-9, 2014) in a plenary session and at the Dalhousie Medical Refresher (November 27-30, 2014). This topic is envisioned as a series with additional cases addressing other pain conditions to be created and presented in the future.

Continuing Pharmacy Education: Pharmacists as Immunizers

In 2013, legislation was passed in Nova Scotia permitting pharmacists to deliver this service to patients. As reported previously, Dalhousie Continuing Pharmacy Education (Dal CPE) created the *Immunization and Injection Administration Training Program (IIATP)* and *Immunization and Injection Administration Refresher Program (IIARP)* through the support of many organizations, including DEANS. This program has been used to train pharmacists in the Maritime Provinces to offer immunization and injection services. Dal CPE continued to offer both the *IIATP* and the *IIARP* to pharmacists in the Maritimes in 2014/15.

DEANS also provided support for a project that examined the rates of influenza immunization in Nova Scotia. The objectives of this study were: to compare the number of influenza immunizations and the estimated influenza vaccination coverage rates before and after pharmacists began

immunizing in NS in 2013/14; and to characterize the demographics of the population receiving influenza immunization from pharmacists.

Preliminary findings indicate that influenza vaccination coverage in NS was higher in 2013/14 than in the previous 3 years. Pharmacists administered 20% (N=78,102) of all influenza vaccines administered in NS in 2013/14. The majority (55%) of individuals who were immunized by pharmacists were 24-64 years of age. Various factors may have contributed to the increased coverage, including the addition of pharmacists as immunizers and media coverage of influenza related fatalities. Future research will be necessary to fully determine the impact of pharmacists as immunizers and the other factors that influence immunization rates.

Promoting Mental Health and Wellbeing through Community Pharmacy Collaboratives

As reported previously, DEANS provided support for the first phase of this multi-phase, interdisciplinary project led by Drs. David Gardner and Andrea Murphy. The overarching purpose of this project is to generate and apply knowledge of the integrated community pharmacy team’s roles in improving the mental health and wellbeing of Nova Scotians.

Phase I explored the relationships between community pharmacists and persons with lived experience with mental illness, through interviews and focus groups. This work is almost complete. As previously reported, data from pharmacy students has been published in the *Canadian Pharmacists Journal*. The article is available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3908620/>. The data from pharmacists’ experiences has been submitted for publication. The patient data from two focus groups and six interviews has been analyzed and the manuscript is nearly ready for submission.

The funding for this project was also instrumental in supporting the development of the Navigator tool available from www.morethanmeds.com and

the resource has been updated for the Bloom Program. This resource identifies mental health services and community supports relating to mental health and addictions throughout the province. The tool was designed to assist pharmacists when helping people with mental health and addiction problems find related services and supports.

The support from DEANS has allowed for literature reviews to support all aspects of this project. The reviews of published and grey literature and the results from the interviews and focus groups have identified several areas in which pharmacists can positively impact mental health. Through the findings of this project and the literature review, specific areas that require further research, including community pharmacists' roles in smoking cessation, brief interventions for alcohol dependence, suicide-related behaviours and screening for mental illnesses have been identified. The support from DEANS has been instrumental as the foundational work to several other projects, e.g. More Than Meds., Headstrong.

STOPP-START Criteria

The STOPP-START criteria are evidence-based sets of explicit criteria developed to facilitate screening for potentially inappropriate prescribing in older persons. STOPP refers to **S**creening **T**ool of **O**lder **P**erson's potentially inappropriate **P**rescriptions, and START to **S**creening **T**ool to **A**lert doctors to the **R**ight **T**reatment. These criteria were developed in Ireland using a modified Delphi process that involved 18 experts in geriatric pharmacotherapy from across the United Kingdom and Ireland.

As reported previously, DEANS provided funding to support a systematic review of research studies related to the STOPP-START criteria and a retrospective observational study that examined the use of benzodiazepines and zopiclone by older persons in Nova Scotia, and concordance with the STOPP criteria. DEANS continued to support work in this area in 2014/15, including a retrospective observational study that examined the extent and predictors of the use of benzodiazepine and zopiclone in fall-prone older adults, using data

from the Nova Scotia Seniors' Pharmacare Program (NSSPP) from 2006 to 2011.

The results of this study indicated that about 22% of NSSPP beneficiaries age 66 and older who were hospitalised for a fall-related injury during the study period had made a claim for a benzodiazepine or zopiclone in the 100 days prior to admission. Of these individuals, about 75% made a claim for a benzodiazepine or zopiclone in the 100 days following discharge.

The findings suggest a gap in concordance between the STOPP criteria and benzodiazepine-zopiclone claims by Nova Scotia's older adults. A strategy to improve the use of these agents is warranted, in particular among fall-prone elderly patients who have experienced a fall-related injury that results in hospitalization.

In 2014/15, DEANS also provided support for a retrospective observational study that examined the use of colchicine among beneficiaries of the NSSPP with a diagnosis of incident gout. In particular, the objectives were to determine the dose and duration of use, to identify the most frequent prescribers, and to evaluate adherence to international guidelines and the STOPP criteria recommendations regarding colchicine use. The impetus for this research was documentation of concerns regarding the use of colchicine in older persons, in particular the risk of accumulation due renal or hepatic dysfunction, risk of serious adverse events such as neuromuscular toxicity and rhabdomyolysis, and drug interactions.

Given the adverse effects associated with colchicine, STOPP criteria recommend that treatment should be limited to a duration of less than 90 days. Recent evidence supports an initial dose of 1.8 mg over one hour, followed by 0.6 mg once or twice daily if prophylaxis is indicated.

From January to March 2011, the average dose dispensed to Nova Scotia Seniors' Pharmacare beneficiaries exceeded the recommended maximum dose of 1.2 mg in 33% of treatment

courses and the recommended maximum duration of 90 days in 9.1% of treatment courses.

The findings of this study suggest that there is still room for improvement regarding optimal prescribing of colchicine for the treatment of incident gout among older patients. Of note, the study period predated the dissemination of the Academic Detailing Service topic on gout, raising the question of whether the patterns of prescribing will improve following this educational initiative.

Audit and Feedback of Prescribing Profiles to Nova Scotia Family Physicians who are using Electronic Medical Records for Prescribing

The use of electronic medical records (EMRs) in primary care provides an opportunity to collect accurate, complete and timely data on patient-health system interactions that can support clinical decision-making. These data may also be used to promote optimal medication use by providing feedback to physicians regarding their prescribing profiles.

As reported previously, DEANS provided funding to support the development of a project “*Audit and feedback of prescribing profiles to Nova Scotia family physicians using electronic medical records for prescribing*”, led by Dr. Nandini Natarajan, Associate Professor, Department of Family Medicine, Dalhousie University, with co-investigators Dr. Ingrid Sketris (College of Pharmacy, Dalhousie University) and Ms. Heather Neville (Capital District Health Authority). The objective is to assess the feasibility of using prescription data extracted from the Nightingale EMR for Maritime Network Canadian Primary Care Surveillance System Network (MarNet CPCSSN) to calculate the DU90% prescribing indicator for all participating and consenting physicians, and to provide the physicians with their individual DU90% prescribing profiles.

Work continued on this study through 2014/15. A key deliverable, accomplished in 2014/15, was to develop a process to connect drug names with the appropriate ATC code. To date, all of the patients with diabetes who are managed by 30 family

physicians in the Halifax area have been identified. The next phase of the project will focus on patients with hypertension.

Dr. Nandini Natarajan presented this work at the Annual Conference of the North American Primary Care Research Group (New York, NY; November, 2014). The presentation described the process that was developed to code the drugs and create profiles.

SleepWell Nova Scotia: An Interdisciplinary Approach to Managing Insomnia

As reported previously, in November 2013 the Management Committee endorsed the development of an interdisciplinary, multi-phase initiative to address the appropriate management of insomnia. As with other DEANS’ initiatives, this project is a collaborative effort by multiple stakeholders, including researchers, clinicians and decision-makers. The initiative proceeded in early 2014, and continued throughout 2014/15.

The objective of the initiative is to promote the rational management of insomnia, with the following aims: to prevent unnecessary starts and use of hypnotics; and to improve sleep outcomes through the use of non-pharmacological interventions. The initiative employs a two-fold approach that includes an education component for health care professionals and the distribution of ‘sleep kits’ that are designed as an alternative to medications.

The initiative was formally introduced in November 2014 with the launch of the SleepWell NS website <http://sleepwellns.ca/> and the first educational presentations at the Dalhousie Pharmacy Refresher (November 7-9, 2014) and the Dalhousie Medical Refresher (November 27-30, 2014). Sleep kits were distributed to participants at each of the Dalhousie Refreshers.

The initiative received some media attention at the Pharmacy Refresher – interviews featuring Drs. David Gardner and Connie LeBlanc.

Publications/Presentations

Alia TA, Isenor JE, Billard B, McNeil SA, Slayter KL, MacDougall D, Halperin B, Holmes E, Oliver G, Bowles SK. Impact of pharmacists as immunizers on influenza vaccination coverage in Nova Scotia. *15th Annual College of Pharmacy Research Day, at 50th Annual Dalhousie Continuing Pharmacy Education Refresher and PANS Annual Conference*, November 7, 2014. Halifax NS. (Poster presentation)

Bowen S, Sketris I, Langille Ingram E. Experiences of health system preceptors and faculty advisors with community service-learning initiatives: learning from the Dalhousie University Drug Use Management and Policy Residency Program. *The International Journal of Research on Service-Learning and Community Engagement*. 2014, 2(1), ISSN: 2374-9466.

Chen TF, O'Reilly CL, Murphy AL, Gardner DM. Best practice for mental healthcare: From education to community pharmacy practice. *Research in Social and Administrative Pharmacy*, 10(5), E70-71. International Social Pharmacy Workshop. August 5-8, 2014. Boston MA, USA.

Drost S, Murphy A, Gardner D. A literature review of quetiapine and thyroid function. Poster presentation, *24th Dalhousie Psychiatry Research Day*. November 2014, Halifax NS. Award received for "Best Presentation" in category of undergraduate student.

Green ME, Natarajan N, O'Donnell DE, Williamson T, Kotecha J, Khan S, Cave A. Chronic obstructive pulmonary disease in primary care: an epidemiologic cohort study from the Canadian Primary Care Sentinel Surveillance Network. *CMAJ-JMAC*, 3(1): e15-322.

Isenor J. Pharmacists as immunizers research. *Capital Health Pharmacy Research and Education Day*, September 27, 2014. Halifax, NS

Isenor JE, Alia TA, Billard B, McNeil SA, Slayter KL, MacDougall D, Halperin B, Holmes E, Oliver G, Bowles SK. Impact of pharmacists as

immunizers on influenza vaccination coverage in Nova Scotia. *11th Canadian Immunization Conference (CIC)*, December 2, 2014. Ottawa, ON. (Poster Presentation)

Jackson LA, Buxton JA, Dingwell J, Dykeman M, Gahagan J, Gallant K, Karabanow J, Kirkland S, LeVangie D, Sketris I, Gossop M, Davison C. Improving psychosocial health and employment outcomes for individuals receiving methadone treatment: a realist synthesis of what makes interventions work. *BMC Psycholo*. 2014 Sep 7; 2(1). doi: 10.1186/s40359-014-0026-3.

Jones B. Academic Detailing Services and how Big Pharma influences physicians' prescribing. *Dalhousie University Mini Medical School*, November 6, 2014. Halifax NS.

Kelly K, Fleming I. Oral anticoagulants in atrial fibrillation. Oral presentation at: *50th Annual Dalhousie Continuing Pharmacy Refresher and PANS Annual Conference*. November 7-9, 2014, Halifax NS.

Kelly K, Fleming I. Oral anticoagulants in atrial fibrillation. Webinar: Continuing Professional Development, Faculty of Medicine, Dalhousie University. February 25, 2015. Halifax NS.

and

Academic Detailing Rx, Continuing Pharmacy Education, Dalhousie University. March 4, 2015.

Lacny S, Zarrabi M, Martin-Misener R, Donald F, Sketris I, Murphy A, DiCenso A, Marshall DA. Cost-effectiveness of a nurse practitioner-family physician model of care in a nursing home. Canadian Association for Health Services and Policy Research (CAHSPR) Conference, May 12-15, 2014. Toronto ON.

Mallery LH, Allen M, Fleming I, Kelly K, Bowles S, Duncan J, Moorhouse P. Promoting higher blood pressure targets for frail older adults: a consensus guideline from Canada. *Cleve Clin J Med*. 2014 Jul; 81(7): 427-37.

McLean-Veysey P, Allen M. Katie Video #3.

Absolute, relative. What's the difference? Calculating and presenting evidence. July 2014. <https://www.youtube.com/watch?v=tDPu-XZSrdg&feature=youtu.be>

McLearn H, Fleming I. Gout: Update 2013. Oral presentation at: *50th Annual Dalhousie Continuing Pharmacy Refresher and PANS Annual Conference*, November 7-9, 2014. Halifax NS.

and

Webinar: Academic Detailing Rx, Continuing Pharmacy Education, Dalhousie University. April 29, 2014.

Murphy AL, Gardner DM. Pharmacies partnering with communities to meet their mental health needs. *Research in Social and Administrative Pharmacy*. 10(5), E38. International Social Pharmacy Workshop. August 5-8. Boston MA, USA.

Murphy AL, Gardner DM, Kutcher S, Martin-Misener R. A theory-informed approach to mental health care capacity building for pharmacists. *International Journal of Mental Health Systems*. 8(1): 46. doi: 10.1186/1752-4458-8-46.

Natarajan N, Martin K, Kotecha J, Willaminson T, Birtwhistle R. Prevalence, comorbidity and management of five chronic diseases from primary care EMR data: The Canadian Primary Care Sentinel Surveillance Network (CPCSSN). Primary Health Care Research Conference, November 5, 2014. Canberra, Australia.

Natarajan N, Varatharasan N, Sabri S. Prevalence and control of diabetes mellitus in Nova Scotia from primary care EMR data: The Canadian Sentinel Surveillance Network (CPCSSN). Canadian Association for Health Services and Policy Research (CAHSR) Conference, May 12-15, 2014. Toronto ON. (Poster presentation)

Natarajan N, Varatharasan N, Sabri S, Neville H, Sketris I. Developing drug prescribing profiles for family physicians using electronic medical record data. *North American Primary Care Research Group (NAPCRG) 42nd Annual Meeting*,

November 21-25, 2014. New York City, United States.

Radu L, Murphy A, Gardner D. What we know about alternatives for nightmares in PTSD during the next prazosin shortage? Poster presentation, 24th Dalhousie Psychiatry Research Day. November 2014, Halifax NS.

Sketris IS, Gruzd A, Mai P, Gamble JM, Dormuth C. Analyzing the short-term social media impact of a drug safety publication – a case study approach. *International Society for Pharmacoepidemiology, 30th Anniversary, Annual Conference*, October 24-27, 2014. Taipei, Taiwan.

Spin P, Hurley K, Sketris IS, Hill Taylor B, Ward C, Zu K. The cost effectiveness of metered dose inhalers with spacers versus wet nebulization for salbutamol inhalation. *Canadian Association for Health Services and Policy Research (CAHSR) Conference*, May 12-15, 2014. Toronto ON.

Williamson T, Green M, Birtwhistle R, Khan S, Garies S, Wong S, Natarajan N, Manca D, Drummond N. Validating the 8CPCSSN case definitions for chronic disease surveillance in a primary care database of electronic health records. *The Annals of Family Medicine*, 12(4): 367-372.

DEANS Management Committee

- Ms. Lisa Farrell, (Chair) Liaison Officer, Canadian Agency for Drugs and Technologies in Health
- Ms. Pam McLean-Veysey, Team Leader, Drug Evaluation Unit, QEII Health Sciences Centre
- Dr. Connie LeBlanc, Continuing Medical Education, Dalhousie University
- Dr. Bronwen Jones, Continuing Medical Education, Dalhousie University
- Dr. Nandini Natarajan, Department of Family Medicine, Dalhousie University
- Dr. Ingrid Sketris, College of Pharmacy, Dalhousie University
- Ms. Diane Harpell, Division of Continuing Pharmacy Education, College of Pharmacy, Dalhousie University
- Ms. Stancy Singh, Division of Continuing Pharmacy Education, College of Pharmacy, Dalhousie University
- Dr. David Gardner, College of Pharmacy, Dalhousie University
- Mr. Kevin Lynch, Manager, Nova Scotia Prescription Monitoring Program
- Ms. Jennifer Ross Makhan, Regional Pharmacist, First Nations and Inuit Health, Health Canada
- Ms. Allison Bodnar, Pharmacy Association of Nova Scotia

For more information about DEANS, go to <http://novascotia.ca/dhw/pharmacare/drug-evaluation-alliance-of-nova-scotia.asp>

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