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## Family Medicine Forum Research Proceedings 2015

### Compte rendu sur la recherche au Forum en médecine familiale 2015

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These abstracts have been peer reviewed | Ces résumés ont fait l'objet d'une révision par des pairs  
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## Top 4 papers / Quatre meilleures présentations

# Longitudinal evaluation of physician payment reform and team-based care for chronic disease management and prevention

Tara Kiran MD MSc CCFP Alexander Kopp Rahim Moineddin PhD Richard H. Glazier MD MPH CCFP

## Abstract

**Context** Transitioning primary care physicians from fee-for-service to capitation or blended payments and incorporating team-based care are widely regarded as desirable transformations for patient-centred medical homes, but there are few studies evaluating the effects of these changes.

**Objective** To assess the effects of capitation payment and team-based care on chronic disease management and prevention by evaluating a large-scale transition of primary care physicians to medical homes in Ontario.

**Design** We conducted a longitudinal population-wide study using routinely collected administrative data. We used Poisson regression models to examine the association between type of medical home and diabetes and cancer screening in 2011. We calculated outcomes for each fiscal year between 2001 and 2011 and used a fitted non-linear model to compare changes in outcomes between type of medical home over time.

**Participants** All Ontario patients enrolled to a medical home in 2011 (N=10675480).

**Intervention** Patient enrolment in team-based capitation, non-team capitation, or enhanced fee-for-service medical homes as of March 31, 2011.

**Main outcome measures** Proportion of eligible patients receiving testing for diabetes and screening for cervical, breast, and colorectal cancer.

**Results** Patients in team-based capitation were more likely to receive recommended testing for diabetes in 2011 than were patients in non-team capitation or enhanced fee-for-service (40%, 36%, and 32%, respectively) and this was true even after adjustment for patient and physician characteristics (relative risk [95% CI] compared with enhanced fee-for-service: team-based capitation 1.22 [1.18 to 1.25]; non-team capitation 1.10 [1.07 to 1.14]). Patients in team-based capitation experienced the greatest improvement in recommended testing for diabetes over time, followed by patients in non-team capitation (absolute difference in improvement [95% CI] compared with enhanced fee-for-service: team-based capitation 10.6% [7.9% to 13.2%]; non-team capitation 4.1% [1.5% to 6.8%]). Patients in team-based capitation experienced the greatest improvement in cervical cancer screening but there were no significant differences in change over time between medical homes for breast and colorectal cancer.

**Conclusion** The shift to capitation payment and the addition of team-based care in Ontario were associated with moderate improvements in diabetes care but the effect on cancer screening was less clear.

# Exploring the health care experiences of women in Vancouver's transitional shelters

## *Qualitative study*

Elena Zoe Paraskevopoulos MD CCFP   Shafik Dharamsi MSc PhD   Leo Paraskevopoulos MD

### Abstract

**Context** Transitional shelters provide safe and temporary accommodation for women in crisis. In 2011 and 2012, shelters across Canada reported more than 60 000 admissions of women. Many of these women have suffered interpersonal violence, complex trauma, and considerable financial burden. They are at disproportionate risk of health deterioration. To date, little is known about the health care experiences of Canadian women living in shelters.

**Objective** To explore the health care experiences of women living in Vancouver's transitional shelters; specifically, to determine how health care is accessed, to identify specific barriers to access, and to examine how the health care system could better serve these women.

**Design** A qualitative study using focus groups.

**Participants** Sixteen women residing in 2 transitional shelters located in Vancouver, BC.

**Instrument** Three focus groups were conducted to explore the health care experiences of the study participants. Interviews were audiorecorded and transcribed verbatim. NVivo software was used for data analysis to help identify units of meaning for key themes.

**Findings** Six main themes were identified: Women in transition want family doctors; transportation is a barrier to care; relocation inhibits access; out-of-pocket costs are unaffordable; access to specialists is limited without a GP; and continuity of care is highly valued.

**Conclusion** Conventional health care services are failing women living in transitional shelters, leaving them doctorless and unengaged. While they most often use walk-in clinics, this fragmented care does not meet their complex needs. Given their histories of trauma and crisis, continuity of mental and physical health care is essential. Family physicians should create specific plans to connect with and care for these vulnerable women.

# Using automated, regularly extracted electronic medical record data for intervention research

Simone Dahrouge MSc PhD   Danielle Rolfe RKin PhD   Laura Muldoon MD MPH FCFP  
 Jyoti Kotecha MPA MRSC CChem   Richard Birtwhistle MD MSc CCFP FCFP   David Barber MD PhD FCFP  
 Lisa Dolovich PharmD MSc   Clare Liddy MD MSc PhD FCFP   Janusz Kaczorowski MA PhD

## Abstract

**Context** The Canadian Primary Care Sentinel Surveillance Network (CPCSSN) is a multidisease surveillance system that collects quarterly electronic medical record (EMR) health data from more than 800 primary care practices across Canada. The data extracted are standardized and used to inform quality monitoring at the practice level, and to conduct epidemiologic research using the large data set.

**Objective** Assess the feasibility of using CPCSSN to obtain chart data required for use in an intervention, the Cardiovascular Health Awareness Program (CHAP).

**Design** A pilot evaluation of preintervention and postintervention data extractions.

**Participants** Six urban primary care practice sites (3 community health centres, 3 interprofessional capitation-based practices) and 48 primary care providers in eastern Ontario participating in CHAP.

**Intervention** CPCSSN was used to replace direct chart extraction for 4 purposes: 1) identify eligible patients (CPCSSN produced a list of all individuals aged older than 65 years and their coordinates, which was used to automate CHAP recruitment letters); 2) evaluate participation bias (comparison of participants' and nonparticipants' baseline data [eg, age, sex, diagnoses, risk factors, attachment to practice]); 3) calculate risk scores (lipid profile and diagnoses of hypertension and diabetes were added to CHAP session data to calculate the Framingham and CANRISK scores of participants); 4) assess the intervention's effects (12 months post CHAP, modifiable risk factors [blood pressure, lipids profile, body mass index, and waist circumference] will be extracted to assess changes from baseline).

**Results** CPCSSN identified 3084 seniors; primary care providers excluded 934 (deceased, too frail, or had dementia). Participation bias was assessed successfully. Lipid data to calculate Framingham scores was available for 94% and 62% of participants in practices with established and new (1 to 2 years) EMR systems, respectively. Effects of the intervention will be assessed in 1 year.

**Discussion and conclusion** The cost of chart extraction often means studies relying on clinical data are not feasible. The growing penetration of EMRs opens the opportunity to use automated processes for data extraction. However, the lack of standards across EMR systems means that one approach cannot be used across practices. The existing processes for data extraction and standardization developed by CPCSSN for 12 EMR vendors can be used to provide accurate data efficiently for studies requiring clinical data extraction.

# Disability profiles in French-Canadians with affective symptomatology surveyed in primary care settings

Nina Nguyen Pasquale Roberge PhD Mathieu Philibert MSc PhD Louise Fournier PhD  
Arnaud Duhoux PhD Annie Benoit MSc

## Abstract

**Context** Depression is associated with substantial disability but less is known about the contribution of anxiety symptoms to disability.

**Objective** To examine the disability profiles pertaining to depressive and anxious symptomatology (DAS).

**Design** Data were drawn from the Dialogue Project, an observational study conducted in 64 primary care clinics in Quebec.

**Participants** The sample of 14 833 adults was recruited in primary care clinics' waiting rooms when consulting a general practitioner for oneself.

**Instruments** The Hospital Anxiety and Depression Scale (HADS) was used to assess DAS. The World Health Organization Disability Schedule (WHODAS, short 12-item version) was used to assess disability in 6 domains: mobility, life activities, cognition, social participation, self-care, and getting along.

**Main outcome measures** Respondents were divided into 4 groups according to their HADS scores: anxious subjects (n=4667), depressive subjects (n=2304), anxious-depressive subjects (n=1785), and control subjects (n=9543).

**Results** Preliminary results indicate that depressive subjects, compared with anxious subjects, presented higher levels of disability for all 6 domains, and anxious-depressive subjects presented the worst loss of functionality. For the social participation domain, multiple logistic regression models showed that anxious subjects (odds ratio [OR]=4.10, 95% CI 3.72 to 4.52), depressive subjects (OR=7.50, 95% CI 5.95 to 9.46), and anxious-depressive subjects (OR=18.62, 95% CI 15.76 to 22.01) were more likely to present disability than control subjects were.

**Conclusion** Depressive symptoms were associated with more disability than anxiety, but comorbid depressive-anxious symptomatology significantly increased disability levels in all domains. Anxious symptoms are also associated with a higher level of disability than the absence of DAS. Recognizing that any type of DAS likely causes disability will further the efforts to improve diagnosis and treatment of common mental disorders in primary care.

## Free-standing oral presentations / Présentations libres (orales)

# The BC Clinical Care Management initiative as a case study in large-scale change

Carol Herbert MD CCFP FCFP FCAHS   Allan Best PhD FCAHS   Alex Berland RN MSc

## Abstract

**Context** The British Columbia Ministry of Health's Clinical Care Management initiative was used as a case study to better understand large-scale change within BC's health system. Eleven guidelines have been introduced into hospitals across all BC health authorities in an attempt to improve evidence-based clinical practice. Fifteen additional Clinical Care Management guidelines are to be implemented over the next 3 years, with many priorities touching on family medicine.

**Objective** Using a complex system framework, this study examined mechanisms that enable and constrain the implementation of clinical guidelines across various clinical settings.

**Design** Qualitative descriptive.

**Participants** Purposively selected respondents in each health authority; 3 purposively selected guidelines.

**Intervention** Researchers applied a general model of complex adaptive systems plus 2 specific conceptual frameworks (realist evaluation and system dynamics mapping) to define and study enablers and constraints. Findings from focus group sessions and interviews with clinicians, executives, managers, and board members were validated through an online survey.

**Findings** The functional themes for managing large-scale clinical change included creating a context to prepare clinicians for health system transformation initiatives; promoting shared clinical leadership; strengthening knowledge management, strategic communications, and opportunities for networking; and clearing pathways through the complexity of a multilevel, dynamic system.

**Discussion** Recommended action-oriented strategies included engaging local champions; supporting local adaptation for implementation of clinical guidelines; strengthening local teams to guide implementation; reducing change fatigue; ensuring adequate resources; providing consistent communication, especially for front-line care providers; and supporting local teams to demonstrate the clinical value of the guidelines to their colleagues.

**Conclusion** Bringing a complex systems perspective to clinical guideline implementation resulted in a clear understanding of the challenges involved in large-scale change.

# Socioeconomic status and risk of hemorrhage during warfarin therapy for atrial fibrillation

## *Population-based cohort study*

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Michael Paterson MSc Moira K. Kapral MD MSc Muhammad M. Mamdani PharmD MPH David N. Juurlink MD PhD

### Abstract

**Context** Among patients taking warfarin, lower socioeconomic status is associated with poorer control of anticoagulation. However, the extent to which socioeconomic status influences the risk of hemorrhage is unknown.

**Objective** To examine the extent to which socioeconomic status influences the risk of hemorrhage in older individuals newly commencing warfarin therapy for atrial fibrillation.

**Design** Population-based cohort study using health care administrative data.

**Participants** Patients aged 66 years or older with atrial fibrillation who commenced warfarin therapy between April 1, 1997, and November 30, 2011, in Ontario. Validated ICD-9 and ICD-10 codes were used to identify a diagnosis of atrial fibrillation. We used neighbourhood-level income quintiles as a measure of socioeconomic status.

**Main outcome measures** The primary outcome was an emergency department visit or hospitalization for hemorrhage and the secondary outcome was fatal hemorrhage. Validated ICD-9 and ICD-10 codes were used to identify a diagnosis of hemorrhage.

**Results** We studied 166 742 older patients with atrial fibrillation who newly commenced warfarin therapy. Of these, 16 371 (9.8%) were hospitalized for hemorrhage during a median follow-up of 369 (interquartile range 102 to 865) days. After extensive multivariable adjustment using Cox proportional hazards regression, we found that those in the lowest income quintile faced an increased risk of hospitalization for hemorrhage relative to those in the highest income quintile (adjusted hazard ratio 1.18, 95% CI 1.12 to 1.23). Similarly, the risk of fatal hemorrhage (n=1802) was increased in the lowest relative to the highest income quintile (adjusted hazard ratio 1.28, 95% CI 1.11 to 1.48).

**Conclusion** Among older individuals receiving warfarin therapy for atrial fibrillation, lower socioeconomic status is a risk factor for hemorrhage and hemorrhage-related mortality. This factor should be carefully considered by clinicians when initiating and monitoring warfarin therapy.

# Intravenous opiate-assisted treatment (iOAT)

## *Participants' characteristics might affect intensive treatment options*

D. Scott MacDonald MD

### Abstract

**Context** For opioid-dependent patients not benefiting from conventional treatments (ie, oral methadone), evidence suggests that supervised injectable medications are effective.

**Objective** This baseline analysis aims to describe participants' characteristics at entry into a study comparing injectable diacetylmorphine and hydromorphone and factors independently associated with previous access to methadone at high doses.

**Design** SALOME is a phase III, randomized, double-blind controlled trial comparing injectable diacetylmorphine and hydromorphone.

**Setting** Vancouver, BC.

**Participants** A total of 202 chronic, opioid-dependent current injection opioid users who had at least 1 previous episode of opioid maintenance treatment.

**Main outcome measures** An analysis has been done to determine characteristics associated with reaching a stable dose of oral methadone in the 5 years prior to trial recruitment.

**Results** These data emphasize that study participants were in need of alternative treatments at the time of enrolment and fit the profile of patients to whom supervised injectable treatment should be offered. Implications of previous methadone treatment experience in these individuals who might be eligible for injectable opioid assisted treatment will be reviewed.

**Conclusion** For opioid-dependent patients not benefiting from conventional treatments (ie, oral methadone), evidence suggests that supervised injectable medications are effective.



# Experience of primary care at a provincial detention centre

Samantha Green MD CCFP   Fiona Kouyoumdjian MD CCFP   Jessica Foran

## Abstract

**Context** Little is known about the health status of Canadian inmates in provincial detention centres or about their access to health care in the community. American and European data show that the health of the incarcerated is poor, with a disproportionate burden of mental illness, infectious diseases, chronic diseases, and premature mortality. Recently released individuals in the United States and Europe have been shown to have poor access to primary care.

**Objective** To describe the primary care experience of adult inmates at the Hamilton-Wentworth Detention Centre in Ontario.

**Design** Written surveys were distributed to blocks of men and women at the Hamilton-Wentworth Detention Centre. Inmates were allowed to complete surveys in their cells at any time. Completed surveys were placed in sealed envelopes and returned to the nurse manager.

**Participants** Adult men and women with working knowledge of English were included in the study. A total of 419 surveys were distributed and 125 were returned (30%). Of the respondents, 17% indicated they were female; 80% indicated they were male. The mean age was 36 years.

**Instrument** A 2-page survey with multiple choice questions and space for extended written responses.

**Results and findings** Among respondents, 38% ( $P < .001$ ) report that they do not have a family doctor or primary care provider, compared with 15% of the Canadian population. Those with no family doctor noted several barriers, including difficulty finding a physician who is accepting new patients; difficulty navigating the health care system; and frequent incarcerations. Among respondents, 43% reported having had unmet health care needs in the year before coming to jail, compared with 8.8% of the Canadian population. Barriers included previous experience of stigma in the health care system and inaccessible clinic locations and schedules. Participants reported an average of 2.1 emergency department visits in the year before incarceration, compared with 0.29 visits per year for the Canadian population.

**Conclusion** Those incarcerated at the Hamilton-Wentworth Detention Centre report having poorer access to primary care and higher unmet health care needs than average Canadians. Incarceration could provide an opportunity to connect inmates with primary care and thus improve health care and health.

# Transition into residency of Canadians studying abroad

## *Stigmatization and the clinical practice gap*

Teresa Cavett MD CCFP FCFP MEd

### Abstract

**Context** Competition for seats in Canadian medical schools has led many Canadians to undertake medical education abroad. Systematic barriers make it necessary for internationally educated physicians (IEPs) hoping to practise in Canada to complete postgraduate residencies. To do so, they must transition into new medical education systems. The transitional experiences of IEPs are not well understood

**Objective** To better understand the transitional experiences of IEPs.

**Design** This exploratory phenomenological qualitative study sought the perspectives of 20 recent graduates from the University of Manitoba family medicine residency program.

**Participants** Most participants were Canadians studying abroad. Participants were drawn from 5 recent cohorts of residents entering training between 2008 and 2012. Recruitment was intentional, with all identified IEPs from these cohorts invited to participate. A modest snowball effect was noted.

**Results** Twenty-one percent of potential participants took part. Participant interviews were inductively coded, employing initial and emotion coding. More than 70 codes were identified, grouped into 10 categories, which led to the identification of 2 main themes: the clinical practice gap and the stigmatization of IEPs. The development of the clinical practice gap is attributed to curricular differences in the timing of graduated clinical responsibility between Canadian and international medical educational systems. Participants perceived that they were stigmatized. They described being labeled, singled out, rejected, and mistreated. They recognized that being Canadian afforded them some invisibility as IEPs, although they could be revealed at any time. They further perceived that those for whom English was a second language or who were from visible minorities could not be invisible. Participants described the presence of dual resident hierarchies, by program of training (Royal College vs College of Family Physicians of Canada) and by country of training (Canada vs international countries). As IEP family medicine residents, they were assigned low status in these hierarchies. Their experiences are conceptualized as stigmatization.

**Conclusion** Many questions remain. What led to the development of this stigmatization? Does the clinical practice gap contribute to perpetuation of this stigmatization? Could pre-residency training mitigate the clinical practice gap? What are the learning needs specific to Canadians studying abroad? These findings are relevant to the work of program directors and curriculum directors in family medicine.

# Continuity of care and identity formation

## *Critical review of interventions in postgraduate training*

Allyson Merbaum MD CCFP FCFP Kulamakan Mahan Kulasegaram PhD

Rebecca Stoller MD CCFP FCFP Risa Freeman MD MEd CCFP FCFP

### Abstract

**Context** Continuity of care (CoC) is a critical aspect of practice in generalist disciplines and across several dimensions of clinical care. To date, there have been several interventions at the level of residency training to inculcate CoC. Their mechanisms and effects on the formation of a caring physician identity is unknown. In this critical narrative review, we analyzed the existing literature to understand the pedagogic rationales and effectiveness of these interventions.

**Methods** We searched the existing medical education literature via MEDLINE, EMBASE, and CINAHL for English-language articles since 1975 that described or evaluated CoC interventions at the level of postgraduate training. We excluded commentaries and nonpostgraduate papers. We analyzed the extracted literature for themes across interventions, for the proposed pedagogic mechanisms or rationales, and for evidence of effectiveness.

**Results** Twenty-two papers dealt with CoC at the postgraduate level but only 15 described interventions, with the remaining describing satisfaction with training. Studies describing interventions have focused on organizational changes to the structure of residency programs. Examples of such interventions included a longitudinal family medicine component, a resident patient panel, and increasing dedicated time for practice in family medicine settings. There is a lack of rigorous evaluation of most interventions. Our analysis suggests that the pedagogic mechanisms are not clearly articulated in the literature. Furthermore, current structural interventions do not conceptualize continuity of care as a part of the identity of the physician.

**Conclusion** Pedagogic evidence suggests that to be effective, training must help integrate the practice of CoC as an essential part of physician identity. Current interventions in the literature do not describe a programmatic approach to integrating CoC into emerging physician identity and have not been rigorously evaluated for outcomes. Adopting an identity formation framework can help training become more relevant and transferrable to future practice, and suggest appropriate outcomes for evaluation.

# Relational continuity experiences of residents and preceptors in a family medicine residency

Ann Lee MD MEd CCFP Sandra Robertson MN Sheny Khera MD MPH FCFP Shelley Ross MA PhD

## Abstract

**Context** Relational continuity is defined as the “ongoing therapeutic relationship between a patient and one or more providers.” It has been found to be a predictor of positive outcomes for both patients and physicians. Given this, teaching and modeling relational continuity in family medicine residency training is highly important. The challenge lies in how to measure relational continuity for residents in training programs.

**Objective** To determine to what extent the electronic medical record (EMR) is a useful tool in understanding relational continuity experiences of family medicine residents. To determine relational continuity experiences of family medicine residents at the end of a 2-year residency and the factors influencing the opportunities for developing relational continuity between residents and patients.

**Design** Mixed methods.

**Participants** Purposive sample of residents (n=5) and preceptors (n=5) at an academic teaching clinic.

**Instruments** Electronic medical record data was used to measure relational continuity. A constructivist grounded theory approach was used to conduct semistructured interviews with all participants, and constant comparative analysis was used to determine factors that influence relational continuity for residents.

**Main outcome measures** Quantitative: Relational continuity, as determined by the Usual Provider Continuity (UPC) index, a commonly used measure of continuity of care (ratio of patient visits to usual care provider). Qualitative: Themes emerging from interviews.

**Results and findings** Residents were found to have relatively low relational continuity. For most residents, 49.3% to 67.5% of patients were in the UPC index of 0 to 0.24, and a low proportion of patients were seen at a UPC index of 0.50 or greater. Qualitative findings resulted in a model of relational continuity, where continuity of care in family medicine, relational continuity with patients, therapeutic alliance, and ownership all interacted and were affected positively or adversely by program and systems factors, patient factors, and attitudes and experiences of both the resident and the preceptor.

**Conclusion** Electronic medical record data provide a good picture of continuity rates. However, the factors that affect relational continuity can only be found by interviewing residents and preceptors. While most residents valued relational continuity, factors such as patient schedules and program or system factors made it difficult to establish high rates of continuity with patients.

# Facilitators, barriers, and strategies for clinical faculty conducting research

## *Qualitative study*

Cathy Thorpe MA   Stephen J. Wetmore MD MCISc CCFP FCFP   Merrick Zwarenstein MBBCh MSc PhD   Jamie Wickett MD CCFP

### Abstract

**Context** Research skills empower family physicians to produce and appraise new knowledge and to evaluate improvements in their clinical work. The College of Family Physicians of Canada's Section of Researchers has developed a blueprint for family medicine research success with the vision that research is a core component of training, scholarship, and clinical practice. This context is the impetus for developing a program for building research culture and capacity in the Department of Family Medicine at Western University. This study represented the first step in the design of our research capacity development initiative.

**Objective** To describe facilitators, barriers, and strategies for clinical faculty to conduct research.

**Methods** In this descriptive qualitative study, key informant interviews were conducted with 10 members of the department with different roles: clinician-teachers, researchers, administrative leaders, and research staff. Interviews were audiorecorded and transcribed verbatim. Interviews were analyzed individually by 2 team members, who identified themes, and then reviewed by the entire team, who further elaborated and refined the themes.

**Findings** Findings were organized around individual, organizational, and external factors that acted as facilitators and barriers to clinical faculty research, and around the success and limitations of research capacity development initiatives already in place. Individual themes centred on motivation and the knowledge, skills, and confidence necessary for clinical teachers to conduct research. Organizational themes included the need for role clarity, collaborations, and organizational support. External themes focused on organizations both within and outside the university setting, including the College of Family Physicians of Canada.

**Conclusion** These results are being used to design a strategy for strengthening research capacity among clinical faculty in the Department of Family Medicine at Western University. The ultimate goal is to enhance research culture, as measured by increased research interest, skills and confidence, and institutional support; and to increase research capacity, measured by publications and presentations. These findings will be of interest to other departments of family medicine in Canada interested in building research culture and capacity.

# Effect of continuity of care in primary health care on hospitalization and emergency department use

Yvonne Rosehart Tanya Flanagan Geoff Ballinger Mary Byrnes Lili Liu Gladys Osien Husam Alqatami

## Abstract

**Context** Continuity of care in primary health care (PHC) has been linked to reductions in emergency department use and avoidable hospitalizations.

**Objective** To determine if patient continuity with family physicians in 2 provinces affected emergency department use for family practice sensitive conditions and hospitalizations for ambulatory care sensitive conditions.

**Design** This study uses patient-level physician billing data, hospital discharge data, and emergency department data to look at the relationship between continuity of care with a family medicine physician (ie, relational continuity) and the use of avoidable hospital services in Saskatchewan and Alberta. Six years of patient-level physician billing data in Alberta and Saskatchewan were linked to the Discharge Abstract Database and the National Ambulatory Care Reporting System to investigate the effects of continuity of PHC on health service utilization. To measure continuity of care we used the Usual Provider Continuity index to assess the level of patient attachment to their most common PHC provider. Regression analyses were conducted to identify any association between continuity of care and emergency department use for family practice sensitive conditions and hospitalizations for ambulatory care sensitive conditions. Patients and provider characteristics were examined for possible associations with continuity.

**Results** In line with the literature, increased relational continuity of care was found to decrease the use of avoidable hospital services.

**Conclusion** The report reinforces the importance of encouraging the general public, family physicians, other PHC providers, and policy makers to support improved relational continuity of care. Looking for opportunities to increase continuity of care within primary health care could improve patient-provider relationships, improve the identification and management of chronic illnesses, and decrease unnecessary hospital use.

# Potentially avoidable emergency department visits for family practice sensitive conditions

Geoff Paltser PhD Josh Fagbemi Cheryl Gula

## Abstract

**Context** Canadians visit the emergency department (ED) frequently, at times for minor medical problems that might be more appropriately treated elsewhere. Many jurisdictions are evaluating strategies to reduce avoidable ED visits, and identifying and quantifying these visits can help efforts to improve appropriateness of care.

**Objective** This study from the Canadian Institute for Health Information examines ED utilization to identify visits that might be more appropriately managed at a family physician's office or clinic, known as family practice sensitive conditions (FPSCs).

**Design** Emergency department visits for primarily low acuity reasons where patients were not admitted to inpatient beds were calculated and compared to rates of visits for other reasons. Possible explanatory factors including diagnosis and acuity, time of visit, length of stay, and patient age, socioeconomic status, and rurality were examined.

**Target population** Included in the analysis are all unscheduled visits to EDs (excluding urgent care centres) in 2013 to 2014 where patients were discharged home.

**Instrument** This study uses data from the Canadian Institute for Health Information's National Ambulatory Care Reporting System. The following jurisdictions submitted ED data with complete ICD-10-CA diagnoses in 2013 and 2014 and are included in the results: Ontario (all facilities); Alberta (all facilities); Nova Scotia (5 facilities); Saskatchewan (4 facilities); Prince Edward Island (1 facility); and Yukon (1 facility).

**Results** Overall, 1 in 5 nonadmitted ED visits were for FPSCs, totaling more than 1.4 million visits in 2013 and 2014. The most common reasons for these visits included upper respiratory infections (13%), antibiotic therapies (13%), sore throats (8%), ear infections (7%), and care following surgery such as dressing changes and removal of stitches (5%). More than one-third (35%) of nonadmitted visits for children were for FPSCs, compared with only 12% for patients age 85 and older. Additionally, 32% of nonadmitted ED visits among rural-dwelling patients were for FPSCs, versus 17% among urban-dwelling patients.

**Conclusion** Providing care for patients presenting with FPSCs in settings such as doctors' offices and clinics might improve continuity of care and the patient experience, and allow ED resources to be focused on those who more appropriately require them.

# Polypharmacy and chronic disease surrogate markers in nursing home patients

## *Cross-sectional survey*

Rita McCracken MD CCFP Charmaine Lam Jonathan Berkowitz PhD Scott Garrison MD CCFP PhD

### Abstract

**Context** Polypharmacy is a recognized source of harm for frail elders, yet many experimental approaches to try to reduce the numbers of medications in nursing homes have failed. Some studies suggest that a focus on disease management, rather than on frailty-appropriate treatments, might be contributing to polypharmacy. A provincial pharmacy data analysis published in September 2014 suggested that prescribing continues to rise for elderly patients in nursing homes.

**Objective** To describe prevalence of polypharmacy for a representative group of frail elders in nursing homes in British Columbia and their associated patient characteristics; and to determine if there are potential associations between hypertension and diabetes surrogate markers and numbers of medications prescribed.

**Design** Cross-sectional survey.

**Participants** A total of 213 randomly selected nursing home patients from 6 nursing homes in BC's lower mainland with a total population of 950 patients and with a highly regarded physician and pharmacist care model in British Columbia's lower mainland.

**Intervention** Patient data collated from the pharmacy database, patient chart, and local administrative database.

**Main outcome measures** Mean number of medications prescribed, systolic blood pressure, HbA<sub>1c</sub> level, hospital visits for each patient, and demographic characteristics.

**Results** The mean (SD) number of medications prescribed was 7.5 (3.4). Among the patients in the study, 70.4% had a diagnosis of hypertension and 100% had a measured systolic blood pressure, mean (SD) 126 (18) mm Hg. Only 27% had a diagnosis of diabetes, mean (SD) HbA<sub>1c</sub> level of 6.5 (1.19). The mean (SD) number of hospital visits in the preceding year for each patient was 0.7 (1.5). A diagnosis of hypertension was associated with more medications ( $P=.04$ ), and increasing age was associated with fewer ( $P=.002$ ). No association was found between the number of medications and a diagnosis of diabetes or dementia, nor with length of stay, prescribing physician, or number of hospital visits.

**Conclusion** The number of medications prescribed to frail elders remains high. Chronic disease treatment might be contributing to this large number. In the case of hypertension, the mean systolic blood pressure was surprisingly low and relaxation of surrogate targets might result in fewer medications. Future efforts to address polypharmacy might have more success if they directly address appropriate drug therapy for frail elders with chronic diseases.



# Women's experience using marijuana to cope with the pain and other symptoms of menstrual periods

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## Abstract

**Context** Our patients tell us they are using marijuana for period symptoms but there is no reported evidence for gynecologic indications. There is evidence for cannabinoid receptors in the uterus. Before starting clinical trials, we need to know how marijuana is being used.

**Objective** To understand how women have been using marijuana for relieving the pain and other symptoms of menstrual periods.

**Methods** Questionnaires were provided online and on paper to marijuana vendors in retail shops in Vancouver, and to women recruited through the shops, by word of mouth, from advocacy groups, and using a classified advertisement website (Craigslist). The vendors were asked if they had recommended marijuana for period symptoms and how it was used. The women's questionnaire asked about demographic characteristics plus whether the respondent had (current or past) pain with her periods, whether she had ever used marijuana for her period pain, and, if so, how she used it (smoked, eaten, etc), and if she had experienced any benefit.

**Results** There were 192 out of 201 usable questionnaires received from women and 9 from vendors. The mean age of respondents was 30.9 years with a range of 18 to 62 years. The worst period pain reported was a mean of 8.3 out of 10 and usual period pain was 5.9 out of 10. Women also complained of headaches (66.7%), nausea (54.2%), diarrhea (50.5%), feeling angry (27.1%), dizziness (66.1%), feeling sad (66.1%), fever or chills (25.5%), weakness (56.3%), and vomiting (20.3%). For period symptoms, 170 women (88.5%) said they had used marijuana and 152 (89.4%) said it helped; 153 women (79.7%) said they knew other women who used marijuana for periods. Eight of the nine vendors had been recommending marijuana and all said it helped their clients. Women had been using it in many forms; however, mostly they smoked or ate it. Specific recommendations from the women included using high-CBD (cannabidiol), low-THC (delta-9-tetrahydrocannabinol) forms and titrating doses so that it allowed women to function.

**Conclusion** Many women are using marijuana successfully to relieve the symptoms of menstrual periods. Clinical trials are needed to assess if low-THC, high-CBD products are helpful, because they might have fewer side effects and risks.

# Use of cognitive task analysis to support change management

Lee A. Green MD MPH

## Abstract

**Context** The Chinook Primary Care Network is a leader in adopting elements of the Patient's Medical Home model of primary care in Alberta. Chinook practices still face various challenges in Patient's Medical Home transformations.

**Objective** To determine whether and how a formal cognitive and organizational science method can help practices with change management efforts.

**Design** Prospective multiple case study.

**Participants** Physicians and staff of 3 Chinook Primary Care Network practices.

**Intervention** Cognitive task analysis (CTA) is a family of tools developed to understand and improve the work of teams of experts, and support knowledge translation. It is based on understanding and improving "macrocognition" skills (coordination, problem detection and monitoring, sense making, planning, and managing uncertainty and irregularity) and "mental models" (beliefs about the nature of the team's work, why activities are done, what actions will produce what results, etc). Cognitive task analysis has been widely successful in aviation, the nuclear industry, intensive care units, and the military. Practice facilitators trained in CTA visited each practice for 2 days to interview physicians and staff and make observations. The team met regularly for several weeks after each site visit to code and abstract the interview and observation data, develop profiles of each macrocognitive skill, and understand each practice's mental model.

**Main outcome measures** A CTA report was generated for each practice, addressing their macrocognition skills and mental model of practice. Rich descriptions of the CTA findings and how the practices make use of them were the outcomes.

**Results** No significant macrocognitive skills deficits were identified. Practices had distinctive patterns of how they used the skills, which were emphasized, and how much demand their work routines placed on each skill. The 3 practices had 3 different mental models of practice, emphasizing continuous quality improvement, highly integrated teamwork, or physician autonomy.

**Discussion** The CTA reports made practices explicitly aware of trade-offs they were making implicitly, and allowed them to consider alternatives. The different mental models had differing implications for what changes practices would pursue, and how they would affect the practices.

**Conclusion** Primary care practice, like other forms of expertise-intensive knowledge work, can benefit from formal cognitive analytic methods.

# Assessing the needs of family physicians caring for cancer survivors

## Montreal survey

Genevieve Chaput MD MA CCFP Desanka Kovacina MD CCFP

### Abstract

**Context** Owing to earlier detection and better treatments, the number of cancer survivors has risen substantially in the past 3 decades. In addition to higher risk of recurrence or second malignancy, more than 50% of survivors are afflicted with late effects. Cancer survivors visit a wide variety of specialists during treatment, yet 75% of them also see their FPs, and this proportion does not decrease after treatment. Upon treatment completion, FPs are expected to play an integral role in cancer survivors' care. However, literature reveals low confidence levels among FPs with regard to survivorship care. Furthermore, considerable deficits currently exist in the transition of care to FPs from other specialists.

**Objective** In 2014, we conducted a survey targeting FPs that aimed to identify their needs and perceived barriers in providing optimal care to cancer survivors.

**Design** A brief survey containing Likert-type and short-answer questions was designed and distributed to FPs practising within academic, public, and private settings in Montreal, Que. Based on a targeted FP population estimated at 500, sample size was set at 75. Survey design aimed to identify specific outcome measures including current needs and perceived barriers to cancer survivor care. Data analysis comprised descriptive statistics, an open-coding approach to identifying main themes, and Student *t* tests. Ethics approval was obtained.

**Results** Of 165 surveys distributed, 93 were completed, for a 56.3% response rate. Among respondents, 94% were already caring for cancer survivors, and of these 73% expressed a willingness to take on new cancer survivors. A statistically significant number of FPs disagreed more than agreed to "receiving summary reports" ( $P=.001$ ), as well as for "familiar with guidelines" ( $P=.01$ ). The biggest barriers to cancer survivor care were lack of communication with specialists (53%), and lack of knowledge of survivorship care (36%).

**Conclusion** Our findings demonstrate the need to improve communication with specialists, as well as to educate FPs about survivorship. In response, a Mainpro-accredited pilot workshop was created and has thus far been delivered to 123 FPs at 4 sites. Preliminary findings indicate high relevance of pilot content (95%).

# Case management in primary care for frequent users

## *Qualitative study of patients' and family physicians' experiences*

Catherine Hudon MD PhD CCMF Maud-Christine Chouinard RN PhD Fatoumata Diadiou MA  
Danielle Bouliane MA Mireille Lambert MA

### Abstract

**Context** Although case management (CM) is increasingly implemented to address the complex needs of vulnerable clients, few studies have examined patients' and FPs' experiences. The aim of this study was to examine the experience of people with chronic diseases, frequent users of health care services, and FPs who participated in a CM intervention.

**Design** A descriptive qualitative approach.

**Setting** Four family medicine groups in the Saguenay region of Quebec.

**Participants** There was a total of 45 participants: people with chronic diseases (n=25), who are frequent users of health care services, and FPs (n=20) who participated in a CM intervention by a nurse in primary care.

**Methods** Data were collected through in-depth interviews (frequent users) and 4 focus groups (FPs). Thematic analysis of the verbatim transcripts used the 6 dimensions of service integration proposed by the National Collaboration for Integrated Care and Support: 1) consideration of patient and family needs; 2) communication with the patient and between providers; 3) access to information; 4) involvement in decision making; 5) care planning; and 6) transitions between various health professionals.

**Results** Patients confirmed that the CM nurse was usually their privileged contact with primary care. She or he actively involved them in developing and carrying out their individualized services plan with other health care partners. Patients and FPs believed that patients' needs were taken into consideration. They thought that the case manager facilitated communication and coordination with and among health care partners as well as better access to relevant information, but a few patients and FPs had not fully understood CM at the beginning of the intervention. Some FPs would have wished to have had more interactions with the case manager. A few people thought that this implies too many appointments. Patients and FPs agreed on the fact that patients were actively involved in decision making. The individualized services plan was considered helpful to improve transitions between services.

**Conclusion** The experience of people with chronic diseases, who are frequent users of health care services, and FPs who participated in a CM intervention in primary care was, overall, positive, regarding care integration.

# Effectiveness of maintenance SSRI treatment in primary care depression to prevent recurrence

## *Randomized controlled trial*

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Les Toop MD Tony Dowell MD Bruce Arroll MBChB PhD Evan Begg MBChB PhD

### Abstract

**Context** The increasing selective serotonin reuptake inhibitor prescription numbers in the population are being driven in part by continuation of medication after acute treatment as maintenance therapy to prevent recurrence. Most depression is treated in the primary care setting. There is no evidence from randomized controlled trials of the effectiveness of this long-term maintenance treatment in primary care patients.

**Objective** To assess the effectiveness of long-term maintenance treatment with fluoxetine for prevention of depression recurrence in primary care; and to compare outcomes at 18 months for those who trialed discontinuation compared with those who did not.

**Design** Multicentre double-blinded randomized controlled trial.

**Intervention** Ongoing maintenance fluoxetine treatment compared with tapered withdrawal to placebo.

**Participants** Participants identified from electronic medical records' prescribing data had initial eligibility screening by their family doctors: they were aged 18 to 75 years, had a historical diagnosis of depression, and were taking fluoxetine as maintenance treatment to prevent recurrence for at least 15 months.

**Follow-up** Follow-up occurred at weeks 1, 2, and 4, and months 3, 6, 9, 12, 15, and 18 to monitor recurrence, side effects, withdrawal effects, other reasons for exiting treatment, and general functioning.

**Main outcome measures** The primary outcome was recurrence of depression over 18 months. Secondary outcomes included comparison of all outcomes at 18 months for those who trialed withdrawal with those who did not.

**Results** Among identified patients, 33% (419 of 1273) responded to the invitation to participate. Of these, 156 were ineligible or did not consent and 263 were randomized into taper and continuation arms. There were 30 (23.3%) depression recurrences in the taper arm and 14 (10.5%) in the continuation arm (absolute difference 12.8%; 96% CI 3.4% to 23.3%;  $P=.005$ ). For every 17 patients taking maintenance antidepressant medication, 1 was unable to discontinue because of withdrawal symptoms. At 18 months, 47% of the taper group and 4% of the continuation group were no longer taking antidepressants (absolute difference 43%; 96% CI 33% to 53%).

**Conclusion** The absolute benefit (12.8%) is similar to that for acute treatment. Most patients taking maintenance antidepressant medication experienced no benefit over 18 months. It seems reasonable to present these data to patients and offer a trial of discontinuation: the number needed to trial for 1 patient to successfully discontinue medication at 18 months is 2. There was no difference in outcome measures at 18 months for those who trialed discontinuation.

# Patient safety in family medicine residency

## *Thematic content analysis of accreditation standards and curriculum objectives*

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Maeve O'Beirne PhD MD CCFP Maureen Topps MD CCFP

### Abstract

**Context** The College of Family Physicians of Canada (CFPC) is responsible for setting standards for accreditation and the curriculum that individual family medicine residency training programs must follow. There are no specific criteria for patient safety and quality improvement content at this level.

**Objective** To conduct a thematic analysis of the CFPC's current documentation for accreditation (*The Red Book*) and family medicine curriculum (Triple C reports 1 and 2) with respect to patient safety competencies as outlined by the Canadian Patient Safety Institute (CPSI).

**Methods** Thematic analysis of the family medicine competencies was conducted as outlined by the Triple C curriculum (using the 4 principles of family medicine, the CanMEDS–Family Medicine framework, and an in-depth curriculum guide for implementation), as well as by overarching *Red Book* standards for accreditation and enhanced skills training programs, with respect to the 6 CPSI patient safety competencies. The CPSI patient safety principles were used as nodes to which the CFPC documentation was coded by 2 researchers. Researchers met to discuss any discrepancies in coding until consensus was reached.

**Results** Across the CFPC documentation, the most commonly found patient safety competencies were “work in teams” (n=24 coding references) and “create a culture of patient safety” (n=23 coding references). The least commonly found patient safety competencies were “optimize factors” (n=1 coding references) and “recognize, respond to, and disclose adverse events” (n=1 coding references). The patient safety competency of “manage safety risks” was also not common (n=5 coding references).

**Conclusion** A relevant framework for patient safety and quality improvement education is needed for family medicine residency training programs across Canada. This framework should focus on optimizing human factors and disclosing near misses or adverse events, as well as on managing patient safety risks in primary care. This is to ensure that programs address patient safety across the full continuum of care, including community-based care. Standards for accreditation and the curriculum from the CFPC could help to create a patient safety culture in family medicine training. Future research should include a needs assessment of family medicine residency training programs with regard to patient safety and quality improvement content.

# Mental health screening in pregnancy

## *Methods women prefer and barriers and facilitators to disclosure*

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Wendy Sword RN PhD Rebecca Giallo PhD Dawn Kingston RN PhD

### Abstract

**Context** Access to mental health services during pregnancy is most commonly mobilized through formal mental health screening. However, despite recommendations by international organizations, fewer than 20% of prenatal care providers routinely conduct mental health screening. A prominent barrier is providers' perceived concern regarding the acceptability of screening and its results to women.

**Objective** To describe pregnant women's views of mental health screening, including screening methods and personal and system-related barriers and facilitators that influence their responses to provider-initiated mental health screening.

**Design** Multisite, cross-sectional survey.

**Setting** Five maternity clinics and prenatal classes at 2 community hospitals in Edmonton and Medicine Hat, Alta.

**Participants** All pregnant English-speaking women presenting for care in the 7 sites were recruited consecutively.

**Intervention** Self-report questionnaire completed on computer tablet.

**Results** Of 500 women approached, 460 (92%) participated. Overall, 98% were very (75%) or somewhat (23%) comfortable with being asked about their mood during pregnancy. Women were most comfortable with paper-based (>90% very or somewhat comfortable) and computer-based (>83%) screening that was coupled with discussion of results with their provider. Comfort levels were similar whether the screening was completed in the clinic or at home. Telephone-based screening by a nurse was least favoured (62% very or somewhat comfortable). Important barriers to disclosure included others' normalizing emotions, desiring to handle their mood on their own, preferring to discuss feelings with significant others, and not knowing what emotions were "normal." Important facilitators included characteristics of the care provider (sensitive, interested), reassurance that emotional health was part of normal care, hearing that other women have emotional issues in the perinatal period, and reassurance that help (in addition to medications) is available.

**Conclusion** Women are receptive to various screening approaches. Efforts to minimize barriers to and enhance facilitators of screening are key strategies in implementing universal, routine perinatal mental health screening.



# Using archived resident data to improve CaRMS selection through evidence-based interview questions

Michelle Morros MD CCFP David Ross MD CCFP John Chmelicek MD CCFP FAAFP Paul Humphries MD CCFP FCFP  
Fred Janke MD CCFP FCFP Michel Donoff MD CCFP FCFP Shirley Schipper MD CCFP Shelley Ross PhD

## Abstract

**Context** Selecting the most appropriate candidates for residency training is crucial. A poor match between a resident and a specialty or program can result in the need for interventions that are costly, time intensive, and stressful for both the resident and the faculty member. Developing better methods for selecting residents should result in a better match between residents and programs.

**Objective** In this study, we triangulated evidence from different sources to develop evidence-based interview questions for use in the Canadian Resident Matching Service selection process.

**Design** Literature review, data-mining.

**Methods** In Phase 1, a literature review was carried out to determine common factors found among residents who encounter difficulty in training. In Phase 2, files of past residents in difficulty were examined to look for common indicators that could be targeted through interviews. In Phase 3, evidence was triangulated to develop evidence-based interview questions. In Phase 4, an expert panel reviewed the questions multiple times until consensus was reached.

**Results** The literature review revealed that deficiencies in professionalism, resiliency, and problem-solving approaches were common factors among residents who encountered difficulty in training. The file review confirmed these areas, as well as sincere interest in the specialty. Key papers from the literature review were re-examined to determine if there were validated questions to ask of candidates. Once essential aspects of key factors were identified, a preliminary list of questions was generated. The expert panel reviewed the questions, and questions went through multiple iterations before finalized forms. Last, a scoring schematic for the individual questions was determined, which included specific elements to watch for in responses. Informally, faculty reported that they were pleased with the new questions; answers given by candidates were more informative than previously. Additionally, scores for candidates showed greater range than in previous Canadian Resident Matching Service rankings, indicating that the new interview questions distinguished between candidates better than previous questions did.

**Conclusion** While much effort is required to develop evidence-based interview questions, initial results suggest that the new questions better distinguish between candidates. Long-term evaluation will include determining how many residents encounter difficulty in training.



# Examining past resident files to improve CaRMS selection through an evidence-based file review process

Michelle Morros MD CCFP   Rosslynn Zulla MEd   Lisa Steblecki MD CCFP   Sandra Robertson   Shelley Ross PhD

## Abstract

**Context** Despite best efforts in selection, 6% to 10% of accepted residents in family medicine experience difficulties. Interventions can be time-consuming and expensive. One strategy to reduce the number of interventions needed is to improve the resident selection process, ensuring that the best match possible is being made between resident and program.

**Objective** The Canadian Resident Matching Service (CaRMS) applications of past residents who encountered difficulty were examined to determine if there were common indicators of difficulty. The goal was to use these data to develop an evidence-based CaRMS file review process.

**Design** Secondary data analysis, literature review.

**Methods** Program directors identified 30 residents who encountered difficulty ("cases"). Matched controls who did not encounter difficulty ("controls") were also identified.

**Main outcome measures** All CaRMS application materials were extracted from resident files (de-identified and coded). Each component of the CaRMS application was analyzed, with a focus on differences within the application elements between the residents who encountered difficulty and those residents who did not. Factors were triangulated with existing findings in the literature.

**Results and findings** Multiple indicators were identified (commonalities among cases, notable differences between cases and controls); several reflected findings in the literature. In the curriculum vitae section, cases did not have much variety in their work or volunteer roles and had few leadership positions. For clinical electives, total time was less of an indicator than was the degree to which applicants described their electives. Cases gave vague descriptions, while controls gave detailed descriptions. For reference letters, there were certain words that occurred with much greater frequency for the controls, such as "exceptional" and "well-rounded." For the personal letter, cases were more likely to be vague, especially about specialty choice, and have inconsistencies within the personal letter. Controls had highly descriptive personal letters that emphasized and gave supporting evidence for specialty choice. The new file review form was piloted with 10 faculty reviewers and their current residents. Greater agreement was seen than with the previous form.

**Conclusion** The new evidence-based form shows promising results in pilot use. Long-term evaluation of the 2015 cohort will indicate if this process is valid as a better way to select residents.

# Trends in resident rotation flags before and after implementation of the Competency-Based Achievement System

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## Abstract

**Context** Remediation of residents who encounter difficulty is costly and time intensive, more so when problems have been occurring for an extended time. It is also stressful for family medicine clinical faculty. Improvement in identification of residents in difficulty is one of the goals of competency-based assessment, and was one of the objectives when we implemented the Competency-Based Achievement System (CBAS) in our residency program in 2009. Through improved detection of residents who are struggling, we can improve training outcomes.

**Objective** To determine if there has been a change to rotation flag patterns for residents experiencing difficulty before and after implementation of CBAS.

**Design** Secondary data analysis (descriptive comparative cohort study) using archived resident data files (3 years before CBAS implementation and 3 years after CBAS implementation).

**Setting** Large Canadian family medicine residency program.

**Participants** Archived files were examined for all residents in the 2005 to 2007 and 2009 to 2011 entry cohorts (N=393).

**Main and secondary outcome measures** Files were searched for evidence of flags on in-training rotation evaluations and summative progress reports.

**Results** Overall, the total number of in-training rotation evaluations with flags has decreased since implementation of CBAS (40% in 2005 to 17% in 2011); as well, there has been a steady increase in flagged residents who are remediated (from a low of 4% in 2006 to 23% in 2011). Total remediations have decreased from 8% in 2005 to 4% in 2011. Rotations where residents are likely to be flagged have mostly remained constant (family medicine, obstetrics, pediatrics, critical care, internal medicine), with the exceptions of general surgery and orthopedics.

**Conclusion** After implementation of CBAS, residents in difficulty appear to be detected earlier and problems are addressed more quickly. This might be owing to CBAS resulting in more detailed comments from the preceptors, leading to resolution of existing issues more quickly by making the resident aware of their deficiencies and providing resources to overcome those difficulties. Overall, implementation of CBAS appears to have increased the likelihood that residents encountering difficulty obtain the attention they require earlier in their training, resulting in fewer flags on rotations.

# Developmental outcomes of children born to methadone-maintained mothers

## *Implications for primary care providers*

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### Abstract

**Context** Perinatal opioid use is highly prevalent in primary care and has been linked to adverse neonatal outcomes. Therefore, integrated care including methadone maintenance treatment (MMT) is the standard of care for the management of opioid use disorders during pregnancy. The most important complication of perinatal MMT is neonatal abstinence syndrome. Neonatal abstinence syndrome is an acute, time-limited consequence of MMT that has been extensively studied. However, long-term developmental outcomes of children with in utero methadone exposure are not well known.

**Objective** To describe developmental outcomes of a Canadian cohort of children with antenatal methadone exposure.

**Design** Retrospective chart review

**Participants** Opioid-dependent pregnant women who attended an integrated primary care-based program and their infants who were born between 2009 and 2011 and followed for 2 years at the Neonatal Follow-up Clinic at St Joseph's Health Centre in Toronto, Ont, were included in this study.

**Main outcome measures** Maternal and neonatal demographic characteristics and developmental outcomes

**Results** Twenty-three maternal-newborn dyads met inclusion criteria. Most mothers had a history of prescription opioid use disorder requiring MMT. The mean birth parameters were as follows: birth weight 2881 g, length 49 cm, and head circumference 34 cm. Almost half of these neonates were in part breastfed, and 87% were discharged home in the care of a biological parent. Fourteen of these children attended the clinic for developmental assessments with 9 lost to follow-up. The overall prevalence of gross motor abnormalities was 36.3% before 12 months and decreased to 12.5% thereafter. Fine motor and communication delays were observed after 1 year of age in 25% and 37.5% of infants, respectively. Abnormal social development was rare.

**Conclusion** Our study demonstrated that gross motor delays seemed to resolve after 1 year of age, with communication and fine motor delays becoming more prevalent on subsequent assessments. These results also emphasize the importance of early screening and intervention programs for this vulnerable population. Primary care providers play a critical role in supporting families with parental substance use disorders to optimize the environment in which these children are raised and to positively influence their development.

# Closing the gap

## *Enhancing knowledge and access to clinical prevention services for South Asian populations*

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### Abstract

**Context** Ethnic minorities are less likely to access clinical prevention services, but there is limited evidence about how to facilitate uptake for these populations.

**Objective** The purpose of this study was to examine the barriers and facilitators to clinical prevention uptake for the South Asian population in Surrey, BC, and to identify effective methods to increase the use of services.

**Design** The study used an inductive, qualitative design based on a series of focus groups with members of the South Asian community. Transcripts were analyzed using thematic data coding, and responses were compared based on clinical prevention topic area and group characteristics.

**Participants** A total of 62 adults between the ages of 40 and 80 participated in 1 of 8 focus groups in health care and community settings.

**Instrument** The focus group guide for the study covered a total of 10 priority clinical prevention topics and each group discussed 3 of these topics. In order to facilitate open discussion participants were asked to respond to questions based on a scenario about a fictitious person who learns about a clinical prevention topic and then chooses not to access it. Participants also completed a brief demographic interview.

**Findings** The findings from this study can be classified into 3 levels of recommended changes. At the micro level, themes included barriers to effective communication with care providers and logistical concerns. At the meso level, participants suggested exploring different delivery models and locations for services. At the macro level the discussion focused on the creation of stronger policies in the interest of the public good.

**Conclusion** Based on these findings we concluded that barriers to culturally accessible and acceptable care occur at multiple levels of the health system. These findings can be used to inform how existing and emerging programs, educational materials, and services can be tailored to meet the values and needs of South Asians in order to increase the uptake of clinical prevention services for this population.

# Using narrative to enhance team-based care in older adults who have fallen

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## Abstract

**Context** Falling as an older adult is a common and complex phenomenon with potentially serious consequences; however, there has been a relatively low uptake and acceptance of fall prevention strategies in this population. Clinical approaches are needed to identify factors that might facilitate or impede older adults' acceptance of risk status and need for intervention.

**Objective** We hypothesize that a narrative approach to interviewing older people who have fallen will reveal important gaps compared with clinical history taking that could better inform collaborative clinical decision making.

**Design** A series of comparative case studies based on a convenience sample of 15 older adults referred to a falls prevention clinic was used, each including the patient narrative elicited by a member of the research team; clinical history generated by the falls clinic team; and clinicians' impressions elicited through team interviews. We compared these 3 components within and across cases using thematic analysis to generate an enriched understanding of each participant's experience of falling. Strategies used to improve trustworthiness included field notes, verbatim transcription, member checking, audit trail of analysis meetings, presentation of preliminary findings to multidisciplinary audiences, and external review.

**Findings** Three key concepts emerged from patient narratives: perception of the cause of the fall (internal vs external locus of control); the significance of the fall; and perceived need for and benefits or risks of action. Interviews with the falls clinic team identified instances of salient information in patient narratives that was missed by clinical history taking or noted but excluded from the clinical report for various reasons. Whether the missing narrative information was the result of failing to elicit it or opting to not report it, falls team clinicians confirmed that the inclusion of this missed information might have resulted in a more holistic understanding of patient context and facilitated collaborative management, particularly in patients not readily engaging with fall prevention strategies.

**Conclusion** Important insights into older adults' experiences with having fallen were revealed using a narrative approach. In concert with clinical history taking, a narrative approach could be of particular use with patients who do not readily accept interventions based on traditional falls risk assessments.

Poster abstracts / Résumés d'affiches

# Cancer diagnosis and treatment time intervals

## *Urban and rural differences in Ontario*

Andriana Barisic MPH   Eva Grunfeld MD DPhil CCFP FCFP   Julie Gilbert PhD

### Abstract

**Context** Despite evidence demonstrating differences in cancer survival between provinces, and between regions within Ontario, the reasons for these differences are not fully understood. Previous research has suggested that diagnostic or treatment delay might be a contributing factor; however, little is known about geographic differences in diagnostic and treatment delay, especially in the Canadian context.

**Objective** To examine urban and rural differences in the time intervals between the onset of first symptoms and cancer diagnosis and treatment.

**Design** This work was part of the International Cancer Benchmarking Partnership, an international collaboration involving 9 countries. It comprised 5 separate areas of research (modules), each examining reasons for observed differences in cancer survival. The focus of this research is module 4, which was a cross-sectional survey that examined the underlying causes of cancer diagnostic and treatment delay.

**Participants** In Ontario, adults aged 40 years and older diagnosed with breast, colorectal, lung, or ovarian cancers were identified through the population-based cancer registry. Eligible individuals were first contacted by Cancer Care Ontario for consent to be contacted by International Cancer Benchmarking Partnership research staff. Those who consented were mailed a survey between May 2014 and October 2015.

**Instrument** The survey examined the pathway to diagnosis (eg, screening, emergency department, or primary care presentation); patient, diagnostic, and treatment time intervals; perceived health status; treatments for comorbidities; and sociodemographic factors.

**Outcome measures** The primary outcome is the patient (onset of symptoms to presentation to health care provider), diagnosis (presentation to health care provider to cancer diagnosis), treatment (cancer diagnosis to start of treatment), and total (onset of symptoms to start of treatment) time intervals. The predictor variable is urban or rural status (defined using the 2011 Canadian census).

**Results** Recruitment will be completed by October 2015. To date, 2510 individuals have consented (breast [n=1205], colorectal [n=745], lung [n=475], or ovary [n=85]), of which 88.5% have returned a completed survey (breast [n=1091], colorectal [n=634], lung [n=402], ovary [n=79]). Differences in the patient, diagnostic, and treatment time intervals by urban versus rural status, by pathway to diagnosis, and by cancer type will be presented.

**Conclusion** The results will inform Cancer Care Ontario's strategy to improve the diagnosis and treatment time intervals, thereby potentially improving cancer survival.

# Comprehensive video-module instruction as an alternative for teaching intrauterine device insertion

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## Abstract

**Context** Intrauterine device (IUD) insertion has been traditionally taught at scheduled training sessions or during rotations at contraception teaching clinics. The limited number of skilled faculty who can teach procedural skills, and issues of time and access, have made it difficult for residents to learn this procedure.

**Objective** To determine how effective the use of video-module instruction is as an alternative procedural skill teaching method to deliver IUD insertion training for family medicine residents.

**Design** This randomized, 2-group (n=39) pretest-posttest (written) experimental research design focused on the comparison of residents' posttest performance based on the traditional instructional (designated site demonstration) and video-module approaches to teaching the IUD insertion procedure.

**Participants** Incoming 2012 first-year family medicine residents (n=39), 53.8% (n=21) of whom were male and 46.2% (n=18) of whom were female. Exclusion criteria included previous IUD insertion during clinical training or previous medical practice that involved IUD insertion (eg, international medical graduates).

**Intervention** Exposure to traditional instruction or video-module approaches to teaching the IUD insertion procedure.

**Main outcome measures** Assessment of knowledge and performance of the procedure.

**Results** Although the traditional and intervention instructional groups both improved significantly in their clinical knowledge scores from pretest to posttest, there was found to be no difference between the groups on the written examinations. On the posttest IUD insertion performance assessment, residents in the video-module intervention group performed significantly better than those in the traditional instructional group ( $P<.05$ , mean effect size difference Cohen  $d=0.75$ ). The internal reliability (Cronbach  $\alpha$ ) of the 27-item performance checklist was  $\alpha=0.77$ .

**Conclusion** Both the traditional and video-module instructional methods were found to be reliable and valid approaches for the teaching and learning of the IUD insertion procedure. The results provide support for the use of a video-module teaching session as a potential method to supplement or enhance IUD insertion procedural skill training. The ability to access this method of instruction online makes this approach highly feasible for residents. In addition, the performance assessment and patient interview checklists that were developed as part of the video-module instructional method might prove to be useful to guide and evaluate the IUD insertion procedures with actual patients.



# We need something BETTER

## *Patients' perspectives on a novel approach to chronic disease prevention and screening*

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 Kris Aubrey-Bassler MD MSc CCFP(EM) Richard Cullen Melanie Heatherington MEd  
 Eva Grunfeld MD DPhil CCFP FCFP Donna Manca MD MCISc CCFP FCFP

### Abstract

**Context** BETTER (Building on Existing Tools to Improve Chronic Disease Prevention and Screening in Primary Care) is a chronic disease prevention and screening (CDPS) program that has been implemented in various primary care settings in Newfoundland and Labrador. The program aims to improve CDPS for cardiovascular disease, diabetes, cancer, and associated lifestyle factors in patients aged 40 to 65 years. The key component of BETTER is the prevention practitioner (PP)—a health care professional with specialized skills in CDPS who structures and complements physicians' CDPS practices in the primary care setting. Some physicians involved in BETTER were sceptical of the benefits of having a PP.

**Objective** To explore patients' perspectives on their visits with PPs in 3 primary care settings in Newfoundland and Labrador.

**Methods** Of 154 patients who received 1 or more prevention visits with a PP, 90 volunteered to provide written feedback. Besides their demographic characteristics, patients were asked what they liked about their visits, what they would have liked to have been different about their visits, and to provide other comments. We employed qualitative description to analyze the data.

**Findings** We identified 4 main themes regarding patients' perspectives on their visits with a PP. 1) Value of the visit: All 90 patients who provided feedback unanimously reported their visits with the PP to be positive and appreciated having a PP as part of the health care team. 2) Visit characteristics: Patients valued the focus on health (as opposed to disease) and that the visit was personalized, comprehensive, and motivating. 3) Characteristics of the PP: The patients saw their PPs as key to their positive experience with the program. Patients characterized the PPs as compassionate, attentive, thorough, knowledgeable, motivating, and supportive. 4) Access concerns: Patients perceived their previous access to preventive care to be limited and expressed concerns about the termination of the program.

**Conclusion** Patients' views that a PP should be an available resource within primary care settings were a contrast to the perception of some physicians involved in BETTER. Our findings might help inform stakeholders in primary care settings as they consider implementing programs to enhance their current CDPS practices.



# Using mobile applications for knowledge dissemination in cataract surgery patients

Harry Dang

## Abstract

**Objective** To assess the effectiveness of the iOphthalmology mobile application for enhancing patients' knowledge of and satisfaction with cataract surgery at the Kensington Eye Institute, a high-volume Canadian cataract centre in Toronto, Ont.

**Design** Cross-sectional study.

**Participants** Seventy-seven patients who were undergoing cataract surgery at the Kensington Eye Institute for the first time with no previous ocular pathology.

**Intervention** To improve patient knowledge of surgical procedures, we developed the iOphthalmology mobile application in 2014. This application is currently available for no cost on the Google Play digital distribution platform on Android devices, including smartphones and tablets. This application was used by cataract surgery patients with the goal of increasing patient knowledge of cataract surgery and increasing patient satisfaction.

**Main outcome measures** Following patient consent, a questionnaire was administered to assess the following: knowledge of cataract surgery, perceived outcome of surgery, decisional conflict level, uncertainty level, sex, occupation, age, highest education level, Ontario Health Insurance Plan status, and literacy status. After using the application, overall satisfaction of all patients was measured.

**Results** Both decisional conflict scores and cataract surgery knowledge scores significantly improved after using the application (mean difference 7.1 [ $P=.02$ ] and 3.4 [ $P<.01$ ], respectively). Multiple regression analysis revealed being illiterate, decisional conflict level, and female sex to be critical factors in the degree to which the application increased patients' knowledge of cataract surgery ( $\beta=3.1$ ,  $P<.003$  for literacy level,  $\beta=2.0$ ,  $P=.01$  for decisional conflict, and  $\beta=-0.9$ ,  $P<.01$  for female sex). A total of 71 of 77 (92.2%) patients were satisfied with the mobile application. Patient satisfaction score was significantly correlated with the overall change in patients' knowledge of cataract surgery score (correlation coefficient 0.31,  $P=.01$ ).

**Conclusion** The iOphthalmology mobile application for Android devices is effective in enhancing patients' knowledge regarding cataract surgery and in decreasing their anxiety in their decision to proceed with cataract extraction surgery. This open-source mobile application can potentially benefit patients who might have restricted access to health care, including patients in countries with low literacy rates. The use of this application before cataract surgery can help to alleviate the worldwide burden of cataract blindness.

# Evaluation of chronic hepatitis B management and monitoring among Asian immigrants

## *Practice-reflective project*

James Leung MD CCFP FCFP    Andrea Leung    Stephen Lau    Simon Cheung

### Abstract

**Context** In Canada, chronic hepatitis B infection is largely a disease of immigrants from endemic countries, with approximately 600 000 cases, based on a 6% rate in immigrants. Among untreated chronic hepatitis B patients, 20% to 25% can progress to cirrhosis, chronic liver failure, and hepatocellular carcinoma.

**Objective** To evaluate chronic hepatitis B management and monitoring in a primary care practice with a high prevalence of cases from Asian immigrants. The project identified HBsAg-positive patients and assessed care according to Canadian hepatitis B guidelines for monitoring.

**Design** Retrospective chart review from a primary care office with predominantly immigrant patients from Asia.

**Setting** Toronto, Ont.

**Participants** A total of 2100 patients were screened. We identified 97 (4.6%) patients with HBsAg-positive status. All patients were Asian immigrants.

**Methods** The study assessed the data from laboratory results in ALT, HBeAg status, HBV DNA viral load, platelet counts, abdominal ultrasound, and other data for liver cirrhosis assessment. Patients were assigned to 1 of 3 groups. The “red” high-risk group included high-viral-load patients for therapy consideration. The “yellow” missing-laboratory-results group included patients missing at least 1 of the results; and the “green” group was the low-viral-load group.

**Results** Among these 97 patients with hepatitis B, 33.0% of the patients were in the “red” high-viral-load group, with only 11.3% receiving treatment for hepatitis B, and 51.5% of the patients were in the “yellow” missing-laboratory-results group, missing 1 of HBeAg, HBV DNA, ALT, or platelet results; 42.3% of patients were not undergoing regular abdominal ultrasound, with more than 12 months’ interval. Only 23.7% of patients were in the “green” low-viral-load group.

**Conclusion** This project has identified that a considerable care gap exists in chronic hepatitis B monitoring. The Canadian hepatitis B consensus guidelines (2012) recommend close regular monitoring of chronic hepatitis B. More resources for hepatitis B care from federal and provincial governments are needed owing to the expected increase of hepatitis B from immigrants. As with treating other chronic diseases, primary care physicians should have more support to establish a vigilant monitoring system for chronic hepatitis B to reduce the rates of cirrhosis and liver cancer in future.

# Web-based intervention for chronic back pain

Shashank Garg MD CCFP Divya Garg MD CCFP Faruq Chowdhury MD Gary Barron MSc Tanvir Chowdhury Turin MD PhD

## Abstract

**Context** Chronic low back pain is one of the most common presenting complaints in the physician's office. Treatment is often challenging and recovery depends on various factors, often resulting in considerable investments of time and resources.

**Objective** To assess which Web-based interventions aimed at chronic low back pain are of benefit to patients?

**Methods** Randomized controlled trials (RCTs) studying Web-based interventions directed at adults with chronic low back pain were reviewed. Retrospective studies, narrative reviews, non-randomized trials, and observational studies were excluded. Electronic databases and bibliographies were searched.

**Results** Eight unique RCTs were identified (n=1414). The number of patients randomized in each trial ranged from 51 to 580. Four trials studied online cognitive behavioural therapy (CBT), 2 studied moderated discussion through e-mail or online chat, and 2 studied other Web-based interventions with interactive features. Use of CBT was associated with reduced catastrophization among patients. Mixed results were reported with regards to reduction in pain levels and disability. One study that measured health care utilization reported reduced utilization with the use of moderated e-mail discussion.

**Conclusion** Limited data are available regarding effective Web-based interventions to improve outcomes for patients with chronic low back pain. Eight RCTs with small sample sizes were identified in this review. Online CBT appears to show some promise in terms of reducing catastrophization and improving patient attitudes. Further research in this area with larger-scale studies focusing on appropriate outcomes appears to be a priority.

# Pilot feasibility study of a primary care and addiction medicine collaborative care model

*SUN:SHARE*

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FRCPC Angela Robertson Laura Pripstein MD CCFP Leslie Molnar MSW Ashok Krishnamurthy MD CCFP  
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## Abstract

**Context** Substance use disorders (SUDs) are a considerable cause of morbidity, mortality, and health care utilization. Few patients are in treatment, largely as a result of poor access to and retention in specialized addiction treatment programs. Primary care might be the solution: outcomes are as good as those in specialized care, retention is better, and capacity is greater. However, because of a lack of training and support, few primary care providers (PCPs) screen and appropriately care for patients with SUDs. As well, PCPs continue to inappropriately prescribe high doses of opioids, increasing the risk of harm (including addiction) to patients. Although there is substantial evidence that shared-care models between PCPs and addiction physicians are the solution to service and knowledge gaps, this model is rarely used in addiction medicine in Canada. We are conducting a program evaluation of a shared-care addiction medicine pilot, SUN:SHARE.

**Objective** To determine if the PCPs participating in the SUN:SHARE pilot improve their management of SUDs.

**Setting** The three participating sites are an inner-city community health centre, an inner-city family health team, and a community family health team affiliated with an academic centre.

**Intervention** In the intervention, addiction physicians facilitate addiction education sessions, assess patients with SUDs, and have case discussions with PCPs at the community sites. The addiction physicians also provide urgent telephone and e-mail consultations with PCPs.

**Methods** We will survey PCPs at baseline and at 6 months to look for reported changes in knowledge and behaviour (counseling, prescribing, and referrals to ancillary services). Additionally, we will conduct patient and provider satisfaction interviews, and track how frequently the telephone and e-mail consultation services were used. We will use each site's electronic medical record to track participating PCPs' prescribing patterns at baseline, 6 months, and 12 months. We will look for changes in the number of prescriptions for medications to treat alcohol use disorders (naltrexone, acamprosate, and disulfiram) and opioid use disorders (buprenorphine-naloxone) and in high-dose opioid prescribing (above 200 mg morphine equivalent per day).

# Use of antipsychotics in a real-world setting in Quebec between 1998 and 2006

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## Abstract

**Context** Several studies have shown clinical differences in the evolution of schizophrenia and the response to antipsychotics (AP) according to patients' age and sex. However, few clinical guidelines take this into account in their pharmacologic recommendations.

**Objective** To describe, in a real-world context, the use of APs (oral or long-acting injectable), according to patients' age and sex, among those living with schizophrenia.

**Methods** This is a retrospective cohort study using medical administrative databases available in Quebec. The study cohort consists of all adult patients living in the province of Quebec, diagnosed with schizophrenia, admissible to the public drug insurance plan, and initiating an AP (with a clearance period of 1 year) between January 1998 and December 2006.

**Results** A total of 16 225 patients (46.2% women) met the inclusion criteria. The median age at AP initiation differed considerably between women (49 years) and men (38 years). The first claimed AP was mainly prescribed by psychiatrists (women 56.7%, men 61.0%, decreasing with age) and general practitioners (women 30.6%, men 27.3%, increasing with age). Moreover, 92.3% of women and 89.2% of men received an AP in monotherapy, 77.9% from a second-generation AP (women 77.2%, men 78.5%), with a slight difference in the molecule used between women and men (olanzapine 42.3% vs 47.9%; risperidone 45.6% vs 39.3%; quetiapine 10.6% vs 10.1%; clozapine 1.5% vs 2.7%). Since long-acting injectable second-generation APs were not available before 2004, only 7.0% of patients taking monotherapy used this type of AP (women 6.7%, men 7.3%). As many as 11.7% of patients did not pursue their treatment after the first month.

**Conclusion** This study reveals statistically significant differences according to age and sex regarding AP utilization in a "real-world" setting. Ongoing studies will evaluate if these differences in AP treatment lead to different outcomes.

# Ambulatory care sensitive avoidable hospitalizations

## *Assessing predictive factors in COPD hospital episodes of care*

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### Abstract

**Introduction** The high rates of “unplanned” hospital admissions are an increasing source of pressure on health system resources. Ambulatory care sensitive conditions (ACSCs), such as heart failure, diabetes, and chronic obstructive pulmonary disease (COPD), are conditions for which hospitalization could be avoidable with ambulatory care management. Chronic obstructive pulmonary disease is the main cause of emergency admissions and hospitalizations in Canada, with a mean length of stay of 10 days and one of the highest rates of rehospitalization.

**Objective** To develop a predictive model for future readmissions of patients with COPD, based on the analysis of their hospital episode of care (EOC), and to identify factors or missed opportunities that can be modified to reduce the readmission rate.

**Methods** This project is a secondary analysis of hospital data for a cohort of patients hospitalized between April 2012 and March 2013 with a primary diagnosis of COPD (ICD-10 J40-J44, J47). The hospital EOC starts at the patient admission (index admission) and ends at hospital discharge, passing through temporal succession of treatments. The main outcomes are the time until the next readmission (COPD and all cause), the number of readmissions, and the total number of days in hospital during the year after the index admission. Independent variables will be analyzed according to the following temporal sequence: 1) status before admission (eg, medical history, comorbidity); 2) status at admission (eg, pulmonary condition); 3) status and care during hospitalization (eg, pharmacological treatments); and 4) status and prescribed treatments at hospital discharge (eg, respiratory conditions, pharmacologic prescription, pulmonary rehabilitation). Data mining algorithms and improved survival analysis with adjusted Cox regression will be used to detect sequential patterns of predictive variables of readmission.

**Anticipated results and conclusion** To our knowledge, introducing sequential patterns of predictive variables on EOC is a new methodologic approach to identifying factors of rehospitalization for an ACSC. A validated methodology for COPD could be then transferred to other ACSCs, such as heart failure and diabetes, and might improve the identification of “missed opportunities” to reduce rehospitalization rates.

# Variations among spirometry interpretation algorithms

## *Push toward standardization*

Florence Mok Amy Liao Tony D'Urzo MD MSc CCFP FCFP

### Abstract

**Context** Asthma and chronic obstructive pulmonary disease (COPD) are among the most common respiratory illnesses encountered in primary care. Although patients often present with similar symptoms, it is important to distinguish between the 2 diseases because their pathophysiology and management are very different. Simple spirometry is an objective pulmonary function test that can support a diagnosis of asthma or COPD, but recent evidence has demonstrated that patients with moderate to very severe COPD also meet spirometric criteria for asthma diagnosis. Spirometry interpretation algorithms (SIAs) should conform to diagnostic guidelines while acknowledging this overlap and prompting the clinician to consider further clinical assessment where such an overlap exists.

**Objective** To determine the variations in SIAs that exist in the published literature and online sources.

**Design** MEDLINE, EMBASE, and mainstream search engines were used to identify all SIA-related material dating back to 1990. Keywords used were *spirometry*, *algorithm*, *algorism*, and *algorhythm*.

**Results** Overall, 17 out of 27 SIAs are unable to serve well as stand-alone documents. Twenty-four SIAs lack a logic string for postbronchodilator forced expiratory volume in 1 second to forced vital capacity ratio, potentially impeding COPD diagnosis. Ten SIA rely solely on postbronchodilator improvement to distinguish asthma from COPD. Twenty-three SIAs lack a prompt for bronchodilator challenge when the forced expiratory volume in 1 second to forced vital capacity ratio is normal. Four SIAs unnecessarily recommend testing the diffusing capacity of the lungs for carbon monoxide to confirm COPD diagnosis.

**Conclusion** Overall, 25 out of 27 SIAs feature variations that might lead to disease misclassification. Further studies are needed to confirm whether this link truly exists. This study points to the need to minimize SIA variability, including the need for a standardized approach to the spirometric diagnosis of asthma and COPD.

# Effects of community-based palliative care on health care use in patients with advanced heart failure

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Russell Goldman MD MPH CCFP FCFP Amna Husain MD MPH CCFP

## Abstract

**Context** In 2000, patients with advanced heart failure (HF) accounted for the second-highest number of hospital days in Canada. The condition is responsible for a high burden of hospitalization for symptoms that are currently difficult to manage in the ambulatory setting and associated with high mortality. We propose that providing home-based palliative care (PC) for these patients can meaningfully reduce the number of hospital visits and days in hospital, with the ultimate goal of improving patients' overall satisfaction with care and quality of life.

**Methods** In a quality improvement analysis of health care utilization of a sample of patients with advanced HF in an urban tertiary hospital, we measured and compared the rate of clinic visits, emergency department (ED) visits, hospital admissions, and days in hospital before and after implementing home-based PC.

**Results** A total of 32 patients with HF (69% female, mean age of 83.6 years) were seen in the home-based PC program during a 2-year period. In a preintervention and postintervention comparison, meaningful reductions were seen in rates of clinic visits (mean of 0.3 visits/month and 0.1 visits/month, respectively), ED visits (mean of 1 ED visit/month and 0.2 ED visits/month, respectively), hospital admissions (mean of 1.5 admissions/month and 0.2 admissions/month, respectively), and days in hospital (mean of 12.5 days/month and 4 days/month, respectively). Median length of stay on the home-based PC program was 2.73 months (range 0.1 to 25.6). Once in the home-based PC program, patients received an average of 2.18 visits a month from a PC physician.

**Conclusion** Home-based care of patients with advanced HF can lead to decreased health care use, including a decreased number of clinic visits, ED visits, and hospitalizations. In turn, we hope it can reduce both patient and system burden and result in greater health-related quality of life for patients with advanced HF.



# Circadian rhythms and cardiovascular disease

## *Systematic mixed studies review*

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### Abstract

**Context** Cardiovascular disease (CVD) is the world's leading cause of death. In Canada, it is estimated that CVD is the cause of more than 69500 deaths annually. Substantial evidence from both animal and human studies now links circadian desynchronization and sleep disturbance with adverse health outcomes, including metabolic and cardiovascular dysfunction. Disruption of the circadian system is also associated with increased incidence and severity of intermediate CVD risk factors such as obesity, diabetes, hypertension, and hyperlipidemia. Given the prevalence of chronic circadian disruption (eg, shift work, electric lighting, and social jet lag), it is crucial to examine current literature pertaining to CVD and circadian disruption, and make a case for their acknowledgment in the primary care setting.

**Design** We present the results from a systematic mixed studies review incorporating quantitative, qualitative, and mixed methods studies, using both animal models and human subjects.

**Objective** To describe current research linking circadian disruption with CVD and its intermediate risk factors in terms of themes covered, methodology, discipline, intended audience, and the extent to which studies refer to primary care as a potential field of application.

**Findings** A preliminary literature search suggests a strong, likely causal, link between chronic circadian disruption and CVD. We identified only a small number of articles that discussed the implications of these findings in primary health care. By far most relevant articles we identified were published in basic research (mostly animal studies) and non-family medicine specialist medical journals. Several papers recommended the potential value of chronopharmacotherapy (drug timing) for CVD treatment, but only a limited number of studies were designed to specifically address the effects of such an approach.

**Conclusion** Based on preliminary findings, we consider chronic circadian disruption a potential modifiable risk factor for CVD. Our results suggest the need to clearly target the primary health care provider audience regarding the causes and consequences of circadian disruption. We recommend that future studies address the effect of the application of circadian concepts in preventive and therapeutic interventions for CVD.

# Development and dissemination of the Preconception Health Care Tool in primary care

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## Abstract

**Context and objective** Good health begins even before conception. Recommendations from the No Time to Wait: The Healthy Kids Strategy suggest that optimizing patients' health before conceiving will improve their children's chances of enjoying good health throughout their lives. In response to these recommendations, the Ontario Ministry of Health and Long-Term Care engaged the Centre for Effective Practice (CEP), in partnership with the Ontario College of Family Physicians, to develop and disseminate the Preconception Health Care Tool (PHCT). The tool is designed to improve maternal and infant health outcomes in primary care by guiding providers' discussions of health promotion and illness prevention strategies with all patients of reproductive age.

**Design** The tool was developed using CEP's integrated knowledge translation approach. A working group comprising a primary care nurse practitioner, a family physician, and CEP staff conducted a comprehensive search, review, and appraisal of existing clinical evidence. Through this process the working group integrated all available evidence and resources into one tool. The tool was tested and refined based on feedback from individuals and organizations with expertise in maternal and infant care, and from providers who practise comprehensive family medicine.

**Results** The tool presents information for providers to use over a series of visits with their patients of reproductive age to encourage patients to develop a reproductive life plan; assess and optimize patients' preconception physical and mental health; optimize chronic medical conditions before conception; choose safe medications for women who might become pregnant; and counsel on lifestyle habits (nutrition, physical activity, alcohol, tobacco, and other substances). Current patient and provider resources are included throughout the tool. Preliminary data on dissemination have been collected and analyzed. Since the launch of the PHCT website in March 2015, it has received more than 2100 views. Additional dissemination data will be presented and discussed.

**Conclusion** The PHCT might help standardize primary care providers' approach to preconception health care with all patients of reproductive age, and provide guidance and resources to both providers and patients.

# Effects of breast reduction surgery on breastfeeding

## *Systematic review and meta-analysis*

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### Abstract

**Context** The World Health Organization recommends exclusive breastfeeding up to 6 months of age, with continued breastfeeding, along with appropriate complementary foods, up to 2 years of age or beyond, owing to breastfeeding's considerable health benefits. Breast reduction is a common plastic surgery performed in Canada and the United States. The effects of this surgery on breastfeeding are currently unclear in the literature.

**Objective** To determine the effects of breast reduction surgery on breastfeeding.

**Design** Systematic review and meta-analysis.

**Participants** Studies were included if they provided both the absolute number and the percentage of women successful at breastfeeding or lactation following breast reduction surgery.

**Methods** A medical librarian conducted the literature search. Two independent reviewers reviewed each paper. References of papers meeting the inclusion criteria were reviewed for completeness. Within the search, 2 systematic reviews were identified; references of these were also reviewed. For each accepted study, 2 independent data extractors captured data on the profession of the study authors, study characteristics, type of breast reduction surgery, patient satisfaction with surgery, preoperative discussion on breastfeeding, and number successful at breastfeeding.

**Main outcome measures** Number of weeks of exclusive or any breastfeeding, percentage of patients satisfied with surgery, percentage of patients with whom breastfeeding was discussed preoperatively, and breastfeeding outcomes by surgery type.

**Results** Preliminary results of the literature search yielded 495 unique papers; 384 were excluded based on the title or abstract and 60 were excluded after full-paper review, leaving 51 papers for data extraction. A further 15 papers were accepted following reference review. The accepted papers were published between 1946 and 2014, and the main outcome in approximately 40% of the papers was breastfeeding postsurgery.

**Conclusion** The final results will provide guidance to plastic surgeons as well as general practitioners on counseling women about breastfeeding before and after surgery, and on whether additional breastfeeding support should be provided to these women.

# Keeping kids in the conversation

## *Understanding children's perspectives of visits to the general practitioner*

Jessica S. Dalley C. Meghan McMurtry PhD CPsych

### Abstract

**Context** Visits to the GP play an important role in the promotion of Canadian children's health, yet research regarding children's perspectives on GP visits is scarce. Greater understanding of children's medical fears is essential to informing interventions for managing procedural distress and pain during GP visits. The current study aims to understand children's fears specific to GP visits, including fear of medical procedures (eg, needles), fear of experiencing pain, fear of illness, and fear of feeling uninformed about upcoming medical procedures. Equally important, we asked children to describe their positive experiences at GP visits so these can be increased.

**Objective** To obtain children's perspectives on GP visits to determine how these experiences can be improved. In particular, this study focused on children's reports of their positive and negative experiences with GP visits, as well as children's desire for increased information and involvement in their health care.

**Design** This is a qualitative, descriptive study. Consistent with the principles of patient-centred care, which emphasize the importance of actively involving patients in their own medical care, this study involved interviewing children directly.

**Method** A total of 167 participants (sufficient to detect medium effect size at  $P = .80$ ,  $\alpha = .05$ ) in grades 2 to 4 (ages 7 to 10 years, mean of 8.07 years) underwent structured interviews regarding their perspectives on GP visits.

**Anticipated results** All study data has been collected. Participant interview responses will undergo content analysis, which is the systematic and objective description of spoken communication. Participant responses will be coded into the following general categories: what children like or dislike about GP visits, how GP visits can be improved, children's medical fears, and how to involve children in conversations about their health care.

**Conclusion** By obtaining children's perspectives directly, the current study can provide information and guidance for improving GP visits for Canadian children through the lens of patient-centred care. This includes promoting positive experiences at GP visits, managing procedural pain and fear, and increasing preparatory information provided to children about medical procedures. Involving children in their primary health care might help increase children's understanding of health concepts and prepare them for making medical decisions in adulthood.

# Examining patterns in medication documentation of trade names and generic names in an academic family practice training centre

Carly Ruderman MSc MD CCFP   Alex Summers MD CCFP   Morgan Slater MSc PhD   Fok-Han Leung MD CCFP

## Abstract

**Context** Medical education is increasingly recognizing and addressing the influence of the pharmaceutical industry on academic physicians and trainees. Among many changes medical institutions have made to try to eliminate directing biased information toward trainees is a restriction on the use of trade names in formal lectures and teaching settings. It is unknown whether there has been a similar trend toward generic name use and documentation in the clinical teaching setting.

**Objective** To compare the use of generic versus brand names for pharmaceutical products in clinical documentation in an urban academic family practice centre.

**Methods** A systematic retrospective chart review of the electronic medical records for St Michael's Academic Family Health Team (SMAFHT) in Toronto, Ont, was completed, analyzing data present in each patient's cumulative patient profile on August 1, 2014. Charts were analyzed for their documentation patterns of 20 commonly prescribed medications, with respect to generic or trade name use. The data were also analyzed for the significance of physician characteristics, such as years from graduation and clinic site, associated with documentation patterns.

**Results** For the 20 medication combinations of interest, only 32% of patient charts contained generic nomenclature exclusively. Conversely, 45% of patient charts contained only trade nomenclature, and 23% contained a mix of generic and trade nomenclature. Among the physicians at the SMAFHT included in the study, there was large variation in the use of generic nomenclature in charts, which ranged from less than 10% to nearly 90%. There was no association seen between the exclusive use of generic nomenclature and the number of years since graduation from medical school. No significant difference in documentation patterns was found between the 5 sites of the SMAFHT.

**Conclusion** Trade names continue to be used abundantly in documentation in medical charts at an academic family health team. The use of generic names and trade names varies widely by both the medication of interest and the prescribing physician. Further study is necessary to determine the characteristics of a physician that influence the use of generic or trade nomenclature.

# Engaging inner-city populations and stakeholders in health services research

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Shireen Surood PhD Ginetta Salvalaggio MD CCFP FCFP

## Abstract

**Context** Inner-city populations are characterized by medical and social complexity, low uptake of chronic disease prevention and screening (CDPS), and low primary care attachment. Hospital visits are a primary health care access point—providing an opportunity to respond to unmet needs as well as to connect individuals to primary and community-based care.

**Objective** To determine whether an inner-city acute care team intervention is associated with reduced emergency department (ED) use, increased primary care attachment, and increased CDPS. Inner-city populations are generally understudied owing to challenges in recruitment, retention, and data quality; these challenges need to be carefully considered in study designs.

**Design** A 2-group before and after quasi-experimental design. Community liaisons meet regularly with the research team, convene a community advisory group quarterly, and provide support for follow-up efforts in the community. Participants provide informed consent for collection of primary survey data (baseline, 6 months, and 12 months); secondary health, housing, income support, and policing administrative data over the same time period; and data linkage.

**Participants** Patients presenting to acute care with active substance use, unstable housing, or unstable income.

**Intervention** The Addiction Recovery and Community Health (ARCH) team uses a multidisciplinary team-based approach to addressing unmet medicosocial needs, population-specific care coordination, and discharge planning.

**Main outcome measures** Total ED use; attachment to a primary care provider; family practice sensitive condition presentations to the ED; stabilization or reduction of substance use; and uptake of CDPS.

**Results** The ARCH team launched in July 2014 and conducts approximately 20 consultations weekly. Baseline characteristics of the study sample will be presented. Based on past local data, we expect community liaison-supported follow-up activities to achieve a 50% retention rate. All participants have consented to data linkage of survey and administrative data sets, allowing for comprehensive characterization of all participants both medically and socially, regardless of retention.

**Conclusion** The ARCH team is designed to provide interim supports for a vulnerable population, traditionally underserved and understudied by primary care. Strong partnerships with service providers, data custodians, and community members create an environment in which inner-city health services research is feasible.

# Endoscopic knowledge, skills, and practice patterns of Canadian family physician endoscopists

Michael Kolber MD MSc CCFP FCFP Shelley Ross PhD

## Abstract

**Context** Currently excessive wait times highlight a shortage of colonoscopists in Canada. Patients in rural communities also face substantial geographic challenges in accessing care for their gastrointestinal concerns or symptoms. To fill this need, some rural family physicians have been trained in gastrointestinal medicine and provide endoscopic services to their local communities. However, there is a paucity of evidence on skill set, practice patterns, and knowledge (and educational needs) of Canadian family physician endoscopists.

**Objective** To determine the training, practice patterns, endoscopic skill set and knowledge of Canadian family physicians who routinely perform endoscopy.

**Design** Cross-sectional survey.

**Participants** Family physician endoscopists at an annual educational event aimed at family physician endoscopists (January 2014), with additional recruitment targeted to previous conference attendees.

**Instrument** Self-report survey accessed online.

**Results** Family physician endoscopists (n=20; 90% male; representing 4 provinces [British Columbia, Alberta, Saskatchewan, Ontario] and the Northwest Territories) completed the survey. Among respondents, 95% practised in rural settings; 65% were in communities without a local general surgeon, and 55% were at least a 2-hour drive from the nearest gastroenterologist. Respondents reported both formal and informal training. All respondents performed gastroscopies, and 90% performed colonoscopies and polypectomies. On average, respondents performed endoscopy 4 days per month. All but 1 physician performed their own sedation at least some of the time, most commonly with fentanyl and midazolam. Most routinely photograph cecal landmarks (76%) and tattoo advanced polyps or cancers (70%), while 94% feel able to intubate the terminal ileum when needed. Most thought they had adequate knowledge on most general gastrointestinal or endoscopic topics but identified needing education in areas such as advanced care of patients with inflammatory bowel disease and staging rectal cancer, and Barrett esophagus nomenclature. All endoscopists except 1 felt supported by their local colleagues and most felt supported by their colleagues in gastroenterology to whom they refer.

**Conclusion** Family physician endoscopists appear to be filling a need in caring for rural Canadian patients with gastrointestinal symptoms or concerns. Ongoing studies to directly measure endoscopic performance of these physicians should be performed and knowledge gaps should be addressed at future educational events.

# Can we meet the needs of Regina's emergency department and hospitalist frequent users?

Sarah Liskowich MD CCFP   Kiel Luhnig MD   Erwin Karreman PhD RHIS

## Abstract

**Context** In Regina, Sask, a small percentage of patients repeatedly access acute care services at a huge cost to the medical system. In 2013, the Hospitalist Referral Program (HRP) was implemented with a goal of better meeting the needs of these frequent users who are seen repeatedly in the emergency department (ED) and frequently admitted briefly to the hospitalist program without outpatient follow-up. These patients continually return to the hospital for their ongoing care, propagating a cycle of numerous brief admissions, creating dependency on acute care services for nonemergent problems. Physicians from the family medicine unit accepted HRP referrals and provided outpatient care at a community clinic.

**Objective** The purpose of this study is to evaluate the success of the HRP by taking into account medical as well as monetary parameters.

**Design** Data collection entailed 6 months before and after referral to measure the varying outcomes. To this end, the charts of 24 patients with a mean (SD) age of 39.6 (15.8) years were reviewed. Patients were categorized as successful or unsuccessful referrals based on whether they showed up for their first appointment and whether they regularly showed up for ensuing ones. This categorization was used to compare reduction in ED visits and monetary savings. Monetary savings were calculated by comparing prereferral and postreferral expenses associated with cost of transportation, hospital-related costs, and costs of outpatient appointments.

**Results** Overall 50% of referred patients were considered successful referrals. Patients in the unsuccessful group showed a mean (SD) drop of 2.0 (2.7) ED visits compared to a drop of 3.3 (4.3) visits for patients in the successful group. In addition, mean (SD) monetary savings through implementation of the HRP were estimated to be an average of \$6600 (\$9700) for the unsuccessful referrals and almost double that (\$12 600 [\$18 300]) for the successful referrals.

**Conclusion** Future research examining the traits of patients that successfully used the HRP would indicate whether more programs of this kind are needed or whether other solutions to this problem are required. Measuring this program's success informs ways to positively affect health delivery in the Regina Qu'Appelle Health Region.



# Provider perceptions of knowledge exchange and communication within a multisite family health team

Morgan Slater PhD Emily Nicholas Fok-Han Leung MD MHSc CCFP Aisha Lofters MD PhD CCFP

## Abstract

**Context** Team-based care is common in today's primary health care system. However, team members might be spread across multiple locations. While this allows for greater access throughout a community, separation of team members might negatively affect communication and lead to disparate patient access.

**Objective** To describe self-reported knowledge and use of family health team (FHT) services and to explore communication issues among health care professionals active within a large multisite FHT.

**Design** Descriptive study using an electronic survey.

**Setting** A multisite FHT in Toronto, Ont

**Participants** All health care professionals active within the FHT were invited to participate (N=90).

**Main outcome measures** Self-reported awareness of FHT services, perceptions of patient access, communication issues, and demographic characteristics, including respondents' roles and experience.

**Results** Forty-six health care professionals participated (51% response rate). While respondents were highly aware of the clinical resources and services offered at their own sites of practice (95% agreed or strongly agreed), only 54% were aware of services offered at other sites within the FHT. While internal referrals for certain specialty services were high (ie, methadone management, obstetric care, intrauterine device insertions, and psychiatry), less than 50% of other referrals were internal despite physicians within the FHT having the expertise (eg, sports medicine, joint injections). Only 60% of respondents believed that patients had equal access to all FHT services and 42% reported that patients were unlikely to travel between sites. Roughly one-quarter of respondents believed that physicians were unlikely to refer patients to another site within the FHT for health care services. Most respondents (68%) agreed that the geographic separation of the sites negatively affected communication.

**Conclusion** Geographic separation of team members in a multisite FHT had a negative effect on provider knowledge of available services, perceived patient access, and communication within the team. As most FHTs are spread across multiple locations, finding ways to improve communication among team members is key to maximizing the effectiveness of the patient care provided by these team-based models of care.

# Accessibility and use of primary health care among immigrants in the Niagara Region

Irene Lum Rebecca Swartz Matthew Kwan PhD

## Abstract

**Context** Research on immigrant health in Canada has been fairly well established; however, the focus has typically been on large urban centres such as Toronto, Ont, Montreal, Que, and Vancouver, BC, which have large immigrant populations. As a result, immigrants and their experiences with the health care system in smaller regions remain largely unknown.

**Objective** The purpose of this study was to examine the lived experiences of immigrants in the Niagara Region, in order to identify specific barriers to use and access of the primary health care system and to better understand the unique challenges they faced when requiring primary care.

**Design** This was a qualitative study employing semistructured interviews with all participants. Each interview was recorded, transcribed, and coded for emergent themes using a constant comparison approach on NVivo software.

**Participants** The study included 14 participants that were Ontario Health Insurance Plan–eligible immigrants currently residing in the Niagara Region. Age of the participants ranged from 31 to 62, and most were female (64%). Half of the participants had lived in Canada for less than 4 years.

**Findings** Overall, 5 emergent themes were found to affect primary care access, the primary care experience, or both. Specifically, social isolation, lack of Ontario Health Insurance Plan coverage, the existence of a language barrier, difference in treatment preferences, and geographic distance were found to be salient contributors to difficulties in accessing primary health care.

**Conclusion** This study is the first to examine the primary health care experiences of immigrants in a smaller urban centre. In comparison to similar studies conducted in larger cities, these findings suggest that immigrants identify similar barriers to primary care. It is likely, however, that these barriers might be further exacerbated in places such as the Niagara Region owing to a smaller immigrant population, fewer services for immigrants, and less diversity in practising physicians. Strategies to improve immigrant health care experiences in larger cities might not necessarily be effective in smaller regions owing to differences in geographic and demographic characteristics. Thus, more research is required to understand effective ways to overcome primary health care barriers for immigrants moving to smaller urban centres.

# Knowledge translation for family physicians

*Making good strategies even better*

Joanne A. Permaul MA CCRP June C. Carroll MD CCFP FCFP

## Abstract

**Context** Knowledge translation (KT) involves transferring knowledge acquired through research to application in practice. Knowledge translation interventions have the potential to bridge the gap between knowledge and practice, potentially leading to improved health outcomes. It is important to evaluate the effectiveness of knowledge dissemination and implementation strategies and to make recommended improvements.

**Objective** To evaluate 3 KT strategies: an interactive educational workshop with resource materials (GenetiKit), including a just-in-time knowledge support tool called Gene Messenger; a hereditary colorectal cancer (CRC) risk triage and management point-of-care tool; and an electronic knowledge dissemination service (e-Gene Messenger), to determine what improvements can be made to KT strategies based on recommendations from FPs.

**Design** Quantitative and qualitative data were analyzed from evaluation questionnaires completed at the end of each study to determine if the KT programs were useful, the aspects that were valued by FPs, and how KT efforts could be improved.

**Participants** Canadian FPs.

**Results** Overall, these 3 KT strategies were rated highly by participating FPs. Of 42 FPs who evaluated the GenetiKit program, 88% found it useful; 76% said their practice changed a little and 21% said it changed a lot; 93% would recommend it to colleagues. Of 73 FPs who used the CRC risk triage and management tool, 70% found the risk triage tool, and 86% found the management tool, easy to use; and 90% stated that the tool would improve their practice. The Gene Messenger program was evaluated by 381 FPs: 88% were somewhat or very satisfied with the service; 88% found this method of learning somewhat or very useful; and 76% found it useful for clinical practice. A synthesis of qualitative comments from the studies revealed the following recommendations for further improving KT strategies for FPs: practical point-of-care clinical tools; concise information with links to additional material if needed; convenient access to a trusted source of information; information tailored to FPs; website for future reference; and tools for hand-held devices and the electronic medical record.

**Conclusion** Knowledge translation strategies have the potential to influence physician behaviour and improve health outcomes. Future KT strategies for FPs should be designed based on lessons learned from their feedback and recommendations.

# Scoping study of communication barriers between physicians and immigrant patients

Salim Ahmed MSc Nusrat Shammu MSc Nahid Rumana MD PhD Tanvir Chowdhury Turin MD PhD

## Abstract

**Introduction** Immigrant people all around the globe are commonly challenged by communication barriers in their everyday life. This barrier becomes severe when they must communicate with their doctors about their health conditions. As a vast number of people of the world are now immigrants (1 in every 7 people is living outside his or her country of origin), we need to understand the causes of this communication barrier and its effects on both doctors and immigrant patients. So far numerous original studies have made an effort to shed light on the communication barriers between immigrant patients and doctors, but a synthesis of existing knowledge is required to identify the gaps as well as opportunities for future research and study.

**Methods** We have done a scoping review of the literature to synthesize knowledge according to the research objective stated above. We used a standard scoping review framework according to Arksey and O'Malley (2005). We searched electronic databases of journal articles and gray literature and also used the snowballing technique to further expand the number of relevant literature findings. We limited our search to English-language literature only.

**Results** The searches returned 567 entries after removal of duplicates. After screening based on titles and abstracts, we selected 131 articles to read in full. After reading these articles, 61 articles were found to be relevant for the synthesis. Language discordance between doctor and patient appeared to be the most critical barrier in communication. However, cultural difference, religion, lack of knowledge, and low socioeconomic status substantially impair effective communications. Lack of appropriate communication creates frustration among doctors and patients and mistrust and anxiety among patients, and ultimately worsens patients' conditions and psychological well-being.

**Conclusion** Based on existing literature, this study depicted the facts and gaps in research about communication barriers that immigrants encounter while accessing health care. Therefore, it can be used by professionals such as doctors, policy makers, and researchers in finding their future directions on this issue.

# Geographic distribution of scientific contributions in family medicine

## *Bibliometric analysis of Canada's contribution*

Tanvir Chowdhury Turin MD PhD   Fahmida Yeasmin MSc   Salim Ahmed MSc  
Arfan Raheen Afzal MSc   Nahid Rumana MD PhD

### Abstract

**Introduction** Publication of scientific articles in peer-reviewed medical journals is considered as a measure of research productivity. The aim of the present study was to quantify the research contributions of different countries in family medicine and to critically discuss the results through the prism of recent socioeconomic parameters.

**Methods** All the articles on *family medicine* published between 2009 and 2013 (5 years) were selected and downloaded from the MEDLINE database. The following key words were used for the search: *general practitioner, family practice, family physician, general practice, family medicine, and family doctor*. These articles were coded for publication year, country of first author's affiliation, and article type. We have investigated the share of research output of the top-ranking 20 countries along with the trend over time. Also, we have investigated this share of research output weighted by other factors such as gross domestic product (GDP), population, per capita income, and research-and-development expenditure of GDP of each country.

**Results** The search generated 12 129 papers (853 clinical trials, 331 case reports, 55 meta-analyses, 908 reviews, and 9982 original articles). In terms of publication volumes, the United Kingdom (20.7%), the United States (19.76%), and Australia (10.1%) were the most productive countries. Canada was the fifth-most productive country, with 5.6% of the articles. When adjusted for country population, Denmark (6.1 out of 105), Netherlands (5.5 out of 105), and New Zealand (5.4 out of 105) occupied the highest ranks. These 3 countries also occupied the top 3 positions when GDP was accounted for. Canada was in ninth position for publication relative to population and was in tenth position for publication relative to GDP.

**Conclusion** Along with the United Kingdom, the United States, and Australia, Canada is one of the top contributors to family medicine-related research. But a comparison using GDP and the percentage of GDP spent on research and development showed that smaller European countries are more productive. With primary care being one of the important aspects of Canada, the barriers to boosting high-quality research in Canada should be determined and, accordingly, appropriate measures should be taken.

# POEMs reveal candidate clinical topics for the Choosing Wisely Canada campaign

Roland Grad MDCM MSc FCFP Sarah Ousalem

## Abstract

**Objective** We propose a method of identifying clinical topics for expert panels involved in campaigns like Choosing Wisely Canada.

**Methods** Patient-Oriented Evidence that Matters (POEMs) are tailored synopses of original research or systematic reviews, selected by searching more than 100 journals. Daily POEMs are delivered to more than 20000 members of the Canadian Medical Association (CMA) by e-mail, and are rated by physician members of the CMA with the validated Information Assessment Method (IAM), in the context of an ongoing continuing medical education program. From the readers' perspective, the IAM questionnaire captures the perception of the clinical relevance of this information, the intention to use this information for a specific patient, and any expected health benefit. We analyzed all ratings submitted by CMA members on all POEMs delivered in 2014. Given the objective of the Choosing Wisely Canada campaigns, we focused our analysis on 1 specific item in the IAM questionnaire, namely the expected health benefit from "avoiding an unnecessary diagnostic test or treatment." For each POEM, we obtained frequency counts of the number of these "avoid" ratings. This allowed us to identify the top 20 POEMs in 2014 associated with this type of health benefit. Then, to determine if the clinical topics of these 20 POEMs were included in the master list of the Choosing Wisely Canada campaign, 2 of us independently searched this list by key word and topic area, in March 2015. Disagreements were resolved by consensus.

**Results** In total, 291804 ratings were submitted on 254 POEMs in 2014. For the set of 20 POEMs of interest, we received an average of 1245 ratings per POEM (range 468 to 1459). Of the clinical topics addressed by these 20 POEMs, just 2 were the subject of a recommendation from the Choosing Wisely Canada campaign. The clinical topics of the other 18 POEMs were not addressed. We grouped these 18 POEM-topics into 3 categories: diagnostic testing (n=3), medical intervention (n=12), and surgical intervention (n=3).

**Conclusion** The selection of new recommendations for Choosing Wisely Canada could be informed by a systematic crowd-sourcing approach based on POEMs.

# Une étude pilote d'implantation du site web Discutons Santé en milieux cliniques de première ligne

Marie-Thérèse Lussier MD MSc CCFP FCFM Élie Boustani MD Catherine Hudon MD PhD  
Holly Witteman PhD Claude Richard PhD Fatoumata Binta Diallo PhD Marilou Croteau MD

## Résumé

**Contexte** La gestion optimale des maladies chroniques exige que les patients jouent un rôle actif dans leurs soins. Une des stratégies pour y arriver est d'améliorer les habiletés communicationnelles des patients. La présente recherche vise à décrire et évaluer l'adoption et l'implantation du site web francophone, Discutons Santé, en contexte clinique, et à apprécier l'expérience de son utilisation.

**Méthode** Une étude de cas multiples.

**Sites** Trois UMF-GMF du Québec.

**Participants** Cinq professionnels de la santé et cinquante patients par clinique. Les critères d'inclusion des patients sont : 1) âgés de 40 ans ou plus; 2) atteints de deux maladies chroniques ou plus et 3) capacité à naviguer sur Internet.

**Description du site web** Discutons Santé: un site web francophone composé de trois outils (Mes habiletés PIVO; Mes rendez-vous et Mon carnet de Santé) pour aider le patient à optimiser ses visites médicales. Chaque outil s'accompagne de vignettes cliniques audio et d'exemples. La personne est invitée à réfléchir aux problèmes qu'elle désire aborder et à les prioriser. Un sommaire de la visite du site est généré automatiquement et peut être partagé avec le clinicien.

**Instruments** Des questionnaires auto administrés et des groupes de discussion auprès des cliniciens et des patients ciblés serviront à recueillir des données sur la portée, l'efficacité, l'adoption, la mise en œuvre des outils dans les milieux cliniques participants.

**Résultats** Au moment de la présentation, les données sur l'expérience des professionnels à suggérer la visite du site web aux patients éligibles dans le cadre de leur suivi régulier seront disponibles. Aussi, les données sur l'expérience des patients quant à l'utilité perçue des trois outils et leur impact sur la visite médicale seront également présentées.

**Conclusion** La présente recherche permettra d'identifier les conditions nécessaires pour intégrer l'intervention au suivi habituel des patients en soins de première ligne.

# Discutons Santé

## *Website to help chronic disease patients and providers engage in productive interactions*

Marie-Thérèse Lussier MD MSc CCFP FCFP Claude Richard PhD Collectif Capsana Fatoumata Binta Diallo PhD

### Abstract

**Context** Communication interventions directed at patients, including self-learning websites, can increase patient participation, but few are available in French. Communication skills training is part of medical curricula. However, there have been few attempts at concurrent training approaches to improve both patient and health care provider (HCP) communication. The project aim is to develop and validate a French-language website intended to help patients and HCPs engage in productive interactions.

**Methods** Phase 1: Development of website materials. Patient training is based on Cegala's PACE model; HCP training is inspired by the health beliefs and transtheoretical models. Many formats are combined: texts, figures, graphs, video and audio excerpts, and interactive exercises. Phase 2: Capsana, a community organization that specializes in production of health education materials, teamed with us to create the website. Phase 3: Validation of website content, relevance, usefulness, ease of use, and intention to recommend it, preceded by observing test users during website exploration, self-administered individual questionnaires, and patient and HCP focus groups to discuss the website strengths and weaknesses. Evaluation of distinct methods to promote the website within primary care practices followed: passive diffusion and active diffusion (website visit recommendation by either clinic receptionists or primary care providers).

**Results** Validation data reveal that website presentation and content are relevant and useful and that the users intend to recommend its use. Patients suggested adding more instructions to improve navigation. Providers wished a greater number of clinical cases to illustrate the theoretical principles presented. Data from the evaluation of website promotional methods indicate increased patient visits when the HCPs suggested it.

**Conclusion** This is the first French-language website aiming at simultaneously improving both patients' and HCPs' communication in the primary care context. A pilot study to examine the implementation of the website in routine primary care practices in 3 Quebec teaching clinics is under way.



# Dissemination and use of the Menopause-specific Quality of Life Questionnaire (MENQOL)

## Scoping review

Jacqueline Lewis MD MSc FCFP Beate Sydora PhD Hilary Fast Nese Yuksel PharmD  
Sandra Campbell MLSc Susan Ross PhD

### Abstract

**Context** The Menopause-specific Quality of Life questionnaire (MENQOL™) and derivative MENQOL-Intervention™ questionnaire are patient-reported outcome measures developed in a Canadian primary care setting and published before there was close attention to intellectual property rights.

**Objective** The purpose of the scoping review is to determine the extent of worldwide use in 1996 to 2012 (inclusive) publications and to assess researcher and clinician fidelity to item and domain integrity, scoring and analysis strategy, and publication reporting of pertinent questionnaire characteristics.

**Design** Comprehensive scoping review.

**Inclusion** All English and non-English papers using MENQOL as an investigative measure.

**Methods** The scoping exercise systematically searched 13 biomedical and clinical databases using *menqol* as a search term. Review articles, conference abstracts, proceedings, dissertations, and incomplete trials were excluded. Google Scholar was searched for gray literature. Two independent reviewers extracted data reflecting study design, intervention, sample characteristics, MENQOL questionnaire version, recall period, questionnaire modification, analysis detail, and language of questionnaire delivery. Data analyses included categorization and descriptive statistics.

**Results** Data extraction identified 957 records of which 166 papers met inclusion criteria. Studies were performed in 38 countries, with MENQOL translated into 30 languages in addition to 18 known professional translations. To date, designs include surveys (n=71), RCTs (n=65), experimental trials (n=27), pilot studies (n=10), psychometric evaluations (n=6), and case reports (n=3). Interventions studied hormonal (n=30), nonhormonal (n=13), and complementary drugs (n=20), and physical (n=20) and psychological (n=16) treatments. Most papers (n=125) report questionnaire version but not recall period. Fifteen papers explicitly report modified items.

**Conclusion** The MENQOL outcome measure contributes evidence to evaluate a number of interventions used in primary care menopause management. Its research use has steadily increased in countries and languages unknown before this comprehensive review. The original lack of licence and limited contact between researchers and developers might have permitted unexpected alterations, use of unofficial versions, informal or duplicate translations, and misunderstandings of item intent, especially related to translation or cultural adaptation.

# Evaluation of a distributed health research methods course for family practice residents

Brian Ng MD FCFP CCFP(EM) John-Jose Nunez Evelyn Cornelissen RD PhD Ruth Elwood Martin MD CCFP FCFP

## Abstract

**Context** Primary health care providers often lack the skills to develop research proposals from clinical questions. Most family medicine residency programs do not provide instruction on research methods. At the University of British Columbia (UBC) in Vancouver, we developed a Distributed Health Research Methods Course (DHRMC) to address this gap.

**Objective** To investigate the effect of the DHRMC on the research knowledge, skills, and attitudes (KSA) of family practice residents.

**Design** Cohort study.

**Instruments** A cross-sectional, 25-item survey will assess research KSA. Participants will enter their survey responses in Fluid Survey. Open-ended qualitative responses will be analyzed using content thematic analysis for recurring themes. Closed-ended quantitative responses will be analyzed with simple descriptive statistics using frequencies. Associations between variables will be examined using cross-tabulations and  $\chi^2$  analysis. Residency program records will determine the number of prizes awarded for resident research projects.

**Setting** The UBC family practice residency program.

**Participants** First- and second-year family practice residents across 16 teaching sites.

**Main outcome measures** Improved research KSA for residents whose teaching sites participated in the DHRMC, compared with research KSA of residents whose teaching sites did not participate in the DHRMC; and increased numbers of prizes awarded for resident research projects in the intervention group compared with the control group.

**Results** Since September 2013, 111 (of a total of 320) UBC family medicine residents have enrolled in the DHRMC, providing sample sizes of 111 and 209 for intervention and comparison groups, respectively. High response rates are anticipated because all residents are surveyed in one location during resident research days (June 2015 and June 2016).

**Conclusion** We anticipate that the effect of the DHRMC will be improved self-reported research KSA and increased numbers of prizes for research projects among family practice residents.

# Point-of-care ultrasonography training

## *Needs assessment in a Canadian family medicine residency program*

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### Abstract

**Context** Point-of-care ultrasound (PoCUS), defined as “ultrasonography brought to the patient and performed by the provider in real time,” is becoming rapidly recognized and adopted as a valuable tool across many fields of medicine. Formal bedside ultrasound training is a prominent component of several non-family medicine residency programs. However, despite its availability, wide applicability, and rapid learning curve, PoCUS has yet to be adopted in many Canadian family medicine residency programs.

**Objective** To assess the perceived need for PoCUS training in a Canadian family medicine residency program.

**Design** An anonymous survey was distributed online to family medicine residents. The survey assessed demographic information, baseline exposure to PoCUS, perceived utility of PoCUS, and the perceived need for PoCUS training as part of a family medicine residency curriculum.

**Participants** First- and second-year residents in a Canadian family medicine residency program.

**Main outcome measures** Perceived utility of PoCUS and perceived need for PoCUS training as part of family medicine residency.

**Results** Despite limited exposure, most respondents perceived PoCUS to be a useful clinical tool and perceived a need for PoCUS training in their residency. More than three-quarters of residents anticipated they would regularly use PoCUS in their clinical practice if they were adequately trained and competent. There was no clear correlation between main outcome measures and the respondents’ training environment, anticipated clinical practice environment, or baseline exposure to PoCUS.

**Conclusion** Our study demonstrates that the residents in our family medicine training program perceive PoCUS to a useful clinical tool and have a strong interest in accessing formal PoCUS training during their residency.

# "How is it for you?"

## *Residents' and faculty experience with a new family medicine competency-based curriculum*

Keith Wycliffe-Jones MB ChB CCFP Vishal Bhella MD CCFP Sonya Lee MD CCFP FCFP

### Abstract

**Context** The family medicine (FM) residency program at the University of Calgary in Alberta introduced a new Triple C Competency-based Curriculum in 2012. This presented an opportunity to study in depth the effects of such a substantial change on both faculty and residents.

**Methods** Semistructured interviews were completed with 10 second-year FM residents and 16 faculty involved in the introduction of the new curriculum. Study participants were selected using a purposeful sampling method. Interviews were recorded and subsequently transcribed verbatim for thematic analysis.

**Results** The analysis revealed a wide variation in residents' and faculty members' understanding of the elements of a Triple C Competency-based Curriculum. Study participants identified issues relating to the delivery of high-quality, consistent, and equitable learning experiences in a large residency program. Scheduled learning experiences with nonphysician health care professionals appeared to be less valued by residents than experiences with physicians were, and substantial challenges around providing experiences with continuity of care were also identified, especially in larger academic teaching clinics. Integration of residents into the FM clinics was better and continuity of supervision throughout the training was improved. A potential trade-off with experiences in inpatient care and acute care settings was identified. Some challenges relating to clinical opportunities and program delivery were attributed in part to program expansion as opposed to curriculum change.

**Conclusion** For a new curriculum to be successful, an ongoing process of evaluation and monitoring of learning experiences is essential. Despite some deficiencies and implementation challenges identified by study participants, residents and faculty both acknowledged that these were expected and were willing to commit to and engage with the new curriculum. Understanding how the Triple C curriculum affected our learners and faculty provided essential feedback to curriculum developers, and enhanced our ongoing processes of quality assurance and improvement within the program.

# Training on underserved populations

## *From a student project to a part of the medical curriculum*

Christine Ouellette   François Venne   Samantha Coulombe

### Abstract

**Context** So-called underserved populations are those whose socioeconomic, cultural, or legal contexts prevent them from benefiting from the opportunities afforded to the rest of society. These populations face considerable stigma from health care providers, who often fail to grasp this context because of a lack of exposure to these populations during their training. This stigma, in turn, might lead to delivering lower-quality care to these patients.

**Objective** To increase medical students' understanding of various underserved communities and social issues surrounding them. Medical students will then be more prepared to manage patients by addressing the specific needs of these communities. Further, we aim to stimulate students' interest in working with these communities.

**Methods** Our extracurricular project, the INcommunity immersions, was founded by medical students, who put together a 1-month summer immersion program in 4 communities that are thought to suffer from a lack of understanding by health care providers: inner-city populations, migrants, aboriginal communities, and offenders. In partnership with local organizations, students learned about the challenges faced by the community in which they were immersed through internships, training sessions, reflective writing, and group discussions. In addition, wanting to bring the INcommunity concept to a wider audience, medical students collaborated with the Faculty of Medicine at the University of Montreal in Quebec in order to have all students exposed to underserved populations. Classes were added to the first- and second-year curricula, and a 1-week immersion session was implemented in the last 2 years of medical school.

**Outcomes** After 4 iterations of the INcommunity immersions, more than 75 students had participated in a 4-week extracurricular immersion and reported a deeper understanding of the issues faced by underserved populations. For the first time at the University of Montreal, a whole class (graduating in 2015) experienced a full week dedicated to underserved populations and the social determinants of health. To further investigate the evaluation of our project, an outcome assessment will be performed, starting with next summer's participants.

**Conclusion** Through these immersion projects, we wish to fight stigma, advocate for underserved populations, and train medical students to become better doctors, by socially and culturally adapting the care they provide to these communities.

# Panel management curriculum to teach emerging competencies for family medicine residents

Sohil Rangwala MD CCFP Douglas Archibald PhD Anne Balkissoon MD  
Elizabeth Muggah MD CCFP Sharon Johnston MD CCFP

## Abstract

**Context** Panel management (PM) is a new approach to care in which providers proactively address the health of their entire patient population (or panel) rather than react to health issues presented at visits. Curriculum guides to teach this new approach are scarce.

**Objective** To develop and evaluate a PM curriculum for family medicine residents to improve collaboration, communication, practice management, and care coordination; to enhance resident experiences in patient ownership and continuity of care; and to strengthen teaching and quality of care (chronic disease management, health promotion, and disease prevention).

**Design** Pilot project using a mixed-methods program evaluation approach.

**Setting** A single academic training site for family medicine in Ottawa, Ont.

**Participants** Seven first-year and 8 second-year family medicine residents.

**Intervention** Residents were assigned a panel of 50 patients meeting preestablished criteria to ensure diversity in age, sex, and morbidity. Residents received dedicated PM time to review their panels and target specific activities, applying knowledge from evidence-based literature. All PM activities were recorded in activity logs and communicated to preceptors as well as to the allied health team through the electronic medical record.

**Main outcome measures** An activity log was developed as both a teaching and an evaluation tool for formative feedback. Ongoing resident evaluation and a robust program evaluation were embedded in the curriculum to enable iterative adaptation and improvement. An assessment instrument of panel management competencies was developed for supervisors to evaluate residents' skills in PM during quarterly reviews, using information from chart audits, resident activity logs, and resident self-reflection surveys. A validated resident self-evaluation instrument was used to assess competencies in collaborative care.

**Conclusion** A PM curriculum provides an opportunity to teach and evaluate key clinical competencies for family medicine residents including collaboration, practice management, and care coordination, while promoting patient ownership and continuity of care.

# What is the usability of a mobile application to prepare residents for their board examinations?

Diana Ramos MD   Roland Grad MD CM MSc FCFP   Alenoush Saroyan MEd PhD

## Abstract

**Context** We developed a mobile application for residents to assist with preparation for their Certification examinations. Our vision is that interested parties—eg, departments of family medicine—will promote the app as a study tool, and that locally expert teachers will participate by adapting the clinical information in the app for their residents. The app (called IAM) was developed for tablet computers, iPhone, and Android devices. The IAM presents information on the 99 priority topics at 4 levels: priority topics, their key features, clinical information on key features, and hyperlinks to online information. In addition the app contains a validated questionnaire for residents to provide feedback on this information. By means of alerts, residents can become aware of 1 topic per week.

**Objective** To better understand residents' experiences with the IAM app and its usability.

**Design** Qualitative descriptive study.

**Participants** Twenty family medicine residents from McGill University in Montreal, Que, consented to this 6-month study in October and November 2014.

**Methods** Data collection is performed by logging page hits whenever a page in the app is opened by a resident. Usage data will be analyzed from October 2014 to May 2015. Individual open-ended semistructured interviews have already been conducted, and a final interview is planned for May 2015 following the Certification examination. Based on log files of app use, we will interview 3 types of residents (never users, former users, and users of the app). Inductive thematic analysis will be employed to classify data into codes and themes. Reliability of data coding will be assessed. This process will lead us to develop naturalistic generalizations to represent the data.

**Expected findings** This study is in progress. We anticipate findings will vary by type of user and will examine barriers such as notifications and alert overload. Study findings will help to improve the app.

# Research and quality improvement in postgraduate family medicine residency

Kelsey Klages MSc Fred Ross CHRP Eric Wong MD MCISc(FM) CCFP

## Abstract

**Context** To stress the importance of research and quality improvement in family medicine, postgraduate programs will need to implement innovative curricula. Literature suggests experiential learning is preferred when training learners.

**Objective** A transformed resident project curriculum focusing on research and quality improvement was designed and implemented.

**Design** Program evaluation.

**Setting** Western University in London, Ont.

**Participants** Family medicine residents.

**Intervention** The curriculum was set after literature review, environmental scan of other programs, and committee meeting discussions. With a focus on active participation, curriculum deliverables included the Institute for Healthcare Improvement's improvement capability modules, a model for improvement quality improvement proposal or research proposal, and a final report. Residents had access to a trained expert, resources, meetings, and templates. Department- and university-specific resources were aligned to advance the curriculum.

**Main outcome measures** Data from the improvement capability module, Quality Improvement Confidence Instrument, Quality Improvement Proposal Assessment Tool, final project assessment tool, lecture assessments, curriculum evaluations, and program committee informal discussions. Challenges in creating and implementing the curriculum were described along with resident project topics, challenges, and successes.

**Results** Improvement capability scores ranged from 90% to 95%. Residents completing the new curriculum had higher confidence in performing quality improvement than the previous year's residents had. Percent agreement for evaluative tools was high. Residents were satisfied with content delivered during resident project lectures. The reformed curriculum positions quality improvement and research on opposite ends of the same scholarly inquiry spectrum and this approach appeared effective for research-involved stakeholders and early adopters. Other stakeholders were concerned the approach focused on quality assurance, highlighting the need for additional training in quality improvement. Residents completing research largely worked alone and projects involved surveys and chart reviews. Quality improvement projects were largely completed in groups and the projects involved patient care (eg, vaccination rates, appropriate prescription, screening rates) and documentation. Residents found it challenging to collect data from the electronic medical record, and the data collected often had accuracy issues. Project proposals often involved testing large tests of change instead of small tests of change through plan-do-study-act phases.

**Discussion and conclusion** Research and quality improvement might become a priority through practice settings with strong scholarly inquiry culture and departmental, university-wide, and community supports.



# Resident selection in Canada

## *What do program directors think about best practice recommendations?*

Keith Wycliffe-Jones MBChB FRCGP CCFP Glen Bandiera MD MEd FRCPC Nick Busing MD CCFP FCFP  
Sandra Banner Anurag Saxena MD FRCPC Matt Raegele

### Abstract

**Context** Residency selection processes across Canada are often poorly understood by applicants and their advisers, resulting in considerable stress and uncertainty. In such a high-stakes and competitive environment where there is often perceived inequity, students can become overly focused on maximizing their chances of selection by a chosen program, potentially at the expense of their overall undergraduate learning. Further, residency program directors often struggle to identify and implement reliable and valid assessment strategies to optimize match results to their programs. There is an overall need to improve the transparency and fairness of these processes and also to gather information on the current selection processes used across the country in resident selection.

**Methods** One medical school recently convened a diverse working group to develop a series of 24 best practice recommendations around resident selection. We invited approximately 600 residency program directors in Canada, including all family medicine program directors, to complete an online survey investigating their level of agreement with the recommendations, thoughts on the feasibility of implementing each recommendation nationally, and the current level of compliance with each of the 24 recommendations in their program. Respondents were also asked to provide narrative comments on each recommendation. Likert-scale scores and narrative responses will be analyzed quantitatively and thematically.

**Results** Program directors' levels of agreement, impressions of implementation feasibility, and current level of compliance will be presented for each recommendation, as well as a thematic analysis of the narrative comments by program type.

**Conclusion** This study will provide valuable baseline information on current residency selection processes across Canada and will also provide important feedback from program directors on their levels of support for implementation of each of the best practice recommendations.

# Anxiety, depression, and frequent binge drinking among medical students

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## Abstract

**Context** Medical school is a time of considerable stress for future physicians, and students' mental health frequently deteriorates over the course of training. It has been suggested that students under psychological stress might use alcohol as a means of coping.

**Objectives** To quantify the prevalence of anxiety, depression, and frequent binge drinking among medical students at Queen's University in Kingston, Ont, across their 4 years of medical training; and to assess the relationship between anxiety, depression, and frequent binge drinking among Queen's medical students who drink alcohol.

**Design** Cross-sectional e-survey from January 18 to February 14, 2015.

**Target population** In all, 400 students attending Queen's School of Medicine.

**Instrument** Anxiety and depression were assessed using the Generalized Anxiety Disorder 7-item scale (GAD-7) and Patient Health Questionnaire-9 (PHQ-9), respectively. Binge drinking was defined as consuming 4 or more standard drinks in 1 sitting for women, and 5 or more standard drinks in 1 sitting for men.

**Main outcome measures** The variables of primary interest were generalized anxiety disorder (GAD-7 score  $\geq 10$ ), major depression (PHQ-9 score  $\geq 10$ ), and frequent binge drinking (binge drinking at least twice in the past 2 weeks). Statistical techniques included calculations of frequencies, means, and Tukey tests.

**Findings** There were 82 (20.5%) respondents, with 76 (19.0%) providing valid data. Overall, 15.8% of respondents were found to have generalized anxiety disorder, and generalized anxiety disorder was most prevalent among third-year students (27.8%). Similarly, the overall prevalence of major depression was 14.5%, and it was most common among third-year students (22.2%). The overall prevalence of frequent binge drinking was 28.9%, and it was most common among first-year students (40.9%). Among drinkers, mean GAD-7 and PHQ-9 scores did not differ significantly between frequent and nonfrequent binge drinkers ( $P = .679$  and  $P = .537$ , respectively).

**Discussion and conclusion** This study suggests that anxiety, depression, and frequent binge drinking might be highly prevalent among Queen's medical students. No significant relationship was identified between the symptoms of anxiety and depression and drinking frequency. There is a strong need for supportive programming for medical students with anxiety and depression, and further research regarding the risk factors for frequent binge drinking among medical students.

# Personal health care practices in residency

## *Cross-sectional survey*

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### Abstract

**Context** Residency training can be a very stressful time and might precipitate or exacerbate both physical and mental health problems. Research has shown that many residents do not have an easily accessible family physician and might turn to colleagues for prescriptions or ignore their personal health concerns altogether.

**Objective** This study examines the personal health practices of residents at Queen's University in Kingston, Ont, and the factors affecting residents' health behaviour. It also makes comparisons to documented practices of a similar group of Queen's residents more than a decade ago, to speculate whether the recent increased emphasis on resident wellness has translated into objective changes.

**Design** Cross-sectional survey.

**Participants** Queen's University residents across all years of all postgraduate programs (N = 113 survey respondents).

**Instrument** An electronically distributed survey, modeled on a similar study from 2001, gathered important demographic data, as well as participants' self-reported actions when faced with 2 hypothetical health scenarios (pneumonia and depression).

**Results** Among respondents, 57% had a family doctor within 1 hour's travel; 29% had to travel longer than 1 hour; and 14% had no family physician. Residents with children were more likely to have a local family physician. Those with a chronic illness or mental health condition, or who regularly took prescription medications, were not. Most residents would seek help appropriately in response to a physical health scenario but not necessarily in response to a mental health one. Of the respondents, 30% reported they would confide in another resident when faced with depression, as opposed to getting formal medical help or counseling.

**Conclusion** Overall, a greater proportion of current residents, compared with residents in 2001, had local family physicians and would choose seemingly appropriate courses of action for their physical and mental health concerns. Lack of time and attitudes about needing a physician remain important barriers, and residents might need to be educated about encouraging colleagues in distress to seek formal help. Conceivably, though, by emphasizing resident wellness over the past decade, some gains have been made in the personal health practices of Queen's residents.