

Telephone-based interpretation in family physician offices in BC

Electronic wound monitoring after breast cancer surgery

Chikungunya: A disease risk for Canadians traveling in the tropics

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**Children's mental health:
Is poverty the diagnosis?**

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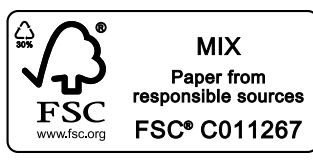
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ON THE COVER: Children living in poverty have higher rates of mortality, hospitalization, asthma, obesity, and psychiatric conditions. Physicians can give them a hand up by screening for poverty and making treatment recommendations that address the family's lack of income and resources. Article begins on page 454.



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Not an all-access pass

“Excuse me, are you wearing one of those new Fitbits?” I asked a healthy looking woman in her 40s while shopping.

“Oh, yes, I am. Not only is it stylish but it tracks my activity. I do between 5000 and 10 000 steps per day,” she answered proudly.

“Wow, that’s really good, especially for someone with a physical disability,” I replied.

“What are you talking about?” she queried.

“On the way in I noticed that you parked in a disabled parking spot,” I remarked, at which point our conversation came to an abrupt end.

As I was driving up to the store all of the parking spaces were full except for the disabled one so I parked down the block. I was a little taken aback when this woman pulled in to the disabled spot and came into the store I was in. Perhaps I shouldn’t have said anything, but I get tired of the way people misuse these parking passes. I should mention that this woman did have a valid SPARC BC pass hanging from the rearview mirror of her vehicle.

SPARC BC is the organization that administers the disabled park-

ing program in our province. SPARC isn’t a misspelling of a small fiery particle thrown from a fire; it stands for Social Planning and Research Council. I perused their website and a few rules jumped out at me. Specifically, only the permit holder is allowed to use the parking pass, and they can’t use it unless they actually get out of the vehicle after parking.

I’m sure many of you get requests to fill out the medical information on the SPARC application. The criteria are quite strict, and I am often surprised by the patients who ask me to complete a request for a permit. I have patients who have been begging me for years to complete the form because walking is painful for them. I have been called cruel and mean when I decline, despite explaining that their obesity-related illnesses of diabetes and mechanical back pain would be better served by parking as far away as possible and walking.

One senior patient who requested a pass became quite offended when I asked them to outline the nature of their disability. “Well, I’m old,” was the answer. The statement that age wasn’t a disability was met with the

snide comment, “Well, just wait until you get old, doctor.”

Family members also request parking passes for their disabled non-driving relatives. They plan to use the pass when taking grandma out shopping or on other errands. I frequently get the impression that the pass will become a well-used regular fixture in their vehicle. When asked why they can’t drop grandma off at the door and then go park the car, more snide comments drift my way. Again, the individuals making these requests often have BMIs that would benefit from an increase in physical activity.

Now, the majority of the requests I receive are legitimate. And I am struck by the courage and fortitude of the majority of my disabled patients and aging seniors who would only apply for a permit as a last resort, and often have to be coerced into taking this necessary step. I hope to act similarly if I am faced with new challenges as the years pass. So, lastly, I would like the physicians of BC who complete SPARC applications to keep in mind that this valuable program is a privilege that shouldn’t be abused.

—DRR



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Anonymity

There are pros and cons to being part of a small community when you are a physician. Some days it seems that everyone knows who you are and what you are like, and other days you are a total stranger—when you see someone out of context they can be completely unfamiliar.

My first job was in a bustling bedroom community, 15 minutes north down a country road from where we lived. There was not a single stoplight on my brief commute to the hospital—just one grocery store, a Canadian Tire, and a local watering hole.

I did most of the family food shopping in those days. One day, as I was waiting patiently at the deli counter for the salami I ordered to be sliced, the woman behind the counter asked, “Are you one of the doctors who works in emergency?”

These conversations can go well, or not so well. After a slight hesitation I answered, “Yes, I am.” Coming from big, anonymous Toronto I was taken aback that anyone who I didn’t know would recognize me.

“Well, you looked after my mother last month [she was in her 80s] with a sore back, and it is still sore! You said you didn’t know what was causing her pain and it has not gone away.”

By then my package of thin-sliced salami was sitting tantalizingly on the glass countertop. We both had our hands on it—me pulling one way and the deli clerk not letting go. Extraction was foremost on my mind. First, I honestly couldn’t remember this woman, and second, it was clear my care had not met their expectations.

“I am sorry she is not feeling better, I hope she will go see her family doctor.” By that point I was firmly in control of the cold cuts and quickly moving toward the checkout. I made a mental note that it was time for my husband to start doing more of the food shopping.

In public forums it can be advantageous for physicians to be professionally incognito, so to speak, but on the other hand, when you need health care, it’s a perk to be recognized as a physician. My family doctor asked me if I wanted to deliver at my own hospital or if I would be more comfortable going a bit farther down the

After about 2 minutes I informed them I wanted an epidural, like now.

road. Labor tends to be the time in a woman’s life when modesty and decorum go out the window. Could I face my colleagues if I were a raving lunatic in the delivery suite?

Like any typical patient with a busy life, convenience matters a lot! I decided to stay local and was ready when the contractions started. With angelic patience, I made my husband turn off the US Open Golf Tournament NOW (“but Honey, this is a really crucial putt!”) and we drove down the quiet country road to the labor ward.

Many of the nurses recognized me, which made me feel very comfortable, but it didn’t mean that I was about to leave my ER persona at the door and be a patient. After about 2 minutes I informed them I wanted an epidural, like now. All laughter and smiles, the staff thought I was hilarious. I made it very clear that I was not joking. “This pain is really, really bad. Please get rid of it.”

“But we haven’t even finished booking you in; you just arrived.”

In retrospect, I don’t think the seat was even warm yet.

When the obstetrician arrived he sat down beside me, introduced himself, and starting getting my history. It became quite apparent he had no idea who I was, despite the fact that I

trained with him and we had worked together for more than 2 years.

“Well, Ms Clarke, your baby is big and you are not, and I am not sure if you can deliver this baby on your own.”

“John,” I said, “it’s me, Anne.” There was a very pregnant pause, pardon the pun, as the light of recognition suddenly shone over his face.

“Oh, OHHH, I didn’t recognize you.” To this day I put this oversight down to it being four in the morning and not my pudgy face, unwashed hair, and sweaty brow.

All went well, I didn’t need a C-section and was soon up in my room with a baby I had no idea how to care for. I had so many staff coming to visit and congratulate me that I left ASAP so I could get on with the business of neonatal care. —AIC

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**I wash my hands of this:
A plea for emotional hygiene**

As a recent graduate of a Canadian medical school, it has been cemented in my brain that I am to wash my hands before and after every patient interaction. I'm grateful for this practice, which keeps me and my patients safe from contagious infections. What is taught with much less emphasis, however, is the transmission of emotions from one patient interaction to the next. I suspect that just as bacterial and viral infections can be passed from one patient to the next, then even taken home with the practitioner, so too can emotional trauma.

As medical practitioners we are given the immense privilege of being welcomed into the personal emotional world of many of our patients. Trauma, mental health issues, and difficult social situations are common reasons why a patient seeks care from their health care provider. We are

trained, and even selected, by medical schools and residency programs to be compassionate and empathetic; this means we will feel the pain alongside our patients. Even the emotional trauma of a devastating physical diagnosis can leave us feeling depleted and raw.

In medical school we are taught about transference and countertransference; the former being when a patient projects their experiences with another person onto the practitioner, the latter being from practitioner to patient. If traumas are not acknowledged and given the space to dissipate, it is inevitable that we will end up projecting our experiences onto future patients. Similarly, initiating a patient encounter with depleted psychological reserves may lead to inferior patient care. At the end of the day we take the compounded trauma back to our personal lives, with possibly few reserves left to manage them.

In a busy practice there is simply no time to fully address our emotional reaction to every situation. However, a small amount of recognition, respect, and mindfulness around the effects of these events may help to prevent many of the negative consequences. I will make a proposal, even a plea, to my medical colleagues: just as you wash your hands between patients, acknowledge the emotional baggage that you bring with you from the previous patient encounter, and greet your next patient with presence and a clean heart. Just as I do a thorough hand washing before heading home each day, I would argue for instituting a type of emotional scrub in the form of a check-in, either with yourself or with a colleague, to address the burdens of the day so you don't take them home with you.

—Justine Spencer, MD
UBC Family Practice PGY-2

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Opioid prescribing: The profession and the patients we serve and support

Let's consider a patient named Jack—an active 26-year-old male who developed a dependency on opioids after suffering a lower-back injury that caused him acute, then chronic, severe lower-back pain. With there being no medically identifiable reason for his pain, he was treated with opioids prescribed by his GP, as well as ER and walk-in clinic doctors—prescriptions that were renewed and refilled regularly. Over time Jack became dependent on the prescriptions, requiring them to function on a daily basis and suffering terrible withdrawal symptoms without them. His increased reliance caused him to turn to illicit drugs—something he was embarrassed to confess to his doctors even though he wanted help—but he feared the street drugs could be laced with fentanyl or that he could accidentally overdose and die.

In the first 7 months of 2016 there were 433 deaths from drug overdoses in BC—an increase of more than 70% from the same period in 2015, and enough to spark BC to be the first province to declare a public health emergency. I want to express some personal views on this topic—views that I suspect will be provocative but that I'm sharing in the hope that they encourage an open discussion.

While these deaths may seem beyond the reach and scope of our own practices, as a profession we must acknowledge how many of these patients have arrived in their desperate circumstances—not unlike Jack—and that we are in the midst of a major public health crisis. Accordingly, as opiate prescribers, we have a significant responsibility and role to play in helping end this crisis.

As a province, BC dispenses on

prescription twice the amount of opioids per capita compared with Quebec, the lowest dispensing Canadian province. In the late spring, on the heels of the declared opioid crisis, the College of Physicians and Surgeons of BC swiftly introduced its new standards, Safe Prescribing of Drugs with Potential for Misuse/Diversion, which all doctors were urgently required to familiarize themselves with. While the method and manner in which

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the College launched this initiative has been questioned by many within the profession, this is without doubt an urgent call for action and attention to address our provincial and national prescription opioid crisis and epidemic.

There's a great deal physicians can do to support patients and the profession in this crisis. As professionals who have an obligation to provide the very best care to our patients, I believe there are a number of steps we can take now to ensure this occurs. Some examples include increasing efforts to improve and enhance identification of patients at risk for opioid addiction and enacting strategies within our own prescribing habits for improved and safer prescribing practices, among others.

The new College standards make BC doctors the first in Canada to be legally bound by strict opioid and narcotic prescribing practices, and include requirements such as talking frankly with patients about alternatives to opioids—clearly communicating that these medications aren't pain killers but pain reducers and not stand-alone long-term solutions. This doesn't mean we should shy away from prescribing opioids in a safe and appropriate manner when clinically necessary. We offer great value to society by continuing to support and treat patients who are experiencing acute and chronic pain-related conditions. But it's time to reconsider the landscape surrounding how we prescribe these potentially highly addictive substances. The bottom line when prescribing is patient safety—ensuring the potential risk or harm to patients is fully realized, discussed, and mitigated.

Not all patients who are prescribed opioids are or will become addicts, but we need to screen for and listen to those who are indeed addicted to opioids; suspend any judgments we have that label them as drug seekers; and recognize that their addiction is a medical condition no different than diabetes, hypertension, or chronic kidney disease. We need to offer long-term, evidence-based solutions.

We should take a collaborative approach to support the seamless integration of professional tools and resources such as PharmaNet into physicians' practices, but in a way that isn't cumbersome to physicians or staff—in a way that allows for ease of use and prescriber efficiency while ensuring patient safety.

Physicians, the Ministry of Health,

Continued on page 441

Incidence of infectious syphilis continues to increase in BC

The incidence of infectious syphilis (i.e., primary, secondary, early latent) has increased nearly fivefold from 2010 to 2015 in BC, and is projected to further increase in 2016 (**Figure 1**). Men who have sex with men (MSM) are disproportionately affected by infectious syphilis. In the first half of 2016 over 86% of men diagnosed with syphilis identified as MSM.

While relatively few cases of infectious syphilis are diagnosed among women, incidence is increasing among women of childbearing age, raising concerns for congenital syphilis. In the United States a 40% increase in congenital syphilis was observed from 2012 to 2014.¹ In the first half of 2016, there were two infectious syphilis cases diagnosed in pregnant women in BC. No congenital syphilis cases have been reported since 2012, likely owing to a strong prenatal screening program.

Syphilis and HIV co-infection is a significant concern, as HIV impacts the clinical manifestations of syphilis² and may lead to poorer treatment responses.³ As well, syphilis can increase the risk of transmission and acquisition of HIV.⁴ In BC about 40% of syphilis cases are co-infected with HIV. However, over 80% of co-infected cases had undetectable HIV viral loads (i.e., < 40 copies/mL), suggesting that the risk of HIV transmission is very low.

Counseling patients to use safer sexual practices, such as consistently using condoms, can help prevent the spread of syphilis. Clinicians should consider syphilis as part of their differential diagnosis in all sexually active

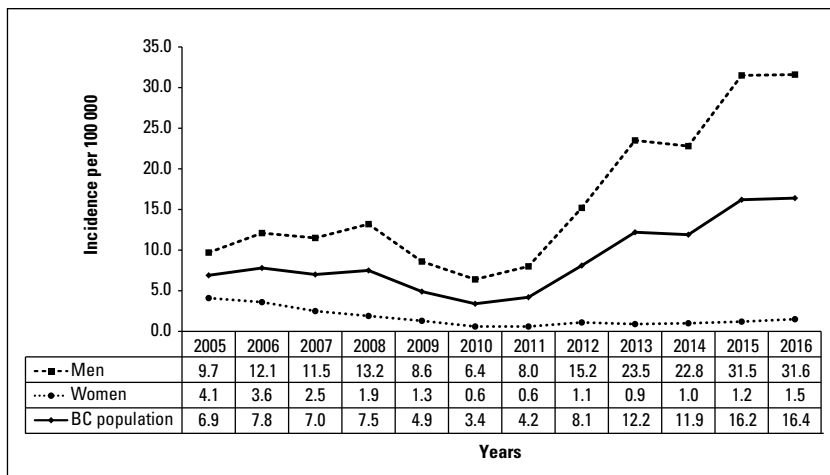


Figure 1. Incidence of infectious syphilis diagnoses by gender in BC, 2005–16.

*Annual incidence of infectious syphilis in 2016 was estimated based on data collected between January and June 2016.

All positive syphilis results (serology or PCR) are reviewed by a physician at BCCDC to help diagnose, stage, and treat syphilis infections. Nurses at the BCCDC follow up with all diagnosed individuals to provide education, arrange treatment and follow-up testing, and discuss partner notification.

patients, particularly those presenting with a new lesion or rash. Since syphilis can present without obvious symptoms, routine screening for sexually transmitted infections is recommended. Individuals at higher risk of acquiring syphilis, such as those with multiple sexual partners and those belonging to groups with high rates of syphilis like MSM, should be screened every 3 to 6 months. Among pregnant women syphilis screening should be performed during the first trimester. Screening should be repeated at 28 to 32 weeks and at delivery for women at high risk of syphilis (e.g., those with new sexual partners).⁵ The BC Centre for Disease Control (BCCDC) offers testing

reminders by text message or e-mail, available at www.smartsexresource.com/get-tested/testing-reminders.

Serology is the primary means to diagnose syphilis. However, with the appropriate transport medium, PCR testing of oral, anal, and genital lesions can also be done. All positive syphilis results (serology or PCR) are reviewed by a physician at BCCDC to help diagnose, stage, and treat syphilis infections. Nurses at the BCCDC follow up with all diagnosed individuals to provide education, arrange treatment and follow-up testing, and discuss partner notification.

Benzathine penicillin G delivered intramuscularly is the preferred treatment; oral doxycycline is an alter-

This article is the opinion of the BC Centre for Disease Control and has not been peer reviewed by the BCMJ Editorial Board.

native in case of penicillin allergy. Sexual partners exposed in the past 3 months should be tested and treated, as it can take up to 3 months before syphilis can be diagnosed by serology.⁶

For further information about syphilis screening or treatment, contact the BCCDC public health nurse at 604 707-5607 or physician at 604 707-5610.

—Christine Lukac, MPH

—Troy Grennan, MD, FRCPC

—Muhammad Morshed, PhD

—Jason Wong, MD, CCFP,
FRCPC

References

1. Bowen V, Su J, Torrone E, et al. Increase in incidence of congenital syphilis – United States, 2012-2014. *MMWR Morb Mortal Wkly Rep* 2015;64:1241-1245.
2. Rompalo AM, Joesoef MR, O'Donnell JA, et al. Clinical manifestations of early syphilis by HIV status and gender: Results of the syphilis and HIV study. *Sex Transm Dis* 2001;28:158-165.
3. Knaute DF, Graf N, Lautenschlager S, et al. Serological response to treatment of syphilis according to disease stage and HIV status. *Clin Infect Dis* 2012;55:1615-1622.
4. Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: The contribution of other sexually transmitted diseases to sexual transmission of HIV infection. *Sex Transm Inf* 1999;75:3-17.
5. Public Health Agency of Canada. Canadian guidelines on sexually transmitted infections. Accessed 18 August 2016. www.phac-aspc.gc.ca/std-mts/sti-its/cgsti-ldcits/section-5-10-eng.php.
6. BC Centre for Disease Control. British Columbia treatment guidelines – sexually transmitted infections in adolescents and adults, 2014. Accessed 18 August 2016. www.bccdc.ca/resource-gallery/Documents/Communicable-Disease-Manual/Chapter%205%20-%20STI/CPS_BC_STI_Treatment_Guidelines_20112014.pdf.

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the College, other stakeholders, and patients all have a role to play, and as partners in health care, together we can make a difference. For doctors, the health and safety of our patients is of utmost importance. We must do everything in our power as a profession to help support and protect our patients—most of whom are often unknowingly vulnerable—by eliminating the judicious overprescribing of opioids. I ask you all, please

talk and engage openly with your patients about the opioid crisis we are facing. I also encourage you to let me know your thoughts on this topic. E-mail me at president@doctorsofbc.ca, and I will share some of the feedback I receive on my President's Blog. Let's start the conversation.

—Alan Ruddiman, MBBCh, Dip
PEMP, FRRMS
Doctors of BC President



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A pilot study of telephone-based interpretation in family physician offices in British Columbia

The use of telephone-based professional medical interpreters in fee-for-service family physicians' offices improves quality of care, is feasible, and is affordable. Access to this service is recommended across the province.

ABSTRACT

Background: Evidence shows that patient care is affected by language barriers and that health disparities can result when care providers cannot communicate with patients. In British Columbia there is currently no province-wide system to support the use of interpreters in community-based fee-for-service family physician offices. Due to the negative consequences of language barriers for patients, physicians, and the health care system, a pilot study was proposed to evaluate the provision of professional medical interpreters by telephone to fee-for-service family physicians in several BC cities.

Methods: From October 2013 until March 2016, members of the Fraser Northwest Division were given access to interpreters through the Provincial Language Service. Physicians were informed of the division-funded telephone-based interpretation support available during the study through division meetings, the division newsletter and website, the Pathways online resource, and office visits by volunteer medical students

and residents. Over the course of the study, physicians from New Westminster, Coquitlam, Port Coquitlam, and Port Moody, with later additions from Burnaby and Comox, participated. Data collected by the Provincial Language Service, including the language of interpretation and length of each call, were analyzed to determine usage patterns for the quantitative evaluation. Physician responses from semi-structured telephone interviews were analyzed to identify common themes for the qualitative evaluation.

Results: Interpretation was provided in 17 different languages during the 30-month study period, with 26 physicians participating in 145 calls. The average length of a call was 12.4 minutes and the average cost per call was approximately \$22. A total of 17 physicians were interviewed about their experience with language barriers, including 8 physicians who had used the interpretation service and 9 physicians who had not. Analysis of physician responses identified five themes: common difficulties with language barriers, methods used to

address difficulties, positive experiences with telephone-based interpretation, challenges with telephone-based interpretation, and support for ongoing provision of interpretation services. Physicians who used the telephone-based interpretation service noted that doctor-patient communication was improved and found the service particularly valuable for more complex or sensitive health issues. Overall, physicians were positive about the prospect of using the interpretation service in future.

Conclusions: This pilot study demonstrated the feasibility and affordability of providing interpretation

Dr Gabriel is a clinical associate professor in the Department of Family Practice at the University of British Columbia, and a family physician and maternity care provider at Royal Columbian Hospital in New Westminster. Dr Ezeaputa is a family physician practising in Agassiz. Dr Liciu is a family physician practising in New Westminster. Dr Grant is a family practice resident at the University of Calgary. Dr Preston is a family practice resident at the University of British Columbia.

This article has been peer reviewed.

by telephone in family physician offices to address language barriers. Physicians who used the service were generally very positive regarding their experience and found the interpreters to be professional and accurate. Despite this positive experience and the need for interpretation in BC family practices, utilization of interpreters during the study was low and uptake for the service was slow. Interviews with physicians suggest that underutilization may be the result of concerns about accuracy, logistical challenges, and the amount of time needed for an appointment involving interpretation by telephone. Based on pilot study findings, access to professional medical interpreters for all family physicians across the province is recommended.

Background

Communication is integral to the provision of health care services. In Canada, language barriers have been shown to result in health disparities,^{1,2} with a wealth of evidence indicating that equity, effectiveness, communication, patient safety, patient centredness, and timeliness of care are all affected.^{1,3-5} Ideally, every Canadian would receive language-concordant health care, where the health care provider and patient are both able to speak the same language. According to Statistics Canada,⁶ 15.8% of BC residents (25.8% in Metro Vancouver) speak a language other than English at home and 3.4% of the population (5.7% in Metro Vancouver) have no English language skills. While interpretation is obviously needed to care for the non-English-speaking patient population, professional language services are unavailable in most primary care settings in BC.

Strong arguments have been made for providing interpretation in primary

care settings based on concerns for health quality, equity, ethics, law, economics, and precedence. Care provided with the help of professional medical interpreters is superior to care provided with ad hoc interpreters,⁷ and is comparable to care received by patients who do not have language barriers.⁸ Ethical arguments for interpretation are supported by evidence that health care inequity can result from language barriers, and in the

have acted systematically to implement interpretation programs.^{9,11,12} In British Columbia interpretation services for 150 languages are provided through the Provincial Language Service (PLS), which has professional medical interpreters available to work in person, by telephone, or by video-conference 24 hours a day. Access to this service is provided by health authorities for use in hospitals and in some community health care clinics.

Ideally, every Canadian would receive language-concordant health care.

United States the provision of interpretation services is viewed as a legal obligation for health care providers.⁹ Although there is no Canadian legislation requiring the provision of interpretation, health care providers may be considered negligent and found liable for harm resulting from poor communication. Several malpractice suits in Canada demonstrate that this is a risk.¹ Economic arguments for interpretation show there is a cost for not providing interpreters, including unnecessary interventions and tests, and increased hospital utilization.¹ As for the expense of providing interpreters, most studies have demonstrated only a short-term increase in costs.¹⁰

Other countries have identified the need for interpreters in primary care settings. Australia, New Zealand, and the United States, among others,

However, only 2.5% of longitudinal care by family physicians takes place in these settings.¹³ In the more commonly used fee-for-service setting, either the physician or the patient must pay for any interpretation service. Historically, no system has been in place for funding this service in community-based fee-for-service family physician offices.

A 2013 qualitative study of family physician experience in British Columbia confirmed that practitioners have observed the negative consequences of language barriers for their patients, for themselves, and for the health care system.¹⁴ Most physicians studied relied on informal interpretation from family or staff members, but recognized that this was suboptimal because of a lack of confidentiality, inaccurate interpretation, and the

strain put on family relationships. To follow up on this qualitative research, a pilot study was proposed to provide and then evaluate interpretation in the fee-for-service primary care setting in British Columbia.

Methods

This pilot study ran from October 2013 to March 2016 with communities in the Fraser Northwest (FNW) Division of Family Practice: New Westminster, Coquitlam, Port Coquitlam, and Port Moody. The Comox Valley and Burnaby Divisions of Family Practice were added later in the study. Accounts were set up for each division with the Provincial Language Service, and a unique division code was used by family practices arranging for PLS to provide interpretation by telephone for office-based appointments. Costs were covered by the Divisions of Family Practice at a rate of \$1.80 per minute. Interpreters were not available for office visits because of the added in-person service cost (a 1.5-hour minimum charge at a rate of \$45 per hour).

Study participants were restricted to those division members working in fee-for-service primary care set-

tings. Physicians were informed of the availability of PLS interpreters through division meetings, the division newsletter and website, the Pathways online resource, and office visits by volunteer medical students and residents.

For the quantitative evaluation we analyzed PLS data, including the physician's name, when the service was used, the language of interpretation, and the length of the call. For the qualitative evaluation, we issued an invitation by e-mail or phone to any physician accessing the service for the first time and asked all new service users to participate in a semi-structured telephone interview. We also randomly selected other physicians from the FNW and Comox divisions who were nonusers of the service and invited them to participate in a similar interview. The interviews for users consisted of open-ended questions about physician experience with professional medical interpreters. The interviews for nonusers focused on determining if there was a need for interpretation and, if so, what barriers had prevented the physician from using the service. All interviews were audiotaped and transcribed. In 2014,

two residents and the research lead assigned codes and identified themes for the nine interviews completed to date. In 2015, two medical students trained in qualitative analysis repeated the coding and theme identification for all 17 interviews completed.

Ethics approval for this research was obtained from the UBC Behavioural Research Ethics Board.

Results

During the 30-month study period, interpretation was provided in 17 different languages, with 26 physicians participating in 145 calls. The average length of a call was 12.4 minutes and the average cost per call was approximately \$22 (12.4 minutes x \$1.80 per minute). The languages used most frequently were Nepali, Korean, Vietnamese, Punjabi, Mandarin, Farsi, and Arabic (Figure). The predominance of Nepali speakers requiring interpretation was the result of including data from one clinic with a large number of Bhutanese refugees who were seen for prenatal care.

In total, 17 physicians were interviewed, including 8 physicians who had used the service and 9 physicians who had not. Analysis of the interviews identified five themes (Table) and confirmed that most physicians had personal experience with language barriers that had affected patient care. As well, most physicians relied on family members and friends to provide interpretation informally, leading to concerns about confidentiality and accuracy of interpretation. Some physicians asked medical office assistants and caseworkers to serve as interpreters or used the Google Translate app.

Physicians who used the phone-based interpretation service noted that doctor-patient communication was improved and found the service particularly valuable for more complex

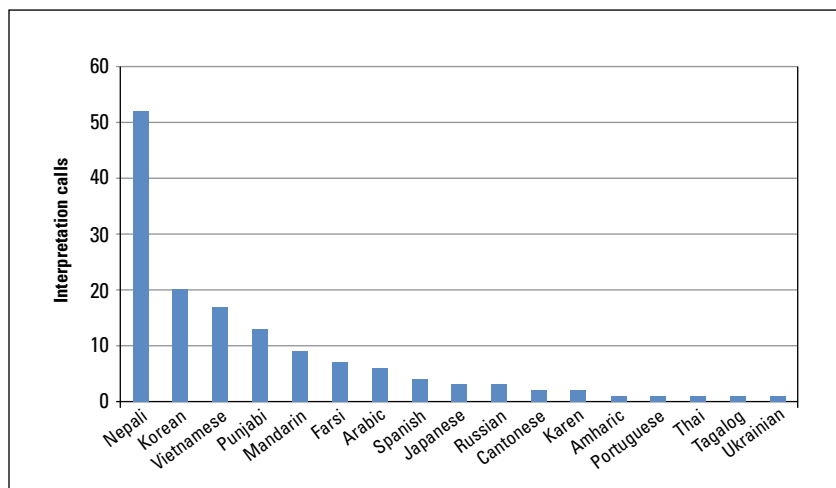


Figure. Languages interpreted during pilot study, 2013 to 2016.

Table. Themes identified in interviews with physicians during pilot study, 2013 to 2015.

Theme	Sample responses
Physicians had previous difficult experiences with language barriers	<ul style="list-style-type: none"> • <i>So often you get to see patients and you're unable to characterize their pain because of language barriers.</i> • <i>Sometimes it's just charades and gestures and trying to work out mutual understanding.</i> • <i>It can get a bit tricky when you're trying to ensure that they [friends or family members serving as interpreters] have consent to talk about sensitive or potentially sensitive issues or parent/child relationships where you might be asking for information . . . you're worried you might not get appropriate or complete information.</i>
Physicians had tried various ways to address language barriers, primarily using family and friends to interpret	<ul style="list-style-type: none"> • <i>In the quick pace of the office I relied on the friend rather than going to any other method.</i> • <i>The family member is going to be intentionally or unintentionally biased towards translating and doesn't know exactly how to translate . . . medical words . . . and who knows if they [are] . . . telling me what the patient actually said.</i>
Physicians had positive experiences with telephone-based interpretation	<ul style="list-style-type: none"> • <i>[The PLS interpreter] was well trained in medical terminology and medical interviewing and she really picked up on some of the nuances and wasn't shy to ask some of the questions around sexuality or sexual history, and so it was very helpful.</i> • <i>[There was] someone ready to go. Yes. That was the most useful, especially when you're talking about the efficiency of an office day. That was the biggest sell for me. The next time I didn't hesitate to call because I knew that it was going to be effective and efficient.</i>
Physicians had challenges with telephone-based interpretation	<ul style="list-style-type: none"> • <i>It was strange to use [the service] for the first time because it's on the phone and it's just different. I never used a system like that before.</i> • <i>Obviously, I would still need to book a longer visit for these patients if they're coming in and I know they need a translator, but at least I'd have that service if needed.</i> • <i>The other thing that I found tricky was whether or not to stay on the line with the service while I was doing the physical examination.</i>
Physicians supported ongoing provision of telephone-based interpretation	<ul style="list-style-type: none"> • <i>[With regular] use it would be much easier. Like starting a new technology . . . or new system, it feels strange at the beginning.</i> • <i>I can speak [my patient's] language well enough . . . but I've referred her on to specialists, and I've had a couple of letters back saying patient arrived without interpreter or without family member and it was . . . a waste of everybody's time . . . I could see that definitely specialists would probably benefit from [the service] even more than GPs.</i>

or sensitive health issues. Many felt using a professional medical interpreter was superior to using friends and family because of the greater accuracy of the interpretation and the preservation of confidentiality. Additionally, many commented on the convenience and speed of telephone-based interpretation. Physicians did remark on challenges, including the “foreignness” of the system, the need for longer appointment times, and occasional technical difficulties.

Overall, physicians were positive about the prospect of using the interpretation service in future. Many recognized the need to improve the quality of care for patients with language barriers while acknowledging that change can be difficult. Some physi-

cians also commented on the need to expand telephone-based interpretation for specialists.

Conclusions

Results from this pilot study, the first to evaluate the use of professional medical interpreters in the fee-for-service primary care setting in Canada, demonstrate that telephone-based interpretation in family physician offices is feasible, is affordable for the health care system, and is appreciated by physicians. The study results also suggest why telephone-based interpretation is underutilized.

Feasibility and affordability

The feasibility of using professional medical interpreters in the fee-for-

service primary care setting is best supported by the average phone call length of 12.4 minutes. Physicians who had not used the service expressed concerns about the process taking too long. Understandably, many family physicians in the fee-for-service setting struggle with finding adequate time for each patient encounter given the volume of patients that must be seen in a day. While the optimal time per consultation is highly contextual, a 12.4-minute appointment reflects the typical experience for general practitioners in BC. We can conclude that the use of a professional medical interpreter does not create unreasonably long patient encounters. In fact, some physicians noted that appointments were actually

more efficient, especially when compared with an appointment relying on the use of Google Translate or another translation app.

The affordability of telephone-based interpretation was also established in this study. The average cost per call was approximately \$22. The

patients and were generally very positive about their experience. They found the interpreters to be professional and accurate. Physicians were impressed that they were connected to an interpreter within minutes of contacting PLS and that the interpretation process was smooth. Physi-

with one patient or more within the previous month because of a language barrier. When asked which services they would likely use to address language barriers, 53% of 81 respondents selected “Free access to professional interpreters by telephone.” These survey findings suggest a much higher need for interpretation services than was demonstrated by the study results.

Possible reasons for underutilization include some concerns revealed in the qualitative analysis. Physicians who chose not to use the service were concerned about accuracy and not being able to read body language cues. They were also concerned about logistical challenges, the extra time they assumed would be needed for the appointment, and the prospect of technical challenges, including poor speakerphone sound quality. Comparing the responses of user and nonuser physicians highlighted a common misconception that access to PLS requires making arrangements far in advance. Despite not having used PLS interpreters because of such concerns, many nonuser physicians were still grateful that the service is available to them and that it could permit patients with language barriers to receive effective care if a friend or family member was not available. The majority of the physicians who used the system were open to using it again and felt the service was particularly valuable for walk-in patients, patients with complex or sensitive health issues, and patients needing frequent appointments, such as those receiving prenatal care.

Physicians who used the interpretation service in the pilot study noted improved communication with their patients.

decision to use an interpreter rather than to rely on a family member or a patient’s limited language abilities is made on a case-by-case basis by the physician and patient. While there is a health system cost for interpretation (one covered in the pilot study by the Divisions of Family Practice), physicians are already familiar with the need to make appropriate decisions that incur a health system cost, such as ordering laboratory tests and other costly investigations. The \$22 cost of telephone-based interpretation is comparable to the cost of a plain film single-view X-ray (\$34) or bloodwork for CBC, ferritin, and TSH (\$30), and is far less than the cost of an abdominal ultrasound (\$105) or a standard MRI (\$721),¹⁵ all tests that might reasonably be ordered if an adequate history cannot be obtained because of language barriers.

Communication benefits

Physicians who used the interpretation service in the pilot study noted improved communication with their

patients who used the service expressed a preference for professional medical interpreters when dealing with more complex or sensitive subject matter that might be difficult to discuss in the presence of a family member. They also felt that having the PLS service available would reduce the burden placed on patients and their families to find their own interpreter for every medical appointment.

Underutilization

Even though telephone interpretation was offered to physicians and patients at no charge during the study, utilization of the service was low and uptake was slow. These findings, however, should not be taken to mean that there is no need for language services in the communities studied. Such underutilization of interpretation services is a recognized problem in health care.¹⁶ Furthermore, an unpublished 2013 survey of the FNW Division prior to the onset of the pilot study revealed that 81% of the 93 respondents had difficulty communicating

Recommendations

This pilot study demonstrates that using professional medical interpreters is feasible in the fee-for-service primary care setting, is affordable for the health care system, and is viewed

positively by family physicians. As with any new technology or process, time is needed to change practice, and to date the service has been underutilized. Work is underway with the health authorities, the General Practice Services Committee, and additional Divisions of Family Practice (including the Vancouver Division as of January 2016 and the Surrey–North Delta Division in August 2016) to increase access to interpretation services.

We recommend providing ongoing education to family physicians about the availability, use, and benefits of the interpretation service to increase utilization where indicated. Furthermore, we recommend establishing access to professional medical interpreters for all family physicians across the province. We also recommend that fee-for-service specialists consider assessing the feasibility of using such a service in their practice settings.

Competing interests

None declared.

Acknowledgments

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References

1. Hyman I. Literature review: Costs of not providing interpretation in health care. Toronto: Access Alliance; 2009.
2. Ng E, Pottie K, Spitzer D. Official language proficiency and self-reported health

- among immigrants to Canada. *Health Rep* 2011;22:15-23.
3. Bischoff A, Bovier PA, Rrustemi I, et al. Language barriers between nurses and asylum seekers: Their impact on symptom reporting and referral. *Soc Sci Med* 2003;57:503-512.
4. Flores G. The impact of medical interpreter services on the quality of health care: A systematic review. *Med Care Res Rev* 2005;62:255-299.
5. Green AR, Ngo-Metzger Q, Legedza AT, et al. Interpreter services, language concordance, and health care quality. Experiences of Asian Americans with limited English proficiency. *J Gen Intern Med* 2005;2:1050-1056.
6. Statistics Canada. Language highlights tables, 2011 census. Accessed 2 August 2016. www12.statcan.gc.ca/census-recensement/2011/dp-pd/hlt-fst/lang/index-eng.cfm?Lang=E.
7. MacFarlane A, Dzebisova Z, Karapish D, et al. Arranging and negotiating the use of informal interpreters in general practice consultations: Experiences of refugees and asylum seekers in the west of Ireland. *Soc Sci Med* 2009;69:210-214.
8. Karliner LS, Jacobs EA, Chen AH, Mutha S. Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature. *Health Serv Res* 2007;42:727-754.
9. Chen AH, Youdelman MK, Books J, et al. The legal framework for language access in healthcare settings: Title VI and beyond. *J Gen Intern Med* 2007;22:362-367.
10. Jacobs EA, Shepard DS, Suaya JA et al. Overcoming language barriers in health care: Costs and benefits of interpreter services. *Am J Public Health* 2004;94:866-869.
11. Australian Government Department of Immigration and Border Protection. Translating and Interpreting Service. About the free interpreting service. Accessed 11 December 2015. www.tisnational.gov.au/en/Agencies/Charges-and-free-services/About-the-Free-Interpreting-Service.
12. New Zealand Office of Ethnic Affairs. Interpreting in New Zealand—Let's keep talking: Guidelines for agencies using interpreters. Accessed 11 December 2015. http://ethniccommunities.govt.nz/sites/default/files/files/Lets_Keep_Talking_Online.pdf.
13. Bric V, McGregor MJ, Kaczorowski J, et al. Practice and payment preferences for newly practising family physicians in British Columbia. *Can Fam Physician* 2012;58:e275-281.
14. Gabriel P, Hassani R, Hosseinieh R. Language barriers in family practice offices in British Columbia: A qualitative study of physicians' experiences and their proposed solutions. Presented at University of British Columbia Family Practice Research Day, Vancouver, BC, 21 June 2013.
15. Hale I. Add to cart? *Can Fam Physician* 2015;61:937-939.
16. Diamond LC, Schenker Y, Curry L, et al. Getting by: Underuse of interpreters by resident physicians. *J Gen Intern Med* 2009;24:256-262. **BCMJ**

Electronic wound monitoring after ambulatory breast cancer surgery: Improving patient care and satisfaction using a smart phone app

Study results suggest that the demand on health care resources resulting from hospital readmissions and emergency department visits can be reduced with the use of a virtual care platform.

ABSTRACT

Background: Ambulatory surgery for breast cancer is commonplace, but complications can lead to unscheduled care, including readmission to hospital and visits to the emergency department or walk-in clinic. A study was proposed to determine if unscheduled care could be prevented with the use of a secure smart phone application that allows patient and surgeon to communicate and share images of the wound postoperatively.

Methods: Clinical details and outcomes were compared for two groups of surgeries: 37 breast operations where patients received conventional follow-up vs 35 breast operations where patients received electronic wound monitoring (e-monitoring) in addition to conventional follow-up. Patients in the e-monitoring group photographed their wounds on post-op days 1, 3, 7, and 14 and sent the images to the surgeon via a smart phone app. The e-monitoring patients were also asked to complete a satisfaction survey online.

Results: Significantly more surgeries in the conventional follow-up control

group than the e-monitoring group (22% vs 3%, $P < .05$) required readmission to hospital, an unscheduled visit to the emergency department or walk-in clinic, or both. Most of the e-monitoring patients (83%) used the smart phone app to ask questions and have their concerns addressed. In 10 cases in the e-monitoring group (29% of 35 surgeries), unscheduled care was avoided by reassuring patients or providing early treatment of surgical site infections. Almost all e-monitoring patients felt that electronic wound monitoring improved their care (95%) and would recommend such monitoring to a friend or colleague (90%). All trusted the virtual care platform to keep their personal information private and secure.

Conclusions: The study found that electronic wound monitoring was associated with less unscheduled care, a high degree of patient satisfaction, and a likely reduction in cost to the health care system. These promising results justify further research with a prospective randomized controlled trial.

Background

Ambulatory surgery for breast cancer has become commonplace, with most patients being discharged on the day of surgery.^{1,2} Compared with inpatient surgery, outpatient surgery has proved to be more cost-effective^{3,4} and to increase patient satisfaction.^{3,5,6} This change has been facilitated by a move toward more breast conserving surgery⁷ and better postoperative pain control.⁸

Complications of breast surgery still occur, however, and include surgical site infection, hematoma, seroma, and bleeding, which can all lead to unscheduled visits to the emergency department (ED) or walk-in clinic and readmission to hospital.^{3,5,6} Readmission rates for ambulatory breast surgery are reported to be as high as 7%.^{3,5,6}

Fortunately, evolving technology has provided new ways for patients and surgeons to communicate, and many have been willing to use the tools now available.⁹ In the past, patient-

Dr Hwang is a general surgeon at Vernon Jubilee Hospital and a clinical assistant professor in the Faculty of Medicine at the University of British Columbia.

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surgeon encounters were restricted to either a hospital or a surgeon’s office. Now smart phone applications can allow patients to participate in a videoconference or send secure messages and images to their surgeons, who in turn can respond immediately or at their convenience.⁹ App-based technology has been employed to monitor pressure ulcers,¹⁰ diabetic foot ulcers,¹¹ chronic venous ulcers,¹² and postoperative surgical sites in breast and orthopedic patients.¹³ Data collection was completed recently for a randomized trial at Women’s Hospital in Toronto that compared home monitoring by app with conventional follow-up in breast reconstruction.¹⁴

Based on the premise that electronic wound monitoring (e-monitoring) fills both a clinical and a temporal gap between the day of outpatient surgery and the follow-up office visit 3 weeks later, a study was proposed

to compare conventional follow-up with additional e-monitoring of breast cancer outpatients by smart phone app. The study aimed to determine if unscheduled visits for care and hospital readmission could be prevented by e-monitoring and to assess patient satisfaction with the use of e-monitoring technology for this.

Methods

All breast cancer patients in the care of a single surgeon over a 1-year period (February 2015 to January 2016) were prospectively enrolled in an electronic wound monitoring study. The outcomes of 35 surgeries in this e-monitoring group of patients were compared with the outcomes of 37 surgeries in a control group of patients who received conventional follow-up the previous year (February 2014 to January 2015).

February 2015 was chosen as the

data collection start date for the e-monitoring group because that is when the technology became available.

Only cases where patients were discharged on the same day or the day following surgery were included in the study.

In the conventional follow-up group, care consisted of referral to the ambulatory wound clinic if the patient had a Jackson-Pratt drain and an office visit with the surgeon around 3 weeks post-op. In the e-monitoring group, patients were invited to participate in additional follow-up using Medeo (Figure 1), a virtual care platform that consists of a smart phone app and secure password-protected online account (Figure 2). Patients in the e-monitoring group were asked to take a photo of their wounds post-operatively on days 1, 3, 7, and 14 (Figure 3), and to attach the photos to

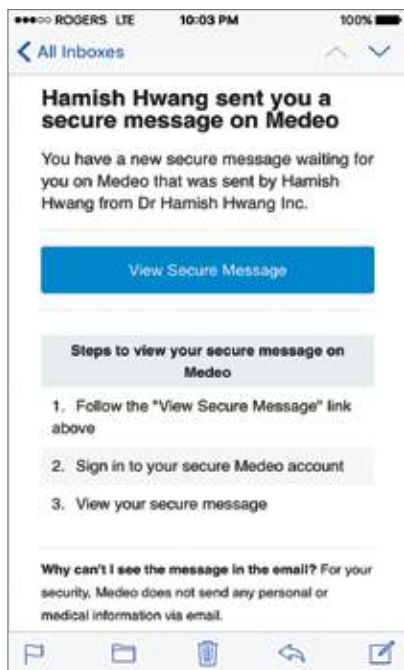


Figure 1. Patient receives e-mail invitation from surgeon to communicate using smart phone app and Medeo virtual care platform.

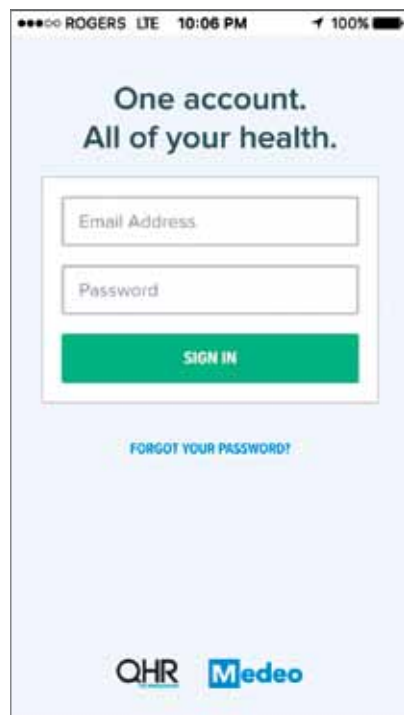


Figure 2. Patient logs in to secure Medeo account.



Figure 3. Patient receives instructions from surgeon.

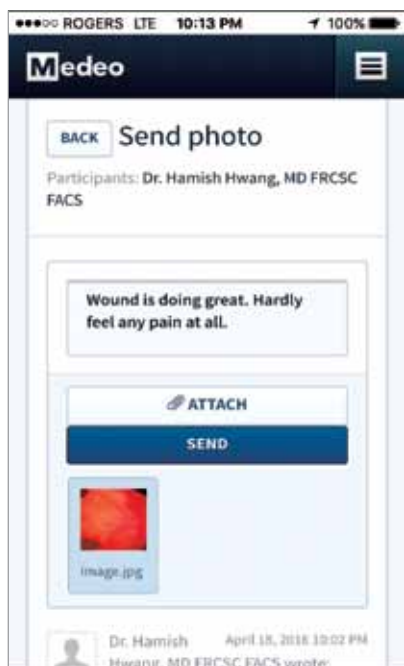


Figure 4. Patient takes photo of wound with smart phone and then sends message and photo to surgeon.

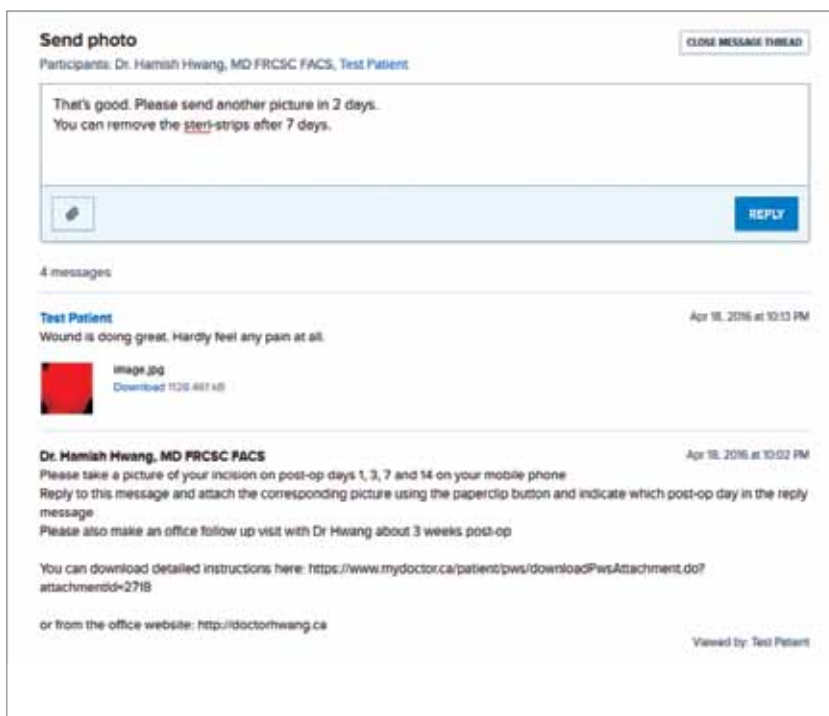


Figure 5. Surgeon receives message on secure site, views photo, and replies to patient.

electronic messages and send them to the surgeon using the smart phone app (Figure 4). The patients were encouraged to ask questions and raise any concerns. The surgeon then responded to each patient message within 24 hours (Figure 5). Patients who successfully attached and sent a wound photo to the surgeon were considered to have made meaningful use of the smart phone app.

Data on patient demographics, breast cancer pathology, operative times, complications, and unscheduled care were recorded in a Microsoft Excel 2010 spreadsheet. Responses to a patient satisfaction survey completed online were analyzed. The chi-square test, student 2-tailed *t* test, and Wilcoxon signed rank test were used on an Internet-based statistical calculator.¹⁵ A probability value of less than .05 was considered significant.

Results

The mean age of patients in the conventional follow-up group was 65.5 years (range 49 to 90), and the mean age in the e-monitoring group was 60.1 years (range 38 to 78) ($P < .05$).

In the conventional follow-up group, 34 women with an average ASA score of 2.2 underwent 37 surgeries (3 patients required 2 operations each). In the e-monitoring group, 28 patients (27 women and 1 man) with an average ASA score of 2.0 underwent 35 surgeries (7 patients required 2 operations each).

The pathology, tumor characteristics, and hormone receptor status of the breast cancers in each group of patients are summarized in Table 1. While seven cases of ductal carcinoma in situ (DCIS) were seen in the e-monitoring group and none in the conventional monitoring group, the breast cancers were otherwise similar.

The clinical details and outcomes

of the surgeries are summarized in Table 2. While four bilateral mastectomies were performed in the conventional follow-up group and none in the e-monitoring group, the number and kind of procedures were otherwise similar.

Operative time for the conventional follow-up group was 65.0 (SD 31.0) minutes and for the e-monitoring group was 51.4 (SD 15.5) minutes ($P < .05$). The majority of patients in both groups were discharged on the day of surgery. Same-day discharge was 94% in the e-monitoring group and 78% in the conventional follow-up group ($P = ns$). The indications for next-day discharge were bilateral mastectomy in 3 patients, age older than 75 in 4 patients, personal request in 1 patient, recent acute coronary syndrome in 1 patient, and post-op bleed requiring hematoma evacuation in 1 patient with a 20-cm phylloides tumor with extensive varices surrounding the tumor.

Significantly more patients in the conventional follow-up group (22% versus 3% in the e-monitoring group, $P < .05$) were readmitted to hospital, had an unscheduled visit to the emergency department or a walk-in clinic, or both. Of the five patients in the conventional follow-up group who had unscheduled visits to the ED, three presented twice and one presented four times. The two conventional follow-up patients who had unscheduled visits to a walk-in clinic each presented twice. The single patient in the e-monitoring group who presented to the ED with pneumonia on day 3 after surgery did not use the smart phone app.

There was meaningful use of the app in 30 of the 35 e-monitoring surgeries (86%). Three patients either did not own a smart phone or did not have an e-mail address. Two patients were unable to use the smart phone app.

A total of 29 patients (83%) used the smart phone app to ask questions and the same number used the app to communicate about a concern that was then addressed by the surgeon. Fourteen patients raised multiple concerns. Five patients asked for reassurance about minor hematomas or skin blisters that subsequently resolved. Five cases of early wound infection and one case of skin edge necrosis were detected using the app and treated without the need for an extra visit. In two cases, extra electronic visits were scheduled after the office visit to address patient concerns about the wound. In one case, an extra scheduled office visit was arranged. In a total of 10 cases (29% of 35 surgeries), an unscheduled visit to the ED or walk-in clinic was made unnecessary by reassuring patients or providing early treatment of surgical site infections.

Of the 28 patients in the e-monitoring group who were invited

Table 1. Pathology of breast cancers for conventional follow-up group and electronic wound monitoring group.

	Conventional follow-up patients n/37 (%)	Electronic wound monitoring patients n/35 (%)
Primary pathology		
Invasive ductal carcinoma	32/37 (86)	25/35 (71)
Invasive lobular carcinoma	2/37 (5)	2/35 (6)
Ductal carcinoma in situ	0/37 (0)*	7/35 (20)
Mucinous carcinoma	3/37 (8)	0/35 (0)
Mixed ductal and lobular carcinoma	0/37 (0)	1/35 (3)
Borderline phylloides tumor	0/37 (0)	1/35 (3)
Multifocal disease	2/37 (5)	4/35 (11)
Lymphovascular invasion	6/34 (18)	4/27 (15)
Tumor characteristics		
Tumor stage	1.53 (mean for 34 cancers)	1.37 (mean for 28 cancers)
Tumor grade (excluding DCIS)	2.06 (mean for 34 cancers)	1.64 (mean for 25 cancers)
Hormone receptor status		
ER positive	30/34 (88)	24/27 (89)
HER-2 positive	6/34 (18)	2/27 (7)

* $P < .05$

Table 2. Clinical details and outcomes for surgeries with conventional follow-up and surgeries with electronic wound monitoring.

	Conventional follow-up surgeries n/37 (%)	Electronic wound monitoring surgeries n/35 (%)
Procedure		
Bilateral mastectomy	4/37 (11)*	0/35 (0)
Total mastectomy	25/37 (68)	20/35 (57)
Partial mastectomy	8/37 (22)	12/35 (34)
Sentinel lymph node biopsy	24/37 (65)	22/35 (63)
Axillary dissection	7/37 (19)	5/35 (14)
Complication		
Pressure sore	1/37 (3)	0/35 (0)
Bradycardia	1/37 (3)	0/35 (0)
Severe neuralgia	1/37 (3)	0/35 (0)
Leaking drain	1/37 (3)	0/35 (0)
Wound infection	2/37 (5)	6/35 (17)
Minor hematoma	0/37 (0)	2/35 (6)
Skin edge necrosis	0/37 (0)	1/35 (3)
Hemorrhage requiring evacuation	0/37 (0)	1/35 (3)
Pneumonia	0/37 (0)	1/35 (3)
Unscheduled care		
30-day readmission	2/37 (5)	1/35 (3)
Emergency department visit	5/37 (14)	1/35 (3)
Walk-in clinic visit	2/37 (5)	0/35 (0)
30-day readmission, unscheduled emergency department visit, or both†	8/37 (22)*	1/35 (3)

* $P < .05$

† One patient had both an unscheduled visit to the ED and readmission to hospital within 30 days.

to complete an anonymous online survey, 20 patients (71%) did so. Responses indicated that 90% did not have difficulty using the app and would recommend e-monitoring to a friend or colleague, while 95% found the app convenient to use and felt it was better for patient care when compared with standard post-op follow-up. All patients trusted the virtual care platform to keep their personal information private and secure.

A sample of responses to an open-ended survey question gives a sense of overall patient satisfaction:

“Response time excellent and with this monitoring service I was able to have antibiotics without going to see my doctor.”

“I found it amazing, very comforting to know my wounds were fine and not have to worry about whether they were okay or not.”

“It took a number of tries to get into the system to start, and then a while to figure out how to upload the pictures, but after that it was easy to use. Very reassuring to know that things were progressing as expected. Perhaps more online assistance would help get things off to a better start.”

“It was nice to hear on days 1 and 3 that everything looked good. Definitely made me feel better and less anxious about how I was healing. Response time was surprisingly fast.”

Conclusions

New app-based technology^{9,16} is being accepted more widely by both patients and physicians and can help with all three objectives of the Institute for Healthcare Improvement’s triple aim¹⁷ initiative:

- Improving the patient experience of care (including quality and satisfaction).
- Improving the health of populations.
- Reducing the per capita cost of health care.

In this study, survey responses indicate clearly that use of a smart phone app improved the patient experience of care. Communicating with the surgeon electronically eased patients’ anxieties and lessened their inclination to visit the emergency department. In 10 cases (29% of 35 surgeries) the surgeon provided reassurance or early diagnosis and treatment of wound infections that might have required visits to the ED at a later date. The e-monitoring patients had significantly fewer hospital readmissions and unscheduled visits to the ED or walk-in clinic than the conventional follow-up patients. The only patient in the electronic wound monitoring group to have an unscheduled visit to the ED did not use the smart phone app. Importantly, 100% of patients felt their confidential information was private and secure.

On a population health basis, the use of smart phone apps and similar technology can also lead to improvements. If unnecessary visits to the ED can be eliminated this not only improves the health of postoperative patients but also of other patients who can receive treatment more promptly in the emergency department because of reduced demand on ED resources.

Unscheduled care places a demand on physicians, hospital personnel, diagnostic services, and other health care resources. In this study, 22% of surgeries in the conventional follow-up group required unscheduled care compared with 3% in the electronic monitoring group. Considering only patients who made meaningful use of the smart phone app, there were no instances of unscheduled care in the e-monitoring group. Electronic follow-up is not only cost-effective by itself when compared with in-person follow-up,¹⁸ it also prevents unscheduled visits to the ED and readmis-

sions, further reducing the per capita cost of health care.

Challenges

Technical difficulties or lack of familiarity with technology challenged a minority of study subjects and prevented five patients from participating in a meaningful way. Arguably, the patients who need support the most—the elderly and the financially insecure—are also more likely to face barriers to using technology. The five subjects in the e-monitoring group who did not participate included the two oldest patients, aged 75 and 78, and three others aged 49, 51, and 69. Identifying ways to remove barriers to meaningful use of new technology for these vulnerable patients needs to be prioritized, perhaps with a publicly funded smart phone loan program and one-on-one instruction sessions.

The fact that post-op days 1, 3, 7, and 14 did not always fall during the surgeon’s work week presented an unexpected challenge to providing prompt responses to patients. Although the ease of access to technology means a surgeon can be out of town or even out of the country and still view and respond to patient messages, it would be preferable to arrange for electronic cross-coverage on weekends and while surgeons are away.

Study limitations

Although subjects for the e-monitoring group were accrued in a prospective manner, patients were not selected randomly, and as a result the study is subject to bias. Also, because the control group was studied retrospectively, it was not possible to reliably assess patient satisfaction with conventional follow-up and compare this for the two groups.

The patients in the conventional follow-up group were older than

patients in the e-monitoring group, which may have had an impact on the number of unscheduled visits to the ED. The mean age of the eight patients in the conventional follow-up group who had unscheduled visits was 65.8 compared with 65.5 in the conventional follow-up group as a whole ($P=.903$).

A confounding factor in the control group surgeries was a higher number of bilateral mastectomies with a corresponding increase in operative time. Two of the four bilateral mastectomy patients each had at least one unscheduled visit to the ED. If the bilateral mastectomies are excluded from the analysis, the number of unscheduled visits made by conventional follow-up patients is still significantly higher (6 visits for 33 surgeries in the control group versus 1 visit for 35 surgeries in the e-monitoring group; $P=.038$).

Summary

In this study, electronic wound monitoring was associated with significantly fewer unscheduled visits to the emergency department, a high degree of patient satisfaction, and a likely reduction in cost to the health care system. These results justify conducting a multicentre, prospective, randomized controlled study to learn more about electronic monitoring.

Competing interests

At the time this article was submitted to the *BCMJ*, Dr Hwang owned shares in QHR, the health care technology company responsible for the Medeo virtual care platform. Dr Hwang does not currently own shares in QHR.

References

1. Margolese RG, Lasry JM. Ambulatory surgery for breast cancer patients. *Ann Surg Oncol* 2000;7:181-187.
2. Tan LR, Guenther M. Outpatient definitive

- breast cancer surgery. *Am Surg* 1997; 63:865-867.
3. Rovera F, Ferrari A, Marelli M, et al. Breast cancer surgery in an ambulatory setting. *Int J Surg* 2008;6(suppl 1):S116-S118.
4. Kåresen R, Jensen HH, Sauer T, et al. Logistics of referral, diagnostic assessment and treatment of patients with breast symptoms and signs. *Scand J Surg* 2002; 91:232-238.
5. Marla S, Stallard S. Systematic review of day surgery for breast cancer. *Int J Surg* 2009;7:318-323.
6. Marchal F, Dravet F, Classe JM, et al. Post-operative care and patient satisfaction after ambulatory surgery for breast cancer patients. *Eur J Surg Oncol* 2005;31:495-499.
7. Hoehn JL. Definitive breast cancer surgery as an outpatient: A rational basis for the transition. *Semin Surg Oncol* 1996; 12:53-58.
8. Huang TT, Parks DH, Lewis SR. Outpatient breast surgery under intercostal block anesthesia. *Plast Reconstr Surg* 1979;63:299-303.
9. Wiseman JT, Fernandes-Taylor S, Barnes ML, et al. Conceptualizing smartphone use in outpatient wound assessment: Patients' and caregivers' willingness to use technology. *J Surg Res* 2015;198:245-251.
10. Rodrigues JJ, Pedro LM, Vardasca T, et al. Mobile health platform for pressure ulcer monitoring with electronic health record integration. *Health Informatics J* 2013; 19:300-311.
11. Wang L, Pedersen PC, Strong DM, et al. Smartphone-based wound assessment system for patients with diabetes. *IEEE Trans Biomed Engineering* 2015;62:477-488.
12. Quinn EM, Corrigan MA, O'Mullane J, et al. Clinical unity and community empowerment: The use of smartphone technology to empower community management of chronic venous ulcers through the support of a tertiary unit. *PLoS One* 2013;8:e78786.
13. Semple JL, Sharpe S, Murnaghan ML, et al. Using a mobile app for monitoring post-operative quality of recovery of patients at home: A feasibility study. *JMIR Mhealth Uhealth* 2015;3:e18.
14. Armstrong KA, Coyte PC, Bhatia RS, Semple JL. The effect of mobile app home monitoring on number of in-person visits following ambulatory surgery: Protocol for a randomized controlled trial. *JMIR Res Protoc* 2015;4:e65.
15. Statistics Online Computational Resource. Accessed 26 July 2016. www.socr.ucla.edu/SOCR.html.
16. Kummerow Broman K, Oyefule OO, Phillips SE, et al. Postoperative care using a secure online patient portal: Changing the (inter)face of general surgery. *J Am Coll Surg* 2015;221:1057-1066.
17. Institute for Healthcare Improvement. IHI triple aim initiative. Accessed 26 July 2016. www.ihl.org/engage/initiatives/tripleaim.
18. Armstrong KA, Semple JL, Coyte PC. Replacing ambulatory surgical follow-up visits with mobile app home monitoring: Modeling cost-effective scenarios. *J Med Internet Res* 2014;16:e213. **BCMJ**

Children's mental health: Is poverty the diagnosis?

Some of the concerns seen by childhood health professionals may not be diagnosable psychiatric conditions, but emotional and behavioral responses to family financial insecurity.

ABSTRACT: The case of a 6-year-old boy who was referred to a physician by his school counselor for investigation of anxiety and possible attention deficit hyperactivity disorder illustrates the need to consider the role of poverty when addressing mental health concerns. After determining that income insecurity could be contributing to the boy's symptoms, the physician used a poverty intervention tool to screen for the effects of poverty and make recommendations to prevent adverse health outcomes. Mental health and behavioral concerns are common in children and youth presenting with undifferentiated complaints in both pediatric and primary care settings. Psychiatric disorders are frequently multifactorial and require a comprehensive assessment of the patient's environmental context, including the family's socioeconomic

status. Poverty is a risk factor for mental health conditions in childhood and is associated with lower academic achievement and impaired cognitive development secondary to direct effects on the developing hypothalamic-pituitary-adrenal axis and indirect effects on a child's environment. British Columbia's childhood poverty rate is well above the national average and is compounded by significant unmet core housing need and widening provincial income disparity. We recommend screening for poverty with office-based interventions and accounting for income insecurity in all mental health diagnoses and treatment plans. We also strongly recommend implementing a national poverty reduction strategy to address social determinants of health in the early years and improve the health of future generations.

Case data

A 6-year-old boy was referred for assessment and treatment recommendations by his school counselor because of anxiety, school difficulties, and possible attention deficit hyperactivity disorder (ADHD). The boy was from a two-parent family and had a 14-year-old brother. Both parents were employed, the father as a cargo delivery driver and the mother in a hospital cafeteria. The boy's mother had started shift work 6 months previously and was working 6 days a week so that the family could meet increasing rent costs. They lived in a small two-bedroom apartment and the boy slept on the pull-out couch in the living room because his 14-year-old brother demanded priva-

Dr Jakovljevic is a PGY-5 resident in the Department of Psychiatry at the University of British Columbia. Dr Miller is an assistant professor in the Department of Psychiatry at UBC and a child and adolescent psychiatrist at BC Children's Hospital and Vancouver Community Mental Health Services. Dr Fitzgerald is a developmental pediatrician at Sunny Hill Health Centre for Children. She is also medical director of Alderwood Family Development Centre and a clinical associate professor in the Department of Pediatrics at UBC.

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cy. The family could no longer afford after-school care for the boy as they had done the previous year, so he was picked up from school by the brother and watched TV and played video games every day after school while his parents were working.

First visit

The boy attended the first visit to the physician with his mother, who reported that the child had no previous history of anxiety or psychiatric concerns but did have a medical history of asthma. The mother described the boy's recent separation anxiety, difficulty concentrating, trouble falling asleep, and tantrums during transitions at school. Teachers reported the boy was frequently anxious and inattentive in class. In the past the father had been diagnosed with a mild learning disability and the mother described herself as "frequently anxious," although she had never been diagnosed with a psychiatric condition. During the visit the boy was shy, clung to his mother, and looked at her for answers. He occasionally gave one-word answers to questions. There were no other significant findings on the mental status exam. Teacher and parent checklists were provided to collect further details and a second visit was scheduled to complete the assessment.

Second visit

At the second visit with the physician, the boy was accompanied by his father. The boy's growth charts and hearing and vision test results were reviewed. No deficits were identified and he was found to be on track developmentally. His asthma, while relatively mild, was found to be contributing to sleep disturbances. Occasional inattention and concentration difficulties were noted on the teacher checklists, but the symptoms fell

below the diagnostic threshold for ADHD. Written reports indicated the boy was slightly behind in reading skills for his age. The father stated that the separation anxiety and problems at school had begun 6 months earlier, coinciding with his mother's

care had placed stress on the family and affected the boy's sense of security. The impact of sleep on the boy's ability to pay attention and manage emotions was discussed and information about sleep hygiene and good asthma management was provided.

The World Health Organization has declared poverty the single largest determinant of health for both adults and children.

increased work hours, and that he had started sleeping with his son on the pull-out couch because of the boy's anxiety.

Given the family's economic situation, the physician chose to use a screening and intervention tool for poverty. The father disclosed that the family had not had enough money for necessities for the previous 9 months and had recently started going to the food bank. The father also said he was too ashamed to talk to his son's school about their circumstances and asked the physician about resources for subsidized housing. The family had not filed a tax return for the previous year because of the mother's transitional employment.

Information gathered at the second visit led to a number of recommendations for the family. The parents were told that although their child did not have a clinical anxiety disorder or ADHD, their recent financial struggles and changes in child

The parents were advised to file tax returns so the family would be eligible for income supplements and subsidized housing. Psychoeducational testing was recommended to rule out a learning disability, even though there was likely to be a long wait for testing in the public system, the only option for the family. The parents were advised to enquire about getting their son extra help with homework through the school and were referred to a parenting group for parents of children with anxious temperaments. The physician emphasized the parents were doing their best to care for their son and had given him a good foundation. A follow-up visit was scheduled.

Third visit

At the third visit the parents reported that their son was attending a subsidized summer camp through his school. The family had filed tax returns, obtained low-cost transportation passes, and been waitlisted for subsidized

housing. The boy was receiving a free breakfast and lunch at school and seeing the school counselor regularly. The parents, however, were still struggling financially and reported that their experiences had affected their relationship. Although they were very eager to join the parenting group, they were unable to attend because of their work schedules and lack of child care options.

or ensured the boy received learning assistance for reading and tutoring from a local high school student. With the physician's help, the parents eventually obtained a subsidy for quality after-school care and established a clear routine for their son, including two 30-minute sessions a week when he would go to the park or have special play time with his mother. Within 3 months, the boy's separation anxiety

undifferentiated complaints. These conditions can include anxiety disorders, ADHD, and other neurodevelopmental disorders. In addition, child abuse, trauma, and early adversity can have a significant impact on all aspects of child development and behavior. As children are embedded in their environments, a comprehensive assessment and consideration of their psychosocial circumstances is crucial for accurate diagnosis and treatment recommendations.

Poverty becomes biologically embedded, leading to both functional and structural changes of the developing brain.

The mother was tearful during the appointment, and said she would love to be able to spend quality time with her son at home, like her own mother had with her, but was unable to leave her job. The mother was told that staying at home with children is not the only way to make them feel secure, and that the quality of time spent together counts. The physician acknowledged the family's hard work and provided information on parenting children with anxious temperaments and emphasized the importance of regular follow-up with the school counselor.

Outcomes

Subsequently, the boy's parents met with the school counselor for two parenting sessions, and the counsel-

or had improved significantly and his teacher noted better focus in class despite the family's continued high stress level and hectic work schedule in attempts to make ends meet.

Discussion

An estimated 12.6% of children and youth age 4 to 17—almost 84 000 young British Columbians—are experiencing a mental health disorder at any given time.¹ Mental health problems in childhood and adolescence have a significant impact on child development and have been identified by many as today's leading pediatric problem.²

Multiple childhood psychiatric conditions come to mind when young children present to primary care physicians or pediatric specialists with

Childhood poverty in BC

According to most recent estimates, approximately one in five BC children age 0 to 17 (20.4%) are living in poverty,³ and the numbers are significantly higher for children of immigrants, visible minorities, and Aboriginal citizens. British Columbia's child poverty rate has remained consistently higher than the national average since 2000, and has increased significantly since the 1989 House of Commons all-party resolution to eliminate child poverty.³ Children of various family types live in poverty, but there is an increase in working poor families living in British Columbia, with one in three poor children having at least one parent who works full time. As of 2013, one-half of children in lone parent families were living in poverty. Food bank use has increased by 25% in British Columbia since 2008. Over 97 000 people used the food bank last year in BC, with 31% of users being children.⁴ Furthermore, families with the fewest economic resources are spending more of their income for inadequate housing, with one-third of all children in lone parent families in BC living in core housing need, representing the highest rate of inadequate housing for all provinces in Canada.³

Income inequality is on the rise in Canada, and particularly in British Columbia, where a family in the high-

est income decile earns 13 times more than a family in the lowest income decile. This staggering income disparity is explained in part by the fact that individuals in BC's lowest earning decile have the lowest income of all Canadians.³

Effects of poverty on children

The World Health Organization has declared poverty the single largest determinant of health for both adults and children.⁵ Children affected by poverty have higher rates of infant mortality, low birth weight, childhood hospitalizations, asthma, obesity, and functional health impairments.⁶ Poverty in early childhood is also associated with increased morbidity and decreased lifespan in adulthood, an association that persists irrespective of the social status one acquires as an adult.⁷ A large and growing body of research, including studies in Canada, the US, and the UK, demonstrates that children living in poverty are significantly more likely to have psychiatric conditions and inferior mental health when compared with peers from families with higher socioeconomic status. This relationship holds across developmental periods, and remains when operationalizing poverty through income, parental employment, and neighborhood income. Children from families living in poverty are 3 times more likely, on average, to suffer from psychiatric conditions, including both externalizing disorders such as ADHD, oppositional defiant disorder (ODD), and conduct disorder, and internalizing disorders such as depression, anxiety, and poor coping skills.^{1,8,9} Furthermore, experts in the field have recently questioned whether some of the behavioral concerns seen by childhood mental health professionals are actually emotional and behavioral responses to inadequate and chaotic

environments rather than diagnosable primary mental illnesses, as illustrated by the case.

Effects on cognition

Children from low-income households are less prepared for formal schooling and perform below their middle-class counterparts on tests of intelligence and school achievement.¹⁰ A recent Vancouver study found that 38% of kindergarten children living in the lowest income neighborhoods demonstrated vulnerabilities in at least one area measured by the Early Development Instrument, which considers physical health and well-being, language and cognitive development, social competence, emotional maturity, and communications skills.¹¹ Children living in poverty have also been found to have deficits in working memory, language abilities, and cognitive flexibility when compared with their middle-class counterparts.¹² Recent neuroimaging research suggests that these deficits are mediated by underdevelopment of several brain areas, including the frontal and temporal lobes and the hippocampus. This underdevelopment is estimated to account for 15% to 20% of achievement deficits.¹³ The longer children live in poverty, the greater their academic deficits and the more likely they are to experience a lifetime of reduced occupational achievement and the persistence of poverty across generations.

Impact on mental health and the developing brain

Living in poverty increases the likelihood of vulnerabilities and adverse childhood events that are themselves known risk factors for the development of mental illness. Children living in poverty are more likely to lack basic resources such as nutritious

food, adequate housing in safe neighborhoods, quality day care, and regular access to health care. Poor children are also less likely to benefit from environmental complexity, exposure to educational activities and materials, and positive parent-led experiences such as reading and conversation.¹² Moreover, children growing up in poverty are disproportionately more likely to be exposed to trauma and stressful life events, including divorce, domestic violence, and punitive parenting practices. Poverty further negatively affects mental health through larger community factors, including social isolation, marginalization, and violence.¹

The mechanism that allows poverty to directly affect the developing brain and contribute to psychopathology is now being elucidated by neuroscientists. Several explanations have been proposed regarding the relationship between poverty and mental health. The concept of allostatic load, or cumulative damage over time, suggests that the excessive, persistent, and uncontrollable adversity experienced by children living in poverty intensifies the activation of the hypothalamic-pituitary-adrenal (HPA) axis and has an impact on the developing brain.¹⁴ Physiological responses to stressful events are mediated by the glucocorticoid and catecholamine system, and prolonged exposure to stressful environments and subsequent heightened neuroendocrine responses are associated with the development of both depressive symptomatology and the hippocampal neuron damage implicated in impaired learning and memory.^{15,16} If early adversity during critical developmental periods leads to permanent changes in the functioning set-point of the HPA axis, then lasting and potentially permanent alterations in neuroendocrine behavioral responses

Table 1. Medication and medical services plans.

Plan	Benefits
Psychiatric Medications (Plan G)	Covers psychiatric medications for individuals registered with a mental health service and demonstrating clinical and financial need.
Recipients of BC Income Assistance (Plan C)	Covers eligible prescription costs for BC recipients of income assistance.
Fair Pharmacare	Covers some of eligible prescription costs based on family income.
Pharmacare Special Authority	Grants full benefit status to a medication or medical supply otherwise not covered for patients with specific medical circumstances.
Non-Insured Health Benefits for First Nations and Inuit	Covers medically necessary health services, equipment, and medications not covered through private insurance or provincial programs for First Nations and Inuit.

Table 2. Income supplement programs.

Program	Benefits
Canada Child Tax Benefit (CCTB) www.cra-arc.gc.ca/E/pub/tg/t4114/README.html	Nontaxable monthly amount provided for families with children under age 18.
Child Disability Benefit (CDB)/ Disability Tax Credit (DTC)	Monthly amount for families caring for children under age 18 with a severe and prolonged impairment in physical or mental functioning (benefit included in the CCTB amount). (DTC: www.cra-arc.gc.ca/E/pub/tf/t2201/README.html)
Universal Child Care Benefit (UCCB)	Taxable monthly amount for families with children under age 6.
BC Early Childhood Tax Benefit	Nontaxable monthly amount for qualifying families with children under age 6.
BC Family Bonus	Nontaxable monthly amount for low- and modest-income families with children under age 18.
Registered Disability Savings Plan	Matching contribution from the Canadian government made to registered savings plan for children with disabilities.

can increase the likelihood of developing mental illness.¹⁴ Thus, poverty becomes biologically embedded, leading to both functional and structural changes of the developing brain,^{17,18} a finding supported by studies demonstrating heightened baseline activation of the stress response system in children living in poverty.^{19,20} And because of the protracted development of brain structures critical for learning and educational functioning, including sustained attention, planning, and

cognitive flexibility, these brain structures are particularly vulnerable to the environmental effects of poverty.²¹

Assessing and addressing poverty

Physicians often recognize the wide-reaching impact of poverty on their patients but report feeling unable to address the issue in a systematic way.²² The poverty intervention tool (<http://ocfp.on.ca/docs/default-source/cme/poverty-and-medicine-march-2013>

.pdf),²³ an evidence-based instrument developed by Dr Gary Bloch from the University of Toronto, can be used to screen for poverty as a health-related risk and to factor poverty into all clinical decision making. A positive answer to the screening question “Do you ever have difficulty making ends meet at the end of the month?” has a sensitivity rate of 98% for identifying patients living in poverty.²³ The targeted interventions outlined in the tool are designed to reduce the effects of poverty and adverse health outcomes in low-income patients, and include specific questions for families with children, seniors, people with disabilities, and First Nations patients living in poverty. Originally developed for use in Ontario, the tool is now available in BC-wide and Kootenay-Boundary versions that include resources and interventions specific to British Columbia (www.divisionsbc.ca/kb/povertyintervention).²⁴

As demonstrated by the case described here, a health care provider can attempt to mitigate the effects of poverty by providing information about support available. This can include plans for low-cost or no-cost medications and medical services (Table 1) and programs for income supplements (Table 2). Health care providers can also inform families working with the BC Ministry of Children and Family Development that they may be eligible for coverage of medically necessary treatments with a physician’s letter of support. Finally, because families attempting to deal with a mental health concern using a first-line treatment recommendation may encounter barriers, including the cost of psychotherapy and academic tutoring, health care providers can also suggest solutions for overcoming these barriers (Table 3).

We recommend screening for

Table 3. Possible solutions for families encountering barriers when attempting to obtain first-line treatment for behavioral and mental health concerns.

First-line treatment	Barrier	Possible solution
Medication for psychiatric condition	Cost	<ul style="list-style-type: none"> Government benefit programs: BC Pharmacare Plan G, Fair Pharmacare, Special Authority program, Non-Insured Health Benefits (NIHB) program.
Medication for medical condition	Cost	<ul style="list-style-type: none"> Substitutions Generic preparations Second-line therapies Government benefit programs: BC Pharmacare Plan C, Fair Pharmacare
Psychotherapy	Cost (\$175–\$200/hour for private psychologist)	<ul style="list-style-type: none"> Free counseling through local community services. Counseling offered at a reduced rate or on a sliding scale by supervised psychology trainees at UBC, SFU, and University of Victoria psychology clinics.
Parenting support	Difficulty attending free parenting group sessions because of work schedule or lack of child care options	<ul style="list-style-type: none"> Free weekly telephone coaching for parents of children affected by temper outbursts, behavioral difficulties, and anxiety through Confident Parents Thriving Kids program (http://cmha.bc.ca/programs-services/confident-parents-thriving-kids/). Referral from health care professional required. Materials provided include psychoeducation, manuals, and behavioral charts.
Psychoeducational testing	Cost (~ \$2000 for private testing)	<ul style="list-style-type: none"> Free testing in the public school system (wait list up to 2 years long). Testing offered free or on a sliding scale for a limited number of clients at UBC and other university-based psychology training centres.
Academic tutoring and homework help	Cost (> \$20/hour) Difficulty ensuring child attends after-school sessions because of work schedule	<ul style="list-style-type: none"> Free tutoring or homework help offered through child's school or by teacher or student volunteers.

poverty and using office-based interventions that account for income insecurity in all mental health diagnoses and treatment plans. And because office based interventions don't reach all families living in poverty, we strongly advocate for implementation of a national poverty reduction strategy to address social determinants of health in the early years and improve the health of future generations.

Summary

The case of a 6-year-old boy referred by his school counselor because of anxiety and school difficulties illustrates the need to consider the role of poverty when addressing mental health concerns. Children and youth seen in primary care settings frequently present with undifferentiated mood

and behavioral symptoms. Given the importance of the psychosocial environment to child development, an assessment of the family and social circumstances is important because symptoms of living in poverty can at first glance mimic the symptoms of mental illness. Income insecurity is increasingly common in working poor families and a growing number of children live below the poverty line in British Columbia. Poverty is a risk factor for mental illness and can affect early cognitive development. Screening for poverty and making treatment recommendations that address a family's lack of income and resources can lead to significant change for children. Early childhood interventions that support the basic needs of children, including access to nutritious food, safe and

affordable housing, quality child care, and regular health care, should be our top health priority if we want to ensure the well-being of future generations.

Competing interests

None declared.

References

- Waddell C, Offord DR, Shepherd CA, et al. Child psychiatric epidemiology and Canadian public policy-making: The state of the science and the art of the possible. *Can J Psychiatry* 2002;47:825-832.
- Lipman EL, Boyle MH. Linking poverty and mental health: A lifespan view. Ottawa: Provincial Centre of Excellence for Child and Youth Mental Health at CHEO; 2008. Accessed 28 July 2016. www.excellenceforchildandyouth.ca/sites/default/files/position_poverty.pdf.

3. First Call: BC Child and Youth Advocacy Coalition. 2015 BC child poverty report card. Accessed 28 July 2016. <http://firstcallbc.org/publications/2015-bc-child-poverty-report-card>.
4. Food Banks Canada. Hunger count 2014. Accessed 28 July 2016. www.foodbanks.ca/getmedia/d8b36130-cc83-46ba-8183-d33d484c7591/HungerCount2014_revised.pdf.aspx?ext=.pdf.
5. World Health Organization. Poverty and social determinants. Accessed 28 July 2016. www.euro.who.int/en/health-topics/environment-and-health/urban-health/activities/poverty-and-social-determinants.
6. Gupta RP, de Wit ML, McKeown D. The impact of poverty on the current and future health status of children. *Paediatr Child Health* 2007;12:667-672.
7. Kuh D, Hardy R, Langenberg C, et al. Mortality in adults aged 26-54 years related to socioeconomic conditions in childhood and adulthood: Post war birth cohort study. *BMJ* 2002;325:1076-1080.
8. Costello EJ, Angold A, Burns BJ, et al. The Great Smoky Mountains study of youth. Goals, design, methods, and the prevalence of DSM-III-R disorders. *Arch Gen Psychiatry* 1996;53:1129-1136.
9. Boyle MH, Lipman EL. Do places matter? Socioeconomic disadvantage and behavioral problems of children in Canada. *J Consult Clin Psychol* 2002;70:378-389.
10. Bradley RH, Corwyn RF. Socioeconomic status and child development. *Annu Rev Psychol* 2002;53:371-399.
11. Hertzman C, McLean SA, Kohen DE, et al. Early development in Vancouver: Report of the Community Asset Mapping Project (CAMP). Vancouver: Human Early Learning Partnership; 2002. Accessed 10 December 2015. https://secure.cihi.ca/free_products/ecd_van_e.pdf.
12. Farah MJ, Shera DM, Savage JH, et al. Childhood poverty: Specific associations with neurocognitive development. *Brain Res* 2006;1110:166-174.
13. Luby JL. Poverty's most insidious damage: The developing brain. *JAMA Pediatr* 2015;169:810-811.
14. Shonkoff JP, Boyce WT, McEwen BS. Neuroscience, molecular biology, and the childhood roots of health disparities: Building a new framework for health promotion and disease prevention. *JAMA* 2009;301:2252-2259.
15. Gianaros PJ, Jennings JR, Sheu LK, et al. Prospective reports of chronic life stress predict decreased grey matter volume in the hippocampus. *Neuroimage* 2007;35:795-803.
16. Sheline YI. Neuroimaging studies of mood disorder effects on the brain. *Biol Psychiatry* 2003;54:338-352.
17. McEwen BS. Protective and damaging effects of stress mediators. *N Engl J Med* 1998;338:171-179.
18. McEwen BS. The neurobiology of stress: From serendipity to clinical relevance. *Brain Res* 2000;886:172-189.
19. Lupien SJ, King S, Meaney MJ, McEwen BS. Child's stress hormone levels correlate with mother's socioeconomic status and depressive state. *Biol Psychiatry* 2000;48:976-980.
20. Lupien SJ, King S, Meaney MJ, McEwen BS. Can poverty get under your skin? Basal cortisol levels and cognitive function in children from low and high socioeconomic status. *Dev Psychopathol* 2001;13:653-676.
21. Hair NL, Hanson JL, Wolfe B, Pollak SD. Association of child poverty, brain development, and academic achievement. *JAMA Pediatr* 2015;169:822-829.
22. Brcic V, Eberdt C, Kaczorowski J. Development of a tool to identify poverty in a family practice setting: A pilot study. *Int J Fam Med* 2011;2011:812182.
23. Bloch G. Poverty: A clinical tool for primary care in Ontario. Toronto: Ontario College of Family Physicians and Family and Community Medicine, University of Toronto; 2013. Accessed 10 December 2015. <http://ocfp.on.ca/docs/default-source/cme/poverty-and-medicine-march-2013.pdf>.
24. Divisions of Family Practice. Our impact: The poverty intervention tool. Accessed 28 July 2016. www.divisionsbc.ca/kb/povertyintervention. **BCMJ**

Screening for poverty and making treatment recommendations that address a family's lack of income and resources can lead to significant change for children.

Chikungunya: A disease risk for Canadians traveling in the tropics

A recent case of chikungunya fever demonstrates why physicians need to make an early diagnosis, provide effective symptomatic treatment of the severe myalgias and arthralgias that can result, and educate patients about preventing mosquito-borne illness.

ABSTRACT: While vacationing in Mexico a 68-year-old man developed a generalized rash and low-grade fever and fatigue for 1 week. On returning to Canada he experienced a flare-up of pain in his neck, elbows, wrists, and knees, and developed pain and numbness in both arms. The symptoms responded minimally to naproxen and improved dramatically with prednisone. Exposure to chikungunya, an RNA alphavirus of the *Togaviridae* family, was suspected. Subsequently, a reactive IgM enzyme immunoassay confirmed exposure to chikungunya. The patient has now returned to mostly normal levels of functioning and has only mild residual numbness in his right thumb. With so many Canadians traveling to tropical areas, physicians must remain aware of the risk posed by mosquito-borne illnesses. Severe chikungunya fever can mani-

fest as encephalitis, myocarditis, hepatitis, arthritis, and multiorgan failure. Neurological complications can include seizures, encephalopathy, neuropathy, and Guillain-Barré syndrome. Patients older than 65 and young children, particularly newborns, are at increased risk for severe disease. Distinguishing chikungunya fever from dengue fever is critical because only the latter can lead to life-threatening hemorrhagic disease. Since the spring of 2014, there have been 320 confirmed cases and 159 probable cases of chikungunya infection in Canada. Canadians traveling to tropical areas should be advised to protect themselves against exposure to mosquito bites. Precautions include using mosquito repellent at all times, sleeping under a mosquito net, and wearing long-sleeved shirts and long pants.

Case data

In November 2015 a previously healthy 68-year-old physician vacationing in Mexico developed a generalized rash and low-grade fever and fatigue for 1 week. With the exception of bilateral osteoarthritis of the knees, the patient had no pre-existing medical concerns. On returning to Canada his symptoms abated, but by mid-December he had a flare-up of pain in his neck, elbows, wrists, and knees. He developed pain and numbness in both arms that was intermittent and depended upon sleeping position. The pain resulted in significant sleep disturbance. Arm strength was significantly reduced and he was unable to open twist-top bottles. His personal trainer noted a loss of strength in the upper body of approximately 75%. Lifting cooking pots and tying shoelaces was difficult.

Over the Christmas holidays the patient found he could no longer

Dr Smith is a clinical professor emeritus in the Department of Psychiatry at the University of British Columbia. Dr Wade is a clinical associate professor in the Division of Rheumatology at the University of British Columbia.

This article has been peer reviewed.

bicycle because of pain in the wrists and weakness in the hands that made braking impossible. Because of joint swelling, rings had to be removed and a watch strap considerably loosened.

The patient's family physician was concerned about viral infection. A referral to neurology and electromyography studies confirmed severe

nisone (5 mg B.I.D.) led to a dramatic and early resolution of symptoms. Physiotherapy was arranged through the local hospital. Laboratory test results were unremarkable, with the exception of a CRP level of 20.6 mg/L (reference range 0.08–3.1 mg/L), which fell to 0.6 mg/L after treatment with prednisone. Subsequently,

A growing body of evidence indicates that viruses and other infectious agents play a role in chronic, inflammatory arthritides such as rheumatoid arthritis.¹ More than 30 microorganisms known to result in significant joint inflammation have been identified, including chikungunya virus. Usually viral arthritis is self-limiting and lasts from a few weeks to several months.

Chikungunya is an RNA alphavirus of the Togaviridae family that can cause chronic and incapacitating arthralgia in humans.

bilateral carpal tunnel syndrome. There was also evidence of a right-sided C7 radiculopathy. No specific cause was identified for the neuropathy. An urgent MRI of the neck was ordered, resulting in an appointment date 9 months later. The patient elected to obtain an MRI privately and the imaging was completed within 48 hours. The MRI of the neck revealed degenerative changes and foraminal narrowing at multiple levels. There was mild stenosis in the spinal canal at C4-C5 and severe right and moderately severe left foraminal stenosis.

In late December the patient began taking naproxen (220 mg Q.I.D.) to minimal effect and was referred to a rheumatologist in early January. Based on the patient's history, infection with chikungunya virus (CHIKV) was suspected. Treatment with pred-

a reactive IgM enzyme immunoassay confirmed the presence of chikungunya antibodies. Results from testing for Zika virus were negative.

The patient has now returned to mostly normal levels of functioning with mild residual numbness in the right thumb. The pre-existing osteoarthritis in both knees has stabilized or improved, likely as a result of physiotherapy.

Discussion

With so many Canadians traveling to tropical areas, physicians must remain aware of the risk posed by mosquito-borne illness, which is increasing around the world. It is important to educate patients, to make an early diagnosis, and to provide effective symptomatic treatment when required.

Chikungunya

Chikungunya is an RNA alphavirus of the Togaviridae family that can cause chronic and incapacitating arthralgia in humans. CHIKV was first isolated in Tanzania in 1952. Since then there has been worldwide spread. Chikungunya has now been identified in more than 60 countries and is considered an important re-emerging public health problem in both tropical and temperate regions. The virus is spread by mosquitoes, typically *Aedes aegypti* or *Aedes albopictus*, the same mosquitoes that spread dengue fever and Zika virus disease.²⁻⁴

In December 2013 the first locally acquired CHIKV infections in the Americas were identified in the Caribbean,^{5,6} and by May 2014 almost 60 000 cases had been reported and the outbreak was still spreading.⁴ In Canada, 320 confirmed cases and 159 probable cases had been diagnosed as of December 2014.⁷ CHIKV has since been reported in many regions of Africa, the Americas, Asia, and the Pacific islands. The United States had 2320 imported cases as of 8 January 2015, and in that year chikungunya became a nationally notifiable condition and jurisdictions are now required to report all cases to the Centers for Disease Control and Prevention.

Diagnosis

The incubation period for CHIKV is 1 to 12 days. The acute phase of the

disease is characterized by the rapid onset of fever and intense asthenia, arthralgia, myalgia, and headache, with maculopapular rash occurring in 40% to 50% of cases. Following the rash, severe myalgias and arthralgias can be so intense that patients have difficulty changing position. The joint pain is typically symmetrical and located in both the arms and legs. Small joints in the vertebral column can be involved to a lesser extent.

Severe chikungunya fever can manifest as encephalitis, myocarditis, hepatitis, and multiorgan failure. Neurological complications can include seizures, encephalopathy, neuropathy, and Guillain-Barré syndrome.

Patients older than 65 and young children, particularly newborns, are at increased risk for severe disease.

Distinguishing chikungunya fever from dengue fever is critical because only the latter can lead to life-threatening hemorrhagic fever, which requires hospitalization of the patient.

Laboratory evidence of recent exposure to chikungunya, dengue, or Zika virus is confirmed by testing serum to detect viral nucleic acid or virus-specific immunoglobulin.

Treatment

There is no specific antiviral therapy for CHIKV infection. Treatment is symptomatic and can include rest, fluids, and the use of nonsteroidal anti-inflammatory drugs (NSAIDs) to relieve acute pain and fever. Persistent joint pain may benefit from the use of NSAIDs, corticosteroids, or physiotherapy.

Prevention

Currently there are no licensed vaccines for use against CHIKV, although numerous candidates are being studied. Specific medications for treating CHIKV infection are also not available.

Prevention and control of chikungunya disease involves insecticidal spraying and management of mosquito breeding sites, as well as bite prevention. Canadians traveling to any tropical area should be informed of the significant risk of mosquito-borne illness and advised to take the following precautions:

- Use mosquito repellent at all times.
- Use air conditioning to stay cool and window or door screens to keep mosquitoes outside.
- Consider sleeping under a mosquito net.
- Empty standing water from containers such as flowerpots and buckets.
- Wear long-sleeved shirts and long pants.
- When using sunscreen and insect repellent together, apply the sunscreen first.
- Treat clothing with permethrin or purchase permethrin-treated clothing.
- Avoid exposure at peak biting times, dawn and dusk (*Aedes aegypti* is a day-biting mosquito species).

The Centers for Disease Control and Prevention website is a good source of additional up-to-date information: www.cdc.gov/chikungunya.

Summary

The case of a 68-year-old patient who recovered after contracting chikungunya fever in Mexico shows the risk posed by mosquito-borne illness. Chikungunya can cause intense asthenia, arthralgia, myalgia, headache, and maculopapular rash. Patients older than 65 and young children are at increased risk for severe disease. Distinguishing chikungunya fever from dengue fever is critical. There are no licensed vaccines for use against CHIKV and no medications for treating chikungunya disease specifically. With so many Canadians traveling to tropical areas, physicians must edu-

cate patients about protecting themselves from mosquito bites and provide effective symptomatic treatment when required.

Competing interests

None declared.

References

1. Mathew AJ, Ravindran V. Infections and arthritis. *Best Pract Res Clin Rheumatol* 2014;28:935-959.
2. Rougeron V, Sam IC, Caron M, et al. Chikungunya, a paradigm of neglected tropical disease that emerged to be a new health global risk. *J Clin Virol* 2015;64:144-152.
3. Harwood PF, Buchy P. Chikungunya. *Rev Sci Tech* 2015;34:479-489.
4. Johansson M, Powers AM, Pesik N, et al. Nowcasting the spread of chikungunya virus in the Americas. *Plos One* 2014;9:e104915.
5. Halstead SB. Reappearance of chikungunya, formerly called dengue, in the Americas. *Emerg Infect Dis* 2015;21:557-561.
6. Weaver SC, Lecuit M. Chikungunya virus and the global spread of a mosquito-borne disease. *New Engl J Med* 2015;372:1231-1239.
7. Public Health Agency of Canada. Travel-related chikungunya cases in Canada, 2014. *Canada Communicable Disease Report*. Volume 41-01. 8 January 2015.

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Canadian Chiropractic Guideline Initiative for effective knowledge translation

Despite existing clinical practice guidelines for optimal management of axial spine pain,¹⁻⁴ the degree of adherence across different health care disciplines varies widely.^{2,5-7} Known gaps between guidelines and routine health care practice reflect a universal need for more effective knowledge translation.^{8,9} Particularly in primary care, effective knowledge translation strategies must consider the constraints faced by busy practitioners, including personal and organizational barriers to change. Targeted clinicians must also be convinced that study patients, from whom the data originate, are sufficiently representative of patients in their real-world practices.

Since knowledge translation often requires changes in clinicians' beliefs and behavior, strategies should be based on explanatory frameworks explicitly recognizing the psychological determinants of behavior change.¹⁰ With this in mind, chiropractic researchers have used the Theoretical Domains Framework (TDF) to inform the design of interventions aimed specifically at changing practice behavior,^{11,12} and encouraging better adherence to neck pain clinical practice guidelines.¹³ In keeping with the TDF approach, chiropractors' beliefs about managing nonspecific neck pain were evaluated and their facilitators and barriers to implementing guidelines in routine practice were identified. These determinants of behavior change were then mapped to key theoretical domains of behavior change. Subsequently, relevant domain-specific

behavior change techniques (from the literature) were selected to incorporate into a comprehensive knowledge translation package.¹³ The proposed intervention includes (but is not limited to) problem-based webinars to promote active learning and enhance knowledge and skills, educational videos by respected opinion leaders to leverage social influence and promote modeling of expert behavior, and evidence summaries and practice tool kits to enhance the environmental context and available resources within private offices. Soon researchers will undertake a carefully designed cluster randomized trial to evaluate the effectiveness of their intervention package.¹⁴

Knowledge translation is a priority of chiropractic policymakers and is supported by every chiropractic regulatory and professional membership organization in Canada. More than a decade ago the Clinical Practice Guidelines Initiative was launched by both the Canadian Chiropractic Association and the Canadian Federation of Chiropractic Regulatory and Educational Accrediting Boards.¹⁵ Its ongoing mission is to improve chiropractic care delivery in Canada through the development, dissemination, and effective implementation of clinical practice guidelines. The initiative recognizes busy clinicians often find it challenging to access the latest scientific evidence, let alone digest and implement it during routine practice. Therefore, through a dedicated website, clinicians are now provided with easy access to information promoting adherence to evidenced-informed practice, and contact information for 22 national chiropractic opinion leaders and more than 100 best-practices collaborators who are available to

meet with private practitioners on demand.¹⁶

An extension of the initiative is the Canadian Chiropractic Practice-Based Research Network, involving partnerships between academic institutions, researchers, and community-based practitioners. In BC, chiropractors participate in systematic data collection while providing evidence-based education, exercises, and manual therapy to patients referred by a medical spine physician or surgeon. This participatory research setting allows investigators to formulate study hypotheses directly informed by experiences of grassroots clinicians while simultaneously engaging and educating clinicians in hypothesis-testing, and knowledge creation and implementation activities.

By definition practice guidelines and research networks aim to define credible benchmarks for care based on the best available scientific evidence, broad consensus among stakeholders, and efficient use of health care resources. In chiropractic, universal support of these initiatives is a significant achievement and testament to the profession's commitment to the principles and objectives of evidence-informed health care.

—Jeffrey A. Quon, DC, MHSc,
PhD, FCCSC
WorkSafeBC Chiropractic
Consultant

References

1. Koes BW, van Tulder M, Lin CW, et al. An updated overview of clinical guidelines for the management of non-specific low back pain in primary care. *Eur Spine J* 2010; 19:2075-2094.
2. Hurwitz EL, Carragee EJ, van der Velde G, et al. Treatment of neck pain: Noninvasive

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- interventions: Results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. *Spine* 2008;33(suppl 4):S123-152.
3. Nordin M, Carragee EJ, Hogg-Johnson S, et al. Assessment of neck pain and its associated disorders: Results of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and Its Associated Disorders. *Spine* 2008;33(suppl 4):S101-122.
 4. Dagenais S, Tricco AC, Haldeman S. Synthesis of recommendations for the assessment and management of low back pain from recent clinical practice guidelines. *Spine J* 2010;10:514-529.
 5. Haldeman S, Dagenais S. A supermarket approach to the evidence-informed management of chronic low back pain. *Spine J* 2008;8:1-7.
 6. Hurwitz EL, Chiang LM. A comparative analysis of chiropractic and general practitioner patients in North America: Findings from the joint Canada/United States Survey of Health, 2002-03. *BMC Health Serv Res* 2006;6:49.
 7. Bussi eres AE, Sales AE, Ramsay T, et al. Practice patterns in spine radiograph utilization among doctors of chiropractic enrolled in a provider network offering complementary care in the United States. *J Manipulative Physiol Ther* 2013;36:127-142.
 8. Grol R. Successes and failures in the implementation of evidence-based guidelines for clinical practice. *Med Care* 2001;39(8 suppl 2):1146-1154.
 9. Schuster MA, McGlynn EA, Brook RH. How good is the quality of health care in the United States? *Milbank Q* 2005;83:843-895.
 10. Grol RP, Bosch MC, Hulscher ME, et al. Planning and studying improvement in patient care: The use of theoretical perspectives. *Milbank Q* 2007;85:93-138.
 11. Michie S, Johnston M, Abraham C, et al. Making psychological theory useful for implementing evidence based practice: A consensus approach. *Qual Saf Health Care* 2005;14:26-33.
 12. Cane J, O'Connor D, Michie S. Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implement Sci* 2012;7:37.
 13. Bussi eres AE, Al Zoubi F, Quon JA, et al. Fast tracking the design of theory-based KT interventions through a consensus process. *Implement Sci* 2015;10:18.
 14. Dhopte P, Ahmed S, Mayo N, et al. Testing the feasibility of a knowledge translation intervention designed to improve chiropractic care for adults with neck pain disorders: Study protocol for a pilot cluster-randomized controlled trial. *Pilot and Feasibility Stud* 2016;2:33.
 15. Bussi eres A. The Canadian Chiropractic Guideline Initiative: Progress to date. *J Can Chiropr Assoc* 2014;58:215-9.
 16. Canadian Chiropractic Association. Guidelines and best practice. Accessed 26 July 2016. www.chiropractic.ca/guidelines-best-practice/.

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ClinicalKey subscription focuses on full-text content in family medicine, psychiatry, internal medicine, orthopedics, pediatrics, obstetrics and gynecology, and emergency medicine.

The ClinicalKey app contains essentially the same content as the web version while offering the convenience of functioning without an Internet connection. Users can browse material or search using the simple, intuitive search box. The breadth of results can be filtered quickly by limiting to formats such as books, articles, or clinical trials, procedural videos, or by specialty. The app also remembers search activity

to facilitate retrieval of previous lists of search results, and content can be placed in a saved-content folder to create a personal archive.

The app is not technically perfect yet; our testing identified some display and search features that do not work consistently. We are in communication with Elsevier's technical services team to improve this resource. For assistance with the ClinicalKey mobile app, please contact the Library at either medlib@cpsbc.ca or 604 733-6671.

— **Karen MacDonell, PhD, MLIS**
Director, Library Services

BCMJ survey: Thank you and congratulations

This past August you may have received an e-mail request to complete a short survey and to tell us what you would like to see in the *BCMJ*. We sent the survey to a random sample set of Doctors of BC members and asked them to provide feedback and be heard, and gave them the option to enter to win a prize. Thank you to everyone who completed the survey—we had an excellent response rate of 24%, spanning family physicians, specialists, and trainees (students and residents) of all ages, both community based and hospital based. Your feedback helps us shape the journal to be relevant for you, and we will be sharing more information about the survey results in upcoming issues.

In appreciation of your feedback we gave away two iPad Pros. Congratulations to our two winners, Dr Brenda Markland and Dr Karen Meathrel, who completed the survey and entered the draw.

If you did not receive the survey but would like to share your thoughts about the journal, send us your comments to journal@doctorsofbc.ca.

Order of Canada recipients

In the September issue of the *BCMJ* we neglected to include the following two additional BC physician appointees to the Order of Canada.

- Dr Dorothy Shaw, Officer of the Order of Canada: Dr Shaw, from Vancouver, BC, was recognized for her contributions as a doctor and administrator who has helped advance women's health care in Canada, and maternal and newborn health globally.
- Dr Geoffrey Battersby, Member of the Order of Canada: Dr Battersby, from Revelstoke, BC, was acknowledged for his contributions as a physician, politician, and community

leader who has encouraged the development of civic, economic, and social initiatives in his region.

Congratulations to Dr Shaw and Dr Battersby.

Congratulations to all 2016 CMA Honorary Membership Award winners

The list of CMA Honorary Membership Award winners included in the July/August 2016 issue of the *BCMJ* is incomplete. There were 13 recipients of the award in 2016, and 6 names were omitted from the list. Thank you to Dr Beverly Spring for bringing this to our attention. Our apologies for the oversight.

Dr Geoff Appleton
 Dr Jean Carruthers
 Dr John Fleetham
 Dr Kenneth Fung
 Dr Peter Konkal
 Dr William McDonald
 Dr Ralph Rothstein
 Dr Anthony Salvian
 Dr Evelyn Shukin
 Dr Beverly Spring
 Dr Paul Thiessen
 Dr Hugh Tildesley, posthumously
 Dr Kenneth Turnbull

Two BC docs recognized by their Alberta alma mater

The University of Alberta Alumni Association has recognized two BC doctors for their contributions to health care and to sport.

Dr Norgrove Penny received a Distinguished Alumni Award for his contributions to health care, education, and international development. After medical school Dr Penny set up Vancouver Island's first sport medicine clinic in Victoria in 1978 and is still a practising orthopedic surgeon today, along with contributing his time to initiatives for children needing orthopedic surgery. Dr Penny also travels overseas to help establish chil-

dren's programs and to train orthopedic surgeons in developing countries.

Dr Jeffrey Zorn has been inducted into the University of Alberta Sports Wall of Fame for his accomplishments as an outstanding student athlete. As a Golden Bears hockey player, Dr Zorn was named a Canadian Interuniversity Sport (CIS) All-Canadian four times and a CIS Academic All-Canadian five times, among other accolades recognizing his contributions to sport, academics, and community involvement. Dr Zorn is a urologist in Courtenay, BC. His interest in surgical volunteer work abroad has recently taken him to Guatemala.

Private wide area network technical support available

Doctors who are making changes to technology in their offices or accessing a new private wide area network (the private physician network: PPN) are encouraged to contact the Doctors Technology Office for technical support focused on understanding the PPN and how to maximize performance issues and reduce security risks. The PPN is a private wide area network managed by BC Clinical and Support Services. A private network allows greater control, security, and reliability than a standard Internet connection.

Common technical frustrations that doctors encounter are often related to connectivity issues. For example, setting up a wireless router without a complete understanding of what the PPN can do will introduce performance anomalies such as random disconnection to your EMR vendor. Sharing your private network with patients may also expose the network to security issues. For more information about how to optimize PPN performance, visit www.doctorsofbc.ca/technical-bulletins.

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STI testing and cervical cancer screening: Need for continued STI screening among young people in the era of new cervical cancer screening guidelines

In June 2016 the BC Cancer Agency released updated recommendations for cervical cancer screening.¹ The age to initiate cervical cancer screening has increased to 25 years, and the routine screening interval has increased from 2 to 3 years. This is consistent with changes being made globally in response to clinical evidence demonstrating that screening in younger women is ineffective and is an unnecessary burden on health care systems. The updated screening recommendations are strongly supported by provincial leadership; however, these new guidelines may have unintended consequences if they lead to a delay in engagement in health care for young women under 25 years of age.

Screening for sexually transmitted infection (STI) has traditionally been offered concurrent with cervical cancer screening in young women. By starting cervical cancer screening at a later age there would likely be decreased STI screening rates among young women in BC. This trend was observed in Ontario by Bogler and colleagues,² where a 60% decrease in Pap testing was seen, along with a 50% decrease in screening for chlamydia and gonorrhoea, following updated cervical cancer screening guidelines. The current Canadian Guidelines on Sexually Transmitted Infections recommend STI screening for any patient who reports risk factors for infection.³ Key components captured in the STI risk assessment are sexual activity, number of partners, contraception use (including condoms), STI history, presence of symptoms, pregnancy history, and substance use. Young people, particularly women under the age of 25, experience high rates of STIs, especially gonorrhoea and chla-

mydia, with the latter having its highest overall rates in this group.^{4,5} It is critical that health care providers find alternative ways to ensure STI screening is offered to at-risk women in the absence of cervical cancer screening.

Primary care providers should offer STI risk assessment and screening to sexually active women under the age of 25 at all clinically appropriate encounters.

Opportunities for STI screening among young people

Primary care providers should offer STI risk assessment and screening to sexually active women under the age of 25 at all clinically appropriate encounters, consistent with Canadian guidelines,³ and the BC Lifetime Prevention Schedule.⁶ Ideal opportunities to perform an STI risk assessment and STI screening are when young women consult health care providers for contraceptive advice, reproductive health, sexual health, human papillomavirus (HPV) vaccination, or family planning.

Beyond the need for health care providers to encourage screening, there are opportunities for public health to promote engagement. The BC Centre for Disease Control (BCCDC) provides provincial leadership and guidance around STI clinical service delivery. This includes STI treatment guidelines, monitoring disease rates and trends provincially, as well as ongoing evaluation of ac-

cess and uptake of STI screening. The BCCDC is committed to enhancing access to sexual health and STI screening in the province through low-threshold clinics, anonymized testing, effective use of electronic medical records, innovative service delivery models such as GetChecked Online (<https://getcheckedonline.com>), text message reminders for screening, and online tools such as the SmartSexResource (<http://smartsexresource.com>).

Programs should also consider opportunities afforded by innovative and novel interventions that improve access to screening, including self-collection, where participants can take their own sample at home using a swab that can be sent by mail for STI screening. A recent systematic review demonstrated that self-collected sampling for chlamydia and gonorrhoea through home-based screening had similar sensitivity and specificity when compared to clinician-collected samples.⁷ Self-collection based screening is not intended to replace routine clinical care; however, it is a highly acceptable and effective alternative for those who are unable or unwilling to undergo a clinical examination.

Though the new recommendations for cervical cancer screening in BC will allow women to continue receiving optimal, evidence-informed care, it is important to ensure that potential gaps in care—such as missed opportunities for STI screening—are mitigated. Under the provincial leadership of the BCCDC and the BC Cancer Agency's Cervical Cancer Screening Program, primary health care providers can be key partners in ensuring that at-risk women continue to be screened for STIs.

—Dirk van Niekerk, MD
—Troy Grennan
—Gina Ogilvie, MD

This article is the opinion of the BC Cancer Agency and has not been peer reviewed by the BCMJ Editorial Board.

References

1. BC Cancer Agency Cervical Cancer Screening Program. Cervical cancer screening policy change: Frequently asked questions. 2016 reference guide supporting healthcare professionals in communicating screening information to patients. Accessed 8 August 2016. www.bccancer.bc.ca/screening/Documents/CCSP_GuidelinesManual-CervicalCancerScreeningPolicyChangeReferenceGuide.pdf.
2. Bogler T, Farber A, Stall N, et al. Missed connections: Unintended consequences of updated cervical cancer screening guidelines on screening rates for sexually transmitted infections. *Can Fam Physician* 2015;61:e459-466.
3. Public Health Agency of Canada. Canadian guidelines on sexually transmitted infections. Accessed 8 August 2016. www.phac-aspc.gc.ca/std-mts/sti-its/cgsti-lcits/index-eng.php.
4. Public Health Agency of Canada. The Chief Public Health Officer's report on the state of public health in Canada, 2013: Infectious disease—the never-ending threat. Sexually transmitted infections—a continued public health concern. Accessed 10 August 2016. www.phac-aspc.gc.ca/cphorsphc-resp-cacsp/2013/sti-its-eng.php.
5. BC Centre for Disease Control. STI in British Columbia: Annual surveillance report 2014. Accessed 10 August 2016. www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/STI/STI_Annual_Report_2014-FINAL.pdf.
6. Office of the Provincial Health Officer. Lifetime prevention schedule. Accessed 25 August 2016. www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/current-health-topics/lifetime-prevention.
7. Lunny C, Taylor D, Hoang L, et al. Self-collected versus clinician-collected sampling for chlamydia and gonorrhoea screening: A systemic review and meta-analysis. *PLoS One* 2015;10:e0132776.

BC at GC: Home sweet home

Last year I wrote about the ways that your colleagues represented you and Doctors of BC at the Canadian Medical Association General Council in Halifax. This year we had the pleasure of hosting the “Medical Parliament of Canada” in Vancouver as Dr Granger Avery from Port McNeill was installed as president of the Canadian Medical Association.

As usual, Doctors of BC was one of the most active delegations. Supported by our expert policy team of Helen Thi and Deborah Viccars, we proposed many motions that were then voted into national policy on important issues such as immunization, climate change, resident and student health, indigenous health, and health care reform. Videos on most of these motions can be seen at https://m.youtube.com/user/CanadianMedicalAssoc/videos?shelf_id=14&sort=dd&view=0.

Your Doctors of BC president, Dr Alan Ruddiman, welcomed General Council and set a tone of unity and respect by acknowledging the difficulties faced by doctors in different provinces and the need to focus on the common goal of providing the best care. We also heard from British Columbia's Minister of Health, the Honourable Dr Terry Lake, and federal Minister of Health, the Honourable Dr Jane Philpott, who both reciprocated Dr Ruddiman's invitation by affirming their willingness to collaborate with doctors.

Another theme of General Council was the need to better support and empower those in the first 15: medical students, residents, and early-career physicians. Indeed, the Doctors of BC caucus was one of the most diverse in the 149 years of General Council with 10 of the 33 delegates coming from the first-15 group. They spoke eloquently and passionately and provided unique perspectives on important issues.

I have seen our young colleagues and the future is bright.

Next year will be the 150th General Council of the Canadian Medical Association and it will be held in Quebec City. Watch for calls to apply to be part of the Doctors of BC delegation. Also check your inbox in upcoming months for calls for nominations to recognize colleagues and mentors for national awards.

As always, we welcome your input and hope that you continue to be part of our efforts to promote improved health for all. When it comes to improving health policy, we are better together.

—Eric Cadesky, MD, CM
Chair of the General Assembly,
Doctors of BC

Seeking nominations for Doctors of BC 2017 awards

Doctors of BC is calling for nominations of members in good standing for the following 2017 awards.

Doctors of BC Silver Medal of Service

Criteria for nominees include any of the following:

- Long and distinguished service to Doctors of BC.
- Outstanding contributions to medicine or medical/political involvement in British Columbia or Canada.
- Outstanding contributions by a layperson to medicine or to the welfare of the people of British Columbia or Canada.

The closing date for nominations is 30 November 2016 at 11:59 p.m. For more information, visit www.doctorsofbc.ca/resource-centre/awards-scholarships.

Don B Rix Award for Physician Leadership

Candidates for this award may have achieved distinction in areas such as:

- Supporting lifelong learning

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- opportunities.
- Promoting excellence in medical education.
- Providing leadership for new initiatives both in business and clinical practice.
- Providing leadership and service to the general community or province either by direct support or through philanthropy.
- Building consensus among physicians and physician groups.

Online resource simplifies billing codes

The Society of General Practitioners of BC (SGP) has created an online resource to streamline the billing process for physicians. The SGP Simplified Guide to Fees organizes fees into 20 categories including:

- Recently updated fees
- GPSC fees
- MSP in-office: visits and exams
- Procedures, injections, and labs
- Obstetrics
- Mental health
- Residential care
- Telehealth
- WorkSafeBC
- ICBC and OSMV

For more information about how

to access this resource, contact the Society of General Practitioners at 604 638-2943 or sgp.office@doctorsofbc.ca.

Transitioning patients to the Modernized Reference Drug Program

The Reference Drug Program (RDP) will be modernized as of 1 December 2016, and associated information packages were mailed to all BC physicians this summer. If you did not receive a package call Health Insurance BC (1 866 905-4912) to request a print copy, or access the information online at www.gov.bc.ca/pharmacare/rdp-pro.

To secure uninterrupted coverage for your patients, Pharmacare encourages physicians to identify patients who are taking a drug that will not be fully covered by the Modernized RDP and, if appropriate, to switch those patients to a fully covered reference drug before 1 December 2016.

In September, Pharmacare sent letters to all patients who are taking drugs that will not be fully covered as of 1 December 2016 and who have not yet been switched to a fully covered drug. The letters advise patients to contact their physician or pharma-

cist if they rely on Pharmacare coverage.

If you have questions about changes to the RDP or its impact for a specific patient, call 1 866 905-4912. Staff are available to answer questions 24 hours a day, 7 days a week.

CareCard to be retired in February 2018

The CareCard is being replaced by the BC Services Card, a secure credential with features to protect identity, improve patient safety, and help avoid fraud and misuse of health care services.

If a patient presents a CareCard for health services after February 2018, the patient must also provide one piece of photo ID or two pieces of ID along with their personal health number. It is the duty of the health care provider to verify Medical Services Plan (MSP) coverage prior to charging the patient for health care benefits. Other Canadian jurisdictions are being directed to not accept the BC CareCard as evidence of enrollment in MSP.

For more information on the BC Services Card visit www2.gov.bc.ca/gov/content/governments/government-id/bc-services-card.

Pulsimeter continued on page 472



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Continued from page 470

Crohn disease discovery

Scientists from the University of British Columbia discovered a mutation that prevented mice from developing fibrosis after they were infected with a type of salmonella that mimics the symptoms of Crohn disease. The discovery could lead to treatments for a debilitating complication of the disease. The mutation had switched off a hormone receptor responsible for stimulating part of the body's immune response.

Co-author Kelly McNagny, professor of medical genetics and co-director of the UBC Biomedical Research Centre, identified that scientists found what they think are the inflammatory cells that drive fibrosis, adding that the gene that was defective in those cells is a hormone receptor, and that there are drugs available that may block that hormone receptor in normal cells and prevent fibrotic

disease. McNagny and colleagues are hopeful that their discovery could also be applied to other types of tissue that experience fibrosis, potentially blocking complications of age-related fibrotic diseases by dampening these particular inflammatory cell types. Liver cirrhosis, chronic kidney disease, scarring from heart attacks, and muscle degeneration all result in tissue fibrosis. The researchers' next step will be to test drugs to discover if they can stop or reverse fibrosis in mice.

The research, "The orphan nuclear receptor ROR alpha and group 3 innate lymphoid cells drive fibrosis in a mouse model of Crohn's disease," is published in the September 2016 issue of *Science Immunology* and is available online at <http://immunology.sciencemag.org/content/1/3/eaaf8864>.

Watch a video with more information about the discovery on bcmj.org.

A virtual scalpel for UBC medical students

For the first time, first-year medical students at the University of British Columbia will be using a touch-screen table that displays detailed images of internal anatomy that can be rotated, enlarged, and sliced open. The anatomy visualization table will be used with traditional anatomical dissections to teach first-year medical students about human anatomy and the medical conditions they are likely to encounter as physicians. The device also will familiarize students with the radiological images that have become a core tool in the diagnosis and treatment of patients.

The 500-pound, five-foot by three-foot table displays primarily CT scans of the entire body, including bones, muscles, organs, and connective tissue. Instructors can customize the table's images for the lessons they want to convey, showing anonymized patients with diseases and injuries that are deemed particularly relevant to the curriculum and to the practice of medicine.

The table will be used in UBC's gross anatomy lab in conjunction with traditional teaching through dissection. Groups of students will take turns with the device, moving from their dissection tables to the touch-screen device and back again.

Visit bcmj.org to watch a video about how the anatomy visualization table works.

Noninvasive technique to monitor migraines

Amplified EEGs can produce diagnostic results of a brainwave associated with migraines and epilepsy that are comparable to the current, more invasive, standard. The discovery could lead to better treatment and diagnosis of these conditions.

The low-frequency brainwave linked to migraines and epilepsy, cortical spreading depression (CSD), is currently best studied by placing elec-


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trodes directly on the surface of the brain. Researchers from UBC, Germany, and Iran have found that EEGs—produced by placing electrodes only on the scalp—can produce equally reliable data if a specially designed amplifier is used in tandem. The electrical signals acquired from the skin of the scalp were very similar to those acquired from the surface of the brain.

An AC/DC amplifier was designed to acquire electrical signals from scalp electrodes used on anesthetized rats in a much broader frequency range than the standard clinical EEG system. CSD was then induced in the rats, and the recordings from scalp electrodes were compared with recordings from electrodes placed on the rats' brains.

Researchers believe the new analysis technique could contribute to the development of migraine drugs that target CSD, and to better understanding, diagnosing, and treating migraines, epilepsy, and other neuro-

logical conditions such as stroke and traumatic brain injury.

The study is a joint research program between UBC, the University of Münster, and Shefa Neuroscience Research Center and Mashhad University of Medical Sciences in Iran. A paper describing the results was published in July 2016 in *Neuroscience*. Contact lou.bosshart@ubc.ca to request a copy.

Synthetic heart valves to help improve surgical skills

UBC researchers have developed synthetic heart valves, arteries, and veins made of polyvinyl alcohol hydrogel that resemble human tissue. The polyvinyl tissue makes it possible for surgeons and medical residents to practise bypass surgery techniques using the synthetic material rather than arteries and veins from dead pigs or human cadavers, which can break down quickly if they are not treated with preservatives and which feel dif-

ferent than living human tissue. The synthetic material can be created safely and cheaply, does not decompose, cannot be contaminated, and feels like living human tissue.

The synthetic tissue was invented by Professor Hadi Mohammadi and Dr Guy Fradet, who are both affiliated with UBC's Faculty of Medicine.

The invention is currently being used for teaching purposes by a number of surgeons and medical residents at Kelowna General Hospital to practise bypass surgery on actual hearts harvested from pigs. The next step will be to create a synthetic heart with the material.

The research, "Simulation of anastomosis in coronary artery bypass surgery," was published in *Cardiovascular Engineering and Technology* and is available online at <http://link.springer.com/article/10.1007/s13239-016-0274-x>.

Learn more about the synthetic tissue in a video available on bcmj.org.



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Your membership in the Section of Clinical Faculty allows us to inform you of progress on issues such as:

- How to assure clinicians are supported to provide excellent teaching?
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- Is teaching required for hospital privileging?
- Is teaching required for access to O.R. time?
- Does your UBC academic rank determine your clinical income? If so, why? If not so, will it be so in future?

In order to help you, we need you to become a member of SCF.

Your first year of membership is free, and \$50/year thereafter. Sign up via Doctors of BC website or the Section website:

<http://www.ucfa.ca/how-to-join>

MEDICAL LEGAL CONF

Vancouver, 21 Oct (Fri)

Examine an eclectic array of medical and legal issues! Attend the conference at the Pan Pacific Hotel or via live webinar. Examine an eclectic array of current and ongoing medical and legal issues for lawyers, legal support staff, doctors, and nurses. On the legal side, the medical dimension arises when there are injured parties and claims in the context of accidents, occupational health, and medical care. At this course you will learn about the current state of the law with medical assistance in dying, how to effectively prepare expert evidence in litigation, the complex issues around the prescription of opioids, how to manage medical legal matters in litigation, medical and legal causation, and much more. Who should attend: lawyers, personal injury litigators, litigation legal support staff, doctors, and nurses. Course chairs: Dr Garry Feinstadt, physician and surgeon, Vancouver, and Mr Paul T. McGivern, Pacific Medical Law, Vancouver. Early bird pricing (until 23 Sep 16): Live webinar: \$485; live course: \$575. Further information and registration at www.cle.bc.ca/onlinestore/productdetails.aspx?cid=1306&utm_source=CLEBC+Staff+Members&utm_campaign=fe0cb6e5af-MedicalLegalConf_Aug5%2F16&utm_medium=email&utm_term=0_5923440f7a-fe0cb6e5af.

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World—Grand Floridian Resort (19–21 Dec); Mexico—Iberostar Mayan Riviera (18–20 Jan), Bahamas—Atlantis Resort (9–11 Feb 2017); Las Vegas—Aria Resort (15–17 Feb); Whistler—Delta Whistler Village Suites (20–22 Mar); Maui—Sheraton Ka'anapali (27–29 Mar); Kauai—Grand Hyatt (10–12 Apr 2017); South Pacific cruise—*Paul Gauguin* (15–29 Apr 2017); Mediterranean cruise—*Celebrity Reflection* (9–20 Oct 2017). CBT Canada, now 20 years old, is a national winner of the CFPC's CME Program Award and was the first organization authorized to provide 3-credit-per-hour CME. Lead faculty Greg Dubord, MD, has given over 300 CBT workshops and is a recent University of Toronto CME Teacher of the Year. For details and to register visit www.cbt.ca or call 1 877 466-8228. Look for early-bird deadlines.

SEMP COURSE

Vancouver, 27 Oct (Thu)

The Simulation Assisted Emergency Medicine Procedures course allows physicians to acquire, review, and practise their skills in essential life-saving emergency procedures. Before the course, students will have access to web-based learning modules to complete the self-directed learning. The hands-on portion of the course at the Centre of Excellence for Surgical Education & Innovation, Vancouver General Hospital, 3602–910 W.10 Ave., will have experienced instructors demonstrating the procedures and supervising the students as they practise on animal and realistic plastic models. Students will have the opportunity to integrate performance of these procedures into the real-time resuscitation of a critically ill patient using the latest human patient simulator technology to create realistic scenarios. Maximum course capacity: 24 participants. Target audience: Emergency physicians and rural

physicians. Accreditation: up to 15 Mainpro-M1/MOC Section-3 credits. Register at ubccpd.ca/course/SEMP-Oct27-2016. Tel 604 875-5101, e-mail cpd.info@ubc.ca.

UGEMP COURSE

Vancouver, 28 Oct (Fri), 18 Nov (Fri)

The use of bedside ultrasound by clinicians to guide invasive emergency and critical care procedures improves success and reduces complications, and is rapidly becoming established as the standard of care. The Ultrasound Guided Emergency Medicine Procedures course will be held at the Centre of Excellence for Surgical Education & Innovation, Vancouver General Hospital, 3602–910 W. 10 Ave. Pre-course work includes web-based learning modules to complete the self-directed learning. Human models will allow for demonstration of human surface landmarks, and ultrasoundable task-trainers that simulate the tactile feel of human tissue will allow for the repeated practice of invasive procedures without harming the human models. Formative evaluation in the form of immediate feedback provided by the instructor will help the students to monitor their progress and guide their learning. Maximum course capacity: 24 participants. Target audience: Emergency, rural, intensive care, and family physicians, pediatricians, anesthesiologists, trauma physicians, residents, IMGs. Accreditation: up to 15 Mainpro-M1/MOC Section-3 credits. Register for 28 Oct at <http://ubccpd.ca/course/UGEMP-Oct28-2016> and for 18 Nov at <http://ubccpd.ca/course/UGEMP-Nov18-2016>. Tel 604 875-5101, e-mail cpd.info@ubc.ca.

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Richmond, 4–6 Nov (Thu–Sun)

Come check out the conference for health care professionals at the Radisson Hotel, our new venue in Richmond, close to the Canada Line station! Building on the success of our new 3-day format, this year's agenda includes presentations designed for family physicians, allied health professionals, podiatrists, and other health care professionals who have an interest in recent advances in diabetes. Featured topics: Diabetes and the elderly; Ambulatory glucose monitoring/CGMS; Combination therapy: Does 1 + 1 equal 3; Economics of diabetic foot complications: Importance of risk reduction; How to discuss obesity—A family physician's perspective. A public health fair has been scheduled for Sunday, 6 November, at the same venue. Conference registration, information, program details, and online registration are available at www.ubccpd.ca. Tel 604 875-5101, fax 604 875-5078, e-mail cpd.info@ubc.ca.

BLEEDING AND THROMBOSIS Vancouver, 17 Nov (Thu)

The Centre for Blood Research at the University of British Columbia is hosting the 10th annual Earl W. Davie Symposium at the Segal Building, 500 Granville St. This 1-day event in honor of the discoverer of the coagulation cascade, features presentations by experts in vascular biology, hemostasis-thrombosis, inflammation, cardiovascular and neurovascular disease, and facilitates knowledge exchange between researchers and physicians. This symposium will focus on cutting edge advances in the understanding and treatment of hemophilia, thrombosis, and bleeding disorders. Highlights of the symposium include keynote presentations by Drs Nigel S. Key and John W. Wiesel, a lineup of leading local and international speakers, talks by patients, and selected oral and poster presentations by students at all levels of training. Accreditation: RCPSC MOC Section 1 credits (pending). Fees: \$99 (professionals); \$49 (students). Registration: <http://cbr.ubc.ca/events/earl-w-davie-symposium>.

FP ONCOLOGY CME DAY

Vancouver, 19 Nov (Sat)

The BC Cancer Agency's Family Practice Oncology Network invites family physicians and primary care professionals to attend its annual Family Practice Oncology CME Day certified by the College of Family Physicians of

Canada and the BC Chapter for up to 6.5 Mainpro+ credits. Attendees will gain up-to-date oncology knowledge and build useful cancer care connections. The session will take place at the Child & Family Research Institute at BC Children's Hospital in Vancouver and provides an effective way to learn about new oncology resources and support in BC. Register now at www.fpon.ca. For more information contact Jennifer Wolfe, jennifer.wolfe@bccancer.bc.ca or 604 219-9579.

ESSENTIAL MEDICAL-LEGAL TOOLKIT

Vancouver, Various dates

This program is suitable for family physicians and specialists and will be held at UBC Robson Square. Medical Legal Reports: The Essentials, will be held 9 a.m. to 4 p.m., 26 Nov (Sat), and 25 Feb (Sat). If writing medical legal reports causes you stress, if you are not sure what to write when asked about prognosis, unsure of what to do about patients' subjective complaints, or how much you should be billing for your reports, then this is the course you want to attend. Medical Legal Reports Advanced and Testifying in Court: Becoming a Great Expert, will be held 9 a.m. to 4 p.m. on 4 Mar (Sat) and will provide advanced training on writing more complex medical legal reports and provide tips on how to reduce stress while testifying in court.

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**MINDFULNESS IN MEDICINE—FOUNDATIONS OF THEORY AND PRACTICE
Brentwood Bay Resort, 2–4 Dec**

As chronic stress and its associated mental and physical health challenges continue to rise in epidemic proportions, the application of mindfulness in clinical practice settings has gained prominence both in terms of evidence-based research and in the popularity of its use. Join us for this 3-day experiential workshop on mindfulness and meditation as it relates to the unique challenges and blessings of our work as physicians. Learn about the latest clinical evidence and neuroscience on mindfulness in medicine, find out about programs offered throughout BC and Canada, and explore practical meditation tools for yourself and for your patients. Accreditation: 32 cert + group learning credits. Visit drmarksherman.ca for more info or contact info@drmarksherman.ca to register.

**GP IN ONCOLOGY TRAINING
Vancouver, 20 Feb–3 Mar (Mon–Fri), and 11 Sep–22 Sep 2017 (Mon–Fri)**

The BC Cancer Agency’s Family Practice Oncology Network offers an 8-week General Practitioner in Oncology training program beginning with a 2-week introductory session every spring and fall at the Vancouver Centre. This program provides an opportunity for rural family physicians, with the support of their community, to strengthen their oncology skills so

that they may provide enhanced care for local cancer patients and their families. Following the introductory session, participants complete a further 6 weeks of customized clinic experience at the cancer centre where their patients are referred. These can be scheduled flexibly over 6 months. Participants who complete the program are eligible for credits from the College of Family Physicians of Canada. Those who are REAP-eligible receive a stipend and expense coverage through UBC’s Enhanced Skills Program. For more information or to apply, visit www.fpon.ca, or contact Jennifer Wolfe at 604 219-9579.

**HAWAIIAN CME: MAUI/KAUAI
Maui, 27–29 Mar 2017 (Mon–Wed),
Kauai, 10–12 Apr 2017 (Mon–Wed)**

Aloha! Please join us in the happiest American state next spring for award-winning CME in medical cognitive behavior therapy—Medical CBT: Ultra-brief techniques for real doctors. The Maui workshop (CBT for Depression/Happiness) will be held at the idyllic Sheraton Maui on Ka’anapali Beach. With 23 acres of lush Hawaiian grounds, you’ll never feel crowded! Maui has been voted best island by the readers of *Condé Nast Traveler* for more than a dozen years. Attractions include 10 000 foot Hale’akala (Hawaiian for house of the sun), 14 golf courses (including some of the world’s top-rated), the scenic road to Hana, the Seven Sacred Pools of Oheo, and over 500 restaurants. The Kauai workshop—CBT Tools, will be held at the spectacular Grand Hyatt on sunny Poipu Beach. The Grand Hyatt Kauai is ranked among the world’s top resorts by both the *Condé Nast Traveler* and *Travel+Leisure*. Kauai is the most tranquil and pristine of the main Hawaiian Islands, with beaches fringing nearly 50% of its tropical coastline. Attractions include the world-famous Kalaulua Trail on the Napali Coast, red-rocked Waimea Canyon, 17-mile Polihale Beach

(Hawaii’s longest), crescent-shaped Hanalei Bay, and Hawaii’s only navigable river, the Wailua. See www.cbt.ca for details about both the Maui and Kauai workshops. Warning: Our significantly discounted guestrooms for these two workshops will sell out far in advance.

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Driving stoned: Marijuana legalization and drug-impaired driving

After alcohol, marijuana is the most frequently detected drug in crash-involved drivers. The Canadian government has indicated its intention to legalize marijuana for recreational use in 2017, and while many Canadians support this initiative some American studies indicate that marijuana legalization may adversely impact road safety. Since 2012 a growing number of American states have legalized the use of marijuana for recreational or medical and therapeutic use.

Canadian discussions around the legalization of marijuana must include a clear-headed assessment regarding the impact of legalization on road safety. We must create a scientifically sound and fair approach toward drug-impaired driving, and develop appropriate standards and penalties to enforce any new laws.

So far, postlegalization, motor vehicle fatality statistics in the US are sobering. In Washington State, fatal crashes among drivers who tested positive for marijuana doubled from 8% in 2013 to 17% in 2014.¹ In Colorado the number of drivers in fatal crashes who tested positive for marijuana without other drugs in their system tripled between 2005 and 2014 from 3.4% to 12.1%.²

Driver impairment from marijuana use may be different than alcohol use. Detrimental effects of marijuana vary in a dose-related fashion and are more pronounced in affecting the highly automatic functions of driving rather than complex tasks that require conscious control, as is the case for alcohol.³ Cannaboid receptors are found in the amygdala, basal ganglia,

and cerebellum of the brain. Marijuana has been shown to negatively impact peripheral vision, awareness of the passage of time, motor control, and balance. Marijuana also affects the prefrontal cortex, the home for executive function. Driving is an exercise in timing, multitasking, and situational awareness, all functions adversely impacted by marijuana. It should be noted that unlike drivers under the influence of alcohol, marijuana users tend to be aware of their impairment, exhibit greater caution, and drive more slowly, although this may not adequately compensate for the impairments discussed above.

The most common standard used to define marijuana-impairment is

5 ng/mL, but legal levels vary significantly between American states. Marijuana's main psychoactive ingredient, THC, is fat soluble, making it difficult to connect a person's current state of impairment to a blood level. Blood levels will vary depending on a number of factors, including whether the individual is a chronic or occasional user. Similar to alcohol levels, Washington State's decision to use 5 ng/ml to define impairment is more of an administrative standard than a scientific one.

To date there is limited evidence supporting the 5 ng/mL standard. First, research from Australia demonstrates that chronic users of cannabis

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are unlikely to register higher than 5 ng/mL 24 hours following ingestion.⁴ This diminishes the chance that unfair convictions would occur for those who have consumed cannabis more than a day before. Second, this research suggests that drivers below 5 ng/mL have twice the incidence of fatal accident involvement while drivers above the 5 ng/mL threshold have more than 6 times the incidence of fatal accident involvement.

Roadside breath testing for marijuana may become a reality for law enforcement but further testing for such devices is required. Through analysis of active THC, testing devices may be able to detect recent cannabis ingestion. This could assist a zero-tolerance enforcement program but would still lack the ability to define degrees of impairment.

Robust scientific evidence and practical roadside testing tools to precisely measure marijuana impairment for drivers are not yet available. Until these are available, road-side sobriety testing by properly trained officers will continue to be the method by which marijuana-impaired drivers are removed from our roads. Police officers in some American states may order drivers to undergo blood testing at a hospital to measure blood levels; however, the practicality of such tests is questionable due to the cost and time required for them. As we proceed to legalize marijuana, it will be imperative for federal and provincial governments to fully consider and appropriately mitigate the risks of marijuana-impaired driving.

—Chris Rumball, MD
Chair, Emergency Medical Services Committee

References

1. Tefft BC, Arnold LS, Grabowski JG, AAA Foundation for Traffic Safety. Prevalence of marijuana involvement in fatal crashes: Washington, 2010–2014. Accessed 16 August 2016. www.aaafoundation.org/prevalence-marijuana-use-among-drivers-fatal-crashes-washington-2010-2014.
2. Colorado Department of Transportation. Drugged driving statistics. Accessed 9 August 2016. www.codot.gov/safety/alcohol-and-impaired-driving/drugged-driving/drugged-driving.
3. Sewell RA, Poling J, Sofuoglu M. The effect of cannabis compared with alcohol on driving. *Am J Addict* 2009;18:185-193.
4. Drummer OH, Gerostamoulos J, Batziris H, et al. The involvement of drugs in drivers of motor vehicles killed in Australian road traffic crashes. *Accid Anal Prev* 2004;36:239-248.



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Full-service East Abbotsford walk-in clinic requires locum physicians for a variety of shifts including weekends and evenings. Generous split: pleasant office staff and patient population. Please contact Cindy at 604 504-7145 if you are interested in obtaining more info.

KAMLOOPS—HOSPITALISTS

Royal Inland Hospital, a 246-bed tertiary hospital and referral centre, is seeking permanent full-time physicians to join our collegial hospitalist service. You will provide general medical care of hospitalized adult patients and co-management of surgical and psychiatric patients. The hospitalist service is supported by a complement of specialty services including anesthesia, general internal medicine, general surgery, orthopedics, psychiatry, radiology, and urology. Opportunity to teach. Income of \$244 200 supported through a service contract with on-call stipend and no overhead. For more information e-mail physicianrecruitment@interiorhealth.ca or visit www.betterhere.ca.

KELOWNA—HOSPITALISTS

Kelowna General Hospital, a tertiary hospital and referral centre with 400 beds, is seeking permanent full-time and part-time physicians to join our progressive hospitalist service. You will provide general medical care of hospitalized adult patients, and co-management of surgical and psychiatric patients. The hospitalist service is supported by a complement of specialty services including anesthesia, general internal medicine, general surgery, ortho-

edics, psychiatry, radiology, urology, and oncology. Income of \$244 200 supported through a service contract with on-call stipend and no overhead costs. For more information e-mail physicianrecruitment@interiorhealth.ca or visit www.betterhere.ca.

LILLOOET—FP

Five-physician, unopposed fee-for-service practice seeks sixth family physician with ER skills. Clinic group focus is on balancing work and lifestyle. Easy access to Lower Mainland, Whistler, and Interior of the province. Call is currently 1 in 5. Regular schedule includes 1 week off every fifth week. Full rural physician recruitment and retention benefit eligibility, including 38 days of rural locum coverage for holidays. World-class wilderness at your doorstep for skiing, hiking, fishing, white-water kayaking, and mountain biking. Full-service rural hospital with GP surgeon and anesthesiologist on staff. For more information e-mail physicianrecruitment@interiorhealth.ca or visit www.betterhere.ca.

MERRITT—FP

Rolling hills, sparkling lakes, and over 2030 hours of sunshine every year make Merritt a haven for four-season outdoor recreation. We have a need for family physicians in their choice of clinic. Nicola Valley Hospital and Health Centre is a 24-hour level-1 community hospital with a 24-hour emergency room. Royal Inland Hospital in Kamloops is a tertiary-level hospital located only 86 km away. Remuneration is fee-for-service (\$250 000 to \$450 000-plus per year), rural retention incentives and on-call availability payment. For more information e-mail physicianrecruitment@interiorhealth.ca or view online at www.betterhere.ca.

N VANCOUVER—FAMILY PHYSICIANS WELCOME

Family practice/walk-in seeking F/T or P/T physicians. Spacious, Oscar EMR, Wi-Fi. Located near SeaBus. Convenient to downtown Vancouver. Offering highest splits on North Shore (up to 72.5%). No OB or ED mandatory. Flexible hours. Great staff. Contact Francis: e-mail fhvala@gmail.com.

N VANCOUVER—FP LOCUM

Physician required for the busiest clinic/family practice on the North Shore! Our MOAs are known to be the best, helping your day run smoothly. Lucrative 6-hour shifts and no headaches! For more information, or to book shifts online, please contact Kim Graffi at kimgraffi@hotmail.com or by phone at 604 987-0918.

NANAIMO—GP

General practitioner required for locum or permanent positions. The Caledonian Clinic is located in Nanaimo on beautiful Vancou-

ver Island. Well-established, very busy clinic with 26 general practitioners and 2 specialists. Two locations in Nanaimo; after-hours walk-in clinic in the evening and on weekends. Computerized medical records, lab, and pharmacy on site. Contact Ammy Pitt at 250 390-5228 or e-mail ammy.pitt@caledonianclinic.ca. Visit our website at www.caledonianclinic.ca.

NEW WEST—FAMILY PHYSICIAN

New Westminster: Columbia Square Medical Clinic is looking for a family physician for a full- or part-time position. Partnership and options to buy are available. Flexible hours, competitive split. The clinic is newly renovated with bright rooms, Oscar EMR, excellent friendly and efficient staff, 20 minutes from downtown Vancouver. We have 800 families waiting for a family doctor who wants to establish a permanent practice or work part-time. Considering a change of location or practice style? Call Irina at 778 886-6511 or e-mail irina.paynemd@gmail.com.

NORTH DELTA—GENERAL PRACTITIONER

Very busy, established family practice located on Scott Road. The practice consists mainly of Punjabi-speaking patients. Two spacious exam rooms plus a private office available for the physician. Underground parking. No set-up fees or equipment required. Everything is included in the billing split (80/20). Potential to earn 400K per year. Physician may decide their own schedule. Each exam room is fully equipped with everything required. EMR: Med Access. Very friendly medical office assistant and office manager. For more information contact Dr Jagtar Rai at raimedicalclinic@gmail.com.

NORTH VAN (LYNN VALLEY)—FAMILY PRACTICE LOCUM

Regular and occasional shifts available in a busy walk-in. We are on Oscar EMR and have experienced staff to assist you. There is also an opportunity to share a family practice 1 to 2 days per week with additional walk-in shifts. For more information contact Carla Orsmond at carla@orsmond.net or call 604 988-5389.

PENTICTON—OB/GYN LOCUM

Locum needed to cover mat. leave, Dec 2016–Feb 2016, or part thereof. 1:4 call and office practice. New office with EMR, good MOA. Fee for service, MOCAP. Great skiing nearby! E-mail julie@ryckmanobgyn.com for more info.

POWELL RIVER—PERMANENT FPs & LOCUMS

Powell River is a rural community of 20 000 people on the Sunshine Coast of British Columbia, a 25-minute flight from Vancouver.

Continued on page 480



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classifieds

Continued from page 479

It's known for its waterfront location, outdoor beauty, urban culture, and international music festivals. Supported by a 33-bed general hospital, the close-knit medical community consists of 26 general practitioners, 4 ER and anesthesia physicians, 2 NPs, and 7 specialists. We are looking for permanent general practitioners and locums. Please visit divisionsbc.ca/powellriver/opportunities for details.

RICHMOND—FP

Best clinic to work at in Richmond! Full- or part-time physician needed for busy, modern walk-in/family medicine clinic. We are a team of caring physicians and staff looking for a like-minded addition to our team. Central Richmond, OSCAR EMR, large rooms, on-site pharmacy. E-mail: Livewellmedical@shaw.ca; Website: www.livewellmedicalcentre.com.

RICHMOND—FP & LOCUMS

Opportunities for physicians looking to do walk-in shifts, build a practice, or relocate in our busy modern clinic. EMR OSCAR. Great location next to a 24-hr Shoppers Drug Mart. No hospital work, no call, 70/30 split—walk-in shifts at \$100 per hour minimum—and bonus available. Contact us at healthvuemical@gmail.com, 604 270-9833/604 285-9888.

SURREY (WHALLEY)—METHADONE-LICENSED GP

Methodone-licensed GP needed to joint an addiction clinic. No overhead if available weekdays other than Tuesday and Thursday. Patient loads guaranteed. Staffed with MOA and counselor. MSP billing available. Please apply by e-mail to healthmedicalservices@gmail.com or contact 604 715-6011 for more info.

SURREY/DELTA/ABBOTSFORD—GPs/SPECIALISTS

Considering a change of practice style or location? Or selling your practice? Group of seven locations has opportunities for family, walk-in, or specialists. Full-time, part-time, or locum doctors guaranteed to be busy. We provide administrative support. Paul Foster, 604 572-4558 or pfoster@denninghealth.ca.

VANCOUVER (KERRISDALE)—FP PT

Highroads Medical Clinic is seeking a PT family physician to join our existing group of four MDs at our brand new clinic in the Vancouver neighborhood of Kerrisdale. Our ideal candidate would either have an existing practice or be willing to build a new practice with us. Walk-in shifts optional, 70% + split. E-mail physicians@highroadsmedical.com.

VANCOUVER (KITSILANO)—GP

Granger Medical has an opening for a physician looking to work within a semi-private multidisciplinary clinic in Vancouver. Ideally we are looking for someone who currently has or wants to build a patient roster. The office runs on Osler EMR; billing can be managed by

the staff. Vacation is shared locum between physicians. A full-time employee may expect approximately \$300,000 annually for a 40-hour work week. Please contact Granger Medical at drhnj@telus.net. We look forward to hearing from you.

VANCOUVER/RICHMOND—FP/SPECIALIST

We welcome all physicians, from new graduates to semiretired, either part-time or full-time. Walk-in or full-service family medicine and all specialties. Excellent split at the busy South Vancouver and Richmond Superstore medical clinics. Efficient and customizable Oscar EMR. Well-organized clinics. Please contact Lisa at medicalclinicbc@gmail.com.

VANCOUVER—FP

Mainland Medical Clinic is seeking a family doctor for our modern, multidisciplinary street-level clinic in Yaletown, downtown Vancouver. We have been operating for over 13 years in a comfortable setting shared with a chiropractor, massage therapists, and a nutritionist to complement our three family doctors. Ideally seeking someone with an existing practice—perhaps relocating or cutting back. We serve a broad spectrum of patients, both walk-ins and appointments. Excellent revenue split. The clinic offers a pleasant work environment in an upbeat, fun neighborhood. Contact Dr Brian Montgomery at brian@mainlandclinic.com or 604 240-1462, or just drop by.

VANCOUVER—FP/BREASTFEEDING MED

Vancouver Breastfeeding Centre is looking for a permanent, part-time family physician with a special interest in breastfeeding medicine to join our group. Maternal and child health experience and IBCLC qualification preferred. Supervised clinical training is available. Visit www.breastfeedingclinic.com and contact veritylivingstone@gmail.com for more info.

VANCOUVER—LOCUM

Busy walk-in shifts in Kitsilano at Khatsahlano Medical Clinic, three-time winner of Georgia Straight reader's poll for Best Independent Medical Clinic in Vancouver. Split is 65%; 70% on evenings/weekends. Contact Dr Chris Watt at drchriswatt@gmail.com.

VANCOUVER—PRIVATE PRACTICE/WALK-IN

Our clinic is located in the heart of Vancouver in the Cambie Village/Broadway corridor and right beside the Canada Line SkyTrain (Broadway—City Hall Station). This is a large 1890 sq. ft. facility with large windows. The front staff will consist of an office manager and multiple full-time medical office assistants. The clinic will be looking for walk-in physicians, locum physicians, family physicians, and specialists. Full-time and part-time positions are available. Standard 30%/70% for remuneration. Please contact lilywu85@gmail.com to e-mail your

resume and cover letter. Three months' free rent.

VERNON—AESTHETICS/VEIN/LASER
Outstanding opportunity to join a well-established and thriving GP dermatology/aesthetics/vein/laser practice in one of the best places to live in Canada. We are looking for an associate/equity partners. The office has all the latest technology and an excellent, congenial staff. Training provided but a special interest in dermatology a definite asset. The Okanagan has some of the best weather, lakes, wineries, golf courses, ski hills, and overall lifestyle anywhere in Canada, if not the world. Contact Dr William Sanders: 250 558-9606, w.sanders@shaw.ca.

VICTORIA (OAK BAY)—MD PARTNER
Derma Spa is a well-established medical/cosmetic practice located in the charming seaside neighborhood of Oak Bay, Victoria. Our business is growing and we have an experienced medical, financial, and marketing team in place to support you. Please contact Alex at 250 580-9428 or concierge@dermaspa.ca.

VICTORIA—GP/WALK-IN
Shifts available at three beautiful, busy clinics: Burnside (www.burnsideclinic.ca), Tillicum (www.tillicummedicalclinic.ca), and Uptown (www.uptownmedicalclinic.ca). Regular and occasional walk-in shifts available. FT/PT GP post also available. Contact drianbridger@gmail.com.

VICTORIA—SHARED PRACTICE
Ideal opportunity for Mandarin/Cantonese-speaking physician to join a turnkey, EMR practice with a view to building the practice. Escape the high-cost accommodation in Vancouver and relocate to Victoria, known for its breathtaking natural beauty and enviable quality of life. Combine a rewarding career with a satisfying lifestyle. E-mail chewmoa@shaw.ca.

VICTORIA—WALK-IN
Walk-in clinic shifts available in the heart of lovely Cook St. Village in Victoria, steps from the ocean, Beacon Hill Park, and Starbucks. For more information contact Dr Chris Watt at watt1@telus.net.

WILLIAMS LAKE—FP EMERGENCY
Seeking CCFP-EM or CCFP with ER experience. Cariboo Memorial Hospital services a population of approximately 26000 with 20000 visits to the ER annually. ER is staffed by six full-time ER physicians and a variety of part-time ER physicians (staffed 24/7). We have a 28-bed hospital with 3-bed ICU. Excellent collegial specialist support including general surgery, OB/GYN, pediatrics, internal med, radiology, anesthesia, and psychiatry. Further specialist support available at our referral centre in Kamloops. Williams Lake is known for its outdoor opportunities and full range of amenities (including local college and

airport). Contact 1 877 522-9722 or physician recruitment@interiorhealth.ca.

medical office space

ABBOTSFORD—OFFICE SPACE
Fully furnished, ready-to-go medical office available for lease in heart of Abbotsford. Rent-free for 6 months! Clinic includes four large exam rooms, reception area, large waiting room with TV, two washrooms, large private office, on-site free parking. Located in a professional building at a busy intersection with lots of walk-in traffic. Great opportunity for someone looking for an existing space with the flexibility to design their own practice and hours of operation. Please contact Frank Dykstra at 604 835-6300 or fdykstra@hotmail.com.

PORT COQUITLAM—HIGH-TRAFFIC MED OFFICE SPACE
Approximately 1500 sq. ft. space in a high-traffic strip mall available. You will have a dentist office, massage therapist, physio, and much more available as your neighbors. Building is 16 years young. End unit. The neighborhood would love a doctor's office. Available for immediate possession. Call for details: 403 828-9596/604 941-7025.

RICHMOND—MED OFFICE SPACE
New modern EMR clinic in Steveston Village looking for physicians to join our team. Opportunities to start a practice or relocate existing practice without worrying about administrative headaches. We offer base 70/30 split and higher for complex care and forms. Visit www.healthvue.ca or contact healthvuemedical@gmail.com, 604 285-9888.

RICHMOND—PSYCHIATRIST or THERAPIST
Psychiatrist (and owner) wishes to share fully furnished esthetic office; 200 sq. ft. suitable for group or individual counseling. Wheelchair accessible, ground floor, in-office sink. One parking spot. Quiet setting, trees and pond nearby. Available immediately weekdays and weekends from \$95 per half-day. E-mail jasbhpal66@msn.com or call 604 616-3250.

SOUTH SURREY/WR (NEAR US BORDER)
No existing GPs within a 5 km radius. New furnished medical clinic on Highway 15. Six exam rooms, one washroom, one staff room, waiting room and reception area, and free on-site parking. Air conditioned and wheelchair accessible. Located in new building within pharmacy. Contact Tazim Mohammed at pharma save053@gmail.com or 604 345-7075.

SURREY (CLAYTON HEIGHTS)—NEW CLINIC, RENT FREE
Brand-new furnished medical clinic opening in Surrey (Clayton Heights). An opportunity for a group of family physicians looking to lower existing overhead or new physicians looking to

start a practice. Lease and operating costs subsidized by pharmacy operating beside clinic. Contact Rob at 778 235-8137 or e-mail robb@claytonwellness.com.

VAN (VGH AREA)—MED OFFICE SUBLEASE
Office space for psychiatrists, psychologists, or any other specialist MD. No secretary or other additional overhead expenses. Top floor. Great view. Two offices for sublease. One office is bigger and has a sink and space for an examination table. E-mail alevin@drlevin.ca.

VANCOUVER (DWTN)—MED OFFICE SPACE
Two established psychiatrists seeking a third psychiatrist to share office space in the Robson Professional Building located on Robson Street. The space features two bright offices; reception/waiting room area; kitchen with sink, fridge, and microwave. Includes full secretarial services (reception, typing, and billing). Opportunity for mentoring in assessment and treatment of ADHD and comorbidities available. Very reasonable rent. Available: January 2017. Call 604 687-0654 or e-mail inquiries to dr.melck@telus.net.

VANCOUVER—WEST BROADWAY
Fully furnished space for one or multiple doctors. Space can be used part-time or full-time with short- or long-term arrangement possible. Use some or all of the large space. MOA provided if needed. Extraordinary views. Concrete professional building with elevators, underground parking, and three restaurants. Available immediately. Please call Neil at 604 644-5775.

WEST VAN—MED OFFICE SPACE
Medical office space available for part-time use on weekdays and weekends. Two rooms. Great view, lots of natural light, ideal location in Ambleside. Located in medical building with pharmacy, lab, X-ray, etc. Please e-mail poorvijju2004@yahoo.co.uk or call 778 919-0585 or 604 356-3282.

miscellaneous

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in memoriam

Dr D'Arcy D. Lawrence 1941–2016



Dr Lawrence was born in Toronto and received his MD from the University of Toronto in 1965. He met his wife, Lynn, who was a gynecological nurse at Royal Victoria Hospital, while he was interning there, and they married in 1967. January 2017 would have been their golden anniversary.

Dr Lawrence started a pathology residency at Vancouver General Hospital but changed his mind after 1 year and moved to Montreal General Hospital to study radiology. He obtained his FRCP in 1970 and followed it with a fellowship in neuroradiology at the Montreal Neurological Institute. Dr Lawrence then accepted a job as a neuroradiologist at Foothills Hospital in Calgary and he practised there until 1979, following which he

was recruited to practise radiology in Victoria, where he stayed until 2014. He was the chief of medical imaging from 1990–2004.

Dr Lawrence was well respected by the medical staff, fellow radiologists, technologists, clerical/support staff, and the administration. During his tenure he was instrumental in completing the amalgamation of the two radiological groups (RJH and VGH) into one harmonious group.

Because Dr Lawrence was prematurely grey he was affectionately called the Grey Fox, and his good looks even got him cast as a radiologist in the movie *Intersection* with Richard Gere and Sharon Stone.

Dr Lawrence is survived by his wife, Lynn; son, Douglas (Gloria); daughter, Kerrilee (Gary); and 10 grandchildren and step grandchildren. Dr Lawrence was an only child, and this large crew of grandchildren overwhelmed him but also fulfilled him. He was also very proud of his daughter Kerrilee's police career, and the pride was evident when she arranged a ride-a-long for D'Arcy with her sergeant. With joy and happiness, Dr Lawrence was able to proudly dance with Danielle, his granddaughter, at her wedding this summer. It was a very special moment.

—Richard Mark, MD
Victoria

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Congratulations to all of the physicians who have recently completed their residency and are now embarking on the next stage of their medical careers. You may not have heard this before but most of you are now small business owners in addition to being medical professionals.

The purpose of this article is to provide you with a basic outline of the issues you will likely need to consider in the **Getting Started Stage of your Practice Lifecycle.**

1. Your practice structure will determine your requirements for income tax planning.

For most of you, when you left your residency program, you ceased to be an employee. The work you are doing as a locum or a member of a clinic will be taxed as self-employment income. Income tax and Canada Pension Plan contributions on self-employment income are not deducted "at source" and will be payable upon filing your 2016 T1 Personal Income Tax Return in the late spring of 2017. You will need to develop a savings plan for this.

You might decide to move quickly to incorporate your medical practice, which will introduce a new corporate taxpayer into your world. You should ensure that you have adequately reviewed the benefits and costs of operating your medical practice as a corporation before doing this and understand the expanded tax responsibilities.

2. You will need to include a plan to repay any outstanding student debt.

There are minimum levels of interest / principal payments that will require cash flow from your practice and you may decide you want to increase the rate of principal payments to eliminate your student debt faster. Your debt repayment decisions need to be part of your cash flow planning.

3. You will likely start planning to purchase a home.

This is the next most common financial objective after your student debt repayment plan. You should consider using your existing Registered Retirement Savings Plan (RRSP) room to make a contribution to your RRSP that would enable you to access the RRSP Home Buyers Plan, if you qualify. The rules for qualifying as well as the rules for contributions and withdrawals are complicated and professional assistance is recommended.

Planning for the balance of your home purchase down payment will require discussions with your lender and a savings plan from your practice cash flow.

4. Other considerations.

The above comments are generally applicable to all physicians as you are getting started, but throughout your practice lifecycle, there will be issues to consider that are uniquely related to you and your individual goals and circumstances. Choosing a team of professional advisors who will take the time to get to know you and understand your goals throughout your practice lifecycle will ensure that you are getting thorough and timely planning assistance.

With 20 locations throughout British Columbia, MNP provides support to medical professionals at all stages of their careers. Contact Don Murdoch, B.C. Leader, Professional Services at 1.877.766.9735 or don.murdoch@mnp.ca

For more information about MNP's Professional Services, visit our website at

www.mnp.ca/en/professionals



Advice about a patient in community care (fee item 13005)

Fee item 13005 (advice about a patient in community care) applies to residential, intermediate, and extended care patients and also includes patients receiving home nursing care, home support, or palliative care at home. It is defined in the *Doctors of BC Guide to Fees* as advice given by telephone, fax, or in written form about a patient in community care in response to an enquiry initiated by an allied health care worker* specifically assigned to the

Medical inspectors look for proper documentation in the patient's record to support the criteria to bill fee item 13005.

care of the patient (including completion of faxed medication review with orders, up to twice per calendar year).

Audits reveal that physicians frequently bill fee item 13005 incorrectly. Services that do not qualify for this fee include:

- Prescription renewals or pharmacist's adaptations.
- Booking for appointments.
- Advice given in response to enquiries from a patient or their family.
- Advice provided by physicians who

This article is the opinion of the Patterns of Practice Committee and has not been peer reviewed by the BCMJ Editorial Board. For further information contact Juanita Grant, audit and billing advisor, Physician and External Affairs, at 604 638-2829 or jgrant@doctorsofbc.ca.

are employed by or who are under contract to a facility and whose duties would otherwise include provision of this care.

- Advice provided by physicians working under salary, service contract, or sessional arrangements whose duties would otherwise include provision of this care.
- Advice provided by physicians who are on site, on duty in an emergency department, who are being paid at the time on a sessional basis, or who are working at the time as hospitalists.

Medical inspectors look for proper documentation in the patient's record to support the criteria to bill fee item 13005. There must be documentation in the medical record of the date of service, name and position of the enquiring health care worker, and the advice given. Alternatively, the original of a fax or a copy of written advice will suffice to document these services. To simply state "no advice given" in the patient's chart or "thank you" on the fax sheet or a simple refill order with no documentation that the medications were reviewed would not qualify you to bill for these services.

Always refer to the *Doctors of BC Guide to Fees* and its preamble for interpretation of all fees.

—**Keith J. White, MD**
Chair, Patterns of Practice Committee

* Allied health care workers are defined as home care coordinators, nurses (registered, licensed practical, public health, psychiatric), psychologists, mental health workers, physiotherapists, occupational therapists, respiratory therapists, social workers, ambulance paramedics, and pharmacists.

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Proust questionnaire: David Patrick, MD

What profession might you have pursued, if not medicine?

Music. I play jazz and rhythm and blues, and it might have been fun to focus on that for a while.

Which talent would you most like to have?

I wish I were more handy. I like doing small projects but it takes me a while to get them right.

What do you consider your greatest achievement?

Sharing a life with Patricia, raising kids, and keeping it real.

Who are your heroes?

Those Battle of Britain Spitfire and Hurricane pilots. They gave us a much brighter future. Oh, and Louis Pasteur.

What is your idea of perfect happiness?

Satisfying work or play in the absence of negative energy.

Dr Patrick is an infectious disease physician and epidemiologist, serves as professor and director at UBC's School of Population and Public Health, and provides service as a medical epidemiologist at the BCCDC. His primary focus is the control and study of emerging infectious diseases with a strong emphasis on the problem of antibiotic resistance at the population level.

What is your greatest fear?

White people playing bongos.

What is the trait you most deplore in yourself?

I concern myself too much with being conciliatory.

What characteristic do your favorite patients share?

Interesting world travel and experiences.

What is your favorite activity?

Spending quality time with my wife, followed by making music.

On what occasion do you lie?

I never lie, or just did. You tell me.

Which words or phrases do you most overuse?

"That's right."

Where would you most like to practise?

I'm here in Vancouver by choice.

What medical advance do you most anticipate?

People finally figuring out that per-

sonalized prevention has even more potential than personalized diagnosis and treatment.

Which living physician do you most admire?

Everyone who had the guts to go to West Africa and help out during the Ebola crisis.

What is your most marked characteristic?

I can find the humor in almost anything, and this can really be annoying to some people.

What do you most value in your colleagues?

Compassion.

Who are your favorite writers?

Kurt Vonnegut and Richard Dawkins.

What is your greatest regret?

Attempting to microwave a roast.

What is your motto?

Onward and upward.

How would you like to die?

I'm not sure that should be printed.

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Essential Medical Legal Toolkit



For FAMILY PHYSICIANS and SPECIALISTS

Medical Legal Reports: *The Essentials*

**Saturday, November 26, 2016 or
Saturday, February 25, 2017 (9 am–4 pm)**

Does writing medical legal reports cause you stress? Not sure what to write when asked about prognosis? Need help figuring out how much you should be billing for your reports? What to do when patients have subjective complaints?

This course will outline:

- The essential components of a medical legal report
- How to clearly narrate the patient's history, physical examination findings, diagnosis and prognosis
- The steps to complete a medical legal report efficiently
- How to streamline the payment/invoicing for medical legal reports
- How lawyers, juries and judges identify the good, bad and ugly medical legal report
- Common challenges with medical legal reports and how to easily resolve them

Medical Legal Reports Advanced and Testifying in Court: *Becoming a Great Expert*

Saturday, March 4, 2017 (9 am–4 pm)

Physicians and all health care professionals generally prefer not to testify in court. This course will provide advanced training on writing more complex medical legal reports as well as how to reduce the stress of testifying in court.

This course will outline:

- Advanced skills for successful medical legal report writing
- How to address issues of patient compliance/adherence and possible secondary gain in a medical legal report
- How to answer complex questions related to Cost of Future Care and Future Treatment
- The role of the medical/health professional expert witness in court
- How to prepare for court testimony
- How to succeed in the various parts of expert testimony: Qualifying the expert, direct testimony, cross examination, re-direct
- Common pitfalls and traps in court—and how to avoid them



Dr Gurdeep Parhar

Teaching Faculty:

These courses will be taught by medical and legal professionals who have extensive medical legal experience and have taught numerous courses for health care professionals and lawyers. The legal teaching faculty have busy personal injury practices and know exactly what they want from medical legal reports and expert testimony in court.

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