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The red dot initiative:

An analysis of postoperative visits to the emergency department

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Vancouver, Canada
604 638-2815
journal@doctorsofbc.ca
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Editor
David R. Richardson, MD

Editorial Board
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Printing
Mitchell Press

Advertising
Kashmira Suraliwalla
604 638-2815
journal@doctorsofbc.ca

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Bud light with your Bud Light?

"Are you ready to order?"

"Everything looks delicious, but I think I'll go with the chef's tasting menu."

"Can I interest you in the cannabis pairing to heighten your meal experience?"

On 17 October 2018 marijuana will become legal and will join alcohol as a recreational drug available to adult Canadians. Through an extensive and exhausting search (I Googled it) I discovered that the legislative framework for nonmedicinal cannabis use is outlined in the Cannabis Control and Licensing Act. The Liquor Distribution Branch will be the wholesale distributor of nonmedicinal cannabis in BC and will run the provincial cannabis retail stores. The Liquor and Cannabis Regulation Branch will also be responsible for licensing and monitoring private nonmedicinal cannabis stores.

I gleaned the following facts from the Cannabis Control and Licensing Act and can't help but make some parallels to alcohol consumption in our province. Adults may possess up to 30 grams of cannabis in a public place. If we assume half a gram per joint, that is the equivalent of carrying around five cases of beer or 10 bottles of wine. The Act prohibits cannabis use where smoking is prohibited, plus other places where children commonly gather. It doesn't say anything about walking down the street or toking up outside office buildings, stadiums, theatres, etc. In contrast, I'm pretty sure I'm not allowed to start chugging my wine in these locations. According to the Act, adults may grow up to four marijuana plants per household, but not if they have a day care. Notably, there isn't a law that prohibits "Toddler Care R Us" from getting their children to make homemade wine. I discovered that the Motor Vehicle Act has also been amended and a driver can be suspended by a DRE for suspected marijuana use (your prostate is a little big, so give me your keys). DRE in this case stands for "drug recognition expert." The police bring in Cheech or Chong to look you in the eye and exclaim, "Dude, you are so stoned!"

I am confident that the rules will evolve as there will definitely be an adjustment period for this new legislation. I'm curious if in coming years cannabis will be woven into our social fabric as much as alcohol is. "Honey, remember we are going to the Smiths' for dinner tonight. Should we pick up some of that Indica Bob likes?" Will people go to cannabis tastings or on cannabis tours? Will restaurants offer cannabis-infused menu items or after-dinner marijuana treats? Will marijuana become part of attending sporting events? I have already heard about alcohol producers rolling out beverages laced with cannabis.

One of the government's stated reasons for cannabis legalization is an attempt to remove the criminal element from its production. To achieve this end, cannabis will have to be priced reasonably to discourage development of a for-profit black market. This brings up the question of quality. Will the commercial product eventually outdo individual growers, as it has in the alcohol industry? Most would

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editorials

Private health insurance: The conversation continues

I have been involved in litigation on the constitutionality of Canada's health system since well before the Chaoulli decision of 2005. The current action—in which the majority of plaintiffs are patients—was launched almost 10 years ago.

Government lawyers continue to block evidence while simultaneously making multiple illogical arguments. For example, a patient-witness taking large quantities of pain medications said they made her sick. Government argued that she was able to state how many pills she took, but the cause of the nausea required expert medical opinion. Objections were made to an ophthalmologist defining glaucoma and a colon surgeon explaining colonoscopy because they were not qualified as "experts."

Government documents confirm that BC fails to meet its own maximum wait benchmarks—beyond which patients are harmed. Their lawyers argue pain and suffering while waiting are irrelevant. They are dismissive of patients lacking access to a GP, mental health services, cancer treatment, or those languishing on ER stretchers for days.

The 2018 Vancouver Coastal Health Authority report card reveals only 49% of surgical patients meet maximum medically accepted wait times. Government documents confirm that only 12% of patients with hip arthritis in "severe pain, unable to self-care, and at risk of serious harm" are treated within the maximum acceptable period. For lung cancer it's 31% and for bladder cancer "with high risk of progression" only 13%. There are thousands of similar shameful examples.

Government lawyers have stated, "So the plaintiffs' argument that evidence of harms . . . is somehow relevant . . . is simply wrong;" "Not all relevant evidence is admissible;" "Statements made by the premier or health minister cannot constitute admissions that can be relied on;" "Harms caused by current legislation are not relevant."

They falsely accused BC clinics of "extra billing," which the Canada Health Act specifies as billing in addition to payments from public health care insurance. Private clinics in BC don't extra bill; public hospitals do.

"This could not even happen in the former Soviet Union, where I was raised."

Even tax-funded government experts have reported: "Parallel private insurance funding does add to the net resources available . . . and does provide some care that would otherwise be a charge on the public system." Another discarded "expert" left the country after a judge ruled he caused an unnecessary enquiry costing over $10 million, and another wrote, "Medicare is being put on trial, and will likely be found wanting."

Suspicious of the BC website data, I followed up with a surgeon whose profile showed very few patients waiting a very short time. In truth there were over 1200 waiting. A physician witness at trial described being ordered to stop seeing patients since it made surgical wait lists longer. The ministry ordered patients who were categorized as being in "moderate pain" to be reclassified as being in "mild pain" in order to (falsely) improve their statistics.

We've heard important evidence described as hearsay, irrelevant, opinion, and argument in order to have it excluded. To state one's place and date of birth is inadmissible hearsay unless one personally remembers being born!

Our BC government volunteered to have $16 million deducted from their federal transfer payments. Other provinces that allow private MRIs and clinics suffer no penalties. Our current health minister stated, "The consequences of the failure of the previous [Liberal] government to enforce the law has cost patients millions of dollars." He forgets that private clinics operated freely under the last NDP government and ignores the fact that private clinics save BC's public system about $300 million a year.

Government recently announced fines up to $20 000 per patient undergoing private MRIs or surgery starting in October. Unless blocked by an injunction, wait lists will worsen dramatically. An underperforming monopoly cannot succeed unless competition and choice are eliminated.

A March 2018 Ipsos poll revealed 81% of BC residents support us. Government's failure to consider public opinion is undemocratic.

I recently addressed a group of 25 visiting health executives from countries as diverse as New Zealand, Netherlands, UK, Switzerland, Germany, Zimbabwe, and Russia. They were shocked that private health insurance was illegal. The Russian delegate remarked, "This could not even happen in the former Soviet Union, where I was raised."

—BD

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have to agree that people who make wine for a living do a much better job than the average garage vintner. As a result, will people be willing to pay a premium for quality, like they do for high-end Scotch, vodka, tequila, etc.?

More relevant to physicians is the effect that legalization of nonmedicinal cannabis will have on medicinal marijuana use. I mused about this issue in my June 2017 *BCMJ* editorial. Unless the price of the medicinal product is significantly less than the nonmedicinal one, I think this industry is in trouble. If a consumer can select from a wide range of reasonably priced quality products in a government store, why would they bother getting a prescription from their physician? The only reason I can think of is if some drug plans start listing marijuana as a covered benefit. The physician-staffed medicinal marijuana specialty clinics also seem to be in jeopardy. Why would an individual attend such a clinic when they can pop into their local cannabis store and purchase whatever they need? I'm not aware of any specialty medicinal alcohol clinics. "You were right Doc, that whiskey you recommended really does help my arthritis." Perhaps there will be some business in advising individuals about cannabis that is high in cannabidiol (CBD)—the proposed therapeutic ingredient—and low in tetrahydrocannabinol (THC)—the psychoactive ingredient. I am skeptical that CBD oil will be a big seller in the nonmedicinal stores, but I could be wrong.

I remain concerned about the long-term health impacts of nonmedicinal cannabis legalization, particularly among young people. The Act limits cannabis use to individuals 19 and over in most provinces, but similar legislation hasn't restricted alcohol use in minors, and with the new law the amount of accessible marijuana in our communities will likely increase.

Like many of you, I will be an interested spectator as this new direction of recreational drug use unfolds in British Columbia.

—DRR

KEY CONTACTS: Directory of senior staff

Mr Allan Seckel
Chief Executive Officer
604 638-2888;
aseckel@doctorsofbc.ca

Ms Marisa Adair
Executive Director of Communications and Public Affairs
604 638-2809;
madair@doctorsofbc.ca

Mr Jim Aikman
Executive Director of Economics and Policy Analysis
604 638-2893;
jaikman@doctorsofbc.ca

Dr Sam Bugis
Executive Director of Physician and External Affairs
604 638-8750; sbugis@doctorsofbc.ca

Dr Andrew Clarke
Executive Director, Physician Health Program
604 398-4301;
andrew@physicianhealth.com

Ms Amanda Corcoran
Chief People & Technology Officer
604 638-2812;
acorcoran@doctorsofbc.ca

Ms Cathy Cordell
General Counsel
604 638-2822; ccordell@doctorsofbc.ca

Ms Margaret English
Director, Shared Care Committee
604 638-2947;
menglish@doctorsofbc.ca

Ms Alana Godin
Director, Community Practice and Quality
250 218-3924;
agodin@doctorsofbc.ca

Dr Brenda Hefford
Executive Director, Community Practice, Quality, and Integration
604 638-7855; bhefford@doctorsofbc.ca

Mr Rob Hulyk
Director of Physician Advocacy
604 638-2883; rhulyk@doctorsofbc.ca

Mr Adrian Leung
Director, Specialist Services Committee
604 638-2884; aleung@doctorsofbc.ca

Ms Sinden Luciuk
Executive Director of Members' Products and Services; 604 638-2886;
sluciuk@doctorsofbc.ca

Mr Tod MacPherson
Director of Negotiations
604 638-2885;
tmacpherson@doctorsofbc.ca

Ms Afsaneh Moradi
Director, Community Partnership & Integration; 604 638-5845;
amoradi@doctorsofbc.ca

Ms Cindy Myles
Director, Facility Physician Engagement
604 638-2834;
cmyles@doctorsofbc.ca

Ms Carol Rimmer
Director, Technology and Operations, Doctors Technology Office
604 638-5775;
crimmer@doctorsofbc.ca

Mr Paul Straszak
Executive Director of Negotiations and Chief Negotiator
604 638-2869;
pstraszak@doctorsofbc.ca

Ms Sarah Vergis
Chief Financial Officer
604 638-2862;
svergis@doctorsofbc.ca

Ms Deborah Viccars
Director of Policy
604 638-7865;
dviccars@doctorsofbc.ca

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Happy 60th birthday *BCMJ*!

Happy 60th birthday to the writers, editors, designers, and all others who create the *BC Medical Journal*!

This journal forms a common bond for the doctors of our province. In addition to presenting valued medical articles, the journal offers humanistic messages through the often lighthearted editorials and by way of submissions from my fellow physicians to the Letters, Premise, Good Doctor, and Special Feature sections. These sections offer readers medical history, biographies, comments about medical practice, and even humor. In contrast to the more pointed messages from the elected officials of our medical establishments, the stories on these special pages deliver their messages subliminally, so that they go directly to the readers' hearts.

About 2 years ago I asked the editors if a collection of some of these special pages could be published in the form of an anthology. I was pointed to obvious reasons why this was not feasible. So, for my own education and pleasure, I thumbed through close to 300 back issues on the shelves of the College Library, searching for my targets. As a prize, I got a feel not only of the important repeated messages for care and humanism in the practice of medicine, but also a feel of the writers' love of medicine as a profession.

Consider the article about early Canadian ships' surgeons [1959;1:103-116]. The lengthy story was written by one of the founders of what is now the College Library, Dr W.D. Keith.

"One fine summer morning in 1903 when I was walking north on the west side of Granville Street," is how this narrative starts about Dr A.T. Stanton, ship's doctor on the *Empress of China*. Dr Stanton and associates proved that beriberi was intimately associated with a diet of polished rice.

Or read and become riveted to the diaries of Dr Charles Gould, well-known Vancouver neurologist in the past, and his wife on their 5-year-long round-the-world sailing adventure on *Astrocite III*, faithfully recorded in the June 1968 issue.

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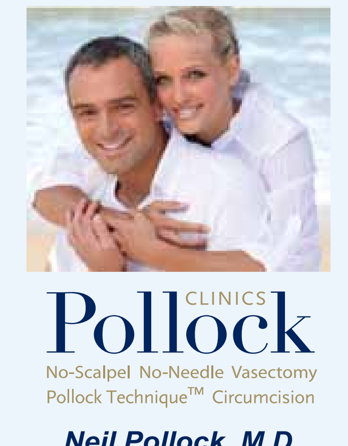

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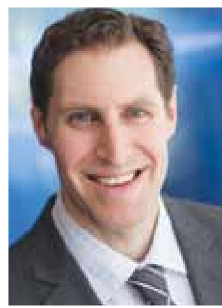

Sitting at my grandfather's typewriter years ago, I heard the click of my finger on the faded black keys and the clack of letters branding the page. Mistakes happened, but there was white-out. Weeks later I submitted the manuscript in triplicate after visiting the print shop and post office. Thankfully it was accepted—it would have taken months more to resend elsewhere.

Today, I can dictate in any language and my phone transcribes what I say. That same phone books flights, orders pizzas, pays for parking and coffee, takes pictures and videos and shares them, calculates CrCl, connects me to consultant doctors in my area, pushes news, sets the temperature of my home, and plays almost every song ever recorded.

Innovation affects every aspect of our lives: GPS devices replaced maps, we stream shows whenever we want on screens of all sizes instead of watching television as it's scheduled, airlines send real-time flight updates, and banks are rarely used for banking.

And yet, there's health care.

While we celebrate innovative successes such as vaccines, laparoscopy, advanced imaging, and safe-injection sites, we lag behind other fields.

I use an electronic medical record, but it doesn't connect to the hospital or other clinics—even if they use the same platform. Handwritten emergency room notes arrive by mail. Requests for health care services must be faxed on specified forms. When away from the office I cannot complete or even download a death certificate online, but must find a paper copy and, you guessed it, fax it. Prescriptions and laboratory requisitions are written on pieces of paper, resulting in unnecessary repeat patient visits or nonclinical physician work to replace or clarify lost, destroyed, or duplicated forms.

How did we get here and what can we do?

1. Recognize that the health care system and the people it cares for are complex.

Complex systems evolve over time, and changing one part affects others. But we have health care silos rather than system coherence—like copilots not talking, each of them trying hard to steer while the destination becomes more difficult to reach. And who is steering? We have advocated for doctors to be in the cockpit, but it's crowded with government, administrators, health care professionals, and patients all rightfully present with their own values and experiences.

As doctors, we experience complexity daily. An antibiotic may work for one person but not another, or it may cause side effects. How people react to the same infection, treatment, or trauma is variable and necessitates personalized care. Similarly, one community may do well with pooled referrals, hospital-based IT, and service contracts. Other communities may not.

2. Identify privacy as paternalism.

While we argue about the highest standard of privacy, people willingly give up some of this right daily to interact on social media. I take a chance that my banking or personal data will be hacked, but that is a risk I choose in return for the benefits of convenient virtual services. In the same way, let's create robust information systems and let people assess risks and benefits for themselves. And let's also remember that fax numbers get misdialed, papers are stolen or dropped, and conversations are overheard. We can aim for perfection, but what we really need is progress.

3. Encourage long horizons and fast failure.

For major health care reform to occur, we need to look many years into the future, where it will grow with expected population needs and technological advances. But political timelines mean that those wishing to stay in office have an incentive to choose safe projects with a high likelihood of short-term success.

Innovation does not behave this way. We learn in many ways, but the nonlinear journey of controlled failure is one of the best. If smoothly working hinges were political, would the inventor of WD-40 have been allowed to fail 39 times? Likewise, how many people have the time, resources, and job security to fail quickly and iterate?

4. It's about people, always.

Care is better when we empower patients and engage doctors. IT projects rarely fail due to the technology itself, but rather due to poor change management. Change cannot be done *to* people: we have to be part of it, working alongside others who it will affect.

So let's promote successes, encourage and learn from failures, focus on stepwise improvement over time, embrace the uncertainty of change, collaborate, and put people and communities first. Maybe then we will see true change in health care, an innovation we all deserve.

—Eric Cadesky, MDCM, CCFP, FCFP, Doctors of BC President

Continued from page 388

Or just let yourself go with "The man who stopped the rain," a story that stays with you about an old man who believed he was God, by Conrad Moralis, MD (pseudonym of the retired psychiatrist) in the May 2008 issue.

Then you might as well switch back to the January/February 2007 issue and read Dr Leslie Andrew's humor: "When I told [my mother that] I wanted to be a stand-up comedian, she said: Comedian, schlamedian. Okay, but become a doctor first."

Or read a series of Back Page articles by retired pediatric surgeon Dr Graham Fraser, recalling his experiences as a house surgeon in the UK.

Continue by reading Dr Gerry Greenstone's and Dr Christopher Morrant's stories gathered from medical history, and then focus your attention on BC's medical history by Dr C.E. McDonnel—a series commissioned by the then BCMA's centenary celebration committee in 2000.

Each of these artful pieces reminded me how far we have come in medicine in some ways, and how in other ways we have stayed the same. For proof of that you might read "A physician's view of the future of health services" in the November 1967 issue, by one of our most distinguished members of the past and a past president of the then BCMA, Dr Peter Banks. Forward in time again to the March 1997 issue, and feel the pain of author Dr Mark H. Lupin, in "Physician suicide –where the system fails." The article, dedicated to the memory of his brother, psychiatrist Dr Daniel Adam Lupin, begins: "Last summer, I lost my brother. I also lost my faith in our ability to care for each other."

Dear *BC Medical Journal*, I thank you for triggering thoughts, feelings, ideas, and notions in my mind and heart, making me appreciate my medical teachers, my medical colleagues, and my medical training and experiences over and over again. I wish you a happy 60th birthday, and many more.

—George Szasz, CM, MD
West Vancouver

Dr Szasz is a frequent contributor to the BCMJ *blog. To read his posts, visit www.bcmj.org/blog.*

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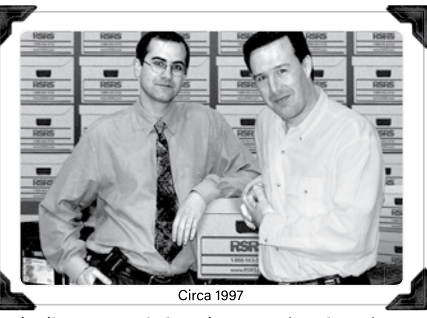

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Building a culture of information sharing

I recently read an interesting article on the business culture at Netflix in *WIRED* (www.wired.com/story/reed-hastings-at-ted). In the article, Netflix CEO Reed Hastings spoke about a talk he had given at the TED conference in Vancouver in April 2018, where he had said that "he purposely built Netflix to have a culture of open information sharing after his first company, Pure Software, struggled because it was too obsessed with creating processes to prevent mistakes from happening. 'We were trying to dummy-proof the system, and eventually only dummies wanted to work there.'"

He went on to say that "The Netflix culture of information sharing builds a sense of responsibility. . . . We're like the anti-Apple. They compartmentalize, we do the opposite. Everyone gets all the information."

"That's why Hastings promotes courage as a fundamental value at the company. We want people to speak the truth, and we say, 'To disagree silently is disloyal.'. . . It's not ok to let a decision go through without saying your piece. We're very focused on trying to get to good decisions with a good debate."

Is such a cultural change needed at Doctors of BC?

Is the failure to make the cultural change contributing to why Doctors of BC is having difficulty engaging members and other nonmember doctors?

Maybe it's time not to turn away

and *watch* Netflix but time to *listen* to what Netflix is doing for success.

—**Zafar Essak, MD**
New Westminster

Look and learn still holds true

The article in the July/August 2018 issue of the journal about assessments by pit appointment [2018;60:304-313] reminded me of the dom appointments I took part in, in UK general practice. No, not that kind of dom, but the domiciliary visit. A specialist consultant and the family doctor would meet at a patient's house. The fields covered included internal medicine and especially psychiatry. These visits were very popular with all concerned, especially with the specialist, who was extremely well paid for this service. Some of the lessons from these visits have stuck with me all my long professional life. An illustrative case follows.

A late-middle-aged accountant suddenly changes his behavior. Previously his routine was immutable. He took the same train in from his small village to his firm in the city of Birmingham every day for years. Suddenly, changes occurred. He began stealing women's underwear from washing lines and planning grandiose holidays and world tours. Naturally, his wife was worried and, as was the fashion then, called the village constable, who, instead of locking him up, called the doctor.

As a junior in the practice I was delegated to meet the psychiatrist on a domiciliary visit. We found a gregarious, garrulous, excitable but very happy chap. A short history disclosed the sudden and dramatic change in behavior in a man who had never been mentally ill in his life and had no family history of mental illness. "What was your impression?" the psychiatrist asked me. "Hypomania," I replied. "True," he said, "but look at his fingers." They were heavily nicotine stained and gave the suggestion of clubbing. Several months later he died from lung cancer. The possibility of paraneoplastic syndromes presenting as mental illness has been a lifelong lesson. "Look at and learn from the patient" was promoted by Osler and remains as true today as it was over 100 years ago.

Having a specialist and the family doctor meet the patient had obvious advantages. Perhaps as our health system evolves we could revive some of these ancient practices?

—**Ralph Jones, MD**
Chilliwack

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PRIVATE WEALTH MANAGEMENT

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Patricia Caddy, MD, Kesh Smith, MD

A quick-reference guide for prescribing buprenorphine/naloxone (Suboxone) in the outpatient setting

By empowering physicians to treat opioid use disorder in their own clinics, an easy-to-use resource supporting Suboxone induction could have important impacts on both individual and public health.

ABSTRACT: British Columbia is in the midst of an opioid crisis. Treatment with buprenorphine/naloxone (Suboxone) is one way to mitigate the many harms resulting from opioid use, yet studies show that few physicians are prescribing this medication. A quick-reference guide for physicians that supports Suboxone induction in the outpatient setting was proposed as part of a Resident Scholar Project required for completing a residency in family medicine at the University of British Columbia. The project involved the creation and evaluation of a teaching tool for physicians based on recent guidelines from the British Columbia Centre on Substance Use as well as peer-reviewed articles grounded in evidence-based medicine. While the project was undertaken at the Nanaimo site of the UBC Island Medical Program, key stakeholders considered during development included primary care physicians, trainees, and people with opioid use disorder throughout BC. Feedback was obtained from physicians with an interest in addiction medicine. The clinical tool that resulted from the project is intended to be a supplementary resource, not a stand-alone one. Further improvement of the tool is expected in future as physicians using the resource participate in a self-test survey and feedback process.

This article has been peer reviewed.

British Columbia is experiencing one of the greatest public health emergencies in its history. Opioid-related deaths continue to climb because opioid use is increasing and illicit drugs are being contaminated with devastatingly potent opioids such as fentanyl and carfentanil. In 2017 the province had 1210 illicit drug overdose deaths associated with fentanyl compared with 667 the year before.[1]

In April 2016 the sharply rising number of deaths related to fentanyl led BC's provincial health officer to declare an "opioid overdose emergency." Shortly after, the special licensure requirement was removed for prescribing Suboxone, a formulation of buprenorphine and naloxone combined at a ratio of 4:1 and administered sublingually. This made it legal

Dr Caddy is currently completing her residency in family medicine at the Nanaimo site of the University of British Columbia Family Medicine Residency Program. Dr Smith has completed his residency in family medicine at the Nanaimo site of the University of British Columbia Family Medicine Residency Program.

for any physician with prescribing privileges to use Suboxone to treat opioid use disorder, a complex neurobehavioral illness recognized in the *DSM-5*. Opioid use disorder is characterized not only by negative changes in a person's ability to function at home, at work, and in society, but by the development of physical tolerance and withdrawal symptoms. Suboxone can be used to manage these symptoms because the buprenorphine it contains is a partial agonist at the mu opioid receptor with a very high binding affinity. Once bound, buprenorphine activates the receptor less than a full agonist such as morphine, fentanyl, heroin, or methadone. The naloxone content of Suboxone deters tampering and misuse as it is active only when administered parenterally, often precipitating withdrawal symptoms in the opioid-tolerant user.

When prescribed skillfully, Suboxone results in the reduction or elimination of withdrawal symptoms without providing the reinforcing "high" or potenially deadly sedative effects of a full agonist, and is now recommended as first-line therapy for the management of opioid use disorder in BC.[2]

Suboxone prescribing resource

A resource designed to reduce barriers to treating opioid use disorder with Suboxone in the family practice setting was proposed as part of the Resident Scholar Project required for the University of British Columbia family medicine residency program. A quick-reference guide was seen as a way to fill the knowledge gap felt by many would-be prescribers considering starting a patient on Suboxone and to support clinicians in need of a refresher who fear "deskilling" after taking a course on how to prescribe this medication. The tool proposed was intended to serve as a supplement to published guidelines and online courses, and to provide contact information for specialists in addiction medicine should further support be needed. By empowering physicians to treat opioid use disorder in their own clinics, the resource could reduce referrals to more specialized clinics, which is preferable according to a meta-analysis published by Srivastava and colleagues, who state that "opioid addiction is best managed in a primary care setting."[3] A resource supporting Suboxone use could have important impacts on both individual and public health. Greater access to and acceptance of Suboxone as an opioid substitution therapy initiated by family physicians could increase the number of patients treated for addiction, thus reducing overdose deaths and bloodborne illnesses stemming from use of IV drug paraphernalia. This could also improve treatment retention, a factor associated with higher rates of abstinence.[4] Finally, greater physician willingness to prescribe Suboxone could lessen the stigma associated with seeking treatment for opioid use disorder, creating opportunities for a stronger therapeutic relationship between patients with this disorder and their physicians.

Literature review

Studies have shown that treatment with opioid substitution therapy leads to sustained abstinence from opioid use, reduced risk of morbidity and mortality, and better rates of treatment retention when compared with abstinence or withdrawal-only therapies.[2] Suboxone and methadone are considered equally efficacious for opioid substitution therapy and are the two medications recommended in the latest British Columbia guideline. The College of Physicians and Surgeons of BC recommends completing an online Suboxone training program, although this is not required in order to prescribe Suboxone. Still, relatively few family physicians in BC prescribe the medication. Although no studies have been conducted in BC specifically, several qualitative studies elsewhere have examined the barriers that prevent family doctors from prescribing Suboxone to their patients. One of the most commonly cited barriers is a perceived lack of knowledge and confidence in the induction phases of treatment.[4-11] Respondents in a 2012 Australian study identified

When prescribed skillfully, Suboxone results in the reduction or elimination of withdrawal symptoms.

"de-skilling" after undertaking Suboxone training as another barrier.[5] Other barriers frequently identified were a lack of local mental health support services/institutional support,[7,9-11] a lack of time (and space) in a busy practice,[5,7-9,11] fear of misuse and diversion of the medication,[7,8] a lack of interest in prescribing,[8] and practice partners unwilling to allow Suboxone prescribing in a shared clinic.[5,7,9] A lack of addiction specialist support was a further barrier highlighted in a number of studies.[7-10] These studies are from countries comparable to Canada, and we believe the results are generalizable to British Columbia. Therefore, any intervention aimed at encouraging family physicians to become Suboxone prescribers must reduce some of these barriers. While it is not currently known how best to do this, or which barriers should be the focus, there is clearly a knowledge gap that needs to be addressed to help more family physicians prescribe Suboxone.

What little literature could be found regarding physician education for Suboxone prescribing practices tended to focus on chronic pain rather than opioid use disorder,[12] other teaching modalities (e.g., web-based or telehealth-based courses),[12-15] or standard guidelines and their effectiveness.[16] There was nothing in the literature about using information-at-a-glance guides designed to support physician prescribing of Suboxone for opioid use disorder, making it likely that the resource produced for this Resident Scholar Project is the first of its kind.

What little literature could be found regarding physician education for Suboxone prescribing practices tended to focus on chronic pain rather than opioid use disorder.

Development of resource

We obtained the information included in our resource from provincial guidelines, as well as peer-reviewed articles grounded in evidence-based medicine. In addition, we asked physicians already practising addiction medicine to review our tool to ensure that we were providing only high-quality information. While the project was undertaken at the Nanaimo site of the UBC Family Medicine Residency Program, key stakeholders considered during development included primary care physicians, trainees, and people with opioid use disorder throughout BC.

Based on the information collected and analyzed, we developed a document to assist physicians with in-office assessment, Suboxone induction, and maintenance (Figure). The resource includes induction algorithms for Day 1 and Day 2, advice on gauging withdrawal severity using the clinical opiate withdrawal scale (COWS), suggestions for mitigating precipitated withdrawal, and considerations such as urine drug testing (UDT) and take-home doses or "carries" versus daily witnessed ingestions.

The information in our clinical tool is based on *A Guideline for the Clinical Management of Opioid Use Disorder*[2] published by the British Columbia Centre on Substance Use and the BC Ministry of Health, as well as online Suboxone training.[17] The recommendations within the BC guideline that were used to inform our resource are of moderate to strong quality according to the GRADE criteria for evidence appraisal.[2]

In order to give clinicians the opportunity to test their knowledge after using our guide, we provided a link to a self-test on Suboxone induction, as well as an email address where they can send feedback they may have for us about the tool itself.

Strengths and limitations of resource

The novel resource that we developed for the project is portable, easy to reproduce, easy to use, and has the potential to influence clinician prescribing practices. Creating the tool provided us with the opportunity to further refine our skills as physician-teachers and physician-leaders. The time-limited nature of the project restricted uptake of the resource throughout the community despite our best efforts, and also meant we were unable to quantitatively assess the impact of our tool on physician prescribing.

Further improvement of resource

We plan to collect feedback from users of the quick-reference guide and hope to implement suggested improvements in future iterations of

PRESCRIBING SUBOXONE IN THE OUTPATIENT SETTING

A QUICK-REFERENCE GUIDE TO IN-OFFICE INDUCTION

By Patricia Caddy, MD, and Kesh Smith, MD

Adapted from *A Guideline for the Clinical Management of Opioid Use Disorder* published by the British Columbia Centre on Substance Abuse and the BC Ministry of Health, June 2017

ASSESSMENT

Confirm opioid use disorder using *DSM–5*

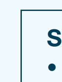
↓

Obtain substance use history

- All drugs used, including ethanol (EtOH), nicotine, benzodiazepines
- Age and amount of first use, current use
- Any periods of abstinence
- Treatment history
- Goals

Suboxone

- Combination of buprenorphine and naloxone at ratio of 4:1
- Available in 2.0 mg/0.5 mg and 8 mg/2 mg sublingual (SL) tablets
- Tablets may be split if necessary
- May take up to 10 min to dissolve completely (no talking, smoking, or swallowing at this time)
- Absorption better with moistened mouth
- Naloxone prevents IM/IV diversion of drug and is not active when taken SL, **so does not protect patient from overdose**
- Max dose approved in Canada 24 mg/6 mg daily



Check PharmaNet

↓

Rule out contraindications

- Allergy to Suboxone
- Pregnancy (relative contra-indication to induction but not to continuation)
- Severe liver dysfunction
- Severe respiratory distress
- Acute EtOH intoxication

Order/review lab test results

- CBC
- Electrolytes
- Renal panel
- Liver panel
- Hep A/B/C serologies
- STI panel (including HIV)
- Urine drug test

INDUCTION: DAY 1

- 1–2 days required for baseline assessment and initiation
- Day 1 max dose 12 mg/3 mg

Confirm

√ COWS* score > 12

√ No contraindications

√ No long-acting opioids used for > 30 hours

→ **Give Suboxone SL 4 mg/1 mg**

↓ ~ 2 hours

Withdrawal symptoms gone?

No — Additional doses needed (return to Give Suboxone SL 4 mg/1 mg)

Yes — Go to Day 2

***COWS = clinical opiate withdrawal scale**

A validated clinical tool used to determine severity of opiate withdrawal, available free online at www.bccsu.ca/wp-content/uploads/2017/06/BC-OUD-Guidelines_June2017.pdf (see Appendix 6 of *A Guideline for the Clinical Management of Opioid Use Disorder*)

Precipitated withdrawal

- Can occur due to replacement of full opioid receptor agonist (e.g., heroin, fentanyl, morphine) with partial agonist that binds with a higher affinity (e.g., Suboxone, methadone)

Symptoms

- Similar to opiate withdrawal (i.e., increased heart rate, sweating, agitation, diarrhea, tremor, unease, restlessness, tearing, runny nose, vomiting, goose flesh)
- Can range from mild to severe
- Can be very distressing and discouraging for patients
- Largely reversible with higher doses of Suboxone or other opioid
- Avoid by ensuring adequate withdrawal before induction (COWS > 12), starting Suboxone at a lower dose (2.0 mg/0.5 mg), and reassessing more frequently

Treatment

- Explain what has happened
- Provide empathetic/compassionate/apologetic support
- Manage symptoms with clonidine, loperamide. Avoid benzodiazepines
- Encourage/motivate patient to try again soon

Figure (Page 1 of 2). In-office assessment, Suboxone induction, and maintenance document

INDUCTION: DAY 2 ONWARDS

- If adequate symptom relief not achieved over Day 1 and 2, additional days (usually no more than 2) may be required
- Day 2 max dose 16 mg/4 mg

Withdrawal symptoms recurred since last dose?

No
- Give Day 1 total dose again to complete induction. This will be the ongoing daily dose
- Consider titration up to optimal dose (≥ 12 mg/3 mg) for improved retention in treatment
- May increase dose every 1–3 days, or less frequently

Yes
- Give Day 1 total plus another dose Suboxone SL 4 mg/1 mg

~ 2 hours

Withdrawal symptoms gone?

Yes
- Induction complete
- Give Day 2 total as ongoing dose, or titrate up to ≥ 12 mg/3 mg for improved retention in treatment

No
- Additional doses needed
- Give Suboxone SL 4 mg/1 mg

~ 2 hours

MAINTENANCE

Goal = once-daily dosing, no withdrawal between doses. Ideally, dose ≥ 12 mg/3 mg

Monitor
- Check PharmaNet regularly to ensure prescriptions are filled, no doctor shopping, etc.
- Order urine drug testing (UDT)
- Assess for readiness for take-home dosing (“carries”), see below

CONSIDERATIONS

Urine drug testing (UDT):
- Urine drug testing expected for patients on Suboxone to objectively document licit/illicit drug use
- UDT not to be used punitively but to facilitate open communication
- Perform point-of-care UDT at least monthly
- Consider ordering confirmatory testing for unexpected results (false positives do occur)

TAKE-HOME DOSES (“CARRIES”)

- Suboxone ingestion commonly witnessed at the pharmacy but take-home doses may be prescribed
- Take-home “carries” appropriate for patients who demonstrate biopsychosocial stability, have not missed doses, are abstinent from illicit drugs, have a secure place to store their medication

FOR ADDITIONAL SUPPORT AND RESOURCES...

To speak to an expert in BC:
Rapid Access to Consultative Expertise (RACE) line: 1 877 696-2131

To see the latest guidelines, research, and provincial resources:
British Columbia Centre on Substance Use
www.bccsu.ca

To test your new knowledge of Suboxone induction, go to www.surveymonkey.com/r/BXHVWVT

To help us improve this guide, please send your feedback to SuboxoneInfographic@gmail.com. Sender information will not be included when feedback is considered.

Figure (Page 2 of 2). In-office assessment, Suboxone induction, and maintenance document

the resource. We also hope that in future we or another resident group can quantitatively assess the effectiveness of this resource and its impact on prescribing practices in the community.

Summary

A quick-reference guide for physicians that supports Suboxone induction in the outpatient setting was proposed to encourage prescribing of this medication to mitigate the many harms resulting from opioid use disorder. Data for the resource were obtained from *A Guideline for the Clinical Management of Opioid Use Disorder*, as well as other provincial guidelines and peer-reviewed articles. The needs of primary care physicians, trainees, and people with opioid use disorder were considered during development, and feedback was obtained from physicians with an interest in addiction medicine. The clinical tool that resulted from the project is intended to be a supplementary resource, not a stand-alone one. Further improvement of the tool is expected as physicians using the resource participate in a self-test survey and feedback process. BCMJ

Acknowledgments

We would like to thank Dr Marcus Barron, a family medicine and addiction medicine physician who acted as our research project advisor, for providing guidance and input as the resource was created and helping to solicit feedback from other physicians who routinely treat opioid use disorder in the community. We would also like to thank the physicians who generously provided comments and feedback on the quick-reference guide during development: Dr Elizabeth Plant, Dr Mark Mclean, Dr Patricia Mark, and Dr Marcus Barron.

Competing interests

None declared.

References

1. BC Coroner Service. Fentanyl-detected illicit drug overdose deaths January 1, 2012 to December 31, 2017. Accessed 12 July 2018. www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/statistical/fentanyl-detected-overdose.pdf.
2. British Columbia Centre on Substance Use. A guideline for the clinical management of opioid use disorder. Accessed 12 July 2018. www.bccsu.ca/wp-content/uploads/2017/06/BC-OUD-Guidelines_June2017.pdf.
3. Srivastava A, Kahan M, Nader M. Primary care management of opioid use disorders: Abstinence, methadone, or buprenorphine-naloxone? Can Fam Physician 2017;63:200.
4. Hser Y, Evans E, Grella C, et al. Long-term course of opioid addiction. Harv Rev Psychiatry 2015;23:76.
5. Longman C, Temple-Smith M, Gilchrist G, Lintzeris N. Reluctant to train, reluctant to prescribe: Barriers to general practitioner prescribing of opioid substitution therapy. Aust J Prim Health 2012;18:346-351.
6. Huhn AS, Dunn KE. Why aren't physicians prescribing more buprenorphine? J Subst Abuse Treat 2017;78:1-7.
7. Andrilla CHA, Coulthard C, Larson EH. Barriers rural physicians face prescribing buprenorphine for opioid use disorder. Ann Fam Med 2017;15:359-362.
8. DeFlavio JR, Rolin SA, Nordstron BR, Kazal LA Jr. Analysis of barriers to adoption of buprenorphine maintenance therapy by family physicians. Rural Remote Health 2015;15:3019.
9. Hutchinson E, Catlin M, Cheng DM et al. Barriers to primary care physicians prescribing buprenorphine. Ann Fam Med 2014;12:128-133.
10. Li X, Shorter D, Kosten TR, Taenzer P, et al. Buprenorphine in the treatment of opioid addiction: opportunities, challenges and strategies. Expert Opin Pharmacother 2014;15:2263-2275.
11. Walley AY, Alperen JK. Office-based management of opioid dependence with buprenorphine: Clinical practices and barriers. J Gen Intern Med 2008;23:1393-1398.
12. Dubin RE, Flannery J. ECHO Ontario chronic pain & opioid stewardship: Providing access and building capacity for primary care providers in underserviced, rural, and remote communities. Stud Health Technol Inform 2015;209:15-22.
13. Kahan M, Gomes T, Juurlink DN, et al. Effect of a course-based intervention and effect of medical regulation on physicians' opioid prescribing. Can Fam Physician 2013;59:e231-239.
14. Webster J. Prescriber education on opioids. Ann Intern Med 2012;157:917.
15. Stoner SA, Mikko AT, Carpenter KM. Web-based training for primary care providers on screening, brief intervention, and referral to treatment (SBIRT) for alcohol, tobacco, and other drugs. J Subst Abuse Treat 2014;47:362-370.
16. Pinto D, Heleno B, Rodrigues DS, et al. An open cluster-randomized, 18-month trial to compare the effectiveness of educational outreach visits with usual guideline dissemination to improve family physician prescribing. Implement Sci 2014;9:10.
17. INDIVIOR Canada Ltd. Welcome to the Suboxone training program. Accessed 12 July 2018. www.suboxonetrainingprogram.ca/en/.

Rebecca Sugar, MD, Anita Jansen, RN, BSN, Josh Olson, MD, CCFP-EM,
Susan McDonald, MD, FRCSC

The red dot initiative: An analysis of postoperative visits to the emergency department

Findings from a recent study suggest a formal notification system is needed to inform the operating surgeon when a patient who has undergone surgery presents to the emergency department with a surgery-related complaint.

ABSTRACT

Background: **A shift from surgeries followed by protracted postoperative hospital stays to more ambulatory surgeries has increased the likelihood of patients experiencing complications and concerns after they have been discharged. Despite this, we were unable to find a hospital or health region in British Columbia with a formal notification system to ensure continuity of care by informing surgeons when patients present to the emergency department postoperatively or are readmitted to hospital. A study was proposed to determine the magnitude of this problem and consider possible solutions.**

Methods: **The study was conducted at a mid-sized community hospital. Charts of patients presenting to the emergency department at Chilliwack General Hospital within 6 weeks of surgery were marked with a red dot sticker by the registration clerk to prompt nursing staff to ask questions and record information about the surgery. The charts marked and annotated during this red dot initiative from 7 July to 30 September 2015 were copied after the patient was discharged, with the originals going to health records and a copy being placed, if appropriate, in the operating surgeon's hospital mailbox. Data collected on all red dot cases were analyzed and descriptive statistics were obtained.**

Results: **A total of 248 patients who presented to the Chilliwack General Hospital emergency department during the study period met inclusion criteria. Of these patients, 138 (56%) were found to have had their surgeries performed at the study site and 110 (44%) had their surgeries performed elsewhere. A total of 915 patients had surgery at Chilliwack General Hospital during the study period, allowing us to estimate that 15.1% (138/915) of patients made postoperative emergency department visits. Presenting complaints included pain (23.0%), infection (17.7%), and bleeding (12.5%). In terms of the disposition of patients upon discharge from the emergency department, less than half (40.3%) were advised to arrange follow-up with their surgeon, more than a quarter (28.6%) required no follow-up, and a small number (11.7%) were instructed to contact their GP for follow-up. Only 2 patients (0.8%) were admitted to hospital.**

Conclusions: **Postoperative visits to the emergency department were common among surgical patients, suggesting a reliable notification system is needed to alert surgeons when this occurs. Furthermore, the majority of these emergency department visits were for minor complications or concerns, suggesting that an improvement in perioperative education could reduce unnecessary emergency department visits. In an extension of the study described here, more detailed information about presenting complaints and disposition of patients has been gathered for analysis and a survey was recently completed to assess the type of perioperative education patients received, their satisfaction with the information provided, and what delivery methods they would find most useful.**

This article has been peer reviewed.

Improvements in both surgical and anesthetic practices have shifted care away from surgeries followed by protracted postoperative hospital stays to a significant proportion of day and short-stay procedures. In 1986 approximately 40% of all surgical procedures in North America involved day surgery compared with approximately 65% in 2001.[1,2] Previously, when patients had longer hospital stays, surgeons were intimately involved in the identification and treatment of postoperative complications and continuity of care was maintained. A change in practice to more ambulatory surgery has increased the likelihood of patients experiencing complications and concerns after they have been discharged and has led to more patients presenting postoperatively to physicians' offices or the emergency department.

Currently, a formal notification system does not exist to inform surgeons when their patients present to the emergency department with postoperative concerns, meaning surgeons may not be aware of or involved in the identification and care of surgical complications. They may even be unaware when patients are readmitted to hospital. The magnitude of this problem has not been determined and we have been unable to find a hospital or health region in British Columbia with a formal notification system. Previous attempts were made to address this problem at our site, Chilliwack General Hospital (CGH), by encouraging emergency department physicians to contact surgeons directly. When this did not result in reliable notification of surgeons, we proposed a study to consider this problem in more detail and determine if implementing an interdepartmental communication system might improve postoperative patient care.

Our site is a mid-sized community hospital that provides services in general surgery, urology, obstetrics, gynecology, otolaryngology, orthopaedics, ophthalmology, and oral surgery, and sees approximately 60 000 emergency department visits annually. During 2017, 8772 surgeries were performed at CGH, including 4647 ophthalmology cases and 4125 cases from all other surgical subspecialties combined.

Dr Sugar is a PGY-3 resident physician in emergency medicine (CCFP-EM) at St. Paul's Hospital. Ms Jansen is a surgical clinical reviewer at Chilliwack General Hospital for the American College of Surgeon's National Surgical Quality Improvement Program. Dr Olson is a staff emergency physician at Chilliwack General Hospital. Dr McDonald is a staff general surgeon at Chilliwack General Hospital.

Methods

A study was conducted using data collected at Chilliwack General Hospital in 2015. The study was approved for commencement by the local departments of Emergency Medicine and General Surgery as well as the executive director of health services in the Chilliwack area. Patients were included in the study if they presented to the emergency department within 6 weeks of surgery, regardless of their chief complaint and whether the surgery was conducted at the study site. Patients were excluded from the study if they had undergone dental or ophthalmologic surgeries. Dental cases were excluded because the majority of these procedures are performed in private office settings rather than in hospital, and ophthalmologic cases were excluded because ophthalmology is a regionalized service and is not specific to Chilliwack General Hospital.

A preliminary round of data collection took place from 15 May to 6 July 2015 to obtain a tally of postoperative emergency department visits, identify the hospitals where patients underwent their surgeries, and to develop a patient tracking process called the red dot initiative (Figure 1).

A second round of more detailed data collection using this process took

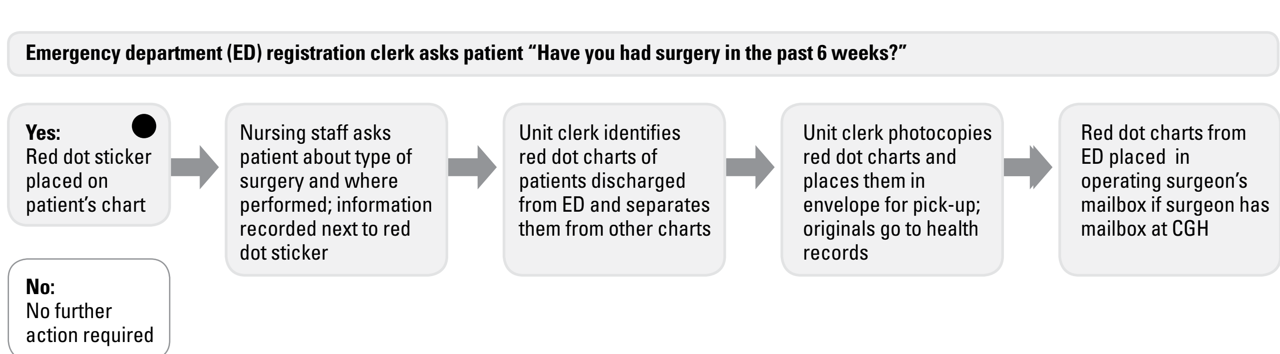


Figure 1. Red dot initiative: Process used to track patients visiting the Chilliwack General Hospital (CGH) emergency department for postoperative complaints.

place from 7 July to 30 September 2015. Only the data that was collected between 7 July and 30 September was used for analysis. The charts of patients presenting to the emergency department during this period were marked with a red dot sticker by the registration clerk to prompt nursing staff to ask questions about the surgery and record the answers. Information obtained included the surgeon who performed the original surgery, the presenting complaint, and the patient's disposition at discharge. Charts marked and annotated during this red dot initiative were copied after the patient was discharged, with the original going to health records and a copy being placed, if appropriate, in the operating surgeon's hospital mailbox.

The study protocol included a discretionary pathway for direct communication between the emergency room physician and the surgeon to address serious postoperative complications such as myocardial infarction, pulmonary embolism, and sepsis. Past experience with a high rate of false-positives for wound infection led to placing particular emphasis on accurate diagnosis, appropriate treatment, and continued follow-up.

Data collected on all red dot cases were analyzed and descriptive statistics were obtained.

Results

During the study period, 248 patients who presented to the Chilliwack General Hospital emergency department met study inclusion criteria. Of these patients, 138 (56%) had their surgeries performed at the study site, and 110 (44%) had their surgeries performed at other hospitals. A total of 915 patients underwent surgery at CGH during the study period, allowing us to estimate that 15.1% (138/915) of patients receiving surgery at the site made postoperative emergency department visits.

Presenting complaints (Figure 2) for all 248 patients presenting to the CGH emergency department varied: 57 (23.0%) presented with pain, 44 (17.7%) presented with postoperative infection, 31 (12.5 %) presented with postoperative bleeding, 27 (10.9%) presented for concerns about wound appearance, and 13 (5.2%) presented with symptoms of deep vein thrombosis or pulmonary embolism. In addition, 53 patients (21.4%) presented with other surgery-related complaints categorized as "Various." Only 23 patients (9.3%) presented with complaints unrelated to their surgery.

The disposition (Figure 3) of the 248 patients discharged from the CGH emergency department also varied: 100 (40.3%) were advised to arrange follow-up with their surgeon, 71 (28.6%) required no follow-up, and 29 (11.7%) were instructed to contact their GP for follow-up. Of the remainder, 23 (9.3%) had presented with complaints unrelated to surgery and their follow-up arrangements were not considered pertinent, and another 23 (9.3%) were categorized as "Other" because they had alternative follow-up arrangements. Only 2 patients (0.8%) required admission to hospital.

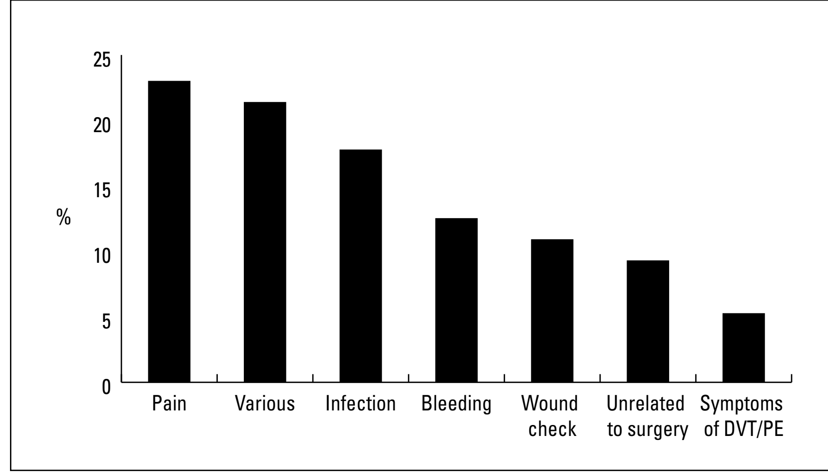


Figure 2. Presenting complaints of 248 patients visiting emergency department within 6 weeks of surgery.

DVT/PE = deep vein thrombosis/pulmonary embolism

Conclusions

The goal of this study was to identify patients presenting to the emergency department with postoperative complaints within 6 weeks of their surgery. The number of patients identified (15.1%) falls within a range found in other studies of postoperative complications presenting to the emergency department,[3-5] and in our study the vast majority of these (90.7%) presented with concerns directly related to the surgery performed.

Continuity of care

Only 40.3% of patients were discharged with advice to contact their surgeon, leaving almost 60% of patients unlikely to communicate with their surgeon regarding the postoperative concern that resulted in the emergency department visit. This lack of communication can result in fragmentation of postoperative care and is an issue for several reasons.

First, patients who require readmission postoperatively have been found to have higher survival rates at 1 year when cared for by the operating surgeon while in hospital,[6] suggesting that not having the surgeon involved can lead to less than optimal management of some postoperative complications. The study by Justiniano and colleagues also suggests that continuity of patient care at the hospital level is not in itself adequate and that continuity of care at the level of the surgeon improves patient outcomes.[6] Second, patients generally assume that their surgeon has been informed of their emergency department visits, new prescriptions, and changes in care. When they realize this is not the case, they may lose faith in both the surgeon and the health care system in general. Third, the lack of communication with the operating surgeon when a patient has a postoperative complication prevents surgeons from accurately tracking their postoperative complication rates and facilitating positive improvements in their practice and perioperative education of patients.

Our study findings suggest that a reliable, automatic, electronic notification system is needed to facilitate communication between the emergency department and surgeons. There is currently no formal notification system used in the Fraser Health Authority, where 71 442 surgeries (excluding ophthalmological procedures) were performed in 2017. Extrapolating from our findings that 15.1% of patients made postoperative emergency department visits, we suggest that over 10 000 patients a year could benefit from improved communication between the emergency department and surgeons.

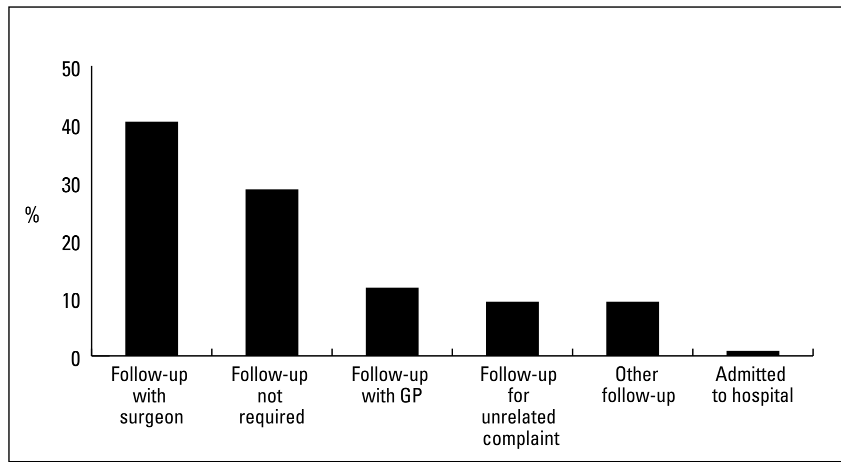


Figure 3. Disposition of 248 patients discharged from emergency department.

Perioperative education

The most common presenting complaints in this study were pain (23.0%), infection (17.7%), and bleeding (12.5%). A significant proportion of patients presented for wound checks (10.9%), but very few patients presenting to the emergency department required admission (0.8%). These findings are similar to those of other studies.

When Mahnert and colleagues retrospectively assessed for return visits to the emergency department after hysterectomy for benign disease they found a low admission rate (1.0%) and that pain was by far the most common complaint (29.5%).[3]

A 2010 study by Aiello and colleagues looking at appendectomy patients reported a slightly higher postoperative admission rate (2.2%) and also found pain to be the most common complaint (48.0%), followed by wound concerns (13.0%) and fever (13.0%).[4]

A 2001 study by Imasogie and Chung found a 1.0% rate of readmission within 30 days of ambulatory surgery.[7] Similarly, a 1992 study by Biswas and Leary described a 1.2% rate of readmission after day surgery,[1] and a 1998 study by Mezei and Chung described a 1.1% rate of readmission rate after ambulatory surgery across numerous specialties.[2] In addition to finding a very low admission rate in line with the studies described above, our study found that 28.6% of patients discharged from the emergency department required no follow-up whatsoever. These results indicate that significant postoperative complications are rare and suggest that initiatives to reduce excessive hospital visits would be beneficial.

A 2009 systematic review performed by Fredricks and colleagues found that intensive and individualized perioperative education is associated with a decline in postoperative symptoms experienced by the patient.[8] Improved counseling about what to expect during the postoperative period, delivered during preoperative patient preparation via the Preoperative Assessment Clinic, hospital-based teaching sessions, online resources, or other modalities, could reduce visits to the emergency department for minor complaints that are more appropriate for outpatient assessment. The expansion of perioperative education to reduce unnecessary emergency department visits is well supported in the literature.[3,4,9,10]

A reduction in unnecessary emergency department visits would benefit not only the individual patient by reducing the stress and anxiety associated with testing and intervention, but would eliminate expenditures incurred by the health system for such visits.

Further data analysis

In an extension of the study described here, we have gathered more information from a larger population to identify patient needs and deficiencies in current care. These data on presenting complaints and disposition of patients are currently being analyzed. As well, a postoperative survey was recently completed to assess the perioperative information patients received, their satisfaction with the information provided, and what delivery methods they would find most useful (e.g., preoperative teaching sessions at the hospital, online videos, preadmission clinic appointments). The data are also currently being reviewed and analyzed. Findings from this survey will be used to assist the working group that has been established to review preadmission processes and modify perioperative patient education.

Study limitations

The main limitation to this study is a data collection process that relied on patients remembering they had undergone a surgical procedure and registration clerks remembering to ask an initial question about surgery. Significant numbers of patients could have been missed because of this reliance on memory. Other limitations include a small sample size consisting of patients at a single community hospital and a study design focused on a limited amount of data, specifically the number of postoperative visits made by patients to the emergency department and where their surgery took place. These limitations mean the findings may not apply to other sites. Furthermore, we acknowledge that organizational culture varies from site to site and can affect communication between emergency physicians and surgeons. For example, surgeons at the study site agreed to be contacted directly by phone during working hours and additional evening hours regarding their patients presenting to the emergency department with postoperative complications regardless of whether they were on call, something that may not be acceptable to surgeons at other sites. Similarly, we acknowledge that perioperative education varies from site to site and across surgical specialties.

Summary

An analysis of data collected during the red dot initiative at Chilliwack General Hospital found postoperative visits to the emergency department were common among surgical patients but that the majority of visits were for minor complications or concerns. This and other findings support development of a notification system that improves communication between the emergency department and surgeons. Further study is underway to improve perioperative education, with preliminary data suggesting that teaching patients what to expect during the postoperative period could reduce unnecessary emergency department visits. BCMJ

Competing interests

None declared.

References

1. Biswas TK, Leary C. Postoperative hospital admission from a day surgery unit: A seven year retrospective study. Anaesth Intensive Care 1992; 20:147-150.
2. Mezei G, Chung F. Return hospital visits and hospital readmission after ambulatory sugery. Ann Surg 1999;230:721-727.
3. Mahnert N, Kamdar N, Lim C, et al. Risk factors for emergency department visits after hysterectomy for benign disease. Obstet Gynecol 2017;130:296-304.
4. Aiello F, Gross E, Krajewski A, et al. Post-appendectomy visits to the emergency department within the global period: A target for cost containment. Am J Surg 2010;200:357-362.
5. Hansen D, Fox J, Gross C, Bruun JS. Hospital readmission and emergency department visits following laparoscopic and open colon resection for cancer. Dis Colon Rectum 2013;56:1052-1061.
6. Justiniano CF, Xu Z, Becerra AZ, et al. Long-term deleterious impact of surgeon care fragmentation after colorectal surgery on survival: Continuity of care continue to count Dis Colon Rectum 2017; 60:1147-1154.
7. Imasogie N, Chung F. Effect of return hospital visits on economics of ambulatory surgery. Curr Opin Anesthesiol 2001; 12:573-578.
8. Fredericks S, Guruge S, Sidani S, Wan T. Patient demographics and learning needs: Examination of relationship. Clin Nurs Res 2009;18:307-322.
9. Gadler T, Gardiner A, Martinez N. Caring for the postoperative patient with complications presenting to the ED. Adv Emerg Nurs J 2014;36:134-144.
10. Twersky R, Fishman D, Homel P. What happens after discharge? Return hospital visits after ambulatory surgery. Anesth Analg 1997;84:319-324.

Management of acute dental trauma

In the workplace, oral and facial injuries are generally related to head or neck trauma. Occasionally, workers with catastrophic or multiple traumas may also sustain dental traumas that can be overlooked and not acutely dealt with, as the more serious injury treatment may take precedence. However, oral facial injuries can result in disfigurement and dysfunction that can have significant negative effects on an individual's quality of life. A worker with fractured, displaced, or lost teeth can have improved outcomes with appropriate first aid measures and early dental treatment.

Crown fractures and luxations (teeth pushed sideways or out of or into their socket) are the most common of all dental injuries. Prompt, correct emergency management is vital to the prognosis of an injured tooth. Treatment strategy after injury to a permanent tooth is dictated by the concern for vitality of the pulp tissue. All traumatized teeth require continued periodic monitoring, as long-term sequelae can include necrosis (pulp tissue death) and subsequent need for urgent treatment.

A fractured tooth can usually be restored or the fractured fragment reattached. If cold air or liquids cause pain in a fractured tooth, biting on a clean, moist piece of gauze or cloth may help reduce symptoms until the tooth is examined and treated by a dentist. When pulp tissue in the tooth is exposed or damaged because of a fracture, root canal therapy may be necessary. A vertical fracture extending into the root of a tooth usually requires extraction, while in a horizontal root fracture, the closer the fracture is to the root tip, the better the chances for long-term health of the tooth.

Proper emergency action can result in a tooth being replanted successfully and lasting for many years.

If a tooth is avulsed (knocked out completely) due to an injury or accident, it does not necessarily mean the tooth has been lost for good. Proper emergency action can result in a tooth being replanted successfully and lasting for many years. Treatment within 30 minutes offers a greater chance to save a tooth. If an avulsed tooth can be located immediately, handle it carefully and pick it up by the crown, without touching the root surface. If the root is dirty, gently rinse with water, do not use soap or chemicals, and do not scrub or dry the tooth. Avoid wrapping the tooth in tissue or a cloth and instead, if possible, immediately replace the tooth in the socket and gently push it into position and hold it in place with fingers or by closing the teeth together. Keeping the tooth moist is very important. If the tooth cannot be replaced in the socket, place the tooth in the mouth next to the cheek or in milk or tooth preservation solution. A dentist should be seen within 30 minutes, if possible, for evaluation and treatment. Even if the tooth cannot be reattached, the exam may pick up other injuries: sometimes neighboring teeth suffer an injury that can only be detected by a thorough dental examination.

A luxated tooth must be repositioned and stabilized by a dentist. Root canal treatment is often required and usually not initiated for at least a few days following injury.

Health care professionals should be prepared to give appropriate advice to patients on first aid for injured teeth. If you would like additional information or assistance for a worker patient with acute dental trauma, please contact a WorkSafeBC dental consultant through a medical advisor in your nearest WorkSafeBC office.

—Alison Kaplen, DMD
Dental consultant, WorkSafeBC Clinical Services

This article is the opinion of WorkSafeBC and has not been peer reviewed by the BCMJ *Editorial Board.*

LAST MINUTE REMINDER:

19th Annual WorkSafeBC Physician Education Conference is being held on Saturday, 20 October 2018, at Inn at Laurel Point, Victoria.

Visit www.worksafebcphysicians.com for details.

The physician's role in harm reduction

As respected leaders, physicians are well positioned to address community concerns with evidence and to advocate for harm reduction to reduce health inequities and improve the health of marginalized populations across British Columbia.

What is harm reduction?

Broadly speaking, harm reduction aims to reduce the morbidity and mortality associated with activities that may cause harm. Harm reduction applied to substance use is a comprehensive, nonjudgmental approach that focuses on preventing harm rather than preventing drug use. Harm reduction includes abstinence-based programs; it is one pillar in a four-pillar strategy, working together with prevention, treatment, and enforcement. Evidence shows harm reduction is a pragmatic, safe,[1] cost-effective,[2] and lifesaving[3] response to address adverse health and social outcomes associated with substance use. The Canadian Medical Association fully supports harm reduction strategies to address the adverse outcomes associated with the use of both legal and illegal psychoactive drugs, and recognizes that it is a clinically mandated and ethical method of care.[4]

While harm reduction is often thought of as the provision of sterile injection supplies to people who use drugs or supervised consumption sites, harm reduction approaches are broad-reaching and inform the design and delivery of policy, programs, and services to benefit people who use substances, their families, and the community at large.

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

Needle distribution and exchange

Policies that restrict the distribution of needles, such as one-for-one needle exchange, increase the likelihood that supplies will be shared, and thus limit the effectiveness of harm-reduction programs in preventing hepatitis C virus and HIV transmission.[5] Therefore, in 2003, consistent with best practice, needle distribution and safe disposal replaced the policy of needle exchange in BC. From 2007 to 2016, HIV diagnoses in people who inject drugs declined from 118 to 16 cases, representing 30% and 6.6% of total cases of HIV identified, respectively.[6] To enable safe disposal of used injection supplies, the BC harm reduction program provides personal sharps containers and safe-disposal education, while health authorities collaborate with municipalities to provide locally appropriate disposal options, including facilitating peer needle-recovery programs (needle sweeps), and needle-disposal containers in public spaces, health centres, and agencies.[7]

Harm reduction includes abstinence-based programs; it is one pillar in a four-pillar strategy, working together with prevention, treatment, and enforcement.

Client (or patient)–centred care and addressing stigma

Successful harm reduction programs focus on the needs of clients and embrace client-centred care. Harm reduction best practices in programing involves ongoing, meaningful engagement with organizations led by people who use drugs, and individuals with past or present experience who can provide expert and valuable perspectives.[8] Stigma experienced by people who use drugs creates a barrier to disclosing substance use and a reluctance to seek help. This is particularly salient given the context of the current overdose public health emergency and people dying while using substances alone.[9]

What can physicians do?

Physicians can respect people's rights to access care by treating the immediate health needs of people who use drugs while acknowledging patients' experiences—meeting people where they are at. The careful use of nonstigmatizing language by physicians and their staff can signal respect to clients. Guidelines on the use of respectful language have been developed (**Figure**), with key recommendations encouraging the use of people-first language, language reflecting the medical nature of substance-use disorders, language promoting recovery, and avoiding slang.[10] Addressing the needs of people who use drugs with compassion can build trust between them and health providers. This trust enables physicians to advocate for their patients and to connect them with treatment and harm-reduction services.

Physicians can help address the issue of marginalization by examining their own assumptions and values, and recognizing the role of social determinants of health and health inequities that predispose people to use substances. Physicians can also advocate for harm-reduction services

in their communities and respond to public concerns with evidence.

—Brandon Yau, BSc
UBC Faculty of Medicine student, on placement with BCCDC
—Emily Sollows, BN, RNc, MN
Nurse Educator, Harm Reduction, BCCDC
—Sara Young, MA, MHA(C)
Manager, Harm Reduction and Hepatitis Services, BCCDC
—Jane A. Buxton, MBBS, MHSc, FRCPC, Physician Epidemiologist and Harm Reduction Lead, BCCDC

References

1. Kappel N, Toth E, Tegner J, Lauridsen S. A qualitative study of how Danish drug consumption rooms influence health and well-being among people who use drugs. Harm Reduct J 2016;13:20.
2. Laufer FN. Cost-effectiveness of syringe exchange as an HIV prevention strategy. J Acquir Immune Defic Syndr 2001;28: 273-278.
3. Kimber J, Copeland L, Hickman M, et al. Survival and cessation in injecting drug users: Prospective observational study of outcomes and effect of opiate substitution treatment. BMJ 2010;341:c3172.
4. Canadian Medical Association submission to the House of Commons Standing Committee on Public Safety and National Security. Bill C-2 An Act to amend the Controlled Drugs and Substances Act. Accessed 30 August 2018. www.cma.ca/Assets/assets-library/document/en/advocacy/submissions/CMA_Brief_C-2_Respect%C3%A9-for_Communities_Act-English.pdf.
5. Bluthenthal RN, Ridgeway G, Schell T, et al. Examination of the association between syringe exchange program (SEP) dispensation policy and SEP client-level syringe coverage among injection drug users. Addiction 2007;102:638-646.
6. BC Centre for Disease Control. HIV in British Columbia: Annual Surveillance Report 2016. Accessed 30 August 2018. www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/STI/HIV_Annual_Report_2016.pdf.
7. BCCDC and Provincial Health Officer Position Statement. Retrieval of used needles. Accessed 24 August 2018. www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/Epid/Other/Position%20Statement_Needle%20Buy-Back_FINAL.pdf.
8. Greer AM, Luchenski SA, Amlani AA, et al. Peer engagement in harm reduction strategies and services: A critical case study and evaluation framework from British Columbia, Canada. BMC Public Health 2016;16:452.
9. BC Coroners Service. Illicit drug overdose deaths in BC (January 1, 2008 – July 31, 2018). Accessed 24 August 2018. www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/statistical/illicit-drug.pdf.
10. Toward the Heart. Respectful language and stigma regarding people who use substances (March 2017) Accessed 24 August 2018. www.towardtheheart.com/resource/new-respectful-language-and-stigma-regarding-people-who-use-substances/open.

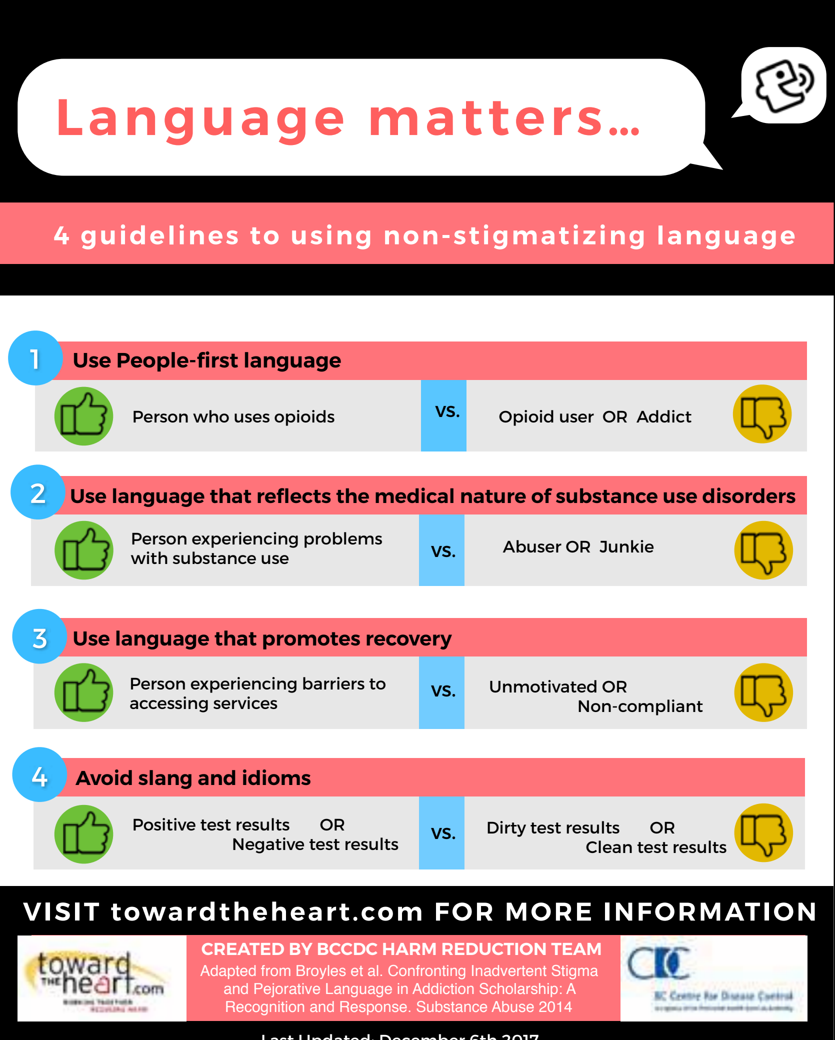


Figure. Guidelines on the use of respectful, nonstigmatizing language for physicians and their staff as part of client-centred care.

PulsePoint Respond app available in BC

The PulsePoint Respond smart phone app is ready to turn bystanders into potential lifesavers when a sudden cardiac arrest occurs in a public place in BC. BC Emergency Health Services (BCEHS) launched the free app in January throughout the province. The app provides vital information in the case of cardiac arrest, where minutes count in reducing suffering and preventing death.

The goal of the PulsePoint Respond app is to engage additional bystanders in the lifesaving acts of cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use. Currently, only one-third of sudden cardiac arrest victims receive bystander CPR, and, where available, publicly accessible AEDs are used less than 3% of the time. The app provides support to the internationally, clinically recognized chain of survival (**Figure 1**), increasing the chances of immediate CPR and rapid defibrillation.

This article is the opinion of the Emergency and Public Safety Committee, a subcommittee of Doctors of BC's Council on Health Promotion, and is not necessarily the opinion of Doctors of BC. This article has not been peer reviewed by the BCMJ *Editorial Board.*

In less than 6 months from the province-wide launch, almost 7000 users have downloaded the app and 604 "CPR Needed" alerts have been sent on 154 potential out-of-hospital cardiac arrests. This means that anyone who may suffer a sudden cardiac arrest in BC now has an increased chance of survival. BC is the first to have a province-wide program for this public notification service; however, other Canadian provinces are keen to follow if it proves to be successful. PulsePoint Respond covers all communities and municipalities in BC, and while it does rely on mobile phone coverage, it processes calls automatically, meaning there are no delays or changes in how paramedics are dispatched after 9-1-1 calls are received (**Figure 2**).

BCEHS paramedics and dispatchers will ensure a rapid response; however, without bystander CPR and AED use the chances of survival are low.

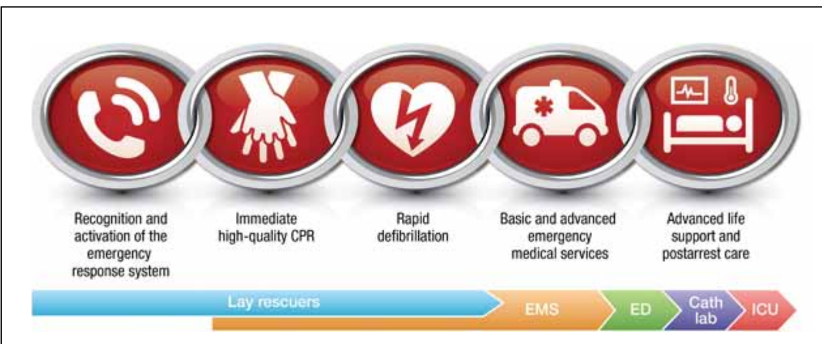


Figure 1. The chain of survival.

How the app works

Smart phone users who have downloaded the app are automatically connected to the BCEHS emergency dispatch system. When a sudden cardiac arrest is reported through 9-1-1, BCEHS dispatchers automatically send a notification of its location to all app users. Next, a "CPR Needed" alert flashes on the smart phone screen of each user who is within 400 metres, accompanied by a distinctive alert tone. Opening the alert loads the app with the following information:

- The app user's current location.
- The general reported location of the cardiac arrest victim.
- The location of any nearby AEDs.

To receive the "CPR Needed" alert, an app user must have the "CPR Needed" alert option turned on in the settings menu of their device, and they must be within walking distance of the reported sudden cardiac arrest (**Figure 3**).

The "CPR Needed" alert shows users a map pinpointing the location of nearby AEDs, which are an important tool that the general public can use safely before paramedics arrive.

We recognize that it may not always be possible for those receiving an alert to respond, and neither PulsePoint nor BCEHS keeps records of who receives or responds to alerts. No identifiable health information (e.g., the name, birth date, or personal health number of the patient, or details about the app user) is known or stored by the app or BCEHS.

The safety of our staff, patients, and bystanders is of utmost concern to everyone at BCEHS. While there have not been any reports of adverse incidents in the 3000-plus communities using PulsePoint Respond, we do not ask anyone to go anywhere where they may feel unsafe. Also, it is im-

Figure 2. How the PulsePoint Respond process unfolds.

portant to remember that the response process begins because someone has called for an emergency ambulance, is speaking to a BCEHS call-taker, and is most likely still on scene. As the response process unfolds, the BCEHS call-taker will remain on the line and provide support until crews are present. If there is cause for concern, the police and other appropriate agencies will be alerted as well.

Figure 3. "CPR Needed" alert screen showing the location of the app user, cardiac arrest victim, and AED.

How you can help

The greatest advocates for PulsePoint Respond are health care providers who see the impact of sudden cardiac arrest and understand the benefits of early CPR and AED use. Survival from sudden cardiac arrest is led by bystanders. BCEHS paramedics and dispatchers will ensure a rapid response; however, without bystander CPR and AED use the chances of survival are low.

Please spread the word among your family, friends, patients, and fellow health care professionals about the PulsePoint Respond app and its benefits. Put up posters where the public can see them and educate them to understand the benefits of early CPR and AED use.

The app can be downloaded from www.pulsepoint.org for iOS and Android. For PulsePoint Respond promotional materials to use in your practice, contact peter.thorpe@bcehs.ca.

—Peter Thorpe, PGDip
Director, Strategic Program Development, Clinical & Medical Programs, BCEHS

BC Medical Journal Writing Prizes

J.H. MacDermot Writing Award

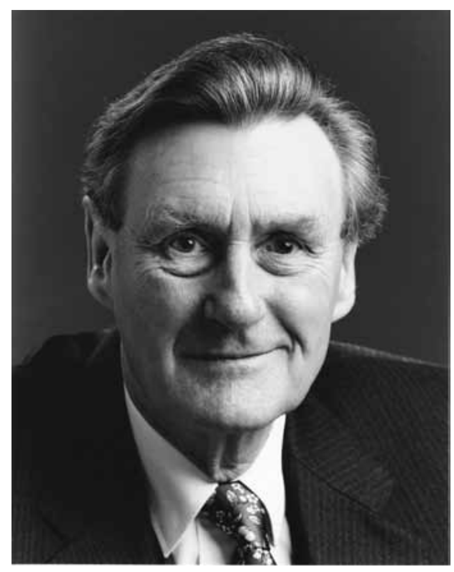
The *BCMJ* invites writing submissions from student authors, and each year awards a prize of $1000 for the best medical student submission accepted for print and online publication. Students are encouraged to submit full-length scientific articles and essay pieces for consideration.

The J.H. MacDermot Writing Award, sponsored by Doctors of BC, honors John Henry MacDermot, who served as editor for 34 years (1932–1968), overseeing the publication's transition from the *Vancouver Medical Association Bulletin* to the *BCMJ* in 1959. Dr MacDermot also served as BCMA president in 1926.

BCMJ Blog Writing Prize

To encourage med students to take their first foray into medical writing, the *BCMJ* awards an additional writing prize of $250 twice per year for the best 200- to 400-word blog submission accepted for online publication.

For submission guidelines and contest deadlines, please visit www.bcmj.org/submit-article-award.



Dr Angus Rae

A pioneer in the care of patients with kidney disease in British Columbia—establishing the Renal Unit at St. Paul's Hospital, initiating the home hemodialysis program, and traveling the province (and beyond) to treat patients—Dr Angus Rae has spent his long and storied career doggedly fighting his gentlemanly fight for recognition of the importance of the clinician's role in the teaching medicine.

Lindsay M. Lawson, MDCM, FRCPC

In the 30-plus years that I spent at St. Paul's Hospital I must have gone to more than a thousand medical grand rounds; fewer than a handful of them stand out in my memory. One that does was given by the remarkable man who is the subject of this article.

Dr Angus Rae was born in 1929 in London, UK, the first child of his radiologist father and nurse mother. He had an unremarkable childhood until life was disrupted by the onset of war. When bombing began in London he and his younger brother were sent to schools deep in the English countryside, safely tucked away from the usual bombing corridors. Still, every time the sirens sounded students had to take shelter—a highly exciting activity for a young teen Angus. One of his standout memories from the time is being sent back to London by ambulance due to onset of acute glomerulonephritis, though he insists this did not trigger his interest in kidneys.

Dr Lawson is a retired member of the *BCMJ* Editorial Board. She practised respiratory medicine at St. Paul's Hospital in Vancouver from 1982 to 2010. Like Dr Rae, she is happily retired in Victoria.

Dr Rae entered the London Hospital Medical School (now the Royal) in 1947 at age 18. Of approximately 80 students, only five or six were women. Meanwhile 80% were ex-servicemen who were much older, wiser, and more battle-worn than he. After completing his studies, Angus carried on with the usual licensing requirements (6 months' medicine/6 months' surgery), and then came compulsory military service. While waiting for a posting, Angus and a few young classmates completed parachute training with the Airborne Brigade but never had to jump in conflict.

When the posting finally came, he spent 2 years in Malaya (Malaysia) caring for British Gurkha troops and their families, happily supervising 250 births along with three excellent midwives and limited antibiotics—penicillin, sulpha, and tetracycline. He had many interesting medical encounters, a 6-week hike in the mountains of Nepal, and a trip with Fijian troops (also serving in Malaya) across the border to play and win a few rugby football matches in Thailand.

Finally in 1956 he was promoted to major in medical charge of retiring soldiers and sent home on a troop ship via Ceylon (Sri Lanka), Bombay (Mumbai), and Aden (Yemen). How the world has changed!

Once back home, Angus had to decide what to do with the rest of his life, but before he had made up his mind he was called up from the reserves to the Suez Canal conflict. Fortunately that ill-fated fight was short-lived and he returned home again, convinced that he wanted to study internal medicine. After a number of interviews he was offered a position in cardiology at the Royal Free Hospital, having been interviewed by Professor Sheila Sherlock and others. Until this day he is not sure if the deciding factor was that he played rugby, as there was intense sporting competition between the eight medical schools in London!

During his training, interest in the new field of hemodialysis was increasing, despite many "experts" considering it to be a waste of time, money, and resources. Detractors aside, Professor Sherlock (a liver specialist) encouraged one of her research fellows, Dr Stanley Shaldon, to start a renal unit. Angus became involved and joined the unit in 1962,

thus beginning his lifelong interest in the kidney and its diseases.

In the mid-60s, at a meeting of American nephrologists organized by his professor in London, Angus was offered a job in San Francisco. Always looking for adventure, he accepted and took his right-hand-drive car with him on the boat, planning to drive across the continent. He advertised for someone to drive with him to share the cost, and chose Prudence, a muscular, over six-foot-tall Australian sheep farmer who was not intimidated by the unusual car. Sitting in what would be considered the driver's seat, reclined, with her feet on the dash, she more than once caused the pair to be pulled over by police, who collapsed with mirth when they saw Prudence sleeping in the sun.

After a year at the University of California in San Francisco, the University of Washington in Seattle beckoned, and from there Professor Belding Scribner, a world leader in dialysis, sent Angus to Spokane to supervise one of the world's first home hemodialysis training programs, which the professor had recently set up.

While Angus was learning about this relatively new field of medicine, over the border Dr Bill Hurlburt was looking for someone to start a similar program at St. Paul's Hospital in Vancouver. Angus's name was suggested by a medical school classmate, Dr John Kerridge. Angus accepted, came to Vancouver in 1968, and went right to work. He didn't even ask what he would be paid. He was later told that until he could make $1000 per month in the fee-for-service system he would be paid up to that amount by St. Paul's. It took Angus 8 months to reach that threshold, and thereafter he survived on his own. He and his later appointees made their living on fee-for-service payments, pooled their income, and were never on the payroll of the hospital or the Faculty of Medicine except for responsibilities outside of patient care, such as lectures.

Soon after arriving in Vancouver Angus arranged for nurses from St. Paul's to visit Seattle and learn how best to train patients to do their own hemodialysis at home. The training was immediately implemented when the nurses returned to St. Paul's, and within 3 months two patients were trained and sent home to do their own hemodialysis, the first in BC.

By the end of the 1970s, the division had expanded to include Drs Clifford Chan Yan and Ronald Werb, then Paul Taylor, and later Tony Chiu, each of whom brought new ideas. The first, Dr Chan Yan introduced internal jugular catheterization, not only of value for blood access in acute renal failure, but also for total parenteral nutrition, so the unit took charge of those who needed this in hospital and at home.

In the late 70s there was pressure to start renal transplantations at St. Paul's, but this took them until 1986. The success was in large measure due to the appointment in 1984 of Dr David Landsberg, a transplant physician trained in eastern Canada. They were also fortunate to have a urologist, Dr David Manson, ready to take this on with enthusiasm. In another of life's coincidences, a member of the Ministry of Health was a diabetic with early renal failure unknown to his colleagues. He suspected he would be more likely to get a transplant if St. Paul's was given permission to start renal transplantations, which they were, and he did.

In 1986 their first transplant was performed on a 34-year-old male who is still alive with normal kidney function, having required a second transplant some years later. The program proved very successful, doubling the transplantation rate in BC in 3 months and tripling it in the first year. St. Paul's continues to have one of the leading programs, now listed among the top in numbers across the country.

The seed that Angus planted in 1968 has grown into a leading centre for the treatment of kidney disease across the land, with the vision to initiate new programs such as the Travellers' Dialysis Clinic (TDC)—inspired by Expo 86 for dialysis-dependent but otherwise healthy visitors from other provinces and overseas (local units were too full to take them as patients). As for advances in transplants, a paired exchange program and a living anonymous donor program have been initiated just to name two.

Nephrology was a small field when Angus came so he offered to consult on patients in several towns across BC and in Whitehorse, Yukon, where there was no general internist

Continued on page 410

L–R: Dr Angus Rae in Malaya in 1956 with nurses Domashiring Llama (Tibet), Sabitri Devi Tamang (Nepal), Matilda Mamon (India), and Dr Vincent Sweeney (Scotland).

Continued from page 409

in residence, thus saving the towns money and increasing the number of renal patients for the unit at St. Paul's.

Many of these communities eventually obtained their own internists, except Whitehorse, where Angus did his last clinic in 2007, 12 years after he had retired. In the 35 years of service to Whitehorse alone he did over 2000 consultations, in many cases saving patients and the medical system the expenses involved in having to be seen in major cities. This service to rural BC and Yukon was invaluable and set the standard for these clinics to this day.

Over the years, Angus gave many lectures, but none were as important, well received, and widely acclaimed as his 1990 Osler Lecture, which was subtitled the Rise and Fall of Bedside Medicine. The importance of a clinician's role in teaching medicine remains Angus's passion to this day and was instrumental in the part he played in the formation in 1998 of the University Clinical Faculty Association (now the Doctors of BC Section of Clinical Faculty).

Angus has written widely on diverse topics, from how to give bad news to patients to a report from the 1998 World Transplant Games in Sydney, Australia.

Building the Renal Unit at St. Paul's is Angus's major accomplishment, starting from virtually nothing in 1968, when he was alone but for excellent nurses and technicians. Patients were gathered from across BC and new physicians were appointed who together pooled their largely fee-for-service income, each taking a percentage according to seniority, paying for secretarial services, and buying their offices—initially just a hole in the ground and now elite studios from where they supervise the ever-expanding hemodialysis, peritoneal dialysis, and transplant services in the Renal Unit at St. Paul's.

The group's last appointee before Dr Rae left was Dr Adeera Levin in 1990. She is now head of the UBC Division of Nephrology working from St. Paul's and in 2015 was appointed to the Order of Canada for "her tireless work on behalf of people with kidney disease, both nationally and internationally."

Dr Angus Rae with his wife, Dr Ann Skidmore, receiving the BCMA Silver Medal of Service at the Victoria Conference Centre (1998).

From 1971 to 1981 Angus was in charge of the rotating internship program at St. Paul's, reputed to be one of the best of its kind, gathering students from many countries, including a woman from Chile escaping Pinochet's dictatorship. Angus thinks it is unfortunate that this system of training students by giving them a broad view of medicine from which to choose their future has been abandoned.

From 2006 to 2015, Angus continued to be involved in his work. He supervised students in the annual problem-based learning course on kidney matters (the last session of which took place on his 86th birthday). With the cash he received for this he established the Angus Rae Aboriginal MD Bursary to help increase the number of Indigenous students enrolling in our medical school.

Angus is especially proud of receiving the Kidney Foundation of Canada's Annual Award, being made a senior member of the CMA, being honored as clinical professor emeritus of medicine and given honorary alumnus status at UBC, his time as the American College of Physicians' governor for the BC chapter, and perhaps above all, having taught and mentored students from the day he arrived. He seems especially proud of the many letters of thanks they have sent him.

Angus is now happily retired in Victoria but is not idle. He continues to visit Yukon, having been granted honorary privileges at Whitehorse General Hospital for his many years of service.

He is a vocal advocate for an equal partnership between the academic culture of UBC's Faculty of Medicine and the clinical culture of those dedicating their lives to the care of patients. Such a union he believes is the only way to help our ailing medical system.

Most recently Angus encouraged me to vote for his favorite candidate in the election of the next president of Doctors of BC! He has been happily married to his wife, Ann, for many years and they have been blessed with children and grandchildren.

As for the title of Dr Rae's grand rounds that fascinated me? It was "Evolution: How the Mammal got its Nephron." BCMJ

BC researchers date "hibernating" HIV strains

Researchers at the BC Centre for Excellence in HIV/AIDS (BC-CfE) and Simon Fraser University, in partnership with the University of British Columbia and Western University, have developed a novel way for dating "hibernating" HIV strains, in an advancement for HIV cure research in the province. Published in *Proceedings of the National Academy of Sciences*, the research confirms that dormant HIV strains, which have integrated their DNA into that of the body's cells, can persist in the body for decades and can reactivate many years later, which is why HIV treatment needs to be maintained for life. The study confirms that the latent HIV reservoir is genetically diverse and can contain viral strains dating back to transmission.

In order to date dormant HIV strains within the viral reservoir, researchers needed to compare these strains with those that evolved within an individual living with HIV over the entire history of their infection.

The research provides further clues in the pursuit of an HIV cure, which will ultimately require the complete eradication of dormant HIV strains, which are unreachable by antiretroviral treatments and the immune system. Through advances in antiretroviral therapy, an individual living with HIV can now live a longer, healthier life on treatment, which works by stopping HIV from infecting new cells. On sustained treatment, individuals can achieve a level of virus that is undetectable by standard blood tests, and an undetectable viral load means improved health and that the virus is not transmittable to others.

This research was funded by the Canadian Institutes of Health Research in partnership with the Canadian Foundation for AIDS Research and the International AIDS Society, as well as the US National Institutes of Health. Dr Zabrina Brumme, Director, Laboratory with BC-CfE is lead author on the study.

Concussions loosen myelin around brain cells

Athletes may be returning to play sooner than they should. Detailed scans of concussed University of British Columbia hockey players found that the protective fatty tissue surrounding brain cell fibres was loosened 2 weeks after an injury, even though athletes felt fine and were deemed ready to return to the ice. The loosening of myelin slows the transmission of electrical signals between brain cells. Researchers previously showed in animals that this loosened myelin can completely deteriorate with subsequent blows—a condition that resembles multiple sclerosis.

This is the third study arising from the before-and-after study of 45 UBC hockey players. The athletes had their brains scanned with MRI before the season began; if they were concussed, they were rescanned 3 days afterward, 2 weeks afterward, and 2 months afterward. Eleven athletes were concussed during the season, and most of them underwent the additional MRI scans.

Conventional MRI imaging done in hospitals to assess brain injury does not reveal myelin loosening. Alex Rauscher, an associate professor in the Department of Pediatrics and the Canada Research Chair in Developmental Neuroimaging, and postdoctoral research fellow Alex Weber, used advanced digital analysis of the scans, using a UBC-developed, pixel-based statistical analysis to find changes that visual inspection could not reveal.

Previous analysis of the concussed athletes' scans, published by Rauscher in 2016, showed changes to the myelin in the corpus callosum, most susceptible to damage from sudden collisions against the interior of the skull, but researchers didn't know whether the myelin was diminished, akin to multiple sclerosis, or altered in another way. In this recent study it was revealed that the loosening around the nerve fibres that connect brain cells was temporary, and the myelin had returned to normal when the concussed players were rescanned 2 months after their concussions.

The findings provide a convincing reason to keep concussed athletes on the bench even if they no longer exhibit any symptoms, as measured by a standard test of cognitive abilities, balance, coordination, and mood. Passing a concussion test may not be a reliable indicator of whether the brain has truly healed, and more waiting time may be advisable to prevent long-term damage.

The study "Pathological insights from quantitative susceptibility mapping and diffusion tensor imaging in ice hockey players pre and post-concussion," is published in *Frontiers in Neurology*.

Gut enzymes key to producing universal blood

UBC researchers have identified a new group of enzymes that can turn any blood type into the universally usable type O.

Blood type is determined by the presence of antigens on the surface of red blood cells, and antigens can trigger an immune response if they are foreign to the body; therefore, transfusion patients should receive either their own blood type or type O to avoid a reaction.

Removing antigens from blood effectively transforms it into type O. Lead researcher Stephen Withers, a

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cme calendar

CME listings rates and details

Rates: $75 for up to 1000 characters (maximum), plus GST per month; there is no partial rate. If the course or event is over before an issue of the *BCMJ* comes out, there is no discount. Visa and MasterCard accepted.

Deadlines:
Online: Every Thursday (listings are posted every Friday).
Print: The first of the month 1 month prior to the issue in which you want your notice to appear, e.g., 1 February for the March issue. The *BCMJ* is distributed by second-class mail in the second week of each month except January and August.

Place your ad at www.bcmj.org/cme-advertising. Payment is made at the time you place the ad, by either Visa or Mastercard.

Planning your CME listing: Planning to advertise your CME event several months in advance can help improve attendance. Members need several weeks to plan to attend; we suggest that your ad be posted 2 to 4 months prior to the event.

CME ON THE RUN
VGH and various videoconference locations, 30 Nov–10 May (Fri)
CME on the Run sessions are held at the Paetzold Lecture Theatre, Vancouver General Hospital and there are opportunities to participate via videoconference from various hospital sites. Each program runs on Friday afternoons from 1–5 p.m. and includes great speakers and learning materials. Topics & Dates: 30 Nov (diagnostics & radiology). Topics include: Cardiac imaging: When and what to order; Imaging modalities in hip pain; Cardiovascular risk screening: What's new; Office assessment of dementia: A practical approach; Interpreting a DEXA scan: What's in the numbers; PSA screening: A debate; Interpreting sex hormone lab values; Choosing wisely: Primary care's most overused lab tests. The next sessions are: 25 Jan (therapeutics); 1 Mar (geriatrics); 12 Apr (gynecology & urology); 10 May (internal medicine). To register and for more information visit ubccpd.ca, call 604 675-3777; or e-mail cpd.info@ubc.ca.

SNOMED CT EXPO 2018
Vancouver, 10–19 Oct (Wed–Fri)
SNOMED CT Expo 2018: The Global Language of Healthcare will be held at the Pan Pacific Hotel, and showcase the latest achievements and research in semantic interoperability, specifically the SNOMED CT clinical terminology. The themes prevalent in this year's Expo include the role that clinical terminology plays within genomic and precision medicine, and clinical data analysis. This event is attended largely by international clinicians but extends an opportunity to BC doctors to get involved in the determination of relevant clinical terminology in SNOMED CT in a variety of specialty areas, applicable to an international setting. SNOMED CT Expo 2018 program (www.snomedexpo.org) offers educational tutorials and workshops at no additional cost to participants, and is available for attendees to earn credits towards maintaining their CPHIMS-CA designation through Digital Health Canada. Registration: www.snomedexpo.org/register-now.

BC ENDOCRINE DAY
Vancouver, 19 Oct (Fri)
The 18th Annual Endocrine Day will focus on office endocrinology. The Endocrine Research Society is pleased to present an interactive case-based review of common endocrine problems at the Sandman Vancouver City Centre Hotel, 180 W. Georgia Street. Join us for a full-day update for the primary care physician on selected endocrine topics. Presented by local physicians from the Division of Endocrinology at St. Paul's Hospital, this course will review endocrine health issues pertaining to the thyroid, pituitary and adrenal, hormone replacement therapy, diabetes, research/laboratory work, and practical mini-case studies. Register now as space is limited. Online registration at www.endocrineresearchsociety.com/events/18th-annual-bc-endocrine-day-conference. Further information: Tristan Jeffery, Endocrine Research Society, endocrine.research.society@gmail.com. Phone: 604 689-1055.

ALLERGY AND CLINICAL IMMUNOLOGY UPDATE
Vancouver, 20 Oct (Sat)
The Allergy and Clinical Immunology Update is back again this year! This 1-day conference offers timely updates on common allergy and immunology issues faced by family physicians and pediatricians in the clinical setting. Participants will hear from leaders in the field on topics such as food allergy, drug allergy, immunodeficiency, and asthma. Participants last year remarked that they

felt more confident managing food allergy and practical advice in daily practice. Target audience: family physicians, pediatricians, nurses, residents. Accreditation: Up to 7.0 Mainpro+/MOC Section 1 credits. This update will be held at the SFU Segal Building in downtown Vancouver. To register and for more information, please visit https://ubccpd.ca/course/allergy2018, call 604 675- 3777, or e-mail cpd.info@ubc.ca.

HYPNOSIS FOR CHILDREN AND TEENS
Vancouver, 20 Oct (Sat) and 19 Jan (Sat)
Canadian Society of Clinical Hypnosis is pleased to present a 2-day clinical training workshop from 9:00 a.m.–4:30 p.m., for health professionals at BC Children's Hospital, Room KO-155. Children in pain and distress are highly responsive to hypnotic suggestions for relief, sensation alteration, and for comfort. This workshop will teach how to utilize pediatric hypnosis to address common distressing hospital procedures and enable children to cope, co-operate, and feel better. It is specifically designed to strengthen clinical practice skills. The 2-day workshop is provided over 2 Saturdays, 3 months apart to allow for the implementation of skills and practice opportunities between sessions. At the second session, case experiences will be discussed, analyzed, alternative strategies demonstrated, and learning refined and practiced. Attendance on both days is mandatory. We will focus on hypnotic language, communication skills, and pediatric hypnotic strategies to therapeutically address pain, distress, and anxiety. Live demonstrations, video examples, and supervised practice sessions will be a part of this hands-on experience. For more information visit www.hypnosis.bc.ca.

CANADIAN SOCIETY OF HOSPITAL MEDICINE CONFERENCE
Whistler, 25–27 Oct (Thu–Sat)
To be held at Fairmont Château Whistler, this interactive conference will provide clinically relevant updates to hospital medicine physicians, general internists, family physicians providing in-patient care, and residents/students. The conference will review current work-up and therapeutic approaches for common inpatient clinical presentations, and identify essential skills required to care for medically complex adult inpatients. Cost: $699. Accreditation: This event is accredited for up to 14.5 Mainpro+ and MOC Section 1 credits. For more details and to register, visit http://ubccpd.ca/course/CSHM2018; e-mail info.cpd@ubc.ca; or call 604 675-3777.

26th OBSTETRICS UPDATE FOR FAMILY PHYSICIANS
Vancouver, 25–26 Oct (Thu–Fri)
Please join us for this 2-day course at Vancouver Marriott Pinnacle Downtown Hotel. This course is designed to meet the needs of a busy practitioner, no matter where you work! Suitable even if you don't attend births—provides updates for early pregnancy care, postpartum, and newborn care. Wine and cheese social event at the end of the day on Thursday! Hands-On Ultrasound Education Obstetrics Course as post-conference workshop on Sat 27 Oct and Sun 28 Oct. Accreditation: up to 13.50 Mainpro+ credits. To register and for more information visit https://ubccpd.ca/course/OB2018, call 604 675-3777, e-mail cpd.info@ubc.ca.

GP IN ONCOLOGY CASE STUDY DAY & FP ONCOLOGY CME DAY
Vancouver, 23–24 Nov (Fri–Sat)
BC Cancer's Family Practice Oncology Network is presenting two practice-ready CME events for family physicians at BC Cancer's 80th Anniversary Summit, at the Sheraton Vancouver Wall Centre—November 23: GPO (General Practitioner in Oncology) Case Study Day, and November 24: Family Practice Oncology CME Day. GPO Case Study Day provides in-depth exploration of prevalent and emerging challenges in cancer care through case-based discussion, while Family Practice Oncology CME Day provides insight into new developments and practice changing guidelines in cancer care. Both offer opportunity to build helpful cancer care connections, and are accredited by the College of Family Physicians of Canada for up to 5.75 Mainpro+ credits each. Register today at bccancersummit.ca. Full details at fpon.ca or via jennifer.wolfe@bccancer.bc.ca

MINDFULNESS IN MEDICINE
Brentwood Bay, 23–26 Nov (Fri–Mon)
This Foundations experiential workshop introduces the theory and practice of mindfulness and meditation for physicians, nurses, and other allied health professionals. Bringing mindfulness into our lives allows us to build resilience and find joy, and meaning in the work that we do. During this 4-day workshop we will explore the unique challenges of health care, review the clinical and neuroscientific basis of mindfulness, and learn formal and informal skills of stress management, self-care, and meditation and find ways to bring these into our personal and professional lives. This popular 16-hour workshop will take place over 4 half days in Brentwood Bay, leaving lots of opportunity to explore the beauty and recreation of the area. Each workshop is accredited for 16 Mainpro+ group learning credits and has a 30 person limit, so register today! Contact us at hello@livingthismoment.ca, or check out https://livingthismoment.ca/event/mindfulness-in-health-care-foundations-of-theory-and-practice/ for more information.

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GP IN ONCOLOGY TRAINING
Vancouver, 4 Feb–15 Feb 2019 (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 30 days of customized clinic experience at the cancer center 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.

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professor of chemistry at UBC, and his team previously developed enzymes that were capable of doing so, but this latest study identifies a more powerful group of enzymes found in the human gut.

The researchers sampled DNA from millions of microorganisms found in environmental samples—a technique known as metagenomics—to find an environment in which the desired enzymes might be found. They eventually focused on the mucosal lining of the human gut, which contains sugars that are similar in structure to blood antigens.

By homing in on the bacteria feeding on those sugars, they isolated the enzymes the bacteria use to pluck off the sugar molecules. They then produced quantities of those enzymes through cloning and found that they were capable of performing a similar action on blood antigens.

Withers and his colleagues—UBC microbiologist Steven Hallam and pathologist Jay Kizhakkedathu of the Centre for Blood Research at UBC—are applying for a patent on the new enzymes and are hoping to test them on a larger scale in the future, in preparation for clinical testing.

The study, funded by the Canadian Institutes of Health Research, was presented at the American Chemical Society's annual meeting in Boston in August 2018.

Canadian Charter of Rights for People with Dementia

The Alzheimer Society of Canada's Advisory Group of people with dementia has created a Canadian Charter of Rights for People with Dementia. Although people with dementia hold the same rights as every Canadian citizen, they face cultural, social, and economic barriers to claiming these rights, leaving many facing discrimination, isolation, and treatment that contravenes their basic rights as human beings. The Advisory Group set out to define seven explicit rights to give a greater voice and authority to those with dementia and to ensure the people and organizations that support them know and protect their rights. These include the right to:

- Be free from discrimination of any kind.
- Benefit from all of Canada's civic and legal rights.
- Participate in developing and implementing policies that affect their life.
- Access support and opportunities to live as independent and engaged citizens in their community.
- Be informed and supported so they can fully participate in decisions affecting their care and life from the point of diagnosis to palliative and end-of-life care.
- Expect that professionals involved in all aspects of their care are trained in dementia and human rights and are accountable to uphold these rights.
- Access effective complaint and appeal procedures when their rights are not protected or respected.

The Charter will also serve to guide the federal government as it develops and implements a national dementia strategy for Canada.

To read stories from individuals affected by dementia, learn more about the Charter, and download a free copy, visit www.alzheimer.ca/Charter.

Fit middle-aged athletes susceptible to cardiovascular risk factors

A recent UBC study highlights how important it is for middle-aged athletes to have their doctor check their cardiovascular risk factors, especially if they have high blood pressure, high cholesterol, or a family history of cardiovascular disease.

For the study, researchers followed 798 "masters athletes"—

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CLASSIFIED ADVERTISING (limited to 700 characters)

Rates:
Doctors of BC members: $50 + GST per month for each insertion of up to 350 characters. $75 + GST for insertions of 351 to 700 characters. Payment is required at the time that you place the ad.
Non-members: $60 + GST per month for each insertion of up to 350 characters. $90 + GST for insertions of 351 to 700 characters. Payment is required at the time that you place the ad.
Deadlines: Ads must be submitted or cancelled by the first of the month preceding the month of publication, e.g., by 1 November for December publication.
Visit www.bcmj.org/classified-advertising for more information. Place your classified ad online at www.bcmj.org/classifieds-advertising.

practices available

RICHMOND (CITY CENTRE)—FP, PART-TIME
Busy well-established storefront family-practice clinic with two physicians looking for another part-time FP. Suitable for someone who wants to work only 2 to 4 days (min. 6 hr./day) per week. No weekends, evenings, obs, hospital. Residential care optional. Modern spacious office. Profile EMR. Amiable staff. Walk-ins optional. Future full-time possible. Must speak basic Mandarin. Contact richmondmedical@hotmail.com. Guaranteed minimum $90/hr. for first 4 months, and revenue split thereafter.

SMITHERS—TWO PRACTICES FOR SALE
Two family practices for sale. Acquire well-established 17-year-old busy rural practices in downtown Smithers, with services including obstetrics and MOT medicals, utilizing MOIS EMR. Hospital is located nearby with potential for ER shifts. Embrace the rural lifestyle with activities such as golfing, boating, kayaking, lake and pool swimming, fishing, hunting, snowmobiling, cross country and downhill skiing. If interested please email iss24@yahoo.com or dr.pretorius.office@centralsquare.ca.

VANCOUVER (W BROADWAY)—FP
Well-equipped, well-established, busy, turnkey, family practice for sale. OSCAR EMR, fibre-optic Internet. Lovely patients, lovely view, lovely setting. Email broadwayfamilypractice@gmail.com.

employment

ARMSTRONG—FT FAMILY PHYSICIAN
Haugen Medical Group, located in the heart of the North Okanagan, is in need of a full-time family physician to join a busy family practice group. Flexible hours, congenial peers, and competent nursing and MOA staff will provide exceptional support with very competitive overhead rates. Obstetrics, nursing home, and inpatient hospital care are not required but remain optional. Payment schedule: fee for service. If you are looking for a fulfilling career balanced with everything the Okanagan lifestyle has to offer, please contact Maria Varga for more information at mariavarga86@gmail.com.

BRITISH COLUMBIA—#1 MEDICAL RECRUITMENT SPECIALISTS
Physicians For You. For the last 10 years we have been assisting clinics looking for family physicians and specialists, and assisting physicians looking for short-, medium-, and long-term positions across Canada. Our goal for everyone we work with is to provide expert guidance, advice, and support throughout the entire recruitment process, and to be available for you 24/7 to make the process as efficient and hassle-free as it can be for all involved. If you're interested, or just keen for further information, please contact us: info@physiciansforyou.ca, 778 930-0265.

BURNABY—PT/FT FP LOCUM/ SPECIALIST
Freshly renovated Burnaby office with beautiful views looking for physicians. We feature a 75/25 split, a convenient location 7 minutes from the Patterson SkyTrain station, flexible working hours, OSCAR EMR, and printer in each room, group practice, friendly MOAs, and free secure underground parking. Please contact us at namc3373@hotmail.com.

COQUITLAM (COTTONWOOD, CONNOLLY, CYPRESS LODGES)—GPS
Opportunities exist for GPs at tertiary care mental health rehabilitation facilities on the Riverview lands. Responsibilities include daily visits Monday to Friday (timing flexible), providing direct ongoing medical care for an assigned group of mental health inpatients; admission assessment and discharge summary; ward rounds; liaison with other support and rehabilitation disciplines. On-call is shared between the GPs (including weekends). Psychiatric care is provided by psychiatrists, with their own on-call schedule. Remuneration via APP sessions. Start date (15 August 2018) is negotiable. Interested candidates submit cv to: loretta.kane@fraserhealth.ca.

NANAIMO—FT/PT FAMILY PHYSICIAN
Drs Jenny, Margo, Stefan, Seamus, Alva, and Jennifer are looking for a physician to join their brand new, state-of-the-art clinic. Great support staff, Accuro-based EMR, online booking, kiosk check-in, and our friendly atmosphere sets our clinic apart from the rest. Walk-ins available and flexible hours; no buy-in, no overhead during vacation, competitive splits. Please call Jenny or Shanda at 250 591-9622 (ext. 6) for details or to book a tour of our clinic.

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NANAIMO—GP
General practitioner required for locum or permanent positions. The Caledonian Clinic is located in Nanaimo on beautiful Vancouver 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 email ammy.pitt@caledonianclinic.ca. Visit our website at www.caledonianclinic.ca.

NORTH DELTA—TWO FPS, LOCUM/FT
Looking for two family physicians for our clinic at the Scottsdale Medical Centre to start ASAP as locums, full-time, or associates, with the intention of being partners in the long run. Clinic is located in North Delta (open since 1983). Fully equipped with EMR and paper charts. We have a full-time family practice and a walk-in clinic. Billing split negotiable. Contact medicalclinic07@gmail.com or call 604 597-1606 as soon as possible.

NORTH VAN—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.

PITT MEADOWS—FAMILY PHYSICIANS
We are seeking three full-time family physicians to join our team at the New Pitt Meadows Medical Clinic. We encourage physicians to have a full family practice with regular shifts in our very busy walk-in clinic. The NPMMC is a purpose-built, well-established, and highly reputed practice in Pitt Meadows with beautiful views. It is ideally situated between Coquitlam and Maple Ridge in a high-visibility, high-traffic location. We have excellent staff. Low overheads for full-time physicians. At present, the clinic is open 6 days per week. For further details visit www.newpittmeadowsmedicalclinic.ca or contact Dr L. Challa at 604 465-0720.

POWELL RIVER—LOCUM
The Medical Clinic Associates is looking for short- and long-term locums. The medical community offers excellent specialist backup and has a well-equipped 33-bed hospital. This beautiful community offers outstanding outdoor recreation. For more information contact Laurie Fuller at 604 485-3927, or email clinic@tmca-pr.ca. Website: powellrivermedicalclinic.ca.

SOUTH SURREY/WHITE ROCK—FP
Busy family/walk-in practice in South Surrey requires GP to build family practice. The community is growing rapidly and there is great need for family physicians. Close to beaches and recreational areas of Metro Vancouver. OSCAR EMR, nurses/MOAs on all shifts. CDM support available. Competitive split. Please contact Carol at Peninsulamedical@live.com or 604 916-2050.

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 (INNER CITY)—GENERAL PRACTITIONER
The Vancouver Native Health Society is looking for general practitioners to join us in providing primary health care promoting both Indigenous and western approaches to health and wellness, healing and medicines, and culturally safe care. Physician payment is provided through sessional payment funding (VCH). The VNHS medical clinic is a multidisciplinary comprehensive care clinic responding to the needs of the Indigenous and non-Indigenous community. We welcome applications from interested physicians. Applications and inquiries may be made by contacting Robyn Vermette at hra@vnhs.info.

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 Winnie at medicalclinicbc@gmail.com.

VANCOUVER—RADIOLOGY LOCUM
Part-time (avg. 3 days/week) 6-month radiology locum position available at Mount Saint Joseph Hospital, 3 Dec 2018 to 3 June 2019, with potential to extend. Responsibilities include general X-ray, US, CT, and general interventions in addition to on-call coverage. Diagnostic breast imaging also possible if the candidate has subspecialty experience in this area. This is a diverse community radiology practice in close proximity to VGH and SPH. Any applicant must hold Royal College of Physicians and Surgeons of Canada certification in radiology and be eligible for full licensure with the College of Physicians and Surgeons of BC. For further details and inquiries, please email msjrads@gmail.com.

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—PERMANENT/P-T FP
Experienced family physician wishing to expand medical team at Mattick's Farm in beautiful Cordova Bay. Fully equipped office, OSCAR EMR, congenial staff, close to schools. Contact phoughton@shawcable.com, phone 250 658-5228.

medical office space

BURNABY—INTERESTED IN JOINING A PEDIATRIC PRACTICE?
We are looking for pediatricians and pediatric specialists to join Kensington Medical Clinic, a large multidiscipline practice located in Burnaby. We have six pediatricians, a pediatric cardiologist, and 12 GPs on staff. Collaborative atmosphere and competitive remuneration. Contact Jeremy at 604 299-9765 or jmickolwin@kensingtonmedicalclinic.com.

NORTH VAN (DELBROOK PLAZA)—MED OFFICE SPACE, 800 SQ. FT.
Medical office building (800 sq. ft.) available at 3759 Delbrook Ave., North Vancouver. Can be rented as is or after renovations. A convenient location for access by public transport or car with free parking. Close to highway and pharmacies. Text 604 961-8432, email armind erbrar@gmail.com.

VANCOUVER—PHYSICIANS & THERAPIST
Fully furnished modern medical office located in Fairmont Medical Building near VGH has medical examination rooms available for physicians/health professionals and consultation rooms for therapists. Office is open 7 days a week 7a.m. to 7 p.m. Terms are flexible to accommodate casual, part-time, and full-time hours. Offering both basic and fee-split leasing options. Able to accommodate both paper and EMR (Accuro) practices (EMR training available). Additional services provided include medical billing, transcription, medical supplies, marketing/advertising, and support staff. For more information please email raz@elitemedicalassociates.com.

vacation properties

PENTICTON—OKANAGAN VACATION
Plan your Okanagan fall wine country getaway. Modern two-bedroom/one-bath suite located on the lower level of our home. Private entrance, fully equipped kitchen, and laundry. Expansive view of Skaha Lake. Close to golf, wineries, and KVR bike trail. $150/night, $900/week. Contact Dr Glen Burgoyne: glenburgoyne@hotmail.com or 250 462-8270.

PROVENCE, FRANCE—YOUR VILLA
Les Geraniums, a luxury 3-bedroom, 2½ bath villa, is your home in the heart of Provence. Expansive terrace with pool and panoramic

views. New kitchen and bathrooms. Walk to lovely market town. One hour to Aix and Nice. Come and enjoy the sun of southern France! 604 522-5196. villavar@telus.net.

miscellaneous

CANADA-WIDE—MED TRANSCRIPTION
Medical transcription specialists since 2002, Canada-wide. Excellent quality and turnaround. All specialties, family practice, and IME reports. Telephone or digital recorder. Fully confidential, PIPEDA compliant. Dictation tips at www.2ascribe.com/tips. Contact us at www.2ascribe.com, info@2ascribe.com, or toll free at 1 866 503-4003.

FREE MEDICAL RECORD STORAGE
Retiring, moving, or closing your family practice? RSRS is Canada's #1 and only physician-managed paper and EMR medical records storage company. Since 1997. No hidden costs. Call for your free practice closure package: everything you need to plan your practice closure. Phone 1 866 348-8308 (ext. 2), email info@rsrs.com, or visit www.RSRS.com.

PATIENT RECORD STORAGE—FREE
Retiring, moving, or closing your family or general practice, physician's estate? DOCUdavit Medical Solutions provides free storage for your active paper or electronic patient records with no hidden costs, including a patient mailing and doctor's web page. Contact Sid Soil at DOCUdavit Solutions today at 1 888 781-9083, ext. 105, or email ssoil@docudavit.com. We also provide great rates for closing specialists.

VANCOUVER—TAX & ACCOUNTING SVCS
Rod McNeil, CPA, CGA: Tax, accounting, and business solutions for medical and health professionals (corporate and personal). Specializing in health professionals for the past 11 years, and the tax and financial issues facing them at various career and professional stages. The tax area is complex, and practitioners are often not aware of solutions available to them and which avenues to take. My goal is to help you navigate and keep more of what you earn by minimizing overall tax burdens where possible, while at the same time providing you with personalized service. Website: www.rwmcga.com, email: rodney@rwmcga.com, phone: 778 552-0229.

Is the *BCMJ* good value?

In 2017 the *BCMJ* cost each member $24, or about $2.40 per issue.

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adults aged 35 and older who engage in moderate to vigorous physical activity at least 3 days per week. The participants included a range of athletes—runners, cyclists, triathletes, rowers, and hockey players.

Participants were asked questions about their health, family history, and physical activity levels. They also had their blood pressure checked and waist circumference measured. Some participants also took part in an exercise stress test. Those with abnormal results underwent further testing, such as a CT coronary angiogram, to determine if they had cardiovascular disease.

Of the 798 athletes, 94 (12%) were found to have significant cardiovascular disease. Ten participants were found to have severe coronary artery disease (blockage in their artery of 70% or greater) despite not having any symptoms.

This study's findings build on previous research that found masters athletes have a higher incidence of cardiovascular disease than non-athletes of the same age with similar risk factors. However, previous research has also found that, compared to non-athletes, masters athletes typically have more calcified plaque, which is known to be more stable and less likely to cause a heart attack.

While the findings may seem alarming, Barbara Morrison, the study's lead author and a PhD student in experimental medicine at UBC, emphasized that it doesn't mean masters athletes should stop exercising. She recommends people see their doctor for regular checkups, including blood pressure and cholesterol monitoring, especially if they have a family history of heart attack or stroke, and exercise in moderation. When taken to the extreme, exercise may have the potential to do harm.

Coauthored by researchers at SportsCardiologyBC, BC Children's Hospital, and Weill Cornell Medical College in New York, the study was funded by Mitacs Canada and the Canadian Institutes of Health Research. The study is titled "Assessment of cardiovascular risk and preparticipation screening protocols in masters athletes: The Masters Athlete Screening Study (MASS): A cross-sectional study," and is published in *BMJ Open Sport and Exercise Medicine*.

New CMPA president: Dr Debra Boyce

Dr Debra Boyce is the new president of the Canadian Medical Protective Association (CMPA), elected in late August. Dr Boyce is a family physician based in Peterborough, Ontario, with a history of working in community and hospital medical practice, and an active staff member at the Peterborough Regional Health Centre, and the Peterborough Family Health Team. She also serves as preceptor of the Peterborough-Kawartha Family Medicine Residency program, the Rural Ontario Medical Program, and as an associate professor at both McMaster and Queen's Universities.

First elected to the CMPA Council in 2008, Dr Boyce served on the Executive Committee and many of the association's governance committees. She also chaired the Case Review Committee, the Human Resources and Compensation Committee, and the Member and Stakeholder Relations Committee. Prior to her election as president, Dr Boyce served as the CMPA's second and first vice president.

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Proust questionnaire: Dr Bonnie Henry

What profession might you have pursued, if not medicine?
I was really keen on marine biology in undergrad and would have pursued that if I hadn't gotten into medical school. Thankfully I did get into med school because I later found out I get really seasick, which would have made marine biology a poor career choice!

Which talent would you most like to have?
I would love to be able to sing but am constantly reminded that it is not my strength.

Which living physician do you most admire?
I have been so fortunate to have worked with a number of wonderful physician mentors and leaders including my predecessor, Dr Perry Kendall, whom I admire tremendously.

Dr Henry is a public health and preventive medicine specialist who has worked across Canada and internationally on myriad public health issues from Ebola to SARS to the current overdose crisis. She is the author of *Soap and Water & Common Sense* and was appointed to the position of Provincial Health Officer for BC in February 2018.

What do you consider your greatest achievement?
Mentoring and supporting many brilliant young women and hopefully being a positive role model.

What is your idea of perfect happiness?
A glass of wine, a good book, and jazz in the background. That and those exceedingly rare moments during a long run when the pain disappears and I feel the flow; unfortunately those moments are fleeting!

What is your greatest fear?
Personally, developing Alzheimer disease. Professionally, I fear antimicrobial resistance and that we will never find a way to stem the tragedy of overdose deaths we are currently experiencing.

What is the trait you most deplore in yourself?
Procrastination!

What is your favorite activity?
Running, for my mental and emotional health along with the physical. And more recently, yoga.

Which words or phrases do you most overuse?
This too shall pass.

Where would you most like to practise?
I have the best job in the country and am happy right where I am, based in Victoria but with responsibility for the province.

What technological medical advance do you most anticipate?
A cure for Alzheimer disease or, better yet, effective prevention.

What is your most marked characteristic?
I am not very tall! People most often tell me I am always calm (even in a crisis) and talk softly.

What do you most value in your colleagues?
Patience and kindness.

Who are your favorite writers?
Milan Kundera, Ian McEwan, and Madeleine Thien.

What is your greatest regret?
Not being a better communicator to my patients, colleagues, family, and friends.

How would you like to die?
I once worked with the search and rescue team in Comox and we were called to attend someone on the glacier. It was a beautiful, sunny Saturday and an older woman had been out on the mountain hiking with friends. They had just finished a nice lunch and she collapsed and died just as they started down. I have often thought that was a lovely way to go.

What is your motto?
In patience lies wisdom.

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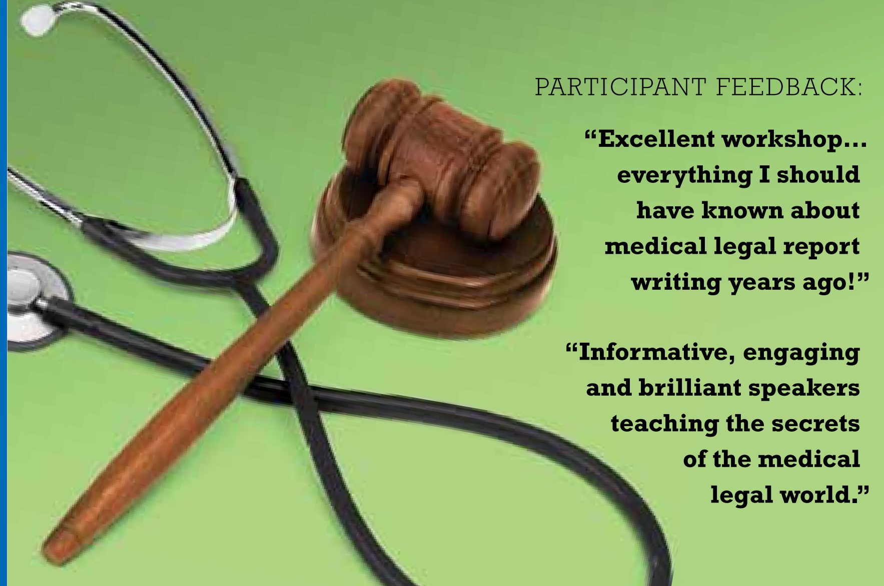

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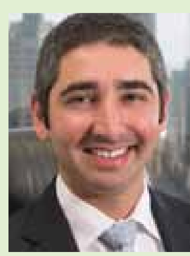
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