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Capnographic monitoring of ventilation during deeper levels of sedation

ALSO IN THIS ISSUE:
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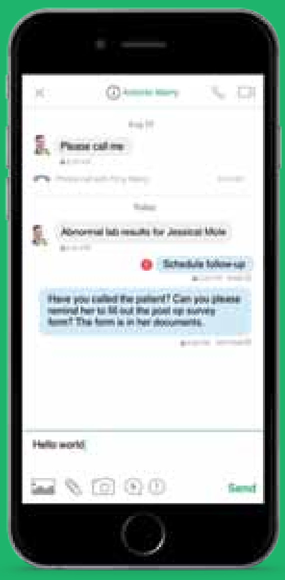

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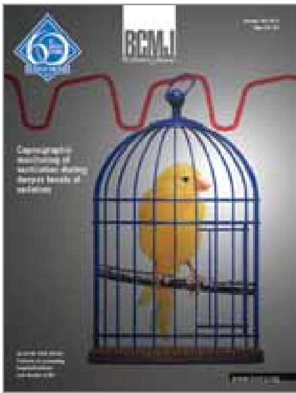

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Capnographic monitoring during deeper levels of sedation can act as a "canary in a coalmine," allowing early rescue intervention and prevention of desaturation. Article begins on page 490.

The *BCMJ* is published by Doctors of BC. The journal provides peer-reviewed clinical and review articles written primarily by BC physicians, for BC physicians, along with debate on medicine and medical politics in editorials, letters, and essays; BC medical news; career and CME listings; physician profiles; and regular columns.

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journal@doctorsofbc.ca
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Printing
Mitchell Press

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

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Sleep: When it no longer comes naturally

"Hey doc, I can't sleep."

"What do you mean you can't sleep?"

"I'm dog tired, but when I go to bed I just lie there and nothing happens."

I'm sure many of you are faced with this patient complaint on a weekly basis. Formerly, I would think to myself that, of course, a person would sleep when they were tired and even if they had a few rough nights then sleep would come eventually. I have always been a good sleeper. I was a head-hits-the-pillow-and-I'm-out kind of guy. I have even fallen asleep at social gatherings and during conversations. However, all of this changed about 6 months ago. Initially, if I had a busy day planned or was planning to get up early to exercise I would wake up and watch the clock. This progressed to initial insomnia thinking about my busy day and then, bam, full-blown insomnia. I would struggle through the day overtired and think, boy, am I going to sleep well tonight. Forcing myself to stay awake, I would make it to 10 o'clock, climb into bed, and instantly be wide awake. Lying there, not sleeping, I would become irritated, which isn't conducive to falling asleep. The longer this pattern continued the more irritated I became, which just made the cycle worse. I worked very hard at calming myself and would lie there in a relaxed state congratulating myself at how well I was doing, when a little voice would say, "but you're not sleeping," and so much for the relaxed state.

I turned to friends for advice. One suggestion was to think of as many words as you can spell starting with the letter A and moving down the alphabet, and before you know it you are asleep. Being competitive I would get irritated if I couldn't come up with enough words and, well, you know the rest. Another suggestion was to tighten each part of my body, then relax it, leading to calm and sleep. Trying this technique I kept thinking of Kegels, which made me laugh and woke me up.

Next, I researched sleep hygiene, which is often the advice I give to my patients. It's pretty obvious that consuming large quantities of water and caffeine in the evening might interfere with sleep. Also, getting regular exercise and not drinking your face off seemed logical. One hygiene tip is to avoid lying in bed, getting frustrated, and instead, getting up and doing something in another room until you feel drowsy again. This has helped my reading tremendously, but I'm not sure how much it has improved my insomnia. I sometimes wonder if I'm just training myself to get up numerous times during the night. I am glad that I haven't turned to sedatives/hypnotics and that I don't keep any on hand as, at 2 a.m., when you haven't slept, you can't pop what you don't have.

The problem with all of this is that something natural has now become unnatural and associated with all sorts of rules. My pre-insomnia brain didn't even register not sleeping as a possibility so this option didn't exist. Now, despite my best efforts, I have anticipatory anxiety wondering if I am going to sleep. This battle is real and making it a conflict in the first place is part of the problem. Perhaps I have developed insomnia so that I can be more empathetic to those of my patients who also struggle. In case anyone up there is listening, I would like to point out that I already have tons of compassion for patients suffering from urinary retention and kidney stones. I'm sure I will soldier on, but if anyone has suggestions for some good book titles, please send them my way.

—DRR

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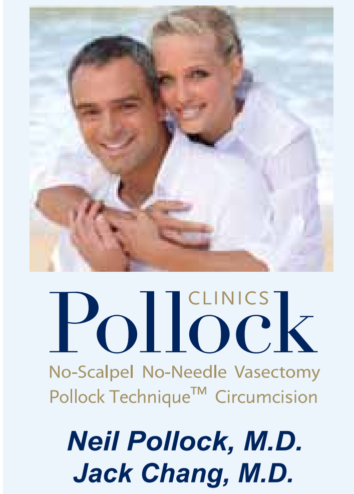

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So long, thank you, and good night

This will be my last *BCMJ* editorial. The editor has politely refrained from asking if I'm thinking of leaving the Editorial Board . . . but now it's time. To everything there is a season.

As well as bringing freedom, stepping away from something often brings regret. In my case, I regret—among other things—not having used the *BCMJ* editorial bully pulpit as effectively as I could have. I wish I'd done more to try to bring rationality to our system of delivering care. Canadian politicians and medical political activists are too cowardly (or too controlling) to permit real discussion about ways to introduce private care into the country. The arguments in favor of a mixed public-private system, as used in every other sensible country, are widely known, and I know that they make sense to all but the most blinkered among us. If you or anyone close to you has been a patient within our system of care, you know that there are—and always have been—multiple tiers of health care for Canadians. It all depends on who you are, who you know, and how much money you have. And that's not right if we are also to be restricted by a legislated universal system of care.

My parents lived their whole lives in Australia. In their later years they were able to direct the level of care they wanted, and to die at home, because the Australian system permits its citizens (if they wish) to pay for the level of care they want. If Canada is going to allow medically assisted dying at a patient's request, why will it not allow patients to determine the care they will receive while alive? It flies in the face of logic. And the arguments used by governments and activists to sustain the status quo simply don't make sense—worse, they reek of hypocrisy. We've all heard the stories of politicians and bureaucrats quietly arranging to have their own elective procedures done privately, while they publicly denigrate those who provide such care. To denigrate sincere people like Dr Brian Day, as has happened, is simply appalling. But my fear is that nothing will change until someone in a position of real power finds that, like the majority of the population, they must wait—and wait—for care. Sadly, because Canadians are ridiculously tolerant and forgiving, that may never happen. Still, I can hope.

But allowing private-pay care in Canada is the only thing I regret not shouting about. I don't like lecturing people. For me as an aging clinician to tell others, colleagues and trainees, how they should practise is largely inappropriate and unnecessary. I have spent enough time with medical students, residents, and fellows to know that essentially we are all responsible for our own education, and most of us have the smarts to know this. Nevertheless, please indulge me as I make one final related point.

The cleverest people I know are not afraid to admit that they don't know something, or to enter a discussion knowing they could be wrong. Appearances don't bother them. So, as I disappear out the door, my parting advice is this: never be afraid to ask, even publicly, for clarification of something that puzzles you, or to speak up knowing that you may well be wrong. We must trust our more knowledgeable colleagues to have the same motivation that we do: to keep learning and sharing knowledge. The future of our profession depends on our basing what we do on evidence and constantly trying to improve. We have to be honest with one another to do this.

I've enjoyed every minute of being on the *BCMJ* Editorial Board, and I'll miss not being part of it. And to those of you who have told me that you read what I wrote: thanks! I believe you. Honest.

—TCR

Please contact me if you are interested in attending a breakfast seminar at the Sutton Place Hotel on Saturday, January 12th, 10am where I will discuss our recent investment in AltaGas Ltd.

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letters to the editor

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Re: Spot-on studies

We enjoyed Dr Richardson's editorial in the September *BCMJ* about the validity of studies [*BCMJ* 2018;60:341]. We were dismayed to read the results of a survey on the Doctors of BC website reporting on a survey of doctors, "Transparency around drug payments to physicians." Out of over 10 000 physicians in BC, 532 responded, so the only meaningful conclusion that can be drawn is: 5% of physicians in BC have these views on drug payments. We have no idea what the other 95% think. It is time for us to all insist that people who publish results of studies clearly state what the limitations are so we can put the results in a meaningful context.

—Geoffrey Ainsworth, MD
Vancouver
—Patrice Dunn, MD
Vancouver

Incentive to immunize

With the flu season upon us again, will someone please remind us why the government is failing to fund opportunistic influenza immunization in general practice?

As things stand, GPs receive no additional remuneration if they choose to immunize vulnerable patients when the service is provided in addition to a consult (i.e., only the consult fee can be claimed).

Why is that? It seems eminently sensible to us that vulnerable patients should be immunized when they present, but that means our time, our needles, our syringes, and our sharps boxes are all funded at our expense.

Where is the incentive in that?

—Shaun Humphreys, MD, CCFP
—Neil Crofton, MD
Victoria

Re: Innovation is everywhere. Why isn't it here?

It was a pleasure to read Dr Cadesky's article [*BCMJ* 2018;60:389]—succinct, and things that needed to be said. To paraphrase Bill Clinton, "It's all about the patient, stupid." If change starts with what will benefit the patient and not what is perceived to benefit the system, better health care will ensue. And the monolithic, inflexible system redesigns are antithetical to how medicine evolves. We need flexibility and readiness to change as we try out any system. Indeed, that's how we practise patient care.

—Barry Koehler, MD, FRCPC
Delta

It was interesting to read Dr Cadesky's comments about the failure of innovation in health care [*BCMJ* 2018;60:389]. One of the remarkable and potentially game-changing functions is physicians' use of computers to keep records. This is something I have been involved with for over 30 years and observed on many committees and projects in British Columbia, Canada, and internationally. It has been frustrating to see ideas that were put forward 20 or 30 years ago still not come to fruition. British Columbia has been a world leader in a number of areas related to the use of computers, including the innovation of high-speed Internet and the development of PharmaNet.

The current crop of EMR products cause a lot of frustrations among users, and it has been reported that EMR difficulties contribute to physician burnout. There is, thankfully, finally an awareness of the importance of being able to exchange data between different providers and organizations. Over the years work has been done in British Columbia to define the requirements for facilitating the exchange of clinical data. There is continued frustration that movement toward incorporating these requirements into EMRs has been very slow. EMR vendors do not seem to be willing to accept that their products are in need of a lot of remediation. Organizations that generate data like hospitals and laboratories are also slow to replace aging systems that are not capable of generating reports in a manner that could be easily consumed by systems in our offices. Finally, physician organizations have not been willing to support physicians who are willing to work on defining the EMR requirements to the level of detail that is needed to achieve interoperability.

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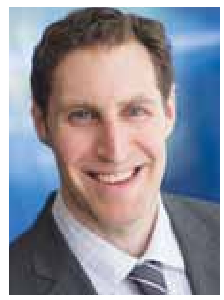
Home and the holidays: On family, friends, and physicians



I came to BC alone, with two suitcases, the address where I was to house-sit for a month, and a medical degree. After answering every ad I saw, I ended up working in 11 clinics over the first few months before settling into the practice that has been my home for the past 13 years.

Home. A curious word to use, but it feels right. We talk about our work families because some days we spend more time caring for a sick child than we do seeing our own children. Team members in the operating, emergency, and case rooms are together longer during days and nights than they are with their own spouses, partners, and friends. And even when we are physically with our families, we are often still available to our patients, whether officially on call, updating our EMRs, or trying to make sense of a challenging clinical case.

So, it is important that we recognize our personal relationships and work hard to protect them. The calling of medicine is not an easy one, and we have all lost relationships due to the rigors of training and practice. I can recall rotations as a learner and then remote locums as an early career doctor where I barely saw the light of day—and even then only through the windows of patients' rooms. Sociologist Emile Durkheim noted the correlation between our feeling of disconnectedness (*anomie*) and suicide. The time we spend away from the things we love—people, nature, hobbies—can be both the cause and the effect of high rates of physician burnout.

I feel fortunate to be part of a Doctors of BC that cares about us not just as doctors, but as people. An organization that protects family time by establishing a paid parental leave program as well as the unique recreational opportunities of Club MD. One that developed disability and home insurance services that give us the peace of mind knowing we and our loved ones will be protected in case of catastrophe. Our work with Divisions of Family Practice, medical staff associations, facility engagement, our various committees, and the Representative Assembly decrease *anomie* by building community and advocating for the amazing initiatives of doctors across BC.

I look forward to what promises to be an eventful 2019 with the negotiation of a new Physician Master Agreement, the potential conclusion of the Cambie lawsuit, further experience with legalized cannabis, and team-based care initiatives all unfolding.

As with all families, there will be disagreements. Access to resources, funding models, shared care, and conscientious objection are all important and sensitive topics that can induce argument. But let us learn from the most functional families who recognize that these heated debates arise from passion and from a will to do our best. And after a good quarrel, we can settle back into our seat at the table knowing that we have much more in common than not: dedication to our patients, our profession, and each other.

I look forward to what promises to be an eventful 2019 with the negotiation of a new Physician Master Agreement, the potential conclusion of the Cambie lawsuit, further experience with legalized cannabis, and team-based care initiatives all unfolding. Until then, I wish you and your family all the best for the holiday season, however you decide to define it.

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

Continued from page 480

Various projects in BC and elsewhere in Canada, including Infoway, have repeatedly defined important elements as being "out of scope," and there was an unwillingness to "get into the weeds." As a result we have to deal with EMR vendors that have a rudimentary understanding of clinical workflows, what data we need, and how it should be presented. It would be nice if there was support for a small group of physicians to work on the details that would make things operate at the high-performance level that we are all hoping for. This group could be either at the provincial or national level.

—Raymond Simkus, MD
Langley

Re: Innovation is everywhere. Author replies

Thank you for the comments. Doctors of BC is actively supporting doctors through the Doctors Technology Office and our refreshed IM/IT policy: www.doctorsofbc.ca/sites/default/files/2017-07updated_from_2010-healthinformationmanagementandtechnologyprinciplesid_115905_1.pdf [log in required].

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

Re: Sale of MD Financial Management

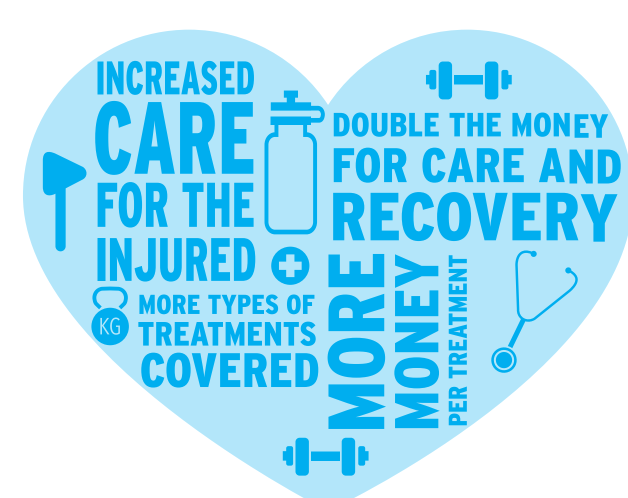
The questions posed by Dr Ken Markel [*BCMJ* 2018;60:345] are shared by many of us, including me. The answers provided by Dr Brian Brodie [*BCMJ* 2018;60;345-346] do not address my concerns, which are:

1. What were the concerns that prompted the need to look for a buyer? The response from Dr Brodie that, "At the end of the day, it would have been very difficult for MD to remain relevant and stay competitive," is vague and explains nothing. What was the crisis we were facing and why were we in that dire situation? What alternatives had been considered and dismissed? And by whom? Was this a unanimous decision?
2. Where is the money now (all of it)? Who was paid to arrange the sale and how much? How many buyers were considered?

—Jose Zanbilowicz, MDCM, FRCPC
Comox

Re: Sale of MD Financial Management. CMA Replies

Our decision to sell MD Financial Management (MD) was made after much deliberation and discussion with leading financial experts. We heard how new technologies like bitcoin and cryptocurrency are rapidly changing the face of the industry, and how clients are asking for more and more tailored and specialized services. Understanding this context,



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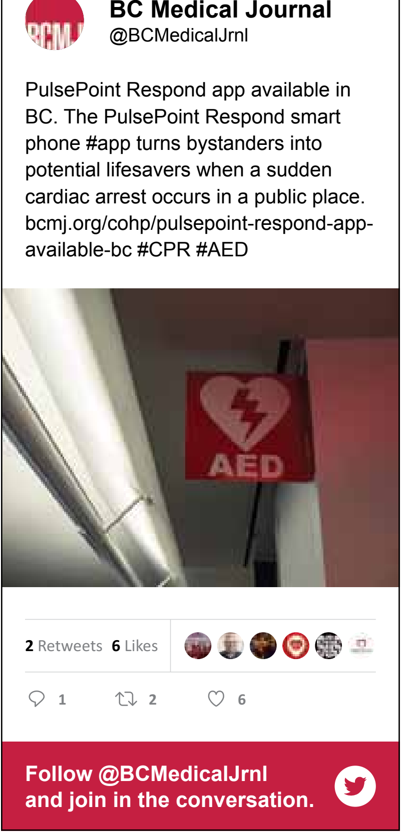
and reviewing MD's prospects within this market, helped us come to the decision to work with Scotiabank. We're now able to ensure that MD can serve many future generations of doctors and their families, and offer new products and services to better meet their needs, including for early-career physicians.

The CMA Board of Directors will be establishing separate boards to invest and steward the proceeds of the sale. We plan to work closely with our members to decide how these funds—in addition to the $115 million that Scotiabank is investing as part of our affiliation agreement—can be used to support the medical profession and better health.

—Brian Brodie, MD
Chair, CMA Board of Directors



obituaries

Dr King Chiu Kwong 1921–2018

Dr Kwong passed away peacefully at age 97. She was predeceased by her spouse, Dr Kwok King Yue, and all 10 siblings, all of whom were medical doctors. She is survived by her son, Kevin Yue; daughter-in-law, Jeannie Chow; grandson, Jonathan Yue; and many nephews, nieces, grandnephews, and grandnieces. Dr Kwong was born in Guangzhou, China. She graduated from Dr Sun Yet San Memorial University. She survived the Second World War, riots, and revolution. She immigrated twice and requalified to practise in both Hong Kong and Canada. In Canada she completed her clerkship at St. Vincent's Hospital in Vancouver, and internship at Misericordia Hospital in Edmonton, well before establishment of the International Medical Graduate Program. She was the first female Chinese general practitioner in Vancouver and practised from 1972 to 1992. Known for personal, comprehensive, and compassionate care, she was loved by many patients.

—Kevin Yue, MD
Vancouver

Dr Robert "Bob" Purkis 1925–2018

Early this year a great mentor and friend passed away peacefully at his beloved St. Paul's Hospital.

Bob was born in Ashcroft to a pioneering family and lived most of his early years in Salmon Arm. There he was an avid sportsman, playing lacrosse and basketball on provincial championship teams. As he completed high school the country was at war and, like so many others, he signed up before his 18th birthday. After initial flight training in Canada, he was posted to transport command in England flying DC3s. Bob was active in the Battle of Arnhem and was awarded the Distinguished Flying Cross as well as the NATO Bar Special Service Medal of Honour.

Post-war he continued in the Air Force reserve while he pursued his bachelor of arts degree in English at UBC. A new medical school at UBC was announced, and after submitting his application, Bob drove to Central America with Peter Postuk (UBC MD '55) and Steve King. Their adventures in Costa Rica were written up in the *Vancouver Sun* as they unknowingly found themselves in the

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midst of a gunrunning scheme with local revolutionaries. What would have been a fatal ambush was thwarted with a fortunate tip-off to the local authorities. They limped home crewing on a fishing boat, and Bob became part of UBC's first medical class in the fall of 1950.

Bob often reflected on the challenges of being in that first UBC class. Professors pushed them hard in order to make sure that UBC measured up against the eastern schools. It was during medical school that Bob met Nan, a bright and witty lab technologist, and they married during his St. Paul's internship year. They traveled to England, where Bob completed 2 years of general surgery and orthopaedics post-grad training at Billericky Hospital in London. Their first son, David, was born in 1954 and then Jeff in 1955. Near the end of their time in England, David developed encephalitis and became permanently handicapped. Bob and Nan would become active in founding the Vancouver Association for the Mentally Retarded. Daughters Mary Kay and Margo arrived in the early '60s, and David would become a beacon of love and laughter for friends and family for decades to follow.

Bob was passionate about family practice. He was a member of the medical staff at St. Paul's for over 30 years and was the founding head of the Department of Family Practice. Early practice was in the pre-medicare era and payment sometimes came fresh from his patients' gardens! Like most GPs at that time, Bob provided comprehensive care for his patients, which included obstetrics, office practice, regular emergency shifts, as well as minor and more major surgeries. In the early years, Bob's surgical slate could include appendectomy, cholecystectomy, tonsillectomy, inguinal hernia, or even vagotomy and pyloroplasty surgeries. Bob continued regular shifts in St. Paul's emergency well in to his 60s and also served a term as head of its Department of Emergency Medicine.

Bob loved to teach. He regularly mentored medical students and residents in his office and was perhaps most passionate about teaching in the ER. One of Bob's very proud accomplishments was the establishment of the St. Paul's CCFP Emergency Residency Training Program. I have enjoyed hearing countless accolades about Bob when meeting former students at meetings and conferences; it is clear that he had a significant impact as a teacher.

Bob also enjoyed being active in medical politics. He served as president of the Vancouver Medical Association as well as the Section of General Practice, and served as VP of the BC chapter of the CCFP. He also co-chaired a then-BCMA committee that successfully negotiated the establishment of the CME Medical Education Fund with government.

Bob had many passions outside of medicine as well. He enjoyed salmon- and fly-fishing, and owned a fishing lodge in Bamfield on the west coast of Vancouver Island at one time. Along with friends, he built a log cabin at Eagan Lake in the Cariboo, which became the favorite family retreat. He was always keen to try something new and even took up windsurfing at age 55. He returned to flying after an almost 40-year hiatus, plying the skies in his home-built Murphy Rebel amphibious floatplane.

Bob remarried later in life and enjoyed many years of good food, travel, and abundant laughter with his wife, Blossom. In his twilight years they were inseparable and enjoyed local walks and restaurants. Bob loved his False Creek home and was able to remain there until very near his passing. Bob "slipped the surly bonds of earth" with Blossom at his side after a very brief hospitalization at St. Paul's.

—Jeff Purkis, MD
White Rock

#1 for Practice Closure

Eric Silver MD and Elan Eisen — co-founders of RSRS.

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Dr David A. Haughton: From ER to studio

David Haughton in his New Westminster home studio.

Dr Haughton traded his stethoscope for a paint brush, and now signs his emails, "Sincerely, David the Painter."

Gabrielle Lynch-Staunton BFA, BEd

A black-and-white photo shot at the end of his final night shift in the emergency department speaks volumes. Sitting on a gurney, arms crossed, grinning ear to ear, Dr David Haughton has a face that confidently says, "I did it!"

BC Children's Hospital emergency physician Dr David A. Haughton took the plunge and dove into painting as of 7:30 a.m. on 29 October 2017. And once he plunged, he wasted no time. He gave away his medical equipment and textbooks, took a few things off the wall, and left the hospital with a box containing just a few items—including his stethoscope in case he needed to check his blood pressure. The next day he canceled his medical licence and CMPA insurance and stopped practising as a physician.

Ms Lynch-Staunton has worked as a sections coordinator with Doctors of BC since 2000.

This article has been peer reviewed.

The move wasn't a surprise. Haughton had been an artist for 40 years and a physician for 32. His plan all along had been to become successful enough as an artist, in parallel to medicine, to eventually become an artist full time.

Haughton applied the same boundless passion and dedication to medicine as he does to his art. He was an exceptional medical leader, mentor, and teacher who presided over the Section of Emergency Medicine for 11 years. Mr Rob Hulyk, director of Physician Advocacy at Doctors of BC, considers Haughton to have been the association's most persistent and effective section head. He was regularly spotted at the association's West Broadway offices perched at a window seat in the staff lounge, with a view of the North Shore mountains, working on his laptop. It has taken three co-presidents to fill Haughton's extraordinary shoes as section head, divvying up the large portfolio and leading its 500 members and 23 executive members. The Section of Emergency Medicine established an award in Haughton's name to honor his leadership legacy—his trademark style of enthusiasm, integrity, honesty, and respect. His exemplary collegial interactions with patients and peers, his visionary leadership, and his strategic orientation did not go unnoticed.

Medical practice

Haughton chose emergency medicine deliberately. Few other specialties include no call, no pager, scheduled shifts, and the flexibility to work part-time. The freedom of an emergency medicine physician working 36 hours

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a week is vastly different from an orthopedic surgeon or pediatrician taking calls a few nights a week and managing a busy practice. He gradually discovered he enjoyed working night shifts—working 3 or 4 nights in a row was easier than working the occasional night. Emergency medicine allowed him to care for children, yet separate himself from the ongoing needs of his young patients, freeing up time for nonclinical activities.

He gave away his medical equipment and textbooks, took a few things off the wall, and left the hospital with a box containing just a few items—including his stethoscope in case he needed to check his blood pressure. The next day he canceled his medical licence and CMPA insurance and stopped practising as a physician.

Experiences from Haughton's early medical training became an unforeseen source of inspiration for his first series of figurative paintings, *Kindertotentanz,* depicting his sense of ambivalence toward modern medicine while working as a pediatric resident in the mid-'80s. Feelings of disturbance, anger, and helplessness compelled Haughton to paint critically ill and deformed children and babies fighting for their lives. "When the doctors and parents pursued the hope of newer medicines, more aggressive modalities, combinations of treatments; when the children bled, grew feverish, or gasped for breath, I did what I could. Often, the attending doctors were unavailable, jostling in administrative meetings or presenting new research proposals. The mothers held their dying children, facing the reality of the diseases." In this series Haughton felt that he was advocating for the children and for their parents' anguish over their children's pointless pain.[1]

While Haughton was glad to make proper diagnoses as a physician, he says the real joy came from interactions with the kids who showed up in the ER. With a big smile Haughton recalls the many times he played games with a 6-month-old or a 2-, 5-, or 15-year-old who arrived in the ER scared to death. Checking for a child's reaction to him acting goofy was useful as a diagnostic tool to rule out meningitis. By playing with the kids, he managed to get them laughing, sometimes laughing at him, or just giggling, providing priceless moments of delight.

Artistic practice

The top floor of Haughton's New Westminster home has been his studio since 1995. A bright, cozy, inviting space, located under the eaves, packed with art, painting supplies, and books on his masters, all largely self-taught like him: Cézanne, Homer, van Gogh, and Goya. In ninth grade, he stumbled across his Japanese 17th-century "artist super hero," Katsushika Hokusai, famed for *The Great Wave*, who created his best work in his 90s. Hokusai has provided an artistic compass and inspires Haughton to this day. Hokusai's artistic ethos, the beauty and simplicity of his images, and the ferocious enthusiasm with which he worked as an artist until his old age all captivate Haughton's imagination.

Travel and painting have always been intertwined for Haughton, both before and after he became a physician. In 1975 he spent a year in Greece and began mastering pen-and-ink drawings of landscapes and monasteries using a drafting pen with

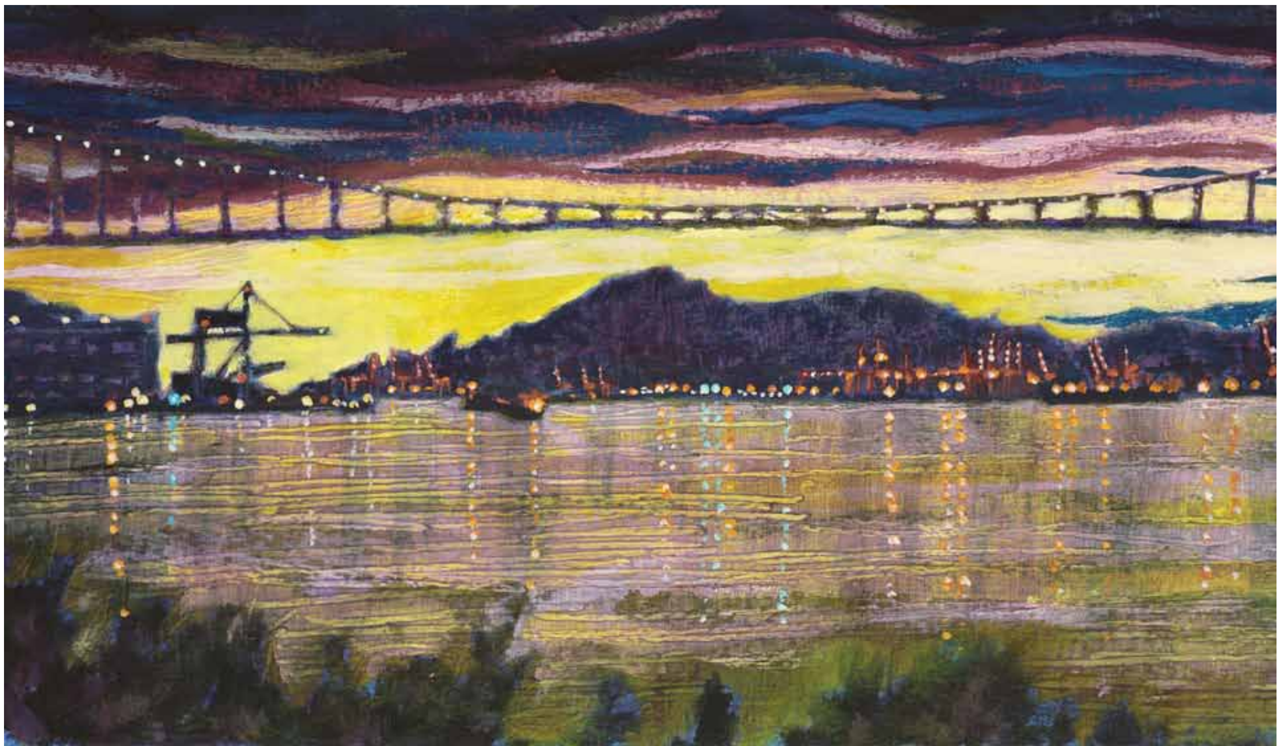
Photo by Dr Garth Meckler

Dr David Haughton's last shift at the BC Children's Hospital emergency department.

no pre-sketching or notation. For a dozen years he worked almost exclusively in pen and ink before moving to watercolors.

While a physician, he dedicated up to 2 months a year to painting. For the last decade, Haughton and his wife, Dr Lyne Filiatrault, have retreated to remote Tofino during storm season, which inspired a series entitled *Fear, Hope and Longing*. Painting this series helped him face and express the anxiety related to aging and the looming end of his medical career. In his 2016 art newsletter he wrote, "Lately I'm inspired by an intense feeling of personal vulnerability and evanescence. Perhaps it is that I am perched on the seam between two tectonic plates in temporary equipoise, awaiting the slip, the earthquake, the tsunami. Perhaps it is that I am on the edge of leaving a secure income for a life of full-time painting. More likely: I am 60 years old."[2]

Haughton's artistic process for landscapes starts with capturing the scene. Usually with his digital camera close by or clipped to his belt, he takes photographs, sometimes several dozen different shots—close-ups, at a distance, panoramas, and so on. Then, back in his studio—days, months, or even years later—with photographs displayed, he imagines himself there again, and starts a painting with a



Before Dawn IV—Under the Bridge *by David Haughton. Acrylic on multimedia artboard, 2015.*

pencil sketch. He currently has about 200 paintings in different states of completion.

His landscape paintings are much more than pretty images; they are his emotional response. In his paintings Haughton tries to capture his initial, immediate emotional and intellectual reaction. He hopes it triggers the viewer in a similar way, and maybe even sets their heart aflutter.

Fully immersed in art

Today Haughton the artist paints in acrylics exclusively and has developed a unique painting style. Superficially, his landscapes might look like a Group of Seven or Impressionist painting. However, his painterly technique is totally different. First, he paints on multimedia artboard on a flat surface, not on canvas on an easel. He's never come across an artist who uses artboard in combination with acrylics the way he does. "It's my own and it's new. Nobody else has done it," he says. What he's referring to is his technique that gives his paintings a jewel-like depth, achieved by layering and glazing three or four times to pop the color. He likens it to transparent sheets of very thin glass.

While he misses his medical colleagues, he does not miss the politics of medicine.

Now fully immersed in his art, Haughton doesn't think about medicine the way he used to. However, between brushstrokes, his wife will not allow him to forget his medical past. Dr Filiatrault, also a retired emergency medicine physician, has shifted into medical administration, leading VGH's Medical Staff Association. She brings home stories that remind him that while he misses his medical colleagues, he does not miss the politics of medicine.

Haughton's brilliant leadership skills have a new application. Not only is he now a full-time artist, he is also a gallerist, working to keep a not-for-profit Seattle gallery alive. He says the learning curve to becoming a gallerist is steep and completely different than being an artist, but he's enjoying it. "The whole bandwidth that was involved in the politics of medicine is now involved in the politics of the art world," he says.

"To quote Frank Sinatra," says Haughton, "What I'm most proud of is that I did it my way. I feel enormously happy and content that I had the courage to make the jump."

Haughton's art can be viewed at www.haughton-art.ca.

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2018 BC Family Physician of the Year, Dr Christy Sutherland

The College of Family Physicians of Canada (CFPC) and the Foundation for Advancing Family Medicine have named Dr Christy Sutherland as the 2018 BC recipient of the Family Physicians of the Year award. The honor is given to 10 doctors across Canada, one from each province, for providing exceptional care to their patients, contributing to their communities, and being committed as researchers and educators of future generations of family doctors. Recipients are nominated by their peers, colleagues, and the CFPC's chapters.

Dr Christy Sutherland completed her medical degree at Dalhousie University, and a family medicine residency at the University of British Columbia, where she is now a clinical assistant professor and serves as a preceptor and mentor to a variety of trainees, including fellows, medical residents, and medical students. Dr Sutherland also serves as the medical director for the PHS Community Services Society, a not-for-profit organization based in Vancouver that provides advocacy, housing, services, and opportunities for the most vulnerable of the Downtown Eastside. She has served as a physician on St. Paul's Hospital's Family Medicine Ward, an addiction physician on St. Paul's Hospital's Addiction Medicine Consult Team, and an addiction physician for WorkSafeBC. As education physician lead for the British Columbia Centre on Substance Abuse, Dr Sutherland works with other health care professionals, coordinators, and external stakeholders to provide leadership and support for education and training activities.

Dr Sutherland has also received the Excellence in Clinical Teaching Award from the St. Paul's Hospital Goldcorp Addiction Medicine Fellowship, where she is preceptor for individual fellows during their inpatient rotation and community electives. She a Diplomate of the American Board of Addiction Medicine and has participated in several research grants and initiatives throughout her career focused on improving the lives of vulnerable populations.

New learning technology adds to prescribing safety in Canada

The Royal College of Physicians and Surgeons of Canada has adopted a digital pioneering assessment and e-learning tool for physicians focused on minimizing medication errors. The new technology is being provided by BPS Assessment, the skills and assessment arm of the British Pharmacological Society. Physicians will have access to online prescribing skills modules in English and French, tailored for the Canadian health care context. Royal College Fellows will be able to contribute to the question-writing process for the modules, which will help to continually update and customize the platform for the Canadian medical community. The Prescribing Safely program will start in early 2019, following a successful 8-week trial between the Royal College and BPS Assessment.

At least 1 year between pregnancies reduces risks for mother and baby

Twelve to 18 months seems to be the ideal length of time between giving birth and getting pregnant again, according to research from the University of British Columbia and the Harvard T.H. Chan School of Public Health. In a study published in *JAMA Internal Medicine* ("Association of short interpregnancy interval with pregnancy outcomes according to maternal age"), researchers found that getting pregnant less than 12 months after delivery is associated with risks for women of all ages. Risks to the mother were found only for women over the age of 35, while risks to the infant were found for all women, but were greatest for women between the ages of 20 and 34.

The study is the most extensive evaluation of how the role of pregnancy spacing could be impacted by maternal age. It is also the first investigation of pregnancy spacing and maternal mortality or severe morbidity in a high-income country. The authors note that the findings about older women are particularly important, as they tend to more closely space their pregnancies, often intentionally.

Researchers examined the relationship between risks for mothers and babies associated with pregnancy spacing among 148 544 pregnancies in BC. Data were collected from birth records, billing codes, hospitalization data, prescription data for infertility information, and census records. Among women over 35 who conceived 6 months after a previous birth, researchers found a 1.2% risk of maternal mortality or severe morbidity.

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The battle against resistance: Carbapenemase-producing organisms in BC

Carbapenemase-producing organisms (CPOs) continue to be a public-health and infection-prevention and control problem globally. CPOs refer to gram-negative bacteria, normally found in the gut, that have acquired resistance to the broad spectrum carbapenem class of antibiotics. In addition to carbapenem resistance, these bacteria also tend to be multidrug resistant, greatly reducing treatment options.

The three most common types of CPOs include the New Delhi metallo-beta-lactamase, OXA-48, and *Klebsiella pneumoniae* carbapenemase. The first two arose from India in 2008 and are now considered endemic in South Asia, with outbreaks and sporadic cases reported worldwide. *Klebsiella pneumoniae* carbapenemase originated from North Carolina in 1996, is endemic throughout the United States, and outbreaks have been reported in many parts of the world. The genetic material that confers resistance in these bacteria resides in their plasmids, and plasmids are easily transferable between and across bacterial species, making resistance highly transmissible with significant infection control implications.

BC saw its first case of CPOs in 2008. Since then, approximately 700 cases have been identified across the province, mostly through active screening by acute care facilities. Risk factors for colonization and, potentially, infection include travel to endemic countries with exposure to health care settings where these multi-drug-resistant organisms are highly concentrated. In 2014 the Ministry of Health mandated surveillance of CPO cases across all acute care facilities in BC. All patients presenting to an acute care facility are asked whether they have traveled outside Canada and whether they have had any exposure to a health care facility while abroad. If the answer is yes, the patient will be screened for CPOs by rectal swab. Cases of CPOs are also detected through routine microbiological workup for infections. This allows identified patients to receive appropriate infection and prevention measures to minimize transmission within health care facilities, but more importantly, appropriate antibiotics are initiated when these patients develop infections. This surveillance, coordinated through the BC Provincial Infection Control Network, has recently expanded to include community-identified cases of CPOs to capture potential cases of infection in the community setting. All cases of CPOs are followed up with whole genome sequencing at the BCCDC Public Health Laboratory. The genomic characterization identifies potential transmissions and outbreaks occurring in acute care or community-based care facilities.

Transmissions of CPOs in acute and community-based care facilities can occur through contaminated health care equipment, poor hand hygiene, and contaminated fomites such as sinks.

Front-line health care professionals can support the prevention of multidrug resistant spread by:

- Using antibiotics judiciously. Inappropriate and unnecessary antibiotic use drives antibiotic pressures that can lead to selection for CPOs.
- Reinforcing the importance of hand hygiene and minimizing the sharing of personal toiletry items.
- Ensuring appropriate use of contact precautions, which is important in preventing spread of CPOs as well as other communicable diseases.
- Ensuring information about a patient's CPO status is shared with all health care providers so that appropriate infection control and isolation precautions are put in place and appropriate antibiotic treatment is provided in the event of an infection.
- Advising patients to avoid unnecessary exposure to health care settings in CPO-endemic countries, but noting that if exposure does occur, they should inform their health care professionals.

For more information about CPOs, visit www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/Epid/Other/CPOBacteriainBC_factsheet_feb7_2014.pdf.

Additional details about BC's provincial CPO program are available from the Provincial Infection Control Network of BC (www.picnet.ca/surveillance/cpo).

—Linda M.N. Hoang, MD, MSc, FRCPC
Medical Microbiologist, BCCDC Public Health Laboratory
Co-Medical Director, BC Provincial Infection Control Network
—Aamir Bharmal, MD, MPH, CCFP, FRCPC
Medical Health Officer and Medical Director, Communicable Disease and Harm Reduction, Fraser Health Authority

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

Matt Kurrek, MD, FRCPC, Richard Merchant, MD, FRCPC

The emerging role of capnographic monitoring of ventilation during deeper levels of sedation

Patients undergoing procedural sedation often present with multiple comorbidities that can have an impact on their respiratory reserve, making the use of capnography to ensure their safety even more important than it was when first recommended by the Canadian Anesthesiologists' Society in 2012.

ABSTRACT: Procedural sedation, called conscious sedation in the past, is the administration of sedative agents that have the ability to depress ventilation as well as consciousness. This form of sedation often relies on opioids and is used during procedures that may cause temporary pain or anxiety, such as dental surgery and endoscopy. The Canadian Anesthesiologists' Society and other leading medical societies and organizations have identified opioid-related adverse events as a major patient safety concern and recommend the use of capnographic monitoring during procedural sedation, particularly when the patient cannot be observed directly. Numerous studies have shown that capnographic monitoring during deeper levels of sedation allows an early rescue intervention and prevents desaturation, although these studies fall short of showing that capnography saves lives. Clinicians using capnography for patients undergoing procedural sedation should remain aware that they play a vital role in ensuring patient safety and must not be lulled into a false sense of security or think that the use of capnography can replace a vigilant sedation provider.

This article has been peer reviewed.

After the Canadian Anesthesiologists' Society (CAS) published revised anesthesia practice guidelines in 2012,[1] we wrote an editorial for the *Canadian Journal of Anesthesia* titled "Yesterday's luxury—today's necessity: End-tidal CO_2 monitoring during conscious sedation."[2] The editorial addressed what is now commonly referred to as procedural sedation and explained the rationale for requiring that deeply sedated patients be monitored by capnography—previously required only for patients when intubated or with a laryngeal mask airway.

Procedural sedation is the administration of sedative agents (often including opioids) that have the ability to depress ventilation as well as consciousness, and is used during procedures that may cause temporary pain or anxiety, such as dental surgery, bone or joint realignment, and endos-

Dr Kurrek is a professor in the Department of Anesthesia at the University of Toronto. Dr Merchant is a clinical professor in the Department of Anesthesiology, Pharmacology, and Therapeutics at the University of British Columbia.

copy for gastrointestinal problems. Over that past 5 years the use of procedural sedation has increased, and so has the medical complexity of the patients being sedated. Many present with multiple comorbidities that can have an impact on their respiratory reserve, making the use of capnography to ensure patient safety even more important than it was in 2012 when we wrote the editorial.

While the CAS guidelines apply to anesthesiologists, they also contain important information for any provider of deeper levels of sedation.

Adverse events concern

The Canadian Medical Protective Association (CMPA) has identified opioid-related adverse events as a major patient safety concern:

> Preventing opioid-related events is a leading patient safety concern. Although there is increased focus on improper use and management of opioids in the community, the hospital setting is also where many patient safety incidents involving these drugs occur. These events take place across different settings within the hospital and involve various members of the healthcare team.[3]

The concern expressed by CMPA is also seen in the United States, where the Joint Commission Patient Safety Advisory Group reminds us of patient risks associated with administering opioids:

> While opioid use is generally safe for most patients, opioid analgesics may be associated with adverse effects, the most serious effect being respiratory depression, which is generally preceded by sedation. Other common adverse effects associated with opioid therapy include dizziness, nausea, vomiting, constipation, sedation, delirium, hallucinations, falls, hypotension, and aspiration pneumonia. Adverse events can occur with the use of any opioid; among these are fentanyl, hydrocodone, hydromorphone, methadone, morphine, oxycodone, and sufentanil.[4]

In 2009 the CMPA reported on 49 medicolegal cases involving physician-prescribed opioids that closed between 2000 and 2007. The report identified the following clinical outcomes:

- In 44 of 49 cases, the principal event was respiratory insufficiency, which led to 27 deaths, 5 cases of hypoxic brain injury, and 12 cases of respiratory depression that responded to treatment.
- In the remaining 5 of 49 cases, one patient suffered a seizure, one suffered hypotension and renal tubular necrosis, one fell down stairs, and two were involved in motor vehicle crashes.[5]

In analyzing monitoring and treatment in these cases, CMPA found the following issues:

- Insufficient monitoring of vital signs, respiratory status, pulse oximetry, and/or level of consciousness in patients at high risk of respiratory depression.
- Failure to order additional treatment and more intensive monitoring in patients with sleep apnea.
- Failure to admit high-risk patients to a specialized unit.
- Early transfer from the recovery room to the ward of a postoperative patient who was not fully alert and had just received a large dose of opioid.
- Too-early cessation of monitoring after a procedure done under sedation.
- Failure to recognize respiratory depression during endoscopy.
- Failure of nurses to notify physicians of decreased respiration, apneic spells, confusion, or decreasing level of consciousness.
- Failure of physicians to appreciate signs of impending respiratory arrest, and to react appropriately by securing an airway and/or administering an opioid antagonist.

Similarly, the Controlled Risk Insurance Company (CRICO) in the US found monitoring and management during routine procedures accounted for 55% of errors in outpatient cases and 46% of errors in inpatient cases (Table).[6]

While many of the adverse events reported above involved patients who did not undergo a minimally invasive procedure under deeper levels of sedation at the time of the respiratory compromise, the message remains the same: early detection of impending respiratory compromise in sedated patients with capnographic monitoring of ventilation can permit an early

Table. Errors in medication process of care during routine medical procedures for cases analyzed by the Controlled Risk Insurance Company (CRICO), 2007 to 2011.

	Outpatient cases (% of total*)	Inpatient cases (% of total)
Ordering	18	23
Pharmacy dispensing	2	3
Provider administration	10	13
Monitoring and management	55	46
Other	16	15

*Percentages do not add up to 100 due to rounding.

Source: CRICO[6]

rescue intervention and prevent progression to respiratory arrest.

Support for monitoring

In the operating room, it has been a standard of practice for intubated patients or patients with laryngeal mask airways to have their oxygenation monitored with pulse oximetry and their ventilation monitored with capnography. These monitoring modalities have generally been embraced by medical practitioners over the years, even though no study has yet proven conclusively that the use of these modalities saves lives. This lack of evidence, however, is solely a statistical problem since the number of patients required to perform such a study (given the relatively small mortality) simply does not make the research feasible.

Likewise, while numerous studies have been able to show that capnographic monitoring during deeper levels of sedation allows an early rescue intervention and prevents desaturation, these studies fall short of showing that capnography actually saves lives.

Studies that support capnographic monitoring for deeper levels of sedation include that of Patel and colleagues,[7] who studied patients undergoing endoscopic procedures with intravenous sedation. They found that capnography detected 57% of adverse respiratory events (defined as apnea lasting 30 s or at least 30 s in any 45-s period), while pulse oximetry detected only 50% of these events and did so with a mean delay time of 45 s. Visual observation alone detected none of the events.

Capnography detected 57% of adverse respiratory events (defined as apnea lasting 30 s or at least 30 s in any 45-s period), while pulse oximetry detected only 50% of these events and did so with a mean delay time of 45 s.

In a pediatric endoscopy study, Lightdale and colleagues[8] observed that the incidence of hypoxia (defined as an oximetry reading less than 95% for more than 5 s) in an intervention arm occurred less than half as frequently (11% vs 24% of cases) where clinical staff were signaled when capnography indicated alveolar hypoventilation for longer than 15 s.

When Qadeer and colleagues[9] investigated the use of capnography in adults undergoing procedural sedation for elective endoscopic retrograde cholangiopancreatography and endoscopic ultrasonography, they found a significantly reduced rate of hypoxia (46% vs 69%), and a reduced rate of severe hypoxia (15% vs 31%). These reductions were found while defining hypoxia as an oximetry reading of less than 90% for 15 s, and severe hypoxia as an oximetry reading of 85% or less regardless of duration. While the level of sedation in the study was not quantified, the amounts of medication (25 to 75 mg IV meperidine or 25 to 75 mcg IV fentanyl with midazolam 2 mg IV plus additional doses as required) suggest that at least moderate sedation was intended.

In another randomized controlled trial, Deitch and colleagues[10] evaluated the use of capnography in the emergency room during sedation using fentanyl or morphine plus propofol and achieving a median score of 4 on the Ramsay sedation scale. In the unblinded capnography group, subjects showed a significantly decreased incidence of hypoxia (25% vs 42%), with hypoxia defined as an oximetry reading of less than 93% for 15 s or longer. All cases of hypoxia were identified through capnography before onset and median time from detection of capnographic evidence of respiratory depression to hypoxia was 60 s.

In accord with the Canadian Anesthesiologists' Society 2012 guidelines[1] described above, other leading medical societies and organizations have recommended the use of capnographic monitoring during procedural sedation, particularly when the patient cannot be observed directly. The 2018 practice guidelines of the American Society of Anesthesiologists for moderate procedural sedation and analgesia[11] state that early detection of hypoxemia through the use of pulse oximetry during sedation analgesia decreases the likelihood of adverse outcomes such as cardiac arrest and death. The guidelines also recommend that end-tidal CO_2 be used when the anesthesia provider is not positioned in close proximity to the patient's airway or when direct ventilation cannot be observed easily, which happens often during imaging procedures where the sedated patient is in a darkened room. The Asso-

ciation for Radiologic and Imaging Nursing (ARIN) addresses this situation directly:

> ARIN endorses the routine use of capnography for all patients who receive moderate sedation/analgesia during procedures in the imaging environment. This technology provides the critical information necessary to detect respiratory depression, hypoventilation, and apnea, thus allowing the timely initiation of appropriate interventions to rescue the individual patient. Capnography use is associated with improved patient outcomes. Capnography should be used at all times, regardless of whether sedation is administered by an anesthesia provider or a registered nurse credentialed to administer moderate sedation/analgesia medications.[12]

Similarly, the Association of periOperative Registered Nurses has issued guidelines for the care of patients receiving moderate sedation and analgesia (www.aorn.org/guidelines/guideline-implementation-topics/patient-care/care-of-the-patient-receiving-moderate-sedation-analgesia). These recommendations include the use of end-tidal CO_2 to monitor patients when ventilation cannot be observed directly during procedures.

Role of the clinician

Clinicians using capnography for patients undergoing procedural sedation should remain aware that they play a vital role in ensuring patient safety. They must not be lulled into a false sense of security or think that capnography can replace a vigilant sedation provider. Reliance on monitoring technology may lead a practitioner to be more liberal in the administration of sedatives or less alert to risks. It is important to keep in mind that capnographic monitoring of ventilation during deeper levels of sedation provides an added level of safety but is no substitute for good clinical judgment and vigilant care. As the CAS guidelines remind us:

> The only indispensable monitor is the presence, at all times, of a physician or an anesthesia assistant who is under the immediate supervision of an anesthesiologist and has appropriate training and experience. Mechanical and electronic monitors are, at best, aids to vigilance. Such devices assist the anesthesiologist to ensure the integrity of the vital organs and, in particular, the adequacy of tissue perfusion and oxygenation.[1]

Cost considerations

Capnographic monitoring is now a robust and mature technology as are other more recently developed respiratory monitoring devices. In 2016 the ECRI Institute reported on the devices available[13] regarding machine issues such as reliability and provided an analysis of costs, albeit from an American perspective. In Canada, capital costs vary depending on contracts but capnography monitors are not expensive, particularly when included as components of other multifunction devices. In addition, the required disposables are inexpensive, costing approximately $8 per patient in our hospitals.

By contrast, the sequalae of respiratory complications can be very expensive, both in terms of liability claim costs and human suffering. In 2009 Metzner and colleagues[14] conducted an analysis of closed claims that found median payments for injuries related to sedation complications totaled $460 000. In a review of pediatric tonsillectomy claims in which the circumstances differed from procedures under sedation but the injuries did not, Subramanyam and colleagues[15] found opioid-related claims had the largest median monetary awards for both fatal injury ($1 625 892) and nonfatal injury ($3 484 278).

Prevention versus cure

Capnographic monitoring of ventilation during deeper levels of sedation is a good example of an ounce of prevention being worth a pound of cure. The Anesthesia Patient Safety Foundation's vision is that "no patient shall be harmed by anesthesia."[16] This is a goal that has, for the most part, been achieved in the operating room whenever general anesthesia is administered.

However, with the growing use of procedural sedation and the increasing complexity of cases, the same goal is needed for procedures involving deeply sedated patients, especially whenever deep sedation might lead to respiratory depression. In addition, it is essential that the attending anesthesia provider be trained to recognize respiratory compromise and be skilled enough to manage the patient's airway. The use of monitoring technology and the presence of adequately trained personnel are required to achieve greater patient safety and ensure no patient is harmed during procedural sedation.[17] BCMJ

Competing interests

None declared.

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Andy Jiang, BSc, Jennifer Smith, BFA, Fahra Rajabali, MSc, Alex Zheng, MSc, Roy Purssell, MD, FRCPC, Ian Pike, PhD

Patterns in poisoning hospitalizations and deaths in British Columbia, 2008 to 2013

Findings from a retrospective analysis of unintentional and self-harm poisonings involving illicit drugs, over-the-counter medications, and other substances can help clinicians, academics, and policymakers develop initiatives that prevent poisoning events.

ABSTRACT

Background: **Poisoning is a leading cause of hospitalization and death in British Columbia, yet patterns for all-cause poisonings remain unclear. A study was proposed to analyze morbidity and mortality for all causes of poisoning in order to investigate patterns and trends associated with intent, age, sex, health service delivery area, and cause.**

Methods: **A retrospective analysis was performed on morbidity and mortality data obtained from the BC Discharge Abstract Database and BC Vital Statistics for 2008 to 2013. Cases with poisoning as the primary cause of hospitalization or death were identified by *ICD-10* codes and classifications for drugs and other substances, which included antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs; narcotics and psychodysleptics; gases and vapors; and nonopioid analgesics, antipyretics, and antirheumatics. Once data were collected, descriptive statistics were generated. Separate multivariable logistic regression analyses were performed to investigate factors influencing the odds of the following events occurring: hospitalization or death from poisoning rather than from other external causes; hospitalization or death from self-harm poisoning rather than from poisonings involving other intents; deaths from poisoning rather than hospitalizations from poisoning.**

Results: **Unintentional poisoning hospitalizations and deaths in BC increased significantly during the study period. Males accounted for a majority of poisoning deaths (66%), while females accounted for a majority of poisoning hospitalizations (59%). Poisoning rates tended to be higher in less urban health service delivery areas. Causes of poisoning resulting in hospitalizations and deaths differed, as did intent. Age, sex, and calendar year were significant predictors of the odds of a poisoning event occurring.**

Conclusions: **Distinct patterns and trends associated with all-cause poisoning were identified by the study. These findings provide valuable insight into poisoning hospitalizations and deaths in BC for the period 2008 to 2013. By considering these findings and understanding the epidemiology of poisoning, clinicians from across the province can be better equipped to counsel patients and their families on ways to prevent poisonings. Clinicians, academics, and policymakers can also use these study findings to develop prevention initiatives that reduce the burden of poisonings on the health care system and society as a whole.**

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Mr Jiang is a student in the MD undergraduate program at the University of British Columbia and a research assistant at the BC Injury Research and Prevention Unit, which operates in partnership with the BC Children's Hospital Research Institute. Ms Smith is a research coordinator at the BC Injury Research and Prevention Unit. Ms Rajabali is a researcher at the BC Injury Research and Prevention Unit. Mr Zheng is a biostatistician at the BC Injury Research and Prevention Unit. Dr Purssell is a professor in the Department of Emergency Medicine at UBC and medical director of the BC Drug and Poison Information Centre. Dr Pike is a professor in the Department of Pediatrics at UBC and director of the BC Injury Research and Prevention Unit.

Background

Poisoning is a major cause of morbidity and mortality in Canada and around the world. Poisonous substances include, but are not limited to, drugs, pesticides, gases, and household cleaners. However, virtually *any* substance can be poisonous if the dose or exposure is sufficient. The role of intent in a poisoning event varies. Poisoning can be unintentional or intentional (i.e., classified as either self-harm or assault/homicide). The intent of an individual can also be undetermined. It is important to note that poisonings due to illicit drug use are overwhelmingly classified as unintentional poisonings because in most cases, individuals using illicit drugs do not intend to inflict self-harm or commit suicide.

In 2016 an estimated 106 683 deaths occurred worldwide because of unintentional poisonings, which resulted in nearly 6 million years of life lost.[1] Though Canadian national data are sparse and incomplete, findings indicate that unintentional poisonings caused over 1500 deaths, 7800 hospitalizations, and 54 000 emergency department visits in 2010 alone, costing the nation an estimated $1.26 billion.[2] In British Columbia, drug poisonings have led to the declaration of a public health emergency,[3] with data indicating opioid and illicit drug deaths totaling 993 in 2016[4] and representing roughly one-third of the 2861 opioid-related deaths nationwide that year.[5] The trend continued in 2017, with 1452 deaths in BC from illicit drug poisoning.[4]

Though "overdose" is commonly used interchangeably with "poisoning" in both medical literature and everyday language, it is important to recognize that the term poisoning more accurately describes the toxic effects of substances on the body and is used by *ICD-10*. The term overdose specifically refers to scenarios where quantities of a substance are used in excess of a known therapeutic dose (e.g., acetaminophen overdose). However, when the term overdose is used in the context of illicit drugs, it implies that individuals know what the correct dose is, even though none exist for illicit substances, and users are therefore intentionally exceeding this dose and are personally responsible.[6] This can lead to unnecessary stigma for already marginalized people, and for this reason the term poisoning is preferred.

Though "overdose" is commonly used interchangeably with "poisoning" in both medical literature and everyday language, it is important to recognize that the term poisoning more accurately describes the toxic effects of substances on the body and is used by *ICD-10*.

Poisoning, like other mechanisms of injury, is preventable. By understanding the trends and patterns of poisonings, targeted prevention initiatives can be developed with the aim of reducing morbidity and mortality. Currently, the research focus in BC has been on poisoning deaths due to illicit drug and opioid use,[3] and patterns with respect to other causes of poisoning, especially those that are nonfatal, remain relatively unstudied even though these are undoubtedly also an issue. Since a greater understanding of all-cause poisoning events can provide information for interventions aimed at reducing the overall burden of poisoning on society, a study was proposed to describe trends and patterns for all-cause poisoning hospitalizations and deaths in BC from 2008 to 2013.

Methods

Data were obtained from the BC Discharge Abstracts Database for all acute-level hospitalizations attributed to poisoning and other external causes (e.g., motor vehicle collisions, falls, fires) for the calendar years 2008 to 2013. Data for all deaths attributed to poisoning and other external causes were also obtained from BC Vital Statistics for the same period. Data from non-BC residents were excluded from all analyses.

Cases with poisoning as the primary cause of hospitalization or death were identified by the *ICD-10* codes X40–X49 (unintentional poisoning), X60–X69 (self-harm poisoning), X85–X90 (homicide/assault by poisoning), and Y10–Y19 (poisoning of undetermined intent). Additional details considered were age, sex, health service delivery area (HSDA) of residence, and cause of poisoning.

With respect to cause, *ICD-10* categories were used for drugs and other substances such as:

- Antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs (e.g., antidepressants, barbiturates).

- Narcotics and psychodysleptics (e.g., opioids, cocaine).
- Gases and vapors (e.g., carbon monoxide, motor vehicle exhaust).
- Nonopioid analgesics, antipyretics, and antirheumatics (e.g., acetaminophen, acetylsalicylic acid).

Once data were collected, descriptive statistics were generated. Age-standardized rates per 100 000 were calculated using 2011 BC population numbers. Trends were analyzed with linear regression models and were deemed statistically significant at $P < .05$. Separate multivariable logistic regression analyses were performed to investigate factors influencing the odds of the following events occurring:

- Hospitalization or death from poisoning rather than from other external causes.
- Hospitalization or death from self-harm poisoning rather than from poisoning involving other intents.
- Death from poisoning rather than hospitalization from poisoning.

After controlling for HSDA of residence, the predictor variables of interest were age, sex, and calendar year. Adjusted odds ratios (AORs) and 95% confidence intervals were calculated and deemed significant at $P < .01$ (Bonferroni correction). Ethics approval for the study was obtained from the UBC Children's and Women's Research Ethics Board.

Results

Poisonings in BC resulted in 26 846 hospitalizations (100.0 per 100 000) and 3120 deaths (11.6 per 100 000) from 2008 to 2013. Males accounted for 66% of poisoning deaths, while females accounted for 59% of poisoning hospitalizations. The majority of poisoning hospitalizations (57%) were classified as the result of self-harm, while one-third (32%) were classified as unintentional. The majority of poisoning deaths (70%) were classified as unintentional, and one-quarter (25%) were classified as self-harm poisonings.

Analysis of poisoning trends by intent and year indicated that unintentional poisoning hospitalizations increased from 31.4 to 35.9 per 100 000 ($P = .04$) from 2008 to 2013, unintentional poisoning deaths increased from 7.2 to 9.2 per 100 000 ($P = .004$), and all-intents poisoning deaths increased from 10.7 to 12.7 per 100 000 ($P = .007$). No significant trends were seen regarding self-harm poisonings.

Poisoning hospitalizations analyzed by age, sex, and intent revealed distinct differences between unintentional and self-harm poisonings. Hospitalization rates for unintentional poisonings were relatively similar between males and females and showed a general increase with age, with the lowest rate for children age 5 to 9 years (3.8 per 100 000) and the highest rate for adults age 75 and older (62.4 per 100 000). Notably, the rate for children age 0 to 4 years (both sexes) was nearly 9 times higher than the corresponding rate for children age 5 to 9 years (34.6 vs 3.8 per 100 000). Self-harm poisoning hospitalization rates were considerably higher among females across nearly all age groups. In particular, the self-harm poisoning hospitalization rate for females age 15 to 19 was highest across all ages and both sexes, and was over 3 times greater than the corresponding male rate (191.6 vs 57.3 per 100 000).

Self-harm poisoning hospitalization rates were considerably higher among females across nearly all age groups. In particular, the self-harm poisoning hospitalization rate for females age 15 to 19 was highest across all ages and both sexes.

Analyses of poisoning deaths by age, sex, and intent showed that mortality rates were significantly greater for males than for females across multiple age groups for both unintentional and self-harm poisoning. Notably, unintentional mortality rates for males age 20 to 64 were in the range of 12.9 to 17.3 per 100 000 whereas the corresponding female rates were in the range of 3.9 to 8.5 per 100 000. Unintentional poisoning mortality rates for both sexes were highest in the 25 to 44 and 45 to 64 age groups. Self-harm poisoning deaths among females increased with age and peaked in the 45 to 64 age group at 4.0 per 100 000, while two peaks were identified for males, with the 45 to 64 age group (5.8 per 100 000) and the 75 and above age group (6.1 per 100 000) having the highest self-harm poisoning mortality rates.

Poisoning hospitalization data analyzed by intent and HSDA indicated that unintentional poisoning hospitalization rates (Figure 1) were highest in regions of Interior Health

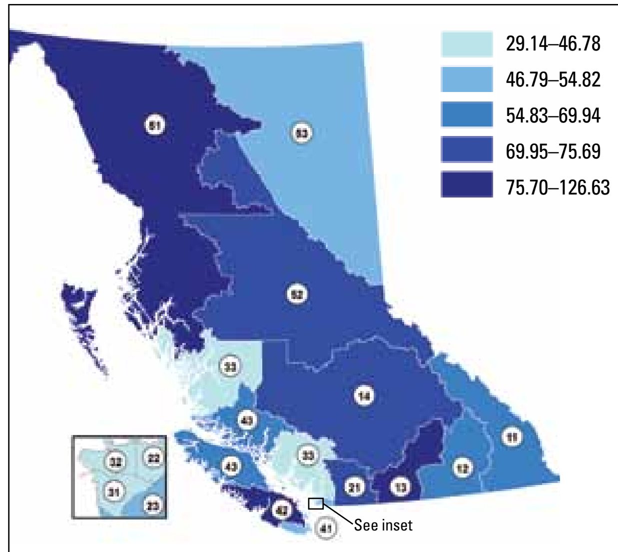

Figure 1. Unintentional poisoning hospitalization rates (age-standardized, per 100 000) by health service delivery area in BC (see box), 2008 to 2013.

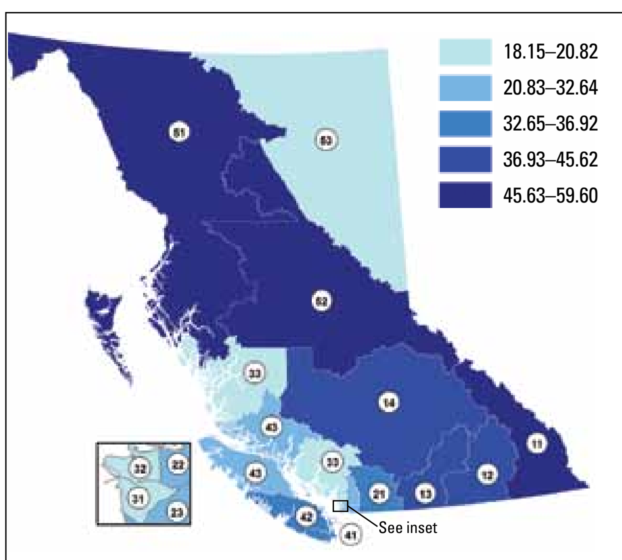

Figure 2. Self-harm poisoning hospitalization rates (age-standardized, per 100 000) by health service delivery area in BC (see box), 2008 to 2013.

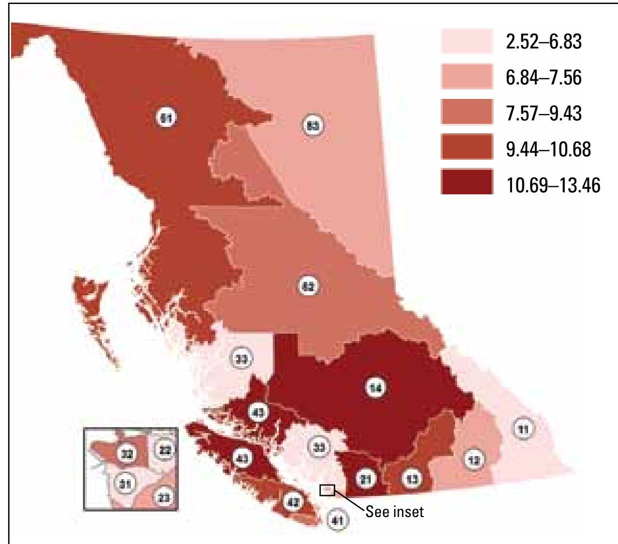

Figure 3. Unintentional poisoning mortality rates (age-standardized, per 100 000) by health service delivery area in BC (see box), 2008 to 2013.

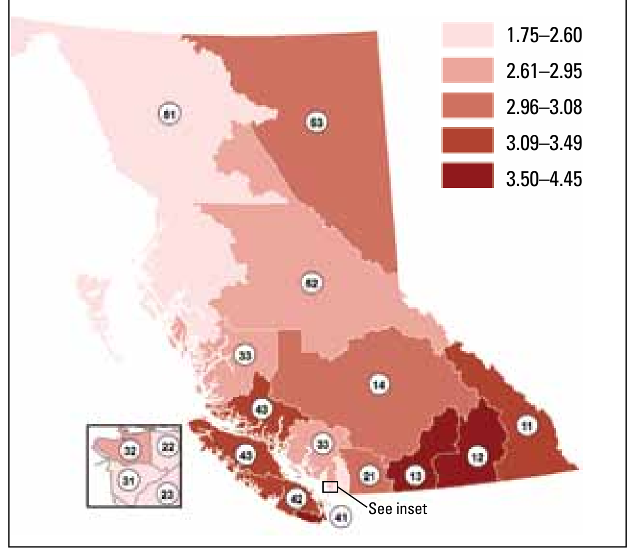

Figure 4. Self-harm poisoning mortality rates (age-standardized, per 100 000) by health service delivery area in BC (see box), 2008 to 2013.

Health service delivery areas in BC

Interior Health
11 East Kootenay
12 Kootenay Boundary
13 Okanagan
14 Thompson Cariboo Shuswap

Fraser Health
21 Fraser East
22 Fraser North
23 Fraser South

Vancouver Coastal Health
31 Richmond
32 Vancouver
33 North Shore/Coast Garibaldi

Island Health
41 South Vancouver Island
42 Central Vancouver Island
43 North Vancouver Island

Northern Health
51 Northwest
52 Northern Interior
53 Northeast

Source: All maps were generated by Andy Jiang using ArcMap software version 10.5.1 (ESRI, Redlands CA, USA) and shape files from the Government of British Columbia, available at www2.gov.bc.ca/gov/content/data/geographic-data-services/land-use/administrative-boundaries.

and Northern Health, whereas self-harm poisoning hospitalization rates (Figure 2) were highest in regions of Island Health, Interior Health, and Northern Health. Both unintentional poisoning mortality rates (Figure 3) and self-harm poisoning mortality rates (Figure 4) were high primarily in regions of Island Health and Interior Health.

Poisoning hospitalization and death data analyzed by intent and cause indicated that antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs (*ICD-10* code X41) were the leading cause of both unintentional poisoning hospitalizations (28%) and self-harm poisoning hospitalizations (50%). Data also indicated that 49% of unintentional poisoning deaths were due to narcotics and psychodysleptics (*ICD-10* code X42), whereas 23% of self-harm poisoning deaths were due to gases and vapors (*ICD-10* code X47). Lastly, data indicated that nonopioid analgesics, antipyretics, and antirheumatics (*ICD-10* code X40) were a major cause of self-harm poisoning hospitalizations (25%).

Trend analyses of poisoning with narcotics and psychodysleptics compared with all other causes of poisoning revealed that deaths due to these drugs increased significantly during the study period from 4.9 per 100 000 in 2008 to 7.3 per 100 000 in 2013 (P = .01), whereas deaths due to all other causes remained relatively stable, ranging between 5.7 and 4.8 per 100 000. A similar analysis of hospitalizations showed no significant trends.

Multivariable logistic regression analysis of factors associated with hospitalization due to poisoning compared with hospitalization due to other external causes indicated that advancing age decreased the odds of being hospitalized (AOR = 0.971; 95% CI, 0.970–0.971), but female sex increased the odds of being hospitalized (AOR = 2.178; 95% CI, 2.118–2.240), as did a calendar year later in the study period (AOR = 1.023; 95% CI, 1.015–1.031).

When comparing cases of hospitalization due to self-harm poisoning with cases of hospitalization due to poisoning of other intents, advancing age decreased the odds of being hospitalized (AOR = 0.981; 95% CI, 0.980–0.983) and later calendar year decreased the odds of being hospitalized (AOR = 0.957; 95% CI, 0.943–0.971), while female sex increased the odds of being hospitalized (AOR = 1.670; 95% CI, 1.587–1.758).

Similarly, analyses of factors associated with deaths due to poisoning compared with deaths due to other external causes indicated that advancing age decreased the odds of dying due to poisoning (AOR = 0.971; 95% CI, 0.969–0.973), but female sex increased the odds of dying due to poisoning (AOR = 1.298; 95% CI, 1.184–1.423), as did a later calendar year (AOR = 1.074; 95% CI, 1.047–1.101). When analyzing poisoning deaths due to self-harm rather than other intents, only advancing age was found to be a significant factor (AOR = 1.039; 95% CI, 1.033–1.045).

Lastly, analyses comparing poisoning deaths with poisoning hospitalizations (all intents) indicated that advancing age increased the odds of dying as opposed to being hospitalized (AOR = 1.010; 95% CI, 1.008–1.012), but female sex decreased the odds of dying (AOR = 0.373; 95% CI, 0.345–0.404). Calendar year was not a significant factor.

Trend analyses of poisoning with narcotics and psychodysleptics compared with all other causes of poisoning revealed that deaths due to these drugs increased significantly during the study period from 4.9 per 100 000 in 2008 to 7.3 per 100 000 in 2013 (*P* = .01), whereas deaths due to all other causes remained relatively stable.

Conclusions

Poisoning is a significant cause of mortality and morbidity in BC. This study reveals several patterns in poisoning hospitalizations and deaths associated with intent, age, sex, health service delivery area, and cause. Notably, unintentional poisoning deaths have increased since 2008—a trend driven primarily by poisonings due to narcotics and psychodysleptics. Comparing poisoning with other external causes of mortality and morbidity also shows that poisoning events increased from 2008 to 2013, consistent with research in the US that found poisonings surpassed motor vehicle collisions as the leading cause of injury death in 2008.[7] Furthermore, this study found the odds of dying rather

than being hospitalized due to poisoning increased over time, suggesting that not only the burden of poisoning but also the acuity of poisoning increased during the study period.

Age and sex

In BC, the unintentional poisoning hospitalization rate of children age 0 to 4 is high relative to other age groups. While this is a concerning finding, it also reflects other study results that indicate the risk of unintentional poisonings may be intrinsically linked to a particular developmental stage.[8] For example, toddlers may be at increased risk of poisoning because they tend to explore their environments by placing objects in their mouths. In addition, research has found that poisoning from drugs taken orally may be linked to imitative behaviors as young children watch and copy their caretakers.[9] Though child-resistant medication packaging has been proven to reduce childhood poisoning risk,[10] household members may choose not to use such packaging and instead store medications in pill boxes that are not child-resistant. Physicians and pharmacists engaged in prescribing and dispensing drugs are ideally positioned to counsel patients in contact with young children to be mindful of poisoning dangers.

With respect to self-harm poisonings, this study suggests that individuals age 15 to 64 are at risk. In particular, females age 15 to 19 had the highest rate of self-harm poisoning hospitalization. Findings from the US are similar, indicating that emergency department visit rates for self-harm poisoning were highest among females age 15 to 19.[11] The observation that females generally have substantially higher poisoning hospitalization rates than males may be explained by gendered patterns of suicide attempts and completions. Previous studies have found that females are more likely than males to choose poisoning as a method of suicide.[12] This is supported by our finding that females were significantly more likely than males to be hospitalized or die from poisoning rather than other external causes, and that poisoning hospitalization was more likely to result from self-harm than other intents. However, research has also shown that when males choose poisoning as a method of self-harm, they are more likely to die than females.[13] Likewise, with respect to self-harm poisoning hospitalizations rates, those for females in this study were greater than for males but the reverse was true for self-harm death rates. The overall odds of dying compared with being hospitalized due to poisoning (all intents) were also lower for females in this study, supporting the notion that while females are at greater risk for poisoning events, these events are less likely to result in death.

Lastly, the results of this study indicate that deaths due to unintentional poisoning disproportionately affect males age 20 to 64, and that males are more likely to die as a result of a poisoning event when compared with females. This pattern may be further amplified as the growing opioid crisis in BC leads to a corresponding increase in unintentional poisoning deaths. It is not exactly clear why poisonings overwhelmingly affect males, suggesting the need for further research on the complex interactions between social, behavioral, and biological factors in the context of poisoning. Importantly, active participation in the workforce and peak economic productivity occur from age 20 to 64. Premature deaths and prolonged hospitalizations from poisoning in this age group in BC have a substantial human and economic impact,[14] and should be a prevention priority not only for physicians and health care providers but for policymakers and elected leaders.

Health service delivery area

This study identified poisoning hotspots in the province, predominantly in less-urban health service delivery areas. Although these findings suggest a difference between rural and urban areas with respect to poisoning hospitalization and death rates, a previous Canadian 10-year cohort study analyzing poisoning deaths across the country found no differences in unintentional or self-harm poisoning rates across the urban–rural continuum.[15] In contrast, research in BC has found significant differences, specifically among cocaine-related poisonings when comparing urban and rural communities.[16] Such discrepancies suggest the need for further research to determine if these geographic differences in poisoning are related to specific substances or other factors such as ethnic clustering, drug prescription practices, or lack of access to mental health services in the case of self-harm poisonings.

Cause of poisoning

Between 2008 and 2013, narcotics and psychodysleptics (e.g., opioids, cocaine) were the leading cause of unintentional poisoning deaths and the second leading cause of unintentional poisoning hospitalizations behind antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs (e.g., antidepressants, barbiturates).

Opioids are of particular relevance in BC in light of the recent public health emergency.[3] While this study did not find opioids to be the leading cause of hospitalization, more recent research shows that poisoning hospitalizations due to opioids have increased 53% nationwide from

2007/08 to 2016/17,[17] suggesting that the pattern found in this study may no longer reflect current trends. The causes and factors driving the recent opioid crisis are complex. However, one major factor is the increasing number of illicit drug deaths involving ultra-potent opioids such as fentanyl, with data indicating fentanyl was detected in 84% of illicit drug deaths in BC in 2017.[18] Research has also shown that prescription opioid consumption in BC has increased 31% from 2005 to 2013,[19] suggesting a possible link between opioid poisonings and increases in the dispensing of stronger opioids.

A large proportion of self-harm poisoning hospitalizations and deaths in this study were caused by antidepressants. This suggests that individuals with depression and/or other mental health issues may form a significant portion of the population at risk for self-harm poisonings. Rates of suicide among those with depression are known to be higher than the general population.[20] Although antidepressant medications are the cornerstone of therapy, research has shown that certain antidepressants may paradoxically increase the risk for suicide in certain populations.[21] Thus, clinicians should be acutely aware of any potential risks associated with prescribing psychotropic drugs in hopes of mitigating suicide attempts.

Substances classified as nonopioid analgesics, antipyretics, and antirheumatics (e.g., acetaminophen, acetylsalicylic acid) were also a major cause of self-harm poisoning hospitalizations. Acetaminophen preparations are commonly available over-the-counter, which could explain the high involvement of these medications in self-harm poisonings. Research conducted in Calgary, Alberta, found that females age 10 to 29 experienced the highest hospitalization rates due to intentional acetaminophen poisoning.[22] While the study was limited to Alberta, the results of the present study suggest the findings apply to BC, and that physicians should be alert to the potential for self-harm among adolescents and young adults and counsel patients about the risks of certain over-the-counter medications.

Study limitations

Defining a poisoning event is often difficult as poisoning may occur in isolation or with other mechanisms of injury, as in the case of motor vehicle collisions that occur when the driver is under the influence of drugs or alcohol. In such cases, the primary cause is often coded as a motor vehicle collision despite the fact that poisoning may have played a pivotal role. Thus, analyzing cases with poisoning as the main cause of hospitalization or death can result in an underestimation of the true magnitude of the problem. Furthermore, the overall accuracy of the *ICD-10* codes used to describe causes of poisoning is unknown. While this may be a limiting factor, previous research examining prescription opioid death data has found that national vital statistics datasets using *ICD-10* codes are fairly accurate when compared with the gold standard of coroners' data,[23] suggesting that the results of this study using administrative datasets and *ICD-10* codes are valid, and supporting the utility of such datasets for public health surveillance.

Another limitation of this study concerns the use of data from 2008 to 2013, which means the findings may not reflect more recent patterns. The findings do, however, provide a useful picture of all-cause poisonings in BC just before the exponential increase in opioid-related poisonings. Analyzing data from before the major increases in opioid-related poisonings reduces the risk of patterns being skewed by the large number of opioid-related cases and provides greater insight into all other causes of poisoning that are undoubtedly still relevant during the current opioid crisis. Future studies may seek to determine whether the patterns found in this study are similar to those seen in the years following 2013.

Lastly, the intent of a poisoning event can be classified incorrectly, particularly with suspected suicide cases. A self-harm poisoning event may not be registered as such because victims or their families wish to avoid this designation for cultural or religious reasons, or because of the stigma associated with suicide. Though this study found roughly 5% of poisoning deaths and 11% of hospitalizations in BC between 2008 and 2013 were classified as the result of undetermined intent, research has indicated that poisonings of undetermined intent constituted some 47% to 80% of all undetermined deaths in Canada.[24]

Summary

The results of this study provide valuable insight into trends and patterns of poisoning hospitalizations and deaths in BC with respect to age, sex, health service delivery area, cause, and intent for the period 2008 to 2013. The unintentional poisoning hospitalization rate for children age 0 to 4 (both sexes) was high relative to other age groups, and the self-harm poisoning death rates for adult males and females were found to increase with advancing age. Males accounted for a majority of poisoning deaths while females accounted for a majority of poisoning hospitalizations. Poisoning rates tended to be higher in less-urban health service delivery areas. Causes of poisoning included drugs such as

antidepressants, opioids, cocaine, and acetaminophen, and substances such as motor vehicle exhaust.

Unintentional poisonings have been on the increase since 2008, emphasizing the importance of early surveillance and prevention. By understanding the epidemiology of poisoning within their communities, clinicians from across the province can be better equipped to counsel patients and their families on ways to prevent poisonings for themselves and their loved ones. Although the hospitalizations and deaths considered in this study are fewer in number than those seen with the recent opioid crisis in BC, they represent the most serious cases, and the findings can help clinicians, academics, and policymakers develop prevention initiatives that reduce the burden of poisonings on the health care system and society as a whole. BCMJ

Competing interests

None declared.

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Traumatic brain injuries

Between 1990 and 2017, WorkSafeBC accepted 30 170 new traumatic brain injury (TBI) claims, of which 98.4% were diagnosed as a mild traumatic brain injury (MTBI). The average age of the claimants was 38 years, 68% were male, and 95% returned fully to their job after a short period of time away from work.

TBI, often called an invisible injury, is quite common. The US Centers for Disease Control and Prevention has identified the leading causes of TBI as falls (28%), motor vehicle traffic accidents (20%), struck-by or -against events (19%), and assaults (11%). Of the total reported TBIs, 75% to 90% fit the categorization of MTBI. About 90% of those diagnosed with MTBI follow a predictable course, experience few, if any, ongoing symptoms, and do not require any special medical treatment. Of the more than 1.1 million patients with MTBI who are treated and released from an emergency department annually, only about 10% experience postinjury symptoms of a long-lasting nature.

WorkSafeBC's Special Care Services Department has a team comprising experienced case managers and clinicians who are responsible for managing all new claims and the majority of existing claims for injured workers with a severe brain injury. Special Care Services case managers remain with their clients for the duration of their claim, monitoring the worker's progress from the date of injury to the initial adjudication and beyond.

Each worker's situation is unique, and our staff members strive to provide the services and support to best meet the individual needs of each client and their family. Health Care Services collaborates with services and providers whose key priorities are to assist clients in gaining and maintaining independence in self-care, and developing return-to-work plans, when appropriate.

The following WorkSafeBC services are designed specifically for workers who have sustained TBIs:

1. Community Brain Injury Services—strives to maximize and maintain skills in self-care, productivity, and leisure that allow injured workers to live, participate, and work in their local community. Services are provided in the home and community to assist these workers in gaining and retaining independence, and maintaining positive relationships. Our occupational therapists develop plans and may delegate care to support workers under the supervision of a community occupational therapist.
2. Residential Care Services—helps workers gain and maintain skills in self-care, productivity, and leisure that allow them to live, participate, and potentially work or volunteer in their local community. Provides physical, cognitive, and psychological services, as well as appropriate behavioral interventions, to a diverse group of workers with varying degrees of function and dependency, including those who need 24-hour supervision. A qualified contractor may provide these services in a facility or family care home.
3. Head Injury Assessment and Treatment Services—a multidisciplinary, early intervention program that provides assessment and treatment services for workers who have sustained a mild-to-moderate head injury, with a goal of return to work. This in-clinic treatment service is offered by teams consisting of physicians, psychologists, neuropsychologists, occupational therapists, and physical therapists, with locations in Kelowna, Surrey, and Vancouver.
4. Home Care—a contracted network of community home-care providers who offer short-term and long-term home support and nursing services in the worker's home and/or community setting, and focus on assisting with activities of daily living, personal care, and professional nursing services such as wound care.
5. Vestibular Physiotherapy—provided by physiotherapists in the community who have training in vestibular rehabilitation and offered as a single service or concurrently with other treatment services, as required. They assist in treating vestibular dysfunction such as vertigo, dizziness, visual disturbance, or imbalance.

If you have an injured worker patient with a TBI and require further information or assistance, please contact a medical advisor in your nearest WorkSafeBC office.

—Andrea McNeill, BScOT, BA Psych, OT(C)
Quality Assurance Supervisor, WorkSafeBC Financial Services & Health Care Programs
—Lori Cockerill, MBA, BScOT, BScPsy
Manager, WorkSafeBC Client Services—Special Care

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

special feature

Safe prescribing of opioids and sedatives: It’s about primary prevention

The current opioid crisis has two important dimensions: first, a drastic increase in opioid prescribing over the past 30 years, and second, a fatal combination of opioid addiction coupled with the contamination of the illicit drug supply leading to thousands of deaths due to fentanyl poisoning. The College’s “Safe prescribing of opioids and sedatives” practice standard aims to effect positive change by targeting the first dimension of the crisis.

David Unger, MD

Prescribing opioids for pain has not always been as controversial as it is today. In the 1980s and ’90s, the harms of prescribing opioid medications for noncancer pain were not fully recognized. We now know that when it comes to treating noncancer pain, opioids are overvalued, and their highly addictive properties can pose huge risks to patients.

Regulatory bodies recognize that the unfolding opioid crisis is complex; there are no easy solutions. The College of Physicians and Surgeons of BC and other regulatory bodies in the province and across the country have dedicated themselves to addressing this extraordinary threat by adopting a broader view and targeting their efforts closer to the upstream source of this unprecedented health crisis that has claimed the lives of thousands.

The opioid crisis has (at least) two important dimensions: the first is the drastic increase in opioid prescribing over the past 30 years and the adverse outcomes that attach to that; the second is the fatal combination of rampant opioid addiction coupled with the contamination of the illicit drug supply leading to thousands of deaths due to fentanyl poisoning. This is an important distinction. The connection between these two facets is complex and is not settled in science. The College stands with researchers, clinicians, patients, and families in the growing recognition that opioids themselves are potentially harmful, and that they expose people to risks of addiction—an increasingly fatal disease.

The College’s “Safe prescribing of opioids and sedatives” practice standard,[1] published this year, strives to effect positive change by targeting the first dimension of the crisis. For years, the College has participated in or led initiatives to address physicians’ roles in the rise of opioid consumption for noncancer pain. In 2010, the College contributed to the development of the National Opioid Use Guideline Group’s “Canadian guideline for safe and effective use of opioids for chronic noncancer pain.” In 2012 the College published its “Prescribing principles” guideline for BC physicians. In 2016 the College Board endorsed the US Centers for Disease Control and Prevention’s “CDC guideline for prescribing opioids for chronic pain—United States, 2016,”[2] and in the same year the “Prescribing principles” guideline was significantly revised and renamed “Safe prescribing of drugs with potential for misuse/diversion.”

After extensive consultations with members of the public, representatives from patient support groups, physicians, key health partners, and the Ministry of Health, an updated standard, “Safe prescribing of opioids and sedatives,”[1] was published in June 2018.

This article has been peer reviewed.

Dr Unger is the deputy registrar, Health Monitoring Department and Drug Programs at the College of Physicians and Surgeons of BC. Dr Unger received his medical degree from the University of Saskatchewan, and holds a master’s of science in bioethics from Albany Medical School in New York. Prior to joining the College, he practised as a family physician in BC focusing on vulnerable populations living with HIV/AIDS and addiction, and also served as director of ethics at Providence Health Care.

Changes made to the updated standard include the following:

- With the publication of the "2017 Canadian guideline for opioids for chronic non-cancer pain,"[3] the clinical guidelines were removed and it is now a standard only. (Best practice *musts* and *must nots.*)
- Language was strengthened to ensure that patients with complex care needs, or patients who are on or seeking opioids and sedatives, are not discriminated against or abandoned.
- Greater clarity was provided about dosage, tapering, and discontinuing opioids and sedatives. Minimal standards around pharmacovigilance and stewardship of prescribed opioids and sedatives were set out.
- Stimulant medications were removed from the standard. It now addresses safe prescribing of opioids and sedatives only.
- The standard now clearly acknowledges that different diagnoses (sleep apnea, heart failure, etc.) will result in unique risks for patients.
- The standard continues to promote collaborative decision making between the patient and physician when possible, while allowing for circumstances when a collaborative decision may not be possible.
- Emphasis was added that problems from excessive prescribing, and the requirement to document discussions with patients about safe storage and disposal, apply across the entire spectrum of prescribing (both short- and long-term care, and for acute and chronic indications).
- While it was stated in previous versions, the new version of the standard more explicitly states that it does not apply to the treatment of substance use disorder, or to the treatment of cancer pain or pain at the end of life.

Despite what has been incorrectly suggested, the College has never set limits or absolutes on prescribing. Physicians are expected to use their professional judgment when prescribing opioids or sedatives. The "Safe prescribing of opioids and sedatives" standard has, as its principal objective, primary prevention of opioid addiction, overdose, and other harms from the use of such medications. In achieving this objective, the College expects physicians to consistently employ the most basic and fundamental best practices to ensure good patient care. The College directs physicians to initiate these medications after completing proper patient assessments, hold and document discussions with patients about the risks of the medications, take full histories and learn about what other drugs patients are taking (illicit and prescription), review patients' PharmaNet profiles, schedule follow-up visits, advise patients not to mix opioids with alcohol and other substances, and taper safely. The College expects physicians to prescribe with deliberate thought and care toward the patient, and to consider the long-term impact these drugs may have on patients' lives.

The College also recognizes that prescribing is complex. Even the most seasoned physicians find prescribing challenging. To assist, the College works collaboratively with physicians through the Prescription Review Program[4] to ensure prescribing patterns are consistent with the standard and aligned with the "2017 Canadian guideline for opioids for chronic non-cancer pain." The Prescription Review Program is not punitive, and the College does not wish to deter physicians from prescribing opioids and sedatives responsibly. The College takes a collegial, educational, and remedial approach in its Prescription Review Program to enhance safe prescribing, and provides a Prescribers Course along with other educational offerings. Physicians will not have their licences suspended or taken away for doing their best under difficult circumstances.

Video on safely prescribing opioids and sedatives

A short video from the College providing an overview of "Safe prescribing of opioids and sedatives" is available at www.youtube.com/watch?v=8Qc_2j3w90o.

Acknowledgment

The College would like to thank all physicians and patients who participated in the multiphased consultation that led to the latest version of "Safe prescribing of opioids and sedatives."

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Why diets fail: Obesity and mental health

Simplistic approaches to the treatment of obesity focusing on restrictive diets or increased exercise power the lucrative weight-loss industry and provide endless hours of reality television, but provide clinicians with no useful models to help those who struggle with serious obesity. While research has shown almost every popular diet to assist in weight loss, there is no diet that seems to help more than a small fraction of participants beyond a couple of years. Further, most gain back the weight they lost. It seems that no matter how well a diet works early on, long-term adherence to popular diets tends to be dismal.

Research is helping us understand why we should consider a more thoughtful and empathic approach to obesity. As we grow up, our normal weight is adjusted upward and food intake is hormonally regulated to ensure that it is sufficient to support growth. If we gain excessive weight, what our body considers our normal weight continues to increase.[1] After intentional weight loss, potent neuroendocrine physiology defends our previous maximum weight and our food intake eventually increases until we regain most or all of the weight lost. This physiological pressure to regain lost weight is persistent and likely permanent. Bariatric surgery impacts the hormones regulating this set point. Anti-obesity pharmaceuticals also target these systems, with less impressive outcomes. Although these interventions have their place, to treat obesity successfully, we need to consider addressing modifiable contributors to weight gain, and assist patients with barriers to successful lifestyle modification.

The complex and inseparable relationship between obesity and mental health is one reason why a simple diet or exercise plan has no lasting value. Childhood trauma, neglect, abuse, food insecurity, and posttraumatic stress disorder often precede lifelong, severe obesity, and pose challenges to treatment.[2,3] Attention deficit hyperactivity disorder (ADHD) is strongly associated with obesity, especially in adults, and coaching those with ADHD to maintain lifestyle modifications is difficult.[4] Depression is a common comorbidity in obesity, and is strongly associated with hyperphagia, anxiety, severe fatigue, and chronic pain, all of which are barriers to effective treatment.[5] Obesity is associated with a high risk of obstructive sleep apnea, which is strongly associated with depression, severe sleepiness, fatigue, cognitive impairment, and increased appetite promoting hormones.[6] Disorderly eating patterns and comorbid eating disorders (especially binge eating disorder) are common, especially with severe obesity. Simply prescribing a restricted diet or strategies such as fasting may exacerbate disorderly eating patterns.[7] Perhaps the most common problem seen in obesity treatment are patients struggling with chronic stress and anxiety who develop habitual emotional eating behaviors to cope.[8] Prescribing dietary changes without assisting these patients in stress management and treating their anxiety is of little long-term value.

Patients with obesity experience judgment, bigotry, and discrimination in all facets of society, including health care settings.[9] Motivating positive change in patients with low self-esteem and a history of repeated failures to maintain weight loss is best achieved by establishing an accepting, nonjudgmental milieu, and helping them reframe their efforts to change as a lifelong journey rather than a race to achieve a weight-loss goal. By helping patients set realistic behavioral goals and assisting them to identify and address the root causes of their obesity, physicians can empower them to make lifestyle changes that are enjoyable, sustainable, and effective.

—Michael R. Lyon, MD, ABOM

This article is the opinion of the Nutrition 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.*

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Waiting 18 months between pregnancies reduced the risk to 0.5%. For younger women, researchers found an 8.5% risk of spontaneous preterm birth for pregnancies spaced at 6 months. For younger women who waited 18 months between pregnancies the risk dropped to 3.7%. Among older women, the risk of spontaneous preterm labor was about 6% at the 6-month interval, compared to 3.4% at the 18-month interval. Although the causes of poor pregnancy outcomes at short intervals among older and younger women were not examined in this study, the findings suggest different risk profiles for each age group.

The authors reflect that whether the elevated risks are due to the body not having time to recover if women conceive soon after delivering or to factors associated with unplanned pregnancies, such as inadequate prenatal care, the recommendation might be the same: improve access to postpartum contraception or abstain from unprotected sexual intercourse with a male partner following a birth.

The study was coauthored by Laura Schummers, SD, Jennifer A. Hutcheon, PhD, Sonia Hernandez-Diaz, DrPH, Paige L. Williams, PhD, Michele R Hacker, SD, Tyler J. VanderWeele, PhD, and Wendy V. Norman, MD. It is available at https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2708196.

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Midwifery linked to lower odds of birth complications for low-income women

Research from UBC and the University of Saskatchewan adds to the evidence in support of midwives as a safe option for prenatal care, especially for women who have low socioeconomic status.

The study, "Reduced prevalence of small-for-gestational-age and preterm birth for women of low socioeconomic position: A population-based cohort study comparing antenatal midwifery and physician models of care," published in the *British Medical Journal Open*, found that low-income pregnant women who receive care from a midwife compared to a physician are less likely to go into early labor, to have a baby with a low birth weight, or to have a small-for-gestational age birth.

Midwives, general practitioners, and obstetricians each offer a different style of prenatal care that matches different women's preferences and needs. Midwives tend to spend more time with their patients with a focus on the overall physical, emotional, and psychological well-being of mothers and their newborns, which benefits women who are more vulnerable.

For the study, researchers followed 57 872 women in BC who carried a single baby, had low- to moderate-risk pregnancies, and received medical insurance premium assistance sometime between 2005 and 2012. They used maternity, medical billing, and demographic data to investigate the odds of small-for-gestational age birth, preterm birth, and low birth weight for low-income women receiving care from a midwife, GP, or OB.

After controlling for differences such as age, previous pregnancies, where they lived, and pre-existing medical conditions, researchers found that low-income women who received prenatal care from a midwife had 29% lower odds of a small-for-gestational age birth compared to women who received care from a GP, and a 41% reduction compared to those who received care from an OB.

Authors of the study suggest the findings could help develop policies that make the service more accessible to low-income women, who might not be as aware of this option.

The study was coauthored by Patricia Janssen, Saraswathi Vedam, and Maureen Mayhew at the University of British Columbia, and Deborah Mpofu and Ulrich Teucher at the University of Saskatchewan. It is available at https://bmjopen.bmj.com/content/8/10/e022220.

Mitochondrial disease resource

MitoCanada is a patient advocacy organization, established in 2010, focusing on awareness, support, and funding research, and the only Canadian mitochondrial disease charity. The organization seeks to increase public awareness of mitochondrial disease and dysfunction; be an information resource and support for individuals, families, and caregivers, and the clinical communities that serve them; and advance research into the diagnosis, care, treatment, and cure for mitochondrial disease. Visit their website for patient advocacy and support information: http://mitocanada.org.

Hiring an MOA? Free resource for the medical community

Whether it is finding temporary help or adding team members to an expanding office, the challenge to find qualified medical office assistant candidates is the same for most medical clinics, especially in an unfocused recruitment space. As a physician's spouse, over the past 10 years I have been tasked with hiring MOAs, and I have noticed that the recruitment process is fragmented. We scatter advertisements across various websites—craigslist, Indeed.com,

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HEALTHCARE PROVIDERS CONFERENCE
Surrey, 24 Jan (Thu)
Join us for an evening of educational sessions designed to bridge the information gap between laboratory medicine and clinical practice. Conference of interest to GPs and specialists, nurse practitioners, naturopathic doctors, and allied health care providers—particularly those providing primary care. This meeting will be held at the Civic Hotel, 5 to 9 p.m., starting with a gourmet buffet dinner at 5:30 p.m., with sessions starting at 6 p.m. The conference's aim is to demystify the laboratory to establish better access to laboratory medicine for all health care providers. Case studies will be used to provide practical clinical pearls and showcase how evolving laboratory medicine practice will improve the quality of clinical care for patients. LifeLabs is committed to providing the highest quality services to better serve our local communities. Enjoy an evening of networking with your colleagues while learning more about laboratory medicine and take away skills that can be directly applied to your daily clinical practice. Speakers are industry experts in laboratory medicine who will follow a case-based format and address topics that will include diagnostic dilemmas and management of common cases at the intersection of clinical practice and each of our lab disciplines—microbiology and infectious diseases, hematology and medical biochemistry, lipidology, toxicology. Adequate time has been scheduled for Q&A sessions. Registration is free. Sign up now as space is limited. This educational event may qualify up to 2 hours of unaccredited Group Learning Activity. Registration at http://www.lifelabs.com/annual-conference.

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. You will be invoiced upon publication. Payment is accepted by Visa or MasterCard on our secure online payment site.

CME ON THE RUN
VGH and various videoconference locations, 25 Jan–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. Topic & date: 25 Jan (therapeutics). Topics included: PPI's: When and how to discontinue; Post TIA management; Suboxone: an FP's approach; Cannabinoids: Current evidence and guidelines for use; Adult vaccine updates; Genomic testing: Ready for prime-time prescribing; Update on hepatitis treatments; RICE to MOVE: Changes in the approach to MSK injuries. The next sessions are: 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.

BC PEDIATRIC DIABETES DAY 2019
Vancouver, 1–2 Feb (Fri–Sat)
Target audience for this conference (to be held at the Morris J. Wosk Centre for Dialogue), are pediatricians, specialists caring for children and youth with diabetes, diabetes educators, social workers, pharmacists, and dietitians. Event highlights: New larger venue, interesting plenary sessions, and lots of small interactive workshops. Conference format includes two breakout sessions designed to address the nursing supportive services educational needs. The conference will focus on addressing new treatment approaches, new technology, and work toward continuing to develop standardized pediatric diabetes care across the province. Further information at https://ubccpd.ca/pediatric-diabetes2019. Registration: https://events.eply.com/pediatric-diabetes2019.

GP IN ONCOLOGY TRAINING
Vancouver, 4 Feb–15 Feb (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.

myoACTIVATION TRAINING FOR CHRONIC PAIN
Vancouver, 23 – 24 Feb (Sat-Sun)
Learn practical nonpharmaceutical trigger point injection skills to use within a system of pain care that encompasses structured assessment, examination, treatment, and aftercare. An efficient analytical approach that can be used within your office schedule to effect immediate improvement in a broad spectrum of chronic pain and physical dysfunction presentations. Appropriate aftercare advice ensures lasting change. Treatments are fully covered by MSP. A tool for your toolbox that addresses the origin of pain, not just symptomatic treatment of ongoing pain. Patients leave the office feeling better than they arrived. This Level 1 course entails 3 hours of online learning plus 14 hours of examination and treatment skills practice in participant pairs with a 4:1 instructor to learner ratio. The workshop will be held at the BC Children's Health Research Institute. Video case conference 6 weeks post-training. Low patient risk + high patient appreciation + high clinician satisfaction! Further information: www.myoclinic.ca/training. Contact Greg Siren, MD, CCFP, FCFP, greg.siren@myoclinic.ca; 250 590-7300.

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college career sites—or post on the many MOA Facebook pages. The medical community would benefit from a dedicated website to post MOA jobs. Most physicians are seeking a similar candidate profile, and if we collectively post in one MOA-specific place, the benefits will be an increase in qualified applicants and a shorter time to hire.

With this need in mind, I created www.MOACareers.com. The goal of the website is to improve the hiring experience for medical clinics and to create a central place to view MOA opportunities. Posting a job is easy and free. Create a posting simply by using the provided template, designed specifically for the MOA role. The website offers an employer dashboard where clinics can post temporary, part-time, and full-time positions, and look for practicum students. The site also offers tips for physicians looking to hone their hiring skills.

This website is a free, grassroots initiative created by a medical family. As this is a new resource, your ideas for improvement are welcome. Please send your feedback to info@moacareers.com. Happy hiring.

—Caroline Dickson, MBA

Caroline Dickson is a faculty member of the Langara School of Management. She also assists with the administration of her husband's multiphysician clinic in Surrey, BC.

Fall GPSC newsletter now online

In continued efforts to ensure doctors receive timely and relevant information from the GPSC, the quarterly newsletter, *GP Update*, is now emailed directly to BC family physicians. The fall 2018 issue features articles on:

- Patient medical homes and primary care networks: clarifying the concepts.
- Using EMR data to inform and plan proactive patient care.
- The GPSC's story: 15 years.
- Maternity care at the Burnaby Maternity Clinic.
- Helping patients and families navigate dementia.

To read the newsletter online, visit www.gpscbc.ca/news/publications. To subscribe to the newsletter, log in to your account on the Doctors of BC website and update your newsletter subscription preferences.

Antidepressants can help treat Alzheimer disease

Scientists at the University of Waterloo have discovered that antidepressant medications can be used to treat Alzheimer disease. A study published in *ACS Chemical Neuroscience*, "Interactions of selective serotonin reuptake inhibitors with β-amyloid," found that selective serotonin uptake inhibitors (SSRI medication) can delay the development and growth of amyloid-beta proteins, which can clump together and form a plaque, contributing to disease symptoms. These plaques block cell-to-cell signals, resulting in delayed cognitive function. As the plaques grow, the brain's ability to make connections and send and receive information becomes further impaired.

There are currently over 500 000 Canadians living with dementia, and no drugs on the market that offer a cure. Approximately 50% of people diagnosed with Alzheimer disease also have depression. Researchers believe knowledge from this study can one day inform how health care providers approach treatment in patients with both depression and Alzheimer disease, perhaps leading to the use of SSRIs as an early intervention for people who have a family history of dementia. The chemical structure of SSRIs presents a type of blueprint for how to develop a medication that will prevent amyloid-beta aggregation. The study is available at https://pubs.acs.org/doi/10.1021/acschemneuro.8b00160.

classifieds

practices available

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.

SURREY (SULLIVAN AREA)—FP PRACTICE-SHARE
Well-established, very busy family practice of mainly female patients and pediatrics. Looking for an FP to practice-share with option of 2.5 to 3 days. The days of the week and hours are flexible. No weekends/evenings, obstetrics/hospital. Profile EMR. Proficient staff. Clinic has two other FPs. Please contact me at ssanghe@icloud.com if interested.

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.

VANCOUVER ISLAND—PRACTICE AVAILABLE
Skin laser spa/clinic on Vancouver Island. Well-established regular clientele. Fully equipped and furnished. Lease or purchase of this modern, stylish, purpose-built facility available. Contact skinlaserdrh@gmail.com for more information.

VANCOUVER—GENERAL PRACTICE FOR SALE
Busy family practice/walk-in clinic in prime Vancouver location for sale. Congenial colleagues and excellent staff are available in this well-established 22-year-old practice. Email emurphy@telus.net or call 778 233-7449.

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.

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, a printer in each room, group practice, friendly MOAs, and free secure underground parking. Please contact us at namc3373@hotmail.com.

KELOWNA—MULTIDISCIPLINARY PRACTICE: INTEGRATING FAMILY PHYSICIANS
PRIME is an integrated fitness, health, nutrition, and rehabilitation centre, recruiting primary care physicians to work in our new multidisciplinary, five-story building. With no start-up fees or buy-in costs, physician compensation packages are higher than competitive. Our 5600 sq. ft. clinic consists of 14 private treatment rooms, private offices, a board room, and a staff room. At PRIME we believe in the enhancement of health care through a multidisciplinary and integrated clinical environment that focuses on patient care. If you also believe in the enhancement of health care through a multidisciplinary clinical setting, please contact brandt@primekelowna.ca.

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 e-mail ammy.pitt@caledonianclinic.ca. Visit our website at www.caledonianclinic.ca.

NORTH DELTA—GP
Very busy, established family practice located on Scott Road. The practice consists mainly of Punjabi-speaking patients. Two spacious exam rooms plus a private office available for the physician. Underground parking. No set-up fees or equipment required. Everything is included in the billing split (80/20). Potential to earn $400K to $500K per year. Physician may decide their own schedule. Each exam room is fully equipped with everything required. EMR: Med Access. Very friendly office staff. For more information contact Dr Jagtar Rai at raimedicalclinic@gmail.com.

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.

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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: 604 485-3927, email: clinic@tmca-pr.ca, website: powellrivermedicalclinic.ca.

S 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 ad-

ministrative support. Paul Foster, 604 572-4558 or pfoster@denninghealth.ca.

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.

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 (CENTRAL PARK)—GENERAL PRACTITIONER/ SPECIALIST
Well-established, busy group practice has immediate position available for family physician or specialist. Large office with Wolf EMR in a three-story health care building. Splendid opportunity for successful career and associateship in this friendly work environment. Contact Dr Marcel Genest at 604 434-8024 or email admin@centralparkmedical.com.

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.

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. Walk to lovely market town. One hour to Aix and Nice, 45 minutes to Mediterranean coast. Come and enjoy the sun of southern France! 604 522-5196. villavar@telus.net.

miscellaneous

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PATIENT RECORD STORAGE—FREE
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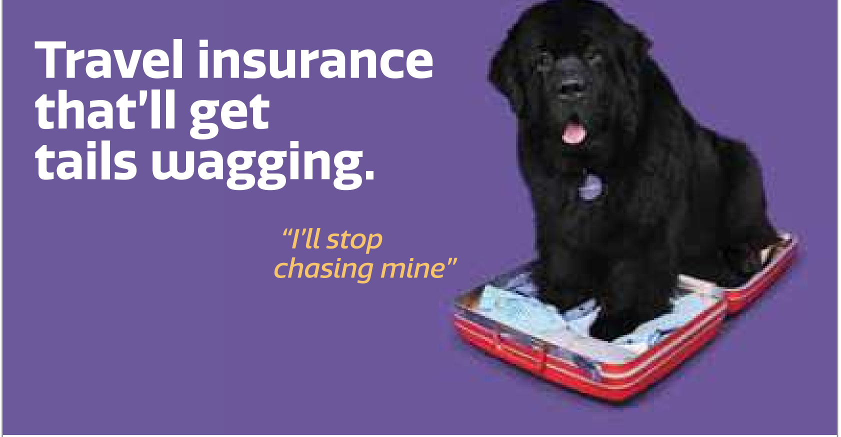
UBC—RE-ENTRY RESIDENCY POSITION, DERMATOLOGY
The UBC Department of Dermatology and Skin Science has a re-entry residency position in dermatology, commencing 1 July 2019 for a PGY3. This re-entry dermatology residency position has a 3-year return of service contract with the Northern Health Authority in Prince George, British Columbia. Visit our website for detailed information, including a list of application requirements: https://derm.med.ubc.ca/about/careers. Deadline for application is 15 January 2019. The position will be offered on a competitive basis by application. Short-listed candidates will be interviewed in the first quarter of 2019.

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.



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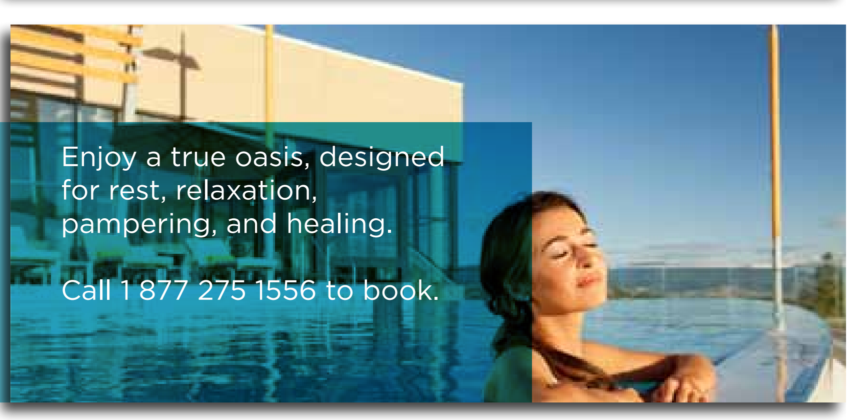

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