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Pages 1–48

BCMJ
BC Medical Journal

THEME ISSUE: Gender-affirming care in BC, Part 1

Gender-affirming primary care

Endocrine treatment of transgender and gender-diverse people

Gender-affirming surgical care in British Columbia

Dr Ramneek Dosanjh
Doctors of BC president 2022

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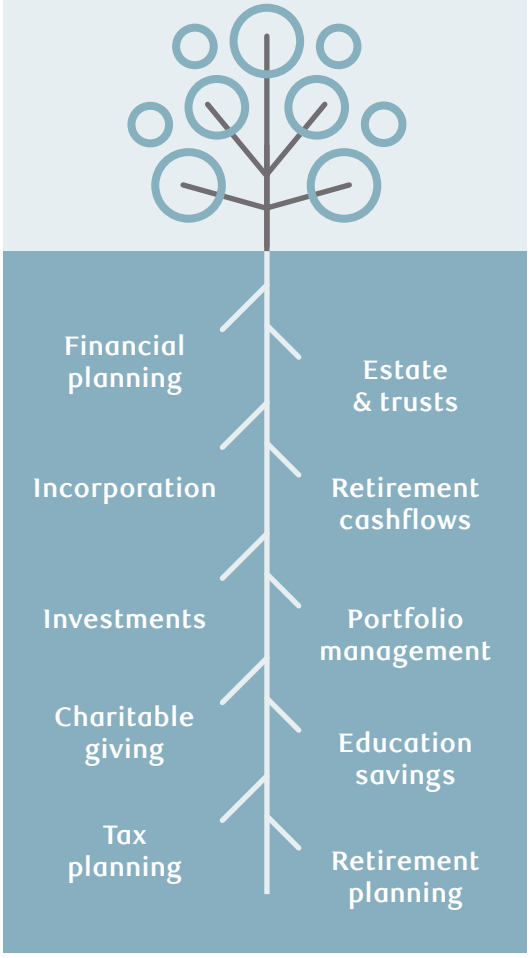

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PHOTO BY JIMMY JEONG

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ON THE COVER
"Political conversations invigorate me," says new Doctors of BC president Ramneek Dosanjh. "Even if they're in opposition to my beliefs, they present learning opportunities." See the full interview beginning on page 12.

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ARTWORK BY JERRY WONG

Through the COVID-19 pandemic, increasing numbers of Canadians have self-medicated with ivermectin, an antiparasitic drug used to treat infections and infestations in humans and livestock. The article, "From the horse's mouth: Calls to the British Columbia Drug and Poison Information Centre about ivermectin exposures during the COVID-19 pandemic," begins on page 30.

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BC mothers are the oldest in Canada. Let's talk about that

For years, British Columbia has had the oldest average age of mothers in Canada.[1] In 2016, the average age of a person giving birth in BC was 31.5 years; as of 2020, this average reached a new high of 32.1 years.[1] What's most remarkable to me is that in a single generation, our society has shifted from persons historically giving birth in their 20s to the majority giving birth in their in their 30s.[2] To demonstrate just how much we've changed, consider some American data, which showed that for persons born in 1960, waiting until after age 30 to have children was quite rare.[3] The median age of first birth for a cohort of persons born in 1910 was 21.1 years, and 22.7 years for a similar cohort born in 1960. In the mid-1970s, the average age of a Canadian person was 26.7 at childbirth.[4]

I am not sharing this data to criticize millennials; I am these statistics! I had my first baby at 32, toward the end of my fellowship, which was the culmination of 14 years of post-secondary education. I was one of the earliest in my residency cohort to be pregnant. You can probably relate to the reasons why medical school and residency might seem like inconvenient times to start a family. Studying for exams, 24-hour shifts, moving cross-country for training, and student debt are just a few reasons why physicians might feel they can't have babies during their reproductive prime. There are also wider societal pressures that contribute to delayed childbearing that are not unique to physicians. As a fertility specialist, my patients talk to me about why it took them some time to start a family: finding the right partner, buying a house, traveling, or finishing education.

Much has been written about older mothers, both in medical journals and in the popular media.[5-8] It is a relatively frequent news topic. In 2018, I wrote a *BCMJ* guest editorial titled "How old is 'too old' to have a baby?" [2018;60:246]. However, despite writing, reading, lecturing, and talking to patients about reproductive aging for years, my speech about older childbearing appears to be the same old story (no pun intended). The conversation needs to evolve.

Advancing reproductive age is a public health issue. Even though society has changed since my parents' generation, an egg's fundamental biology has not. People with ovaries have their maximum number of eggs by 20 weeks gestation—6 to 7 million in total. Egg numbers decline throughout life, but after age 35 the drop is much more dramatic. Egg *quality* also decreases with age, resulting in chromosomal errors, which lead to infertility and miscarriage. The reproductive lifespan can be extended with assisted reproductive technology, but it is not a cure-all. Even with in vitro fertilization, the odds of a live birth at age 45 are less than 2%.

Canada's fertility rate is at an all-time low at 1.4 children per childbearing person.[9] The media have written about a pandemic-driven fertility decline, but blaming COVID is overly simplistic.[10,11] A Statistics Canada survey published in December 2021 made headlines for the 19.2% of respondents who "would have fewer children or later childbearing" as a result of the pandemic, when in fact, the vast majority (76.5%) had "no change" in plans.[9] American research suggests that would-be parents of lower socioeconomic status could be those most likely to have adjusted their family planning.[12] Perhaps we can say that the pandemic accelerated an already-concerning trend.

Physicians are well positioned to talk to patients about their childbearing plans. A study of UBC undergraduates showed that "although most women were aware that fertility declines with age, they significantly overestimated the chance of pregnancy."[13] Whether it's life planning, egg freezing, or just having children earlier, a little conversation might go a long way. In my daily work I am constantly humbled by Mother Nature and the heartache of unintended childlessness. ■

—Caitlin Dunne, MD, FRCSC

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Langley City family practice, Part 2

A loose definition of a family is a group of people going through the world together. Family isn't always blood. It can simply be the people in your life who support and care for you.

I wrote an editorial about my work family in the April 2019 issue of the *BCMJ* titled "Langley City family practice" [2019;61:106]. Considering my current situation, I thought it was time to revisit this topic and give credit where credit is due.

In that editorial I talked about how blessed I was to work with such fine individuals. I also encouraged physicians who are starting out to choose their work colleagues wisely as they will be your family for many years to come.

Reaffirming the excellent choice I made is demonstrated in the way I have been supported by my colleagues since my wife became ill. The practical help I received without complaint or question I can never repay. The physicians in my office immediately covered my on-call duties and hospital rounds. I asked once and it was done. Taking this load off my plate was a huge relief and allowed me to focus on what needed to be done for my wife. They also took care of my patients when I had to suddenly take time off as no locum was available on short notice. The added emotional support they have given overwhelms me at times and often brings me to tears. They have my back and listen with compassion and caring when I need to vent about the apparent unfairness of it all.

Our group practice has grown to seven physicians, and I would like to give a shout out to our two newest family members. There is a lot of talk about the next generation of physicians being less interested in running a busy full-service family practice. They are often accused of being less hardworking than the generations before. Nothing could be further from the truth as our most recent family physician members are better than me in so many ways. They are smart, compassionate, and hardworking. They have built excellent successful practices from the ground up and are admired by their patients and our medical community alike. Nothing is beyond their capability, and I am so thankful that they have joined our practice family. The future is in good hands with these two.

They have my back and listen with compassion and caring when I need to vent about the apparent unfairness of it all.

Often underrecognized in medical practices but no less deserving of praise is the staff. I would like to thank ours for their support during this challenging time. I try and let them know how much I appreciate them, but I don't think they realize the extent of my admiration. They are a part of my extended family and many of them I have known for years, of which the last few have been particularly difficult being on the front lines of our office during the COVID pandemic. I am sure this increased stress has taken a toll on them and has affected their personal lives and families. Despite this, they consistently show up with kind smiles, ready to face another challenging day.

So, when it comes to my work family, I am so thankful for all of them and want to acknowledge all that they mean to me. If a good quality of life is about finding a happy balance between work, friends, and family, then I am truly blessed as I have all three in the same place. ■

—David R. Richardson, MD

BC mothers *Continued from page 5*

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What lies within us

"What lies behind us and what lies before us are small matters compared to what lies within us."

Often attributed to Ralph Waldo Emerson, these words do not serve to diminish history, ignore what we endure, or dismiss the challenges of the future; rather, they are a reminder that what we are capable of—what humanity is capable of—is powerful beyond measure.

There is heightened awareness of the human condition in the air today. A palpable shift. A recognition of the world reflecting and becoming more conscious of its purpose and presence.

Unequivocally, humanity overcomes the greatest challenges with remarkable resilience and endurance. Our journey, irrespective of how arduous it may be at times, is a powerful feat. Cultivating resilience and patience is not without cost or pain to the human spirit, yet within the embrace of this learning we are reminded again who we truly are. We will no longer hide our pain; rather, we accept it as the flames of our revival, the light of our lived and learned experience, the driver of our advocacy, the fuel of our hope.

While plagued by the uncertainty and inequity of our current world, I am reassured by the courage from the actions and the power of all of you; you are a shining testament to the human condition.

The whole world is living and navigating its way through a global pandemic. Throughout this time, and closer to home, we also face ongoing discoveries of the lost lives of Indigenous children, an opioid crisis that continues to take lives, climate change like we've never seen before, and health care disparities and systemic inequities that marginalize our most vulnerable populations and rake at the souls of our medical professionals.

While acknowledging the hardships you have faced, I also recognize what you are made of: compassion, grit, valor, and leadership. I see you and the world sees you, your commitment, your humility, and your strength. You give us hope in what may seem the most hopeless of times. You are extraordinary. You make the world a better place.

I see you and the world sees you, your commitment, your humility, and your strength.

As we embark on a new year, I urge you to take time to pause, to take that deep breath, and to marvel at the journey that has brought you here. Remember who you are and your reason for being. Now is the time for us to use our collective wisdom and our voices to speak up and challenge the world around us as we continue to lead in demanding times. Together we can harness our energy reserves and overcome impossible hurdles to advance a culture change in medicine never seen before, and to continue to create a profession of diversity and equity while prioritizing our health, well-being, and autonomy.

I am filled with optimism for what we can create, change, and innovate because I am surrounded by exceptional humans who have shown the world exactly what is possible.

I am grateful and humbled to have the honor of representing you this year as your president. ■

—Ramneek Dosanjh, MD
Doctors of BC President

Letters to the editor

We welcome original letters of less than 300 words; we may edit them for clarity and length. Letters may be emailed to journal@doctorsofbc.ca, submitted online at bcmj.org/submit-letter, or sent through the post and must include your mailing address, telephone number, and email address. Please disclose any competing interests.

Should clinical research be curtailed?

The amount of clinical research taking place is excessive.[1] Out of the 6 million articles published in a year, half are never cited and a good percentage of the cited articles are self-cited.[2] Would medicine be just as effective, and not as expensive, if clinical research was replaced with quality improvement?[3] Somewhat cynically, this could be called trial and error based on doctors' coffee room chat.

As a counterpoint, the world has just benefited from a truly amazing public health research project on COVID-19. Initial vaccine trials involved 75 000 patients, with the results saying, "go ahead, it is safe," and data are now being collected on the hundreds of millions of people who are vaccinated, saying it is safe. When one considers that vaccines in the not-too-distant past took years to come online, the mRNA rollout is an unbelievable triumph.

However, regardless of what modern monetary theory says, money is finite, so perhaps research should be limited to really serious problems of a public health nature. Quality improvement would be cheaper and less bureaucratic than conducting clinical trials as there is no self-serving demand for people to publish in order to get tenure. A nice way to think about quality improvement is trial and error, which is how the Silicon Valley brings technology products to market. So assuming funding is finite, the question becomes which 1000 small studies of 10 patients each should be defunded to allow the money to be redirected to a big public health issue study of 10 000 patients?

—Mark Elliott, MD
Vancouver

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Doctors of BC scholarship winners

Doctors of BC awarded its annual $1000 scholarships for 2021 to Ms Maren Longman of Port Alberni, Ms Anna Myllyniemi of Victoria, and Ms Annalise Wong of Richmond. The commendable recipients were chosen from an abundance of highly impressive applicants.

Ms Maren Longman

Ms Longman represented her graduating class of 2021 as valedictorian. During high school, her greatest passions were giving back to her community and building relationships with people in her town. She worked with Alberni Drug and Alcohol Prevention to create a safe space for local youth and made many connections while working as a lifeguard and swimming instructor at her local pool. In her free time, Maren enjoys reading *Game of Thrones*. In fall 2021, she began a bachelor of science degree at the University of Guelph in Ontario. She has a passion for science and plans to attend medical school and train to become a children's psychiatrist.

Ms Annalise Wong

Ms Wong has been playing high-level hockey for the past 14 years and feels privileged to have represented BC for Team BC at the U18 Women's Hockey Nationals. She now plays university-level hockey on the UBC's varsity women's hockey team. Along with hockey, she also played basketball and volleyball. Annalise is studying in the Faculty of Science at the University of British Columbia, and plans to pursue a career in health sciences. She also volunteers regularly in her community and has coached young girls hockey teams to help lead and to be a mentor for them. Throughout high school, Annalise was on the principal's honor roll for all 5 years while participating in clubs and playing numerous high school sports.

Ms Anna Myllyniemi

Ms Myllyniemi is currently a first-year student at the University of Toronto, St. George Campus at Trinity College. She is in the computer science program, and is also interested in cognitive science and robotics. During high school, Anna was very involved in her school dance program, while also being a competitive figure skater. In university, she uses dance and skating to stay active and balance her studies. In her spare time, she also likes to do photography, read novels, and explore Toronto with her friends. Anna doesn't yet have specific plans for her future, but in general would like to make a positive impact in the lives of others, and sees computer science as a pathway to accomplish that.

For more than 15 years, Doctors of BC has presented the scholarship award to children of members in good standing who are completing high school and planning to continue studies at a recognized postsecondary institution. For more information about the award, visit www.doctorsofbc.ca/about-us/awards-scholarships/doctors-bc-scholarship-awards.

Recent health trust legislation changes and the impact on the Doctors of BC Health Benefits Trust Fund

A major legislative change regarding health trusts was introduced in the summer of 2021. Health trusts are used to offer employee health benefits in a manner that is tax effective for the employer and employee.

Prior to the change, the type of trust used depended on the employee demographics of a business (i.e., employer). Businesses with a large percentage of key employees, that is employees who are highly paid and/or involved in the ownership of the business, used health and welfare trusts (HWTs) to set up group health insurance benefits, whereas larger corporations with many employees established employee life and health trusts (ELHTs).

As part of Budget 2018, the federal Department of Finance proposed new legislation that would streamline the use of trusts in sourcing and administering group benefits for employees. This legislation would eliminate the health and welfare trust structure and broaden the definition of the ELHT structure to accommodate existing HWTs. The 2021 Budget Implementation Act (Bill C-30) received royal assent on 29 June 2021, and the revisions pertaining to ELHTs went into effect. It required all existing HWTs be converted to ELHTs by the end of 2021.

The Doctors of BC Health Benefits Trust Fund (HBTF) was established in 2005 as a health and welfare trust to provide health and dental insurance benefits to physician members, their families, and their employees. The HBTF was affected by the revised legislation and, as a result, it was converted to an ELHT as of 1 January 2022. In October 2021, Doctors of BC contacted members of the HBTF plan and advised them of the pending changes. While these changes do not affect the insured benefits that members currently enjoy under the plan (i.e., health, dental, and travel insurance benefits), they do impact the self-funded Cost-Plus feature that approximately 1600 of our incorporated physicians use.

The Cost-Plus feature allows an employer to convert an employee's personal health expenses into self-funded health plan premiums. This is a tax-effective way to pay for medical expenses, and previously under HWT administrative rules there was no certainty of the premium limit. As a result, physicians could elect a Cost-Plus annual entitlement limit that they and their tax advisors felt was reasonable. The change

to ELHT brings certainty to the premium limit as there is a defined formula for calculating the limit that is used for all participants under the HBTF plan.

For many physicians, the defined formula results in a premium limit that is lower than their 2021 Cost-Plus entitlement. However, there is an advantage for unincorporated physicians: the defined formula results in a higher premium limit and it may now be appropriate to add a Cost-Plus entitlement.

The formula that is calculated for the premium limit is as follows: $2500 for the employee + $2500 for each of the employee's dependants (as defined by Canada Revenue Agency). Since the premium limit includes both insurance premiums and self-funded Cost-Plus entitlement, members participating in the HBTF plan must deduct the annual premiums for the insured benefits to determine the appropriate Cost-Plus entitlement.

As with any legislative change, it may take time for all tax advisors to become well versed in the impacts on clients. Doctors of BC will endeavor to keep members updated on the changes and on any actions members must take.

—Erin Connors
Advisory Services Manager
Members' Products and Services, Doctors of BC

Community-based specialists: No-cost access to UpToDate

Community-based specialists with no active hospital privileges now have free access to UpToDate, a subscription-based online clinical decision support resource that provides physicians with clear clinical guidance to complex questions with the latest evidence and best practices.

Available for desktop or mobile, the award-winning platform offers more than 10 000 peer-reviewed topics in 21 specialties from international and Canadian authors, as well as drug information, medical calculators, and patient information sheets.

Interested, eligible specialists can get their free subscription to UpToDate by emailing the Specialist Services Committee (SSC) at sscbc@doctorsofbc.ca and stating they do not have access to the resource through a health authority. Within 2 weeks, they will receive an email with details on how to log in and register to get started with UpToDate.

Funding for these subscriptions is being provided by the SSC, which is partnering with the General Practice Services Committee (GPSC) to expand access to UpToDate in January 2022. Until now, free subscriptions to UpToDate have been made available by health authorities to specialists with active admitting privileges and by the GPSC to family doctors through their local division of family practice.

The GPSC and SSC are two of four Joint Collaborative Committees that represent a partnership of Doctors of BC and the BC government.

Dr Ramneek Dosanjh: Medicine captures her mind and her spirit

Dr Dosanjh is a family physician, hospitalist, and child and youth mental health advocate in White Rock and the new president of Doctors of BC. Here she shares a bit about where she has come from, what has inspired her, and what she hopes for the future.

Dr Dosanjh started her 1-year term as president of Doctors of BC on 1 January 2022. She spoke with *BCMJ* editor Dr David Richardson in December.

So, you're from Ladner?
I am, I grew up here.

I grew up in Tsawwassen.
Oh my gosh. Really, what a small world.

I'm guessing, maybe a little before you. I'm 58.
Yeah, so a bit before me.

Which elementary and junior high school did you go to?
I started at Hawthorne Elementary and ended at Holly Elementary, and I graduated from Delta Secondary.

It's funny, I worked for the Delta School Board for a bunch of years while I was going to university.
Oh really; what did you do?

I was grounds maintenance, so I know where all the schools are; I spent many hours weeding and raking and trimming and those kind of things.
That's really neat.

So, speaking of Ladner, tell me a bit about your upbringing?
My whole family on my mother's side, so my grandmother and her brothers and sister, we are all from there.

Whereabouts in Ladner did you live?
I grew up on the west side of Ladner, closer to Hawthorne Elementary. I still have a lot of family and friends there who I grew up with. There was a great sense of community, great people. We have always had lovely neighbors.

Where's your practice?
I no longer have my practice; I was in Surrey, initially. I was a solo practitioner but grew into doing a lot more hospital-based medicine, and then locums as opposed to running my own clinic.

What inspired you to get into medicine?
Dr David Kason had more of an influence than he even knew. He was our family doctor—he delivered all of us and was involved in the delivery of my daughters, too. I loved the fact that medicine was, still is, limitless. There are so many things we don't know, and I was really curious about the human body, anatomy, physiology. How things work was always really important to me, and the "why" behind things has been equally important. My dad and I were avid enthusiasts of the Ladner Pioneer Library; I used to take out more books than people would think I could read, but medicine was my biggest fascination, and reading is what propelled me into it.

My mother was pretty sick with severe ulcerative colitis growing up, and I knew there wasn't a real cure at that time, so even at a younger age, I started going to the university libraries with my dad, who worked at UBC. I was also interested in seeing the morgue, things that most kids weren't super fascinated by. I was exposed to the UBC science fairs; one year the medical school put one on, and you could use the laparoscopic instruments. I always loved science; it was intriguing. I thought, wow what a fascinating world, and I still feel that way. I feel like I could read about medicine nonstop and not tire of it. It's alluring; there are so many new inventions and great minds. I've always been a curious learner, so the ability to never stop learning is appealing. I was drawn by the awe of it. I started candy striping and volunteering at Delta Hospital at 12 years old and I volunteered there throughout high school until I was 18, so when I went back and did my first shift there, it was like coming home in a way. I also volunteered for 4 years with the Make-A-Wish Foundation, granting terminally ill children a wish. I was inspired, both from my love of learning and the ability of physicians to intervene to save lives.

Growing up, I witnessed a great deal of respect and admiration for physicians in my family as well, and where my ancestors come from, there had never been a female physician in the family, as far as we know. It seemed like an impossible feat for women or girls to go to school, and now I had all of this at my feet, so with marvel, wonder,

I admire my colleagues, I look to them for inspiration, but I also want to help them if there are grievances, or if there are issues I can bring forward on their behalf.

PHOTO BY JIMMY JEONG

and curiosity, I really got into it and was fascinated by the ability to connect with patients and their families.

I still feel privileged and grateful for the ability to bring life into the world, delivering babies, and then have people take their last breath with you in a palliative situation, that's powerful. It's something that I feel captures my mind and my spirit at the same time.

I totally understand. I've had a full-service family practice in Langley for the past 30 years. What did your dad do at UBC?
I lost my dad this year. He was 69, but he was a carpenter, a shop steward, and worked in plant operations.

My dad was a professor there; he was a dentist. And my mom was involved with the Delta Hospital Auxiliary her whole life. I'm sure you ran into her at some point; funny how many connections there are.
Definitely, and I must have run into her while I worked at the hospital gift shop in high school.

Anyway, so why medical politics? Why take on the presidency at Doctors of BC now?
To be honest, I was nominated by my specialist colleagues. I got more involved after I went to a divisions event where I vocalized my concerns at a roundtable. It was still early in my practice, and I was probably frustrated, I was doing full service. Listening to the people who were making decisions, I vocalized my opinion that it was interesting to be having those conversations, but they were designing medicine to go a certain way without necessarily thinking toward the future; I thought they should try talking to medical students and the people in family medicine residency to ask how they wanted to practise, and about our patients, and how our populations are changing, and other things we need to consider. I also said that I have to raise three kids and do all the other things off the side of my desk as a mom. I wanted to practise medicine the way I wanted to practise; I wanted to take time; I wanted to do comprehensive complex care. And I think people thought, maybe we should listen to what she's saying. A few of them took me under their wing and said, "You need to be involved in politics," and I thought, I don't know about that. My grandfather, who did a lot for immigrant refugee populations, told me when I was younger that I needed to go into politics, and I didn't like the idea at that time. He was a very well-known, connected individual who helped people change the way they looked at things. Eventually I realized it's part of my fabric, part of my being; political conversations invigorate me because, even if they're in opposition to my beliefs, they present learning opportunities.

I realized there was a lot that we could do and influence. If I can influence other struggling primary care physicians and all doctors, I feel like it's the principles of really good medicine that save lives. We need to go back to basics—what are the patient's needs and what are the physician's needs—to make sure that what we're co-creating is going to be feasible and sustain primary care. It doesn't mean that I'm not for all doctors, but I think we need to do primary care right and bolster support and connect all our specialist physicians around it, and make it a world-class system, anchored tightly on our family practitioners in an environment that is the most suitable for collectively changing society. There are a lot of social justice causes that are important to me—access, equity, health economics, addressing disparities. If we can create something that addresses the needs of our most marginalized populations, then we've done it right; then potentially we've got a system that provides equitable health care.

I think about diversity, equity, inclusivity as being one big cause; it's all linked to social justice

I'm lucky that I have a group of like-minded physicians that I practise with. It's like choosing a family; you're together for many years. Was there anybody in particular in your career who made an imprint on your professional direction?
I think, for the politics piece, it would be Dr Jean Clarke. She got me involved with the SGP. And Dr Dan Beegan, who was a UBC professor while I was also teaching medical students in my practice and through the hospital, and he got me involved with the Divisions of Family Practice, which is where my whole direction changed. That's the first time I sat at a table and on a board, and I felt embraced by very like-minded physicians, a very inspiring group of people who gave me the fervor and the boost I needed.

Are there any particular experiences with patients that stand out as having a significant impact on you?
So many. Ever since residency I've had moments that stand out. The terrible ones definitely stand out—the first baby you lose, first cardiac arrest when you can't save the child, I'll never forget that. The first full-term in utero fetal demise—delivering that baby, that was one of the most challenging times.

Tell me about a pivotal time in your career?
I trained in Atlanta, Georgia, so when I came back I was trying to understand the system here. I was always boasting about our socialized medicine and how we do things so much better [laughing]. It was a really robust family practice residency program where you came out doing surgery and C-sections; you were basically trained to be a rural family physician in the US.

How did you end up in Atlanta?
My brother was at Emory in Georgia, so I put Atlanta as my first pick. I was pregnant at the time, so I wanted to have my daughter close to some family.

Were you living in the States then?
No, I was in Vancouver; I was in CARMS match as well, but the CARMS match was after the US, so I thought, let's see what happens.

I chose to train there because of the volume of cases and experiences, definitely; my ultimate dream was field medicine.
The pivotal moment in my career was when I had my cauda equina syndrome.

You were paralyzed from the waist down?
Yes, and Dr Mark Matishak and the group at RCH took care of me. They didn't think I was going to get the function of my legs back ever, but I was adamant that I was going to walk again, and thankfully, I was able to practise, but at that time, that shift, for me, was a time of introspection of who, really, am I without my work? It was so early in my career that I thought I was going to be lost without it because it had been my dream, my hope.

I saw Dr Matishak, too, because I broke my neck. But it's okay, I didn't have to have surgery, I just had to wear a hard collar for 3 months. What traits do you most admire in a colleague?
Camaraderie, the ability to be a human, humility, intelligence, honesty, and authenticity. I love it when people can be who they really are, without armor.

As a profession, in general, people are pretty much who they are, I think. There are always exceptions, but…
I love when people can admit they're wrong, and their failures. There are a lot of type-A people and we want control.

I would admit it; it just hasn't happened yet.
[Laughing,] I like humor too.

What would you do if you weren't a doctor?
Human rights activist for sure.

Do you have any personal achievements that stand out for you?
I have a funny one. I won the storm cage survivor at UBC during my last year of undergrad and I won a trip to Europe.

What did you have to do for that?
A lot of weird obstacles, like being chained to a group of people running around campus doing obstacle courses. I had to eat a cup of butter. There was a mud-wrestling event. Ridiculous things, and it snowed that year while we were outside in a cage. Thinking about it now, holy!

That looks good on a résumé.
Not at all.

Any regrets?
Yes, staying too long in places that didn't serve me.

We have a culture of stoicism and perfectionism. We need to make an effort to change that and be seen for the humans we are, our lived experiences, and why we are who we are.

What are your concerns about the future of medicine in our province?
That's a big one to unpack. Because medicine is such an evolution, I do worry about the demise of family practice and primary care. I hope that the new era of technology and advances don't take away from the relationship and the importance of having a provider throughout your life's continuum; I really value that.

Is there a particular health care issue you think needs more attention right now?
Physician health and well-being, human resources. The inequities that exist need to be addressed. There are a lot of access issues. Even our supplies, for example—COVID was a good learning opportunity, when we talk about ventilators or ICU beds or PPE. We need the infrastructure and the means to support our growing patient populations.

Also the changing dynamics of our patient profiles in our population; we've got an aging population, and we need to think about things in terms of health economics. There are places where we could streamline things; for example, health care data sharing, making it easier for us to evolve EMRs and remove the burden of paperwork.

Are there any technological advancements that you're excited about, that you'd like to see?
I'd love to see a universal health record, where we can all see what's happening in real time.

It would be nice to be able to access people's medical records from different health regions; that's one of the biggest frustrations right now.
Yes, and it would decrease our redundancy, or even the ordering multiples of tests, even if it was attached to the health care card.

Any thoughts about telemedicine?
I think telemedicine, virtual care, are great additions. People are allowing you access in a way that you haven't had before, which increases rapport. What I get fearful of is when it's not done in a continuum of primary care or longitudinal care, because if those sessions aren't captured or you don't get that information sharing, then it becomes a problem. In conjunction with a robust primary care setting or with follow-up, I think it can be used wisely.

COVID forced it to the forefront. In our practice it's probably increased capacity, which is one of the biggest issues in primary care. What do you think are the current challenges for residents and students? You said it's important to talk to the next generation, the people who are going to take care of us when we're old.
Really understanding their needs is important, because in the traditional systems that we've created, the gaps, spot, aren't being filled one-for-one. And with the impending mass exodus from primary care, to replace people we have to look at the way incoming physicians want

to be remunerated, but also how they want to practise—do they want to be in a large group setting and a team-based setting?

Not to speak for them, but what I've heard from them is that they're making work-life balance more of a priority; we all should be emphasizing physician health.

Maybe there's a different way of doing 24-7 care? Postsurgically, I had to choose shift work, where I knew that if I was off, I was off; if I needed to rehab, I could do that. Certain things you have to compromise, which I was not happy about, but I had to tailor my practice to meet my needs as a patient. It was a hard pill to swallow, at times, because I started out thinking I was going to change the world and practise exactly as I wanted to. We are not infallible, we are human. Life affects us just as it does our patients.

You still have time. What aspects of the president role do you think you're best equipped to tackle?
Listening to my colleagues and connecting with them. Relationship building, because I think that's one of the most important aspects of the role. I hear them, but I also want them to know that I feel them. I understand the hardships of balancing your own well-being, your own family life. I know the hardships of divorce or relationship demise, children getting very sick, and not being well yourself, or patients dying, family dying. I can empathize on those levels, but I also need to be a representative and a voice for all the people who need to have a voice at this time, especially in this state of vulnerability during the pandemic.

I admire my colleagues, I look to them for inspiration, but I also want to help them if there are grievances, or if there are issues I can bring forward on their behalf. I have the courage to do so.

What changes have you seen in the association since you've been involved, and where would you like to see it 10 years from now?
With the new governance model—the representative assembly of 104 members and a smaller Board—I was on the representative assembly for 3 years before I came into the presidency role. Watching that evolve, I'm hoping that in the next decade it becomes the most robust entity in which our members and our sections are engaged to bring forward issues, but also to create innovative solutions to a lot of our frustrations on the ground. I've dreamt of this think-tank idea for so long; I would love for the representative assembly to become that because there are 104 members, which represent all the sections from all over the province, and I feel that if we come together we can create monumental things.

If we take 5% or 10% of our leadership abilities—everyone is a leader in their own office or practice clinic or operating room—and bring that together to take on social justice causes or health care innovation or fees or whatever the issue that we are passionate about together, I think we will have solutions that could change the way we practise medicine locally, but nationally as well. We have such remarkable, intelligent, influential, innovative physicians who have had to work outside the box at times because of the constraints of the system that we could leverage one another's knowledge to do something substantial.

Do you have one cause that speaks to you personally?
People say to me, in 122 years you're the first Indian woman ever to hold this position; you broke barriers. So people think I'm a spokesperson because I'm a woman of color. But I'm also doing this during an earlier part of my career than most—most get into politics after they're done with their practice.

So I think about diversity, equity, inclusivity as being one big cause; it's all linked to social justice, for me, because the advocacy I have for my marginalized patient populations, Indigenous patients or families who don't get the access they require or may not know any better—there's a lapse in education there for them to even understand health care. I think I can bring a voice to those situations.

I have also had a lot of lived experience in racialized environments.

I hope some of my previous interactions have given me the confidence of my colleagues, but I think one issue I bring to the table that's different is that I have intersectionality as part of my platform, because it's just my lived experience. It's all I know.

What would you personally like to take away from your year as president?
It would be a win if even more than a handful of my colleagues felt heard, seen, validated, appreciated. Maybe that I inspired them in some way to have hope or lead differently. If I could take that with me to continue on a journey to lead in a way that we haven't before, that's my hope.

Maybe we can have those more vulnerable conversations. I've had a lot of things impact my life that maybe not many people have had to experience at my age or may not even be aware of. I would be willing to share and lean in and encourage others to do the same. If we could sit in a moment of introspection—many of us haven't had a moment to pause because the pandemic has been consuming us, because we've been on the front lines, we've been so heavily involved on all fronts for the last couple of years.

I think it's the human being component—who we are, and are we okay, are we checking in—that's important.

I don't know if you know about the project I'm working on; I have been inspired by the Humans of New York project and I would like to showcase physicians as humans. We have a culture of stoicism and perfectionism that pervades us. We need to make an effort to change that and be seen for the humans we are, our lived experiences, and why we are who we are. We have always been responsible for life; it is time the world sees life in us.

Some of my colleagues get offended when I say "heroes" because they think that's too heavy a word for us. I don't think it's a heavy word, I think every one of you deserves that. There's a heroism that needs to be applauded, and for the first time we could use our patients' stories and our public acknowledgment to our betterment. A lot of times we get negative press, being depicted in a certain way, but by humanizing ourselves and using the courage of vulnerability, we can learn a new way of showing up for one another and the world.

Dr Dosanjh with her colleagues Drs Jeff Obayashi, Connie Ruffo, James Rudnik, and Navpaul Rattan.

I haven't read it, but you authored a book with your daughter. I thought that was pretty cool.

As a way of connecting, she and I co-created a dreamland space, and I starting talking about it in my family practice. I used it for kids and parents, to give them some advice about what may work for kids to go to sleep, to get away from the monster in the closet; I would get a lot of parenting questions.

I had one patient in his early 40s come to see me; he broke down in my office and told me he had just lost his wife in a car accident, had three young kids, and didn't know how to handle it. He told me I was the first person he was reaching out to. I was at a loss. I gave him a little grief counseling and tried to walk him through the stages of what to expect, and then I asked about the kids. He said the kids were struggling; they wanted their mom. I told him what I did with my kid, the dreamland stuff, and the next time he came in he said it changed their lives, the way his kids were sleeping, and he asked me to make a commitment to publish this as a book. It percolated for a while, and eventually my daughter said that we should do it.

Some wonderful colleagues—palliative docs—put it into all the palliative care units, and Canuck Place invited my eldest daughter and me to put it in their library; that was more than enough for me. It was never going to be for profit but a tool to help people, especially children and their families. It was a special venture between my daughters and me to remind them, and other children, that no matter where in the world they were, no time or space would ever separate their spirits from their loved ones.

So, being an author, as the president, you get to write in our journal every issue.

Yeah, no pressure. It's interesting, it was my favorite pastime, and now I have so many things to say, but I feel like I have writer's block. It's hard to write when you know the audience is filled with brilliant minds, mentors, role models, and doctors making a difference, especially in the current world.

An hour is up; see how fast it goes? Do you have any final thoughts?

I think about all my colleagues, so many of whom I hear from have heavy hearts, are feeling burnt out, are feeling spent. I wish that we can impart some hope and optimism, and also change the current system in a way that makes sense for them. ■

Gender-affirming care in British Columbia, Part 1

Gail Knudson, MD, MEd, FRCPC

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This editorial has been peer reviewed.

Transgender health is a rapidly evolving field that is moving away from pathology toward gender-affirming practice. Over the last 2 decades, the field has also moved from a binary model of gender identity to one that embraces a gender spectrum. This has been mirrored in the classification manuals published by the World Health Organization, American Psychiatric Association, and World Professional Association for Transgender Health (WPATH). As you will read in this series of six articles over two *BCMJ* issues, much of the care for transgender and gender-diverse individuals in BC has moved from being heavily centred in tertiary care institutions to being provided in primary care settings.

Wherever possible throughout these two issues, "transgender and gender-diverse" is used as an umbrella term that covers the spectrum of transgender and gender-diverse identities. The term "gender dysphoria" describes the distress that emerges from a body/mind incongruence. No one's identity is a disorder; the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders-5*[1] and WPATH's *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People-7*[2] diagnoses are based on the distress of body/mind incongruence. In BC, the manuals used in classifying and coding with respect to transgender health care are the *International Classification of Diseases-10*[3] and the *Diagnostic and Statistical Manual of Mental Disorders-5*.[1] The *International Classification of Diseases-11*[4] heralded a significant move forward in the field of transgender health. Two major revisions were made: transsexualism and 11 other diagnoses related to gender identity and sexual orientation were removed from the "Mental Health Disorders" section. A new chapter was created, "Conditions Related to Sexual Health," separate from "Mental Disorders," and a new term, "gender incongruence," is used, with the intention of maintaining or increasing access to health care.[4] Now that gender incongruence appears as a diagnostic code, the next step is lobbying for the removal of "gender dysphoria" as a term in subsequent revisions of the *Diagnostic and Statistical Manual of Mental Disorders*.

The World Professional Association for Transgender Health, formerly known as the Harry Benjamin International Gender Dysphoria Association, is an interdisciplinary professional and educational organization of more than 3000 members who are devoted to transgender health (www.wpath.org). Its mission is to promote evidence-based care, education, research, public policy, and respect in transgender and gender-diverse health. The association publishes the *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People* (www.wpath.org/publications/soc), which articulates an evidenced-based approach to gender-affirming care. The association has published seven versions of the *Standards of Care* (1979, 1980, 1981, 1990, 1998, 2001, 2012); version 8 is expected to be published in 2022. The goal of gender-affirming care is lasting personal comfort with the gendered self to maximize overall psychological well-being and self-fulfillment. The Ministry of Health in BC was the first in Canada to adopt the *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People-7*. With version 8, it is anticipated that the term "gender incongruence," as defined in the *International Classification of Diseases-11*, will be one of the codes available to access care.

BC has a long history of providing transgender and gender-diverse health care dating back to the establishment of Vancouver Coastal Health's BC Centre for Sexual Medicine in 1979. At present, three provincial programs are in place. In 1998, the Gender Clinic at BC Children's Hospital began seeing transgender

and gender-diverse youth and young adults, and it continues to be one of the busiest clinics in North America (www.bcchildrens.ca/our-services/clinics/gender). The team at BC Children's (endocrinologists, endocrine nurse clinicians, and social worker)—working in partnership with BC Children's and community mental health professionals (psychiatrists and psychologists), Trans Care BC, and the BC Transgender Clinical Care Group—functions as a "clinic without walls" to deliver endocrine care (puberty blockers and gender-affirming hormone therapy) to this population. As elsewhere across BC, their care is delivered according to the World Professional Association for Transgender Health's *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People–7*. The BC Children's team partners with Trans Care BC to train and support community clinicians in advancing their practice with gender-diverse young people. Many pediatricians, family physicians, and nurse practitioners now provide this care in their communities.

In 2015, the Provincial Health Services Authority became responsible for the provincial coordination of transgender and gender-diverse health services through Trans Care BC (www.phsa.ca/transcarebc). Trans Care BC plans, coordinates, monitors, and provides limited direct funding for transgender health and wellness services. The program also helps clients navigate the health care system, and provides clinical education and ongoing support to health care professionals in the form of live and online training on clinical practice. Since its inception, Trans Care BC has worked to improve client access to care, with an emphasis on providing primary and surgical care closer to home. It has led the increase in gender-affirming surgeries in BC, developed a central pooled wait list for 15 surgeons who offer upper body gender-affirming surgeries, and helped create Vancouver Coastal Health's Gender Surgery Program BC (www.vch.ca/Locations-Services/result?res_id=1457), which provides lower body gender-affirming surgeries.

The Gender Surgery Program BC, including the Gender Surgery Clinic, opened at Vancouver General Hospital in September 2019; it is Western Canada's only hospital that performs lower body gender-affirming surgeries for transgender and gender-diverse people. The Gender Surgery Program BC is a multidisciplinary team of surgical specialists and health care providers who are devoted to providing high-quality gender-affirming treatment and surgical care. The program offers surgical procedures that are consistent with the guidelines established by the World Professional Association for Transgender Health.

BC has a long history of providing transgender and gender-diverse health care dating back to the establishment of Vancouver Coastal Health's BC Centre for Sexual Medicine in 1979.

The first part of this *BCMJ* theme issue highlights health care service delivery and educational products provided by the three current provincial programs: BC Children's Gender Clinic, Trans Care BC, and the Gender Surgery Program BC. The first article provides suggestions on how to create a gender-affirming clinical environment for transgender and gender-diverse people, and includes educational and support resources on transgender and gender-diverse health care. The second article reviews the use of hormone therapy to help transgender and gender-diverse people achieve their goals for physical changes. The third article describes gender-affirming surgeries that are available in BC. The March issue will feature three more important areas related to transgender and gender-diverse health: BC law with respect to minors consenting to surgery, including recent BC court decisions (Findlay); contraception options for transgender and gender-diverse people (Todd); and available reproductive options (Wisenthal and colleagues). ■

—Gail Knudson, MD, MEd, FRCPC

Competing interests

Dr Knudson receives an annual honorarium for serving as a co-chair of the WPATH Global Education Institute.

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Gender-affirming primary care

By accessing various educational resources and support from Trans Care BC, primary care providers can develop the knowledge and skills needed to create a safe, respectful clinic environment and better health care experiences for transgender, gender-diverse, and Two-Spirit people.

ABSTRACT: Transgender, gender-diverse, and Two-Spirit people report barriers to accessing health care, and lower rates of health screening, which results in unaddressed health needs. Barriers to care include the knowledge level and attitudes of care providers (actual or perceived), and a lack of culturally appropriate health information. Health care providers can take a number of steps toward improving health care and care experiences for gender-diverse people, including children and youth, by accessing educational resources on gender diversity; creating a safe clinic environment; using respectful and inclusive language, especially when taking a medical history; providing gender-affirming physical exams; learning from mistakes, which are inevitable; assessing readiness for gender-affirming hormone therapy and initiating treatment; and facilitating access to gender-affirming surgeries.

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Dr Mackenzie is a family physician in Chilliwack, physician lead of the Chilliwack Gender Care Clinic, and clinical instructor in the Department of Family Medicine, UBC. Dr Townsend is a family physician in Vancouver, medical director of Trans Care BC, and clinical assistant professor in the Department of Family Medicine, UBC.

This article has been peer reviewed.

Transgender, gender-diverse, and Two-Spirit people who access gender-affirming care have elevated rates of a number of health conditions, including depression, HIV, and substance use.[1-4] They are also disproportionately affected by poverty, unemployment, homelessness, harassment, and violence.[2,4] Gender-diverse people report barriers to accessing health care, and lower rates of health screening, which results in unaddressed health needs.[4-8] Barriers to care include the knowledge level and attitudes of care providers, actual or perceived, and a lack of culturally appropriate health information. Accessing gender-affirming care has profound benefits in the lives of patients, including improved social and occupational function. Health care providers can reduce barriers to care and make positive contributions to the health and well-being of gender-diverse people.

Improving access to care

Accessibility to and quality of gender-affirming primary care can be improved by establishing a safe, welcoming, respectful environment and using affirming and inclusive language. Having or knowing where to access information regarding medical and surgical interventions is also very helpful. Guidelines regarding physical exams and general health screening are available and include special considerations for caring for children and youth.

Creating a safe, affirming clinic environment

Simple actions can be taken to make clinics feel safe and respectful to patients who seek gender-affirming care. Training all patient-facing staff to interact respectfully with gender-diverse patients is a good start. This can easily be achieved by supporting staff to take online courses that teach foundational concepts about gender diversity and describe effective strategies for creating more accessible and gender-affirming services **[Box 1]**. Small but significant changes can be made to the clinic's physical space to create a welcoming and affirming environment. This can include displaying signs, such as a sticker of a pride flag, and inclusive health promotional material, and taking steps to ensure that patients can access the washroom without anxiety or the risk of harassment. For example, signs can be posted at single-stall washrooms to indicate they are gender neutral, and signs posted at multistall washrooms can indicate that gender-diverse people are welcome **[Box 2]**. Intake forms and electronic medical records can also be used to create safe clinical encounters. For instance, adding fields for "Name Used" and "Pronoun" on intake forms signals to patients that the clinic is knowledgeable about gender

diversity, and it may contribute toward building patient-provider rapport. Additionally, each clinic can display the patient's correct name and pronouns in the electronic medical record to help front-desk staff and clinicians provide safe and affirming care.

Using respectful, affirming language

Interactions with patients can be made more affirming by using language that clearly signals respect for diverse identities, bodies, and relationships **[Box 3]**. This is especially important when taking a medical history. For example, questions can be framed in ways that make no assumptions about gender, gender expression, or gender-related goals. Patients can be asked if there is anything about their gender or sexual health that they would like to discuss. It can be helpful to ask what steps have been taken to affirm their gender and related future goals. When discussing care needs and illness prevention, consider the patient's anatomy, although there is no need to focus on gender if it is not relevant to the presenting concern.

Mistakes are inevitable. Learn from them and incorporate that learning into future practice to improve care.

Learning from mistakes

Mistakes are inevitable. Learn from them and incorporate that learning into future practice to improve care. To learn more about what you can do if you make a mistake in your choice of words, names, or pronouns, visit Trans Care BC's resource "Making Mistakes and Correcting Them" **[Box 3]**.

Providing gender-affirming physical exams

Many patients report significant body dysphoria, physical and emotional discomfort during physical examination, inadequate screening, and low service expectations. Physicians can address these health inequities by using a gender-affirming approach to reduce discomfort and increase the chances of a positive experience. This includes developing rapport before examining sensitive areas, whenever possible, providing a rationale for why you recommend a particular exam, using affirming or neutral terms for body parts or asking what terms the person prefers, and examining only those areas that are relevant to the situation. For concrete examples on how to provide a gender-affirming physical exam, visit www.transcarebc.ca.

Prescribing gender-affirming hormones

Because primary care providers often have in-depth understanding of their patients' medical and mental health background and the greater context of their lives and support networks, they are well positioned to assess a patient's readiness for gender-affirming hormone therapy and initiate treatment. Providers can explore the experience and effects of gender incongruence with their patients and discuss affirmation goals and treatment options. These discussions enable providers to comprehensively assess a patient's capacity to consent to treatment. For patients with more complex care needs—for example, patients with endocrine conditions or who request medications or dosing that is outside of existing guidelines—referral or consultation with an endocrinologist can be useful.

Guidelines and clinical resources on how to initiate, titrate, and monitor gender-affirming hormone therapy are available. For example, Trans Care BC's Primary Care Toolkit (https://bit.ly/3gKp7Fi) is an excellent resource for clinicians who are new to this area; it outlines the process of hormone initiation, provides a checklist for readiness assessment, and gives suggestions for starting doses, titration, lab monitoring, and follow up.

Accessing gender-affirming surgeries

Some gender-diverse people benefit from gender-affirming surgery. Primary care providers play an important role in helping patients access surgery in a timely way. This includes connecting patients with a qualified assessor who conducts surgical readiness assessments, and linking patients to resources and peer support to help with the logistical and emotional

BOX 1. Education.

Online courses

- Exploring gender diversity: For health and human services: https://learninghub.phsa.ca/Courses/22474/
- Gender-affirming primary care: https://ubccpd.ca/course/gender-affirming-care

Mentorship and clinical support

- Trans Care BC: www.transcarebc.ca
  - Weekly clinical mentorship call.
  - Quarterly speaker series.
  - Health navigation team.
- RACE and eCASE: www.raceconnect.ca
- 1 877 696-2131: select "Transgender health" option

BOX 2. Health promotion materials and signs.

- Trans Care BC: www.transcarebc.ca
  - "Things to Know about Tucking"
  - "Things to Know about Binding"
- "Primed²: A Sex Guide for Trans Men into Men": www.catie.ca/resources/primed-sex-guide-trans-men-men
- "Brazen 2.0: Trans women's Safer Sex Guide": www.catie.ca/resources/brazen-trans-womens-safer-sex-guide-0
- Gender-neutral washroom sign: https://bit.ly/3sUo1M4

BOX 3. Trans Care BC resources.

Trans Care BC (www.transcarebc.ca) is a provincial program that works to enhance and coordinate gender-affirming health services across BC. Its website has information for community members, physicians, and other health care providers, including:

- Educational resources and training opportunities.
- Clinical tools and tip sheets, including "Making Mistakes and Correcting Them," "Gender Inclusive Language: Clinical Settings with New Clients," and "Sexual Health Screening and Pelvic Examination."
- Information about hormone therapy, surgery, and social transition.
- Peer and community resources.
- Support with health navigation.
- Patient resources and handouts.

aspects of preparing for surgery. Providers can work with patients to stabilize any physical or mental health conditions to ensure they do not pose barriers to accessing surgery, and may help provide postoperative care and liaise with surgeons as needed. To learn more about gender-affirming surgeries in BC, including how to become a qualified assessor, visit www.transcarebc.ca.

Applying health screening guidelines

Health screening guidelines apply to gender-diverse patients, but additional considerations may be necessary depending on a patient's hormone therapy or surgical history. Some programs, such as BC Cancer Breast Screening, have updated their guidelines to be inclusive of patients who have had gender-affirming medical or surgical interventions. A summary of health screening recommendations, including for sexual health, is provided in Trans Care BC's Primary Care Toolkit (https://bit.ly/3gKp7Fi).

Providing care to gender-diverse children and youth

Providing gender-affirming care to children and youth includes addressing a range of health needs. While only a portion of gender-diverse children and youth will pursue gender-affirming interventions, all young people and their families will benefit from working with a gender-affirming primary care provider who can be an important source of information, support, and advocacy. Receiving gender-affirming care can have significant health benefits for gender-diverse youth.[4] Depending on the situation, providers may take an active role in treatment and monitoring, or they may work collaboratively with pediatricians, pediatric endocrinologists, and adolescent psychiatrists. In all cases, providers can deliver care that is affirming and supportive, and they can help nurture and sustain relationships between youth and their families.

Summary

With access to ongoing support from Trans Care BC and other clinical resources **[Box 4]**, primary care providers can easily develop the knowledge, skills, and experience needed to provide better health care experiences for gender-diverse people. ■

With in-depth understanding of their patients' medical and mental health backgrounds, lives, and support networks, primary care providers are well positioned to assess a patient's readiness for gender-affirming hormone therapy and initiate treatment.

Competing interests

Dr Townsend is medical director of Trans Care BC.

BOX 4. Clinical resources and guidelines.

- National LGBT Health Education Center. *Affirmative Care for Transgender and Gender Non-conforming People: Best Practices for Front-Line Health Care Staff*: https://bit.ly/3DtQayq
- Rainbow Health Ontario. *My Guide to Caring for Trans and Gender-Diverse Patients*: www.rainbowhealthontario.ca/TransHealthGuide/
- Sherbourne Health and Rainbow Health Ontario. *Guidelines for Gender-Affirming Primary Care with Trans and Non-binary Patients*: www.transforumquinte.ca/downloads/Guidelines-and-Protocols-for-Comprehensive-Primary-Care-for-Trans-Clients-2019.pdf
- Trans Care BC. *Gender-Affirming Care for Trans, Two-Spirit, and Gender Diverse People in BC: A Primary Care Toolkit*: https://bit.ly/3gKp7Fi
- University of California San Francisco (UCSF) Transgender Care. *Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People*: https://transcare.ucsf.edu/guidelines
- World Professional Association of Transgender Health. *Standards of Care Version 8*: www.wpath.org/soc8

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Endocrine treatment of transgender and gender-diverse people

Because gender self-identification can be nonbinary, the use of hormone therapy to achieve a patient's goals for physical changes must be based on individualized assessment, treatment, and follow-up monitoring.

ABSTRACT: Endocrine therapy is used to change the body's physical characteristics to reduce gender dysphoria or incongruence. Feminizing endocrine treatment involves the use of ovarian hormones or anti-androgen drugs; however, venous thromboembolism or meningioma can be associated risks. Masculinizing endocrine treatment involves testosterone supplementation, but lower high-density-lipoprotein cholesterol, increased triglycerides, and risk of polycythemia may occur. In youth, gonadotropin-releasing hormone agonist therapy can be used as a reversible means of suppressing unwanted puberty and preventing irreversible body changes. Physicians can provide treatment that achieves a patient's goals and minimizes the risk of causing harm by conducting an initial assessment, prescribing medications based on individual factors, and providing follow-up treatment monitoring. Physicians who treat youth must be trained in childhood and adolescent developmental psychopathology. They must also be able to diagnose gender dysphoria or incongruence, establish the youth's capacity to make decisions regarding their medical care and to understand the relatively irreversible changes in physical characteristics and reproductive capacity that will occur, and ensure that the youth has parental or other adult support and will be able to transition safely in their home setting. Counseling may be required for youth who suffer from anxiety, depression, or suicidality.

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Endocrine therapy is used to change the body's physical characteristics to reduce gender dysphoria or incongruence. Its use can be considered when a diagnosis of gender dysphoria or incongruence has been made, and the World Professional Association for Transgender Health criteria for treatment **[Box]** have been met.[1]

The physician's goal for endocrine therapy is to provide effective treatment that has a minimum risk of causing harm. Treatment "effectiveness" involves understanding a patient's goals for physical changes and working to achieve them through administration of endocrine medications. Because gender self-identification is a nonbinary spectrum of feminine and masculine traits, it is important to understand an individual's needs. For example, some people who identify as nonbinary in the transmasculine spectrum may not desire virilization but instead want only a small dose of testosterone to achieve a slightly less feminine and more androgynous appearance.

Initial medical assessment should include the patient's history, a physical examination, and laboratory testing of blood hormone levels together with testing of liver, kidney, cholesterol, and diabetes status in order to give the patient adequate information to provide informed consent.

Before administration of endocrine treatments, patients must be aware of the drug-specific potential adverse effects, plus the likely loss of reproductive potential (sperm production and oocyte release).

World Professional Association for Transgender Health criteria for hormone therapy in adults.[1]

1. Persistent, well-documented gender dysphoria.
2. Capacity to make a fully informed decision and consent to treatment.
3. Age of majority in a given country.
4. Significant medical or mental health concerns are reasonably well controlled.

Feminizing endocrine treatments

Ovarian hormones

Estrogen supplementation has two actions: it increases feminizing effects at target tissues and reduces masculinizing blood levels of testosterone through suppression of the hypothalamic–pituitary–testicular axis. Physical changes include breast growth, softer skin, and changes

in body composition, such as fat redistribution from the abdomen to the hips. Estradiol use is preferred to conjugated estrogens because of lower potential of venous thromboembolism.[2] Transdermal estradiol may have a better safety profile than oral estradiol in patients who are at increased risk of venous thromboembolism.[3] Risk factors include age greater than 50 years, tobacco use, body mass index greater than 27 kg/m^2, and postoperative state. Initial history should also determine if the patient or their family have a history of venous thromboembolism.

Clinical controversy has surrounded progesterone supplementation. Advocates point to the physiologic role of micronized progesterone in breast, nipple, and areolar development and suppression of testosterone secretion by reduction of pituitary secretion of gonadotropins.[4] Progesterone is used in hormone therapy of cisgendered women, particularly in the context of prevention of endometrial hyperplasia, which is not a consideration in transgendered women.

Anti-androgen drugs

Spironolactone is an antagonist that blocks the action of androgen at its receptor and reduces testosterone levels. Feminizing effects of anti-androgens include breast development and reduction of androgen-sensitive face and body hair.

Cyproterone acetate is a synthetic progestogen with strong anti-androgen and antigonadotrophic effects. A recent observational cohort study of cisgender and transgender girls and women showed a dose- and duration-of-use-dependent increase in the risk of meningioma treated by radiation or surgery. With doses of 25 or 50 mg daily, risk of meningioma increased from 4.5 to 23.8 per 1 000 000 patient years compared to the control group.[5] This has led to discussions about avoiding the use of cyproterone or limiting the dose to no more than 12.5 mg daily **[Table 1]**.[6]

Masculinizing endocrine treatment

Testosterone

Testosterone supplementation increases androgen action at target tissues and suppresses ovarian sex steroid production. Desired masculinizing effects include deeper voice, increased

TABLE 1. Basic feminizing regimen in adults. (Adapted from "Endocrine therapy for transgender adults in British Columbia: Suggested guidelines";[6] updated April 2015.)

	Estrogen		Androgen antagonists	
Agent	Micronized 17beta-estradiol		Spironolactone	Cyproterone acetate
Brand name*	Estrace	Estradot, Oesclim	Aldactone	Androcur
Administration	Oral	Transdermal	Oral	Oral
Dose range	1–8 mg daily	50–200 mcg patch twice weekly	25–300 mg daily	12.5–50.0 mg daily
Cost of generic agent at usual dose† before dispensing fee‡	4 mg daily ~$30 per month	100 mcg patch twice weekly ~$40 per month	200 mg daily ~$20 per month	50 mg daily ~$45 per month
BC PharmaCare benefit	Yes	Possible on case-by-case basis via Special Authority request for patient with venous thromboembolism risk from oral estradiol	Yes	Yes (requires Special Authority)

Progestin options		
Agent	Micronized progesterone	Medroxyprogesterone acetate
Brand name*	Prometrium	Provera
Dose range	100–300 mg daily	10–40 mg daily
Cost of usual dose† before dispensing fee‡	200 mg daily ~$115 per month	20 mg daily ~$20 per month
PharmaCare benefit	No	Yes

Note: Some patients choose intramuscular injection of estradiol valerate, which is available in BC from compounding pharmacies. The cost of 10 mg per week is ~$80–$120 per month depending on the pharmacy.
* All brand name formulations are also available as generics.
† Prices for oral medications per Pharmacy Compass. Accessed February 2020. www.pac.bluecross.ca/pharmacycompass; price for transdermal estradiol per pharmacist quote, February 2020.
‡ Dispensing fees in the range of $10–$12 per prescription.

TABLE 2. Basic masculinizing regimens in adults. (Adapted from "Endocrine therapy for transgender adults in British Columbia: Suggested guidelines";[6] updated April 2015.)

	Injection (intramuscular or subcutaneous)		Transdermal
Agent	Testosterone cypionate	Testosterone enanthate	Testosterone crystals in gel
Brand name	Depo-Testosterone	Delatestryl	AndroGel
Dose range	25–100 mg subcutaneous/intramuscular weekly or 50–200 mg intramuscular every 2 weeks. Adjust dose to achieve mid-normal male testosterone range on sample drawn halfway through injection cycle		2.5–10.0 g daily
Cost of average dose before dispensing fee	50 mg per week ~$14 per month	50 mg per week ~$16 per month	5 g daily ~$160 per month
BC PharmaCare benefit	Yes, with Special Authority stating female-to-male transgender	Yes, with Special Authority stating female-to-male transgender	Possible on case-by-case basis with Special Authority stating female-to-male transgender and contraindication to intramuscular injection

Note: Self-injection techniques for patients are provided in the *Transgender Health Injection Guide* https://fenwayhealth.org/wp-content/uploads/2015/07/COM-1880-trans-health_injection-guide_small_v2.pdf.

male pattern facial and body hair, increased muscle mass, reduced fat mass, and cessation of menstruation. Adverse effects may include acne, scalp alopecia, lower high-density-lipoprotein cholesterol, increased triglycerides, and risk of polycythemia. Testosterone is usually administered by intermittent intramuscular injection of testosterone cypionate or enanthate. Subcutaneous injection has also been shown to be effective in pharmacologic studies.[7] Daily transdermal testosterone preparations are used in patients when injections are not possible or desired. Transdermal preparations are more expensive and may result in lower testosterone serum levels than injected testosterone **[Table 2]**.[6]

Treatment of youth

Medical treatment for transgender and gender-diverse youth has been available in BC for more than 20 years.[8] Separate eligibility[1] and treatment regimens[8] exist for youth **[Table 3]**. Unlike in adults, gonadotropin-releasing hormone agonist therapy can be used as a reversible means of suppressing unwanted puberty and preventing irreversible body changes (e.g., breast or beard growth). This can be initiated once puberty has begun (Tanner 2). Depending on the youth's persistent level of dysphoria, family support, and emotional and intellectual maturity, hormones can be offered as early as 13.5 to 14.0 years. Escalating-dose hormone regimens for youth allow for more gradual, natural pubertal development to better match that of their age peers.

It is vitally important that all transgender and gender-diverse children and youth have access to providers who are trained in childhood and adolescent developmental psychopathology.[1] This involves making the diagnosis of gender dysphoria or incongruence, establishing the youth's capacity to make decisions regarding their medical care and to understand the relatively irreversible changes they will undergo in terms of body changes and reproductive capacity, and ensuring that the youth has parental or other adult support and will be able to transition safely in their home setting. While the diagnosis of gender dysphoria or incongruence may be relatively straightforward in some of youth, as a group they are burdened with high rates of anxiety, depression, and suicidality,[7] and therefore, may require intensive counseling to allow them to move forward with successful medical transition.

Endocrine treatment for gender dysphoria or gender incongruence is similar to many medical interventions. The goals of treatment are to improve the patient's quality of life while minimizing the risk of adverse effects.

Monitoring treatment

Monitoring endocrine treatment is individualized and includes assessment of the patient's degree of dysphoria and desired physical changes, as well as the presence of possible adverse effects. Levels of estradiol, testosterone, lipid, glucose or glycosylated hemoglobin, liver enzyme, and electrolyte and creatinine levels are measured at intervals determined by the clinical situation, laboratory results, and frequency of dosage adjustments. Some sample monitoring regimens have been published.[9]

TABLE 3. Puberty suppression for transgender youth.

Agent	Leuprolide acetate for depot suspension
Brand name	Lupron Depot
Administration	Intramuscular
Dose range	3.75–7.50 mg every 4 weeks 11.25–22.50 mg every 13 weeks
Cost of usual dose* before dispensing fee†	$4600–$5600/year
BC PharmaCare benefit	Yes, with Special Authority

* Prices for medications per www.drugsearch.ca. Accessed February 2020.

† Dispensing fees in the range of $10–$12 per prescription.

Summary

Endocrine treatment for gender dysphoria or gender incongruence is similar to many medical interventions. The goals of treatment are to improve the patient's quality of life while minimizing the risk of adverse effects. This is done through initial assessment, prescription of medications based on individual factors, and subsequent reassessment of patient factors and laboratory results. Like any practitioner-patient interaction, intervention works best when a cooperative dialogue with a well-informed patient or family is undertaken with knowledge of the individual psychosocial context of treatment. ■

Competing interests

None declared.

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Gender-affirming surgical care in British Columbia

Being able to access medically necessary gender-affirming surgeries close to home with the support of a multidisciplinary medical team can maximize the health and well-being of transgender and gender-diverse people.

ABSTRACT: A variety of gender-affirming surgical procedures are available to transgender and gender-diverse individuals in BC. Care throughout the entire surgical journey is shared by a multidisciplinary team of surgical specialists and allied health care providers. Upper body gender-affirming surgeries include breast construction, chest construction with subcutaneous mastectomy and male chest contouring, and gender-affirming breast reduction. Lower body gender-affirming surgeries include orchiectomy, vaginoplasty, penectomy, metoidioplasty, phalloplasty, hysterectomy, and bilateral salpingo-oophorectomy. Surgeons are encouraged to follow the World Professional Association for Transgender Health criteria for patient eligibility for these surgeries. All these procedures have associated risks, and all are covered by British Columbia's Medical Services Plan. Some complementary procedures are funded by Trans Care BC. In addition, facial and neck procedures such as facial feminization, tracheal shaving, and voice surgery may be performed. However, the World Professional Association for Transgender Health does not specify eligibility criteria for these procedures, and they are not currently covered by MSP. Surgeons and physicians should take an individualized approach to providing gender-affirming patient care in order to maximize surgical outcomes and prioritize specific harm-reduction strategies.

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This article has been peer reviewed.

The goal of gender-affirming surgical care is to maximize the health and well-being of transgender and gender-diverse individuals.[1] While not all these individuals seek surgical interventions as part of their journey, many find surgery an important and key component of their transition. In September 2019, the Gender Surgery Program BC, located within Vancouver Coastal Health, became Western Canada's first and only centre to perform lower body gender-affirming surgeries for transgender and gender-diverse individuals. The multidisciplinary team of surgical specialists and allied health care providers provide shared care throughout the entire surgical journey. This program builds upon the existing gender-affirming surgical services offered throughout the province to provide patients with access to safe surgical care close to home. In addition to the Gender Surgery Program BC, Trans Care BC has established a network of transgender-inclusive surgical providers throughout the province and within all health authorities who offer upper body surgery, orchiectomy, and hysterectomy.[2]

In BC, gender-affirming surgical care largely follows the direction and guidance of the World Professional Association for Transgender Health (WPATH). Current guidelines for surgical standards of care are summarized in the Table.[1] Not all transition services are currently covered by the provincial Medical Services Plan; procedures that are considered an insured service for transgender individuals are listed in the Table. In addition, an individual's gender identity is often not binary and may exist along the gender spectrum. As a result, patients may seek some surgical interventions and not others as part of their journey. The following procedures are broadly classified based on anatomic location. Each procedure is an individual choice that may aid a patient to move along the gender spectrum.

Chest and breast procedures

Breast construction (augmentation mammoplasty)

In BC, augmentation mammoplasty is considered to be medically necessary for transgender women who have insufficient breast tissue growth following 18 months of feminizing hormone therapy.[3,4] Prosthetic implants are the mainstay for enhancing the size and symmetry of the chest. Criteria for MSP coverage include

insufficient breast growth (less than an AA cup size) or asymmetrical growth of more than 1.5 cup sizes following 18 months of continuous hormone therapy. Women can also be considered for augmentation mammoplasty if hormone therapy is medically contraindicated and they have a less than an AA breast cup **[Table]**.

Specific complications with augmentation mammoplasty are rare but include capsular contracture (scar tissue formation around the implant); implant migration, rupture, or exposure; altered sensation; and anaplastic large cell lymphoma.[5-7] Surgeons in BC are encouraged to follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Chest construction with subcutaneous mastectomy and male chest contouring

A subcutaneous mastectomy with male chest contouring involves the removal or reduction of breast tissue and skin to construct a flatter, more sculpted masculine chest. It can be performed with or without nipple and areola resizing and repositioning.[8] Chest binding, often used by

TABLE. World Professional Association for Transgender Health guidelines for gender-affirming surgery (adapted).[1]

Type of surgery*	Persistent, well-documented gender dysphoria	Capacity to make a fully informed decision and to consent to treatment	Age of majority in given country (18 years in Canada)	If significant medical or mental health concerns are present, they must be well controlled	One year of hormone therapy (unless contra-indicated)	One year of living congruently with gender identity	Referrals required	MSP coverage
Breast/chest construction/ breast reduction	✓†	✓	✓	Reasonably well controlled	Optional		One from surgical readiness assessor	Yes, if: • Hormone therapy is contraindicated for individuals • Insufficient breast growth (< AA cup size) (with 18 months of hormone therapy) • Asymmetrical growth of > 1.5 cup size (with hormone therapy)
Orchiectomy	✓	✓	✓	✓	✓		Two from surgical readiness assessor	Yes
Vaginoplasty/ vulvoplasty/ oenectomy	✓	✓	✓	✓	✓	✓	Two from surgical readiness assessor with gender-affirming surgery assessment‡	Yes
Chest construction	✓	✓	✓	Reasonably well controlled	Optional		One from surgical readiness assessor	Yes
Hysterectomy and bilateral salpingo-oophorectomy	✓	✓	✓	✓	✓		Two from surgical readiness assessor with gender-affirming surgery assessment	Yes
Metoidioplasty	✓	✓	✓	✓	✓	✓	Two from surgical readiness assessor with gender-affirming surgery assessment	Yes
Phalloplasty	✓	✓	✓	✓	✓	✓	Two from surgical readiness assessor with gender-affirming surgery assessment	Yes

* Facial feminization, tracheal shaving, and voice surgery are not included because WPATH has no specific recommendations, and the procedures are not covered by MSP.

† "✓" indicates a suggested guideline for that surgery.

‡ Individual surgeon practices vary. Not all surgeons require two assessments.

Adapted from the WPATH Standards of Care guidelines.

transgender men, may lead to the loss of skin elasticity; therefore, significant excess skin may need to be removed to create a more aesthetically appealing chest.[3] This surgery can be an important step for transgender men and nonbinary individuals who feel more comfortable with a flat chest or who restrict their activities and social engagement due to body and binder discomfort.[3] Subcutaneous mastectomy and chest contouring is covered by MSP, and a centralized wait list is managed by Trans Care BC.[3] Complications specific to this surgery include hematoma or seroma, loss of nipple grafts due to necrosis, change in nipple or areolar sensation, asymmetry or contour abnormalities requiring secondary revisions, and visible scarring.[3,8] Surgeons are encouraged to follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Gender-affirming breast reduction

Gender-affirming breast reduction uses surgical principles to reduce chest tissue volume and nipple size. Many nonbinary patients seek breast reduction to feel more affirmed, reduce the need for chest binders, and facilitate clothing choices. This procedure uses similar incision patterns to a standard breast reduction. It is covered by MSP, regardless of chest volume.

Genital procedures

Orchiectomy

Orchiectomy involves the removal of the testes and spermatic cord to prevent testicular hormone (i.e., testosterone) and sperm production. This procedure reduces the required dose of feminizing hormones and the need for androgen-blocking medications.[4] Based on patient goals, orchiectomy can be completed independently (with or without scrotectomy) or combined with penile inversion vaginoplasty. Orchiectomy results in permanent sterilization; therefore, sperm banking is suggested for individuals who are interested in future fertility. This procedure is performed in BC and is covered by MSP. Surgeons are encouraged to follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Vaginoplasty

Vaginoplasty is the surgical creation of a vaginal cavity and external vulva (consisting of an anatomic clitoral complex and labial complex). The preferred surgical technique is the penile inversion vaginoplasty, which uses the penile and/or scrotal tissue to create the neovagina.[3] In revision cases or for patients with a technically challenging anatomy, a pedicled colosigmoid transplant or peritoneal vaginoplasty can be offered as an alternative.[3] Orchiectomy can be completed prior to or during the vaginoplasty procedure. Permanent hair removal of tissue used for vaginal cavity construction is required to avoid hair growth within the vaginal lining. Perineal and scrotal electrolysis for hair removal is funded by Trans Care BC. Vaginal dilation is required postoperatively to maintain the depth and width of the vaginal cavity. Educational sessions are provided postoperatively, and dilators are funded by Trans Care BC. Pelvic floor physiotherapy preoperatively and postoperatively is thought to enhance the surgical outcomes for vaginoplasty patients. Surgical risks include urethral stricture, vaginal stenosis, partial or complete inversion flap loss, hypergranulation tissue, vaginal prolapse, cosmetic dissatisfaction, reduced erogenous sensation, vesicovaginal or rectovaginal fistula, pelvic pain, and postoperative voiding dysfunction.[2,6] Penile inversion vaginoplasty completed in BC is covered by MSP. Surgeons at the Gender Surgery Program BC who offer this procedure follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Minimal depth vaginoplasty

Minimal depth vaginoplasty, also referred to as vulvoplasty, is similar to vaginoplasty but a vaginal canal is not created. Instead, a shallow vaginal depression is created when constructing the external genital structures.[2,5] This procedure may be preferred in medically complex patients or individuals who do not wish to have a vaginal cavity. Minimal depth vaginoplasty has the same inclusion criteria and similar complication profile as vaginoplasty (but less risk of stenosis and fistula).

Penectomy

Penectomy involves removal of the penis. While more commonly performed as part of a penile inversion vaginoplasty, some individuals may choose penectomy as a stand-alone procedure.

Metoidioplasty

Metoidioplasty involves the creation of masculine genitalia from existing clitoral and labial tissues. This begins with hormonal enlargement of the clitoris (virilization), followed by surgical release of its attachment ligaments to create a phallus that is 4 to 6 cm long, and removal of the vagina. The labia majora are mobilized to create the scrotum.[3] Testis implants and reduction of residual labial tissue adjacent to the penis are completed approximately 6 months after the initial procedure. While metoidioplasty extends the urethra externally, standing urination cannot always be ensured due to differences in patient anatomy.[2] Moreover, it is unlikely that individuals undergoing metoidioplasty will be able to engage in penetrative intercourse because the surgery does not permit internal placement of an erectile device.[3] Compared to phalloplasty, metoidioplasty is considered a less invasive procedure, and is preferred by transgender and nonbinary individuals whose priorities are maintaining erogenous sensation over neophallus size, and avoiding additional scarring from distant donor sites.[3] This procedure is covered by MSP. Complications include urethral strictures and fistula, superficial wound infection or hematoma, breakdown of the vaginectomy closure, and persistent vaginal tissue.[9] Surgeons at the Gender Surgery Program BC who offer this procedure follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Phalloplasty

Phalloplasty is a lengthy, multiphase surgery performed to construct a neophallus. This procedure is the most complete genitoperineal transformation for transmasculine individuals, since it most closely approximates the appearance, size, and function of a cisgender phallus. It employs one of two techniques to create the neophallus from the patient's skin: pedicled flaps (from regional areas, typically the anterolateral thigh, groin, or abdomen) or free flaps (tissue from a remote location, such as the forearm).[3] Many of these donor sites can contain nerves that can be coapted to the clitoral nerve in order to maintain sensation. The gold standard for phallic reconstruction uses the radial forearm free flap.[3] Permanent hair removal of the tissue used to reconstruct

the penile urethra is required to avoid urinary blockage, stone formation, and urinary tract infection. Donor site hair removal for the urethra is covered by MSP. Similar to metoidioplasty, the testosterone-enlarged clitoris is released, and the labia majora are used to create the scrotum. If desired, testicular implants and semi-rigid or inflatable erectile implants may be inserted during follow-up procedures. Phalloplasty is often completed in transgender and gender-diverse individuals who prioritize a cisgender-appearing neophallus, the ability to urinate while standing, and the capacity for penetrative intercourse.[5] Potential drawbacks of this procedure include the visible forearm scar at the donor site, the multistage nature of the procedure, the prolonged operative time, and the high complication rates. This procedure is covered by MSP. Phalloplasty has a total complication rate of up to 80%, which comprises mostly urethral issues. Common complications include urinary stricture, stenoses and fistula, partial/total flap (neophallus) necrosis, and donor-site morbidities.[10,11] Surgeons at the Gender Surgery Program BC who offer this procedure follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Facial and neck procedures

Facial feminization

Facial feminization procedures usually focus on altering prominent facial angles of the cheeks (enhancing the malar region), forehead (smoothing of supraorbital bossing), nose (adjusting the glabellar angle), and jaw (reducing the gonial angle), and making adjustments to the hairline and areas surrounding the eyes, ears, and lips.[3] WPATH does not specify eligibility criteria for facial feminization surgery, and the procedures are not currently covered by MSP.

Thyroid chondroplasty (tracheal shave)

Thyroid chondroplasty involves reducing or reshaping the laryngeal prominence of the thyroid cartilage. The procedure is done under general anesthetic, or local anesthetic with sedation through an incision across a naturally occurring neck skin crease.[3] WPATH does not specify eligibility criteria for tracheal shaving, and the procedure is not currently covered by MSP.

Voice surgery

Voice surgery is used to raise vocal pitch because feminizing hormone intervention does not affect the adult voice (unlike testosterone, which deepens vocal pitch). The stigma associated with transitioning patients who have a deep voice can cause extreme distress. Various surgical techniques can be employed to raise the vocal pitch, including shortening the vocal cords, increasing the tension across vocal cords, or reducing vibrating vocal cords, in addition to vocal therapy.[3] Currently, these procedures are not covered by MSP, and only a limited number of surgeons in Canada offer voice surgery. WPATH states that for maximum benefit, the patient should consult with a voice and communication specialist preoperatively and postoperatively.[1]

Other procedures

Hysterectomy and bilateral salpingo-oophorectomy

Hysterectomy (removal of the uterus) can be completed independently or with oophorectomy (removal of the ovaries) and salpingectomy (removal of a fallopian tube). Complete hysterectomy (removal of the uterus and cervix) is required if the individual is considering future metoidioplasty or phalloplasty. Oophorectomy and salpingectomy can be completed prior to further lower body gender-affirming surgery but are not required. If the individual is considering future fertility, egg harvesting may be considered prior to oophorectomy. Complications specific to this surgery include damage to surrounding tissues, including ureters, bladder, small bowel, rectum, and blood vessels.[5] For patients who are seeking either a metoidioplasty or phalloplasty, it is recommended that a hysterectomy be completed 4 to 6 months prior to other lower body gender-affirming surgery to reduce the complications of the vaginectomy component of the procedure. Hysterectomy with or without bilateral salpingo-oophorectomy is covered by MSP. Surgeons are encouraged to follow the WPATH guidelines for patient inclusion criteria **[Table]**.

Summary

Although the evidence-based guidelines for the WPATH Standards of Care should be met, clinical departures can arise based on a patient's unique anatomical, social, or psychological situation. Individualized surgical consultation can provide educational information that helps guide patients in their decision-making and surgical planning process. Experienced health professionals should take an individualized approach to patient care in order to prioritize specific harm-reduction strategies and maximize surgical outcomes.[1] ■

Competing interests

None declared.

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Cheryl Young, MD, CCFP, Tom Kosatsky, MD, MPH

From the horse's mouth: Calls to the British Columbia Drug and Poison Information Centre about ivermectin exposures during the COVID-19 pandemic

Concerns over unsafe use of ivermectin prompted a review and descriptive analysis of calls to the British Columbia Drug and Poison Information Centre from 1 January 2018 to 11 October 2021.

ABSTRACT

Background: As the COVID-19 pandemic continues to unfold, increasing numbers of Canadians have self-medicated with ivermectin, an antiparasitic drug used to treat infections and infestations in humans and livestock. This is despite a lack of good-quality evidence for its efficacy in preventing and treating infection with SARS CoV-2. Concerns over unsafe use of ivermectin prompted a review of calls to the British Columbia Drug and Poison Information Centre.

Methods: We performed a descriptive analysis of calls received from 1 January 2018 to 11 October 2021 about exposure to ivermectin and related compounds.

Results: The BC Drug and Poison Information Centre received 50 calls concerning exposure to ivermectin and related compounds during the period we studied. Prior to the COVID-19 pandemic, 23 calls were made, and all but one were unintentional exposures. The first ivermectin call referencing COVID-19 was received in March 2021, after which call frequency increased, leading to 27 more calls, of which 19 were intentional exposures to ivermectin referencing COVID-19. Of these calls, 11 concerned veterinary-grade ivermectin, and where doses were calculable, at 0.147–11.91 mg/kg, they were above the 0.15–0.2mg/kg therapeutic dose for most approved human uses. Three exposures were asymptomatic, 11 were considered to have minor effects, 1 was moderate, 4 were symptomatic but considered unrelated to ivermectin, and in 1 case symptoms were not recorded.

Conclusions: The use of ivermectin to prevent or treat COVID-19 is occurring in British Columbia, and both human and veterinary formulations are being ingested. Our case review suggests that these exposures occur most frequently in more agricultural regions, where the portion of adults vaccinated against COVID-19 has been lower and the portion infected higher than elsewhere in the province.

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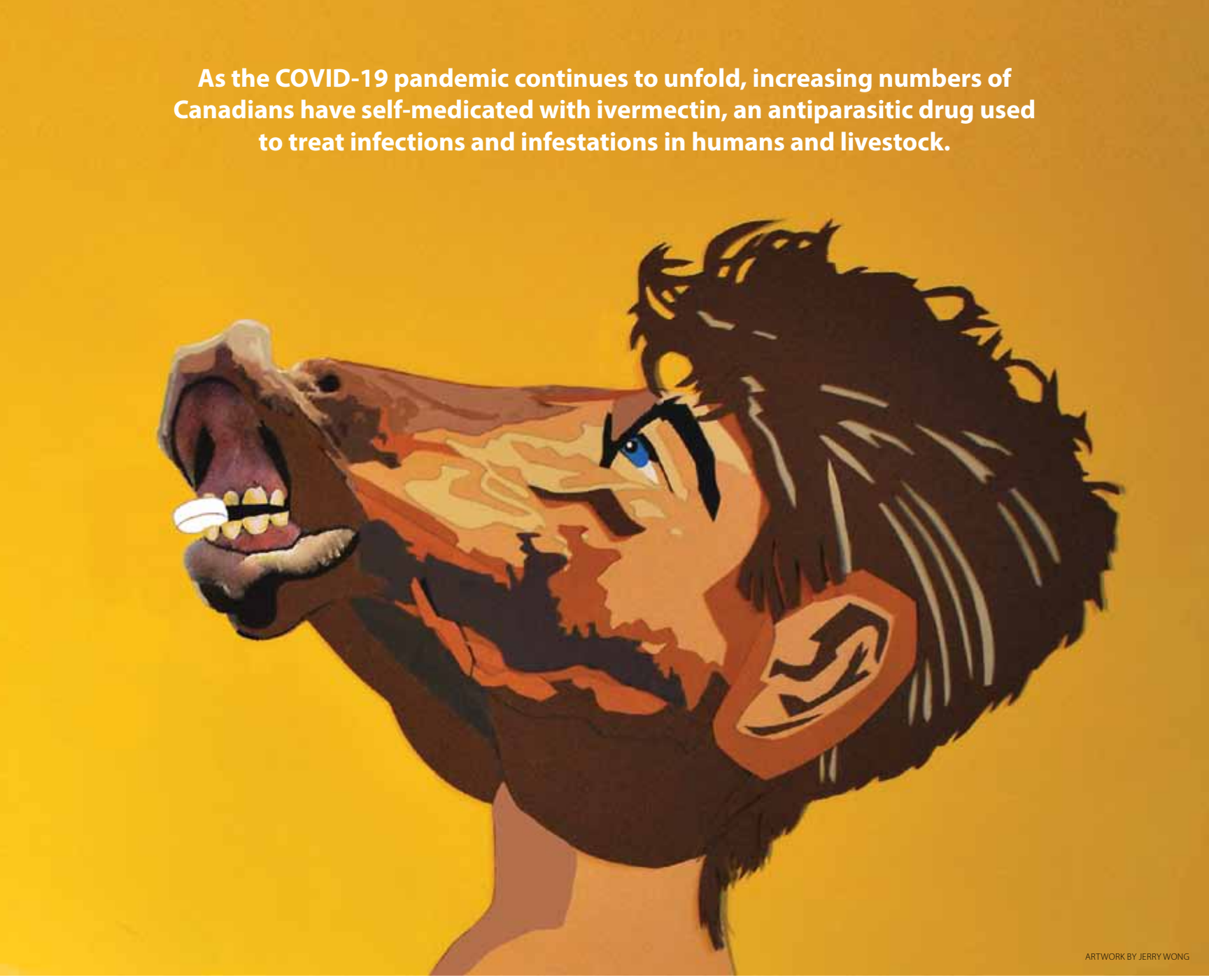
Background

Ivermectin is a broad-spectrum antiparasitic drug used to treat onchocerciasis (river blindness), strongyloidiasis, lice, and scabies among other parasitic infections and infestations, as well as rosacea.[1] In Canada, besides for treatment of such conditions in humans, ivermectin is used in veterinary medicine to treat livestock, including horses and cattle, as well as household pets, most commonly for heartworm and mites.[2]

As the COVID-19 pandemic drags on, a variety of existing medicines, notably ivermectin, has been studied to assess their potential in preventing and treating infection with SARS-CoV-2. When it was demonstrated early in the pandemic that, in vitro, high doses of ivermectin suppressed SARS-CoV-2 replication in a primate cell line,[3] numerous clinical trials were conducted to study whether ivermectin is effective in preventing or treating COVID-19. A scientific basis for this hypothesis exists; ivermectin has been studied for antiviral and anti-inflammatory activity for many years, and a recent computational simulation showed that ivermectin might block the

As the COVID-19 pandemic continues to unfold, increasing numbers of Canadians have self-medicated with ivermectin, an antiparasitic drug used to treat infections and infestations in humans and livestock.



ARTWORK BY JERRY WONG

SARS-CoV-2 spike protein from binding to the angiotensin-converting enzyme 2 receptor,[4] the receptor required for SARS-CoV-2 to attach and enter human cells. However, randomized controlled trials have produced very low to low certainty evidence of the efficacy of ivermectin for this use,[5] with some studies raising serious concerns about flaws in methodology and data interpretation.[6] In the absence of clear evidence for using ivermectin to prevent or treat COVID-19, health authorities worldwide, including Health Canada, have not authorized such use. Nevertheless, commentators (particularly in the US) have promoted its benefits, and it became apparent in spring and summer 2021 to the Health Products and Food Branch of Health Canada that increasing numbers of Canadians were seeking and using ivermectin, including veterinary formulations.[7] In parallel, a shortage of prescription ivermectin formulated for human use began in January 2021 and is ongoing.[8]

Concerns over ivermectin misuse include toxicity, which can result in abdominal pain, nausea, vomiting, diarrhea, headache, visual disturbances including hallucinations, dizziness, tachycardia, hypotension, metabolic acidosis, respiratory failure, ataxia, seizures, central nervous system depression, and death.[9] Given this concern, we reviewed calls to the BC Drug and Poison Information Centre (BC DPIC) about exposure to ivermectin and two related compounds, avermectin (used in pesticides) and selamectin (used in veterinary medicine). The BC DPIC is the provincial telephone poison control service available to the public and to health care providers; it is staffed by pharmacists, nurses, and physicians who provide consultation on management.

Methods

We performed a descriptive analysis of ivermectin exposure calls received by BC DPIC from 1 January 2018 to 11 October 2021. We included calls regarding exposure to related substances, specifically avermectin (commonly used in insecticides) and selamectin (a veterinary product). Calls were extracted from BC DPIC's electronic record using Poisindex (a poison information/classification system for quickly identifying and managing toxic exposures)[10] substance code "077715 Non-ANTHELMINTIC: OTHER" and searching for "ivermectin," "avermectin," and "selamectin" in the noncoded specific substance field. Using a purpose-designed extraction form, we manually extracted data from standard record fields as well as verbatim case notes. Information captured included demographics of the exposed individual, substance type (avermectin, selamectin, ivermectin), formulation (veterinary, human, insecticide), dose in mg/kg when known, reason for exposure (accidental or intentional, unrelated or related to COVID-19, for COVID-19 prevention or treatment), intended application (e.g., topical, oral), route of exposure (e.g., topical, oral), caller type (self, friend or relation, health care provider), health authority of exposed person's residence, symptoms, and BC DPIC recommendation. Medical outcomes at time of call were classified as minor, moderate, or major as determined by National Poison Data System classification based on clinical effects.[11] Extraction data were validated and entered into a Microsoft Excel spreadsheet for analysis.

Results

Fifty calls concerning exposure to avermectin, selamectin, and ivermectin were received at BC DPIC from 1 January 2018 to 12 October 2021. Of these, 15 calls were made by the exposed person, 24 by a friend or relation, and 11 from a health care provider. All 11 calls from providers occurred after the start of the COVID-19 pandemic. Of the 50 calls, 23 occurred from 2018 to 2020 (0.64 calls per month), and 27 occurred from January to 11 October 2021 (2.57 calls per month). The first call referencing COVID-19 was received in March 2021, after which BC DPIC took increasing numbers of ivermectin calls **[Figure 1]**. Over the almost 4-year study period, 20 calls concerned exposures to avermectin or selamectin, 11 were about exposures to ivermectin unrelated to COVID-19, and 19 concerned exposures to ivermectin for reasons related to COVID-19. As summarized in **Table 1**, 29 of 31 calls for avermectin, selamectin, and ivermectin unrelated to COVID-19 were in accidental exposures, whereas all 19 calls for ivermectin related to COVID-19 were intentional ingestions: 5 ingestions were for COVID-19 prevention, 12 for treatment, and 2 for an unspecified reason related to COVID-19.

In the absence of clear evidence for using ivermectin to prevent or treat COVID-19, health authorities worldwide, including Health Canada, have not authorized such use.

Calls about ivermectin related to COVID-19

Of the 19 calls about ivermectin exposure referencing COVID-19, 13 exposures (65%) were in males. The mean age was 53.2 (range 19–97). There were no calls about persons aged 18 or younger where COVID-19 was referenced, whereas there were four calls concerning children exposed to ivermectin unrelated to COVID-19, all of which were accidental exposures, three received before March 2021 and one received after. Seven COVID-19 related calls were from the exposed individual, 4 from a friend or relation, and 8 from a health care provider.

All exposures to ivermectin for reasons related to COVID-19 were intentional ingestions. Eleven were veterinary products, one was a product for humans, and in seven cases the formulation was unknown. Of the 11 exposures to a veterinary product, 8 were oral products, 1 was a product meant for topical application that was taken orally, and in 2 cases the intended application was not recorded. In terms of health authorities, 8 calls came from Interior (IHA), 3 from Northern (NHA), 5 from Fraser (FHA), 2 from Vancouver Island (VIHA), and 1 from Vancouver Coastal (VCH). Dose ingested was recorded in 13 calls, for which the mean was 2.18 mg/kg and range 0.147–11.905 mg/kg. Twelve of 13 known doses were above the 0.15–0.2mg/kg typical therapeutic dose for treatment of parasitic infections in humans,[12] of which 6 were above 2 mg/kg, a dose below which no CNS toxicity has been shown.[13] Six of the exposed individuals stated that they took a dose higher than intended due to calculation errors, of which 4 were of veterinary products and 2 were unrecorded formulations.

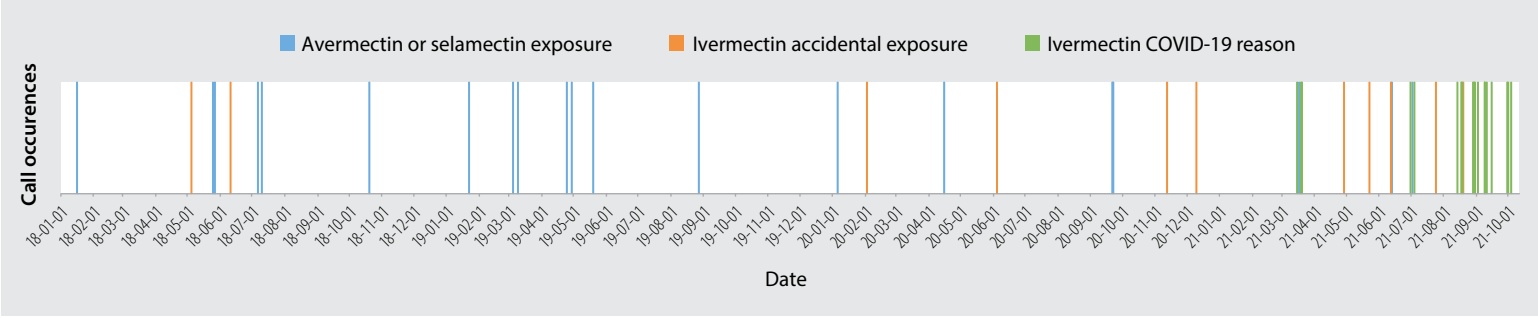


FIGURE 1. Occurrence of calls to BC DPIC about exposures to ivermectin or an ivermectin-like substance, 1 January 2018 to 11 October 2021.

TABLE 1. Calls to BC DPIC from 1 January 2018 to 11 October 2021 related to an exposure to ivermectin or an ivermectin-like substance.

	Accidental	Intentional
January 2018–December 2020		
Avermectin or selamectin	16	1
Ivermectin unrelated to COVID-19	6	—
Ivermectin related to COVID-19	—	—
January 2021–11 October 2021		
Avermectin or selamectin	3	—
Ivermectin unrelated to COVID-19	4	1*
Ivermectin related to COVID-19	—	19
COVID-19 prevention	—	5
COVID-19 treatment	—	12
Reason for use not specified	—	2

*Reason for use of ivermectin unclear and without reference to COVID-19.

Three individuals were asymptomatic at the time of call (reasons for these calls were concerns from a friend or relation and a query after a regretted ingestion). Eleven had symptoms attributable to their ivermectin exposure: 9 were coded as having minor effects (2 dizziness, 1 headache, 1 tingling lips, and 1 nonspecific sensations), 1 moderate effect (visual disturbances), and 1 unclear. Four were symptomatic but it was considered by the BC DPIC poison specialist that the symptoms were not attributable to the ivermectin exposure. These four included one individual who had severe central nervous system and respiratory depression resulting in death, but whose timing of ivermectin ingestion was not known and the potential effect of ivermectin could not be distinguished from that of their known COVID-19 illness; one person whose dose was too small to have any expected toxicity and whose respiratory symptoms were consistent with their known COVID-19 illness; one whose symptoms of diarrhea and headache started prior to ivermectin ingestion, along with respiratory symptoms consistent with their known COVID-19 illness; and one whose fever, anorexia, and fatigue started prior to their ivermectin ingestion. Symptoms were not recorded for one call. For four calls, BC DPIC referred the individual to hospital, 8 were already en route to or in hospital, 6 were given management advice or reassurance but were not recommended to present to hospital, and 1 was lost to follow up.

Table 2 compares some of the above characteristics between calls about ivermectin related and unrelated to COVID-19. There were notable differences: (1) there were four accidental pediatric exposures in the unrelated group and none in the related group, and (2) the exposures unrelated to COVID-19 included dermal, ocular (accidental splashes to the eyes), and parenteral (a needlestick injury) routes, whereas all COVID-19 related exposures were by ingestion.

Conclusions

Clearly, use of ivermectin to prevent or treat COVID-19 is occurring in BC, and both human and veterinary products are being used. These findings are consistent with reviews from the United States, where the American Association of Poison Control Centers compiled more than triple the number of ivermectin calls in 2021 compared to 2019 and 2020, and recorded serious adverse events including deaths attributed to ivermectin used to prevent or treat COVID-19.[14] This review of BC poison control call records revealed no severe effects clearly attributable to ivermectin, with asymptomatic exposures and minor effects predominating, and one severe outcome that could not be distinguished from the individual's known COVID-19 disease. In contrast, a recent review of calls to the Oregon Poison Center regarding ivermectin included a number of individuals who had more severe effects, with some requiring care in an intensive care unit, although it is less clear if the dose and ivermectin formulation (i.e., human or veterinary) taken by these individuals was known.[15]

Notably, 11 of the 12 exposures to ivermectin related to COVID-19 where formulation was known were exposures to a veterinary product, of which four involved an error in dosing. Veterinary ivermectin is most commonly used for farm animals. Total agricultural land area ranked from most to least by health authority is NHA, IHA, and FHA.[16] This ranking is the same for the portion of individuals by health authority not vaccinated against COVID-19 as of 11 October 2021.[17] This is also the order from highest to lowest for rate of cases of COVID-19 over the 7-day period between 5 and 11 October 2021.[17] Similarly, the rate by population of calls to BC DPIC for ivermectin referencing COVID-19 was highest from IHA, followed by NHA, FHA, VIHA, and VCH. These patterns suggest an association between access to and familiarity with ivermectin, and attitudes and beliefs about COVID-19. As for caller type, the four calls from a friend or relation emphasize one of the social science lessons of the pandemic: the importance of health literacy not just in individuals but in their social networks.[18]

Calls to BC DPIC regarding exposures to ivermectin and related compounds are not a new occurrence, but the most noticeable changes since the beginning of the COVID-19 pandemic are the quadrupling of calls per month that occurred in 2021, the increased frequency of intentional exposures in general and to veterinary formulations, and the increased frequency of calls from health care providers who, prior to the pandemic, would not have encountered such frequent misuse of ivermectin and thus presentations of toxicity from either human or veterinary formulations. Of note, Google searches for "ivermectin" spiked when the pandemic reached BC in spring 2020 **[Figure 2]**,[19] but no calls to BC DPIC about exposure to ivermectin were made until spring 2021, around

TABLE 2. Calls to BC DPIC about ivermectin related and unrelated to COVID-19.

	Ivermectin calls related to COVID-19	Ivermectin calls unrelated to COVID-19
Sex		
F	6	4
M	13	7
Age		
≤ 18	—	4
Age unknown	—	4
Mean	53.2	19.9
Range	19–97	3–63
Caller type		
Self	7	3
Friend or relation	4	6
Health care provider	8	2
Health authority of exposed individual		
IHA	8	5
NHA	3	2
FHA	5	2
VIHA	2	1
VCH	1	—
Not recorded	—	1
Intended use		
Veterinary	11	11
Human	1	—
Not recorded	7	—
Dose		
Dose recorded	13	2
Mean (mg/kg)	2.18	3.6
Range (mg/kg)	0.147–11.905	0.3–6.9
Route of exposure		
Oral	19	6
Dermal	—	2
Ocular	—	2
Parenteral	—	1
Clinical severity[11]		
Asymptomatic	3	6
Symptomatic	11	5
Minor	10	5
Moderate	1	—
Major	—	—
Symptoms unrelated to exposure	4*	—
Unknown	1	—

*This includes the one individual who had severe central nervous system and respiratory depression resulting in death, but whose timing of ivermectin ingestion was not known and the potential effect of ivermectin could not be distinguished from that of their known COVID-19 illness.

the time of a relative rise in COVID-19 cases in the province. Calls were received most frequently in August 2021, paralleling another rise in cases, and also when Google searches for "ivermectin" were at their highest. Just as Google searches can act as surrogate markers for public awareness, calls received by poison control centres have been used as a source of information to identify and monitor emerging public health issues, including trends in adverse drug reactions[20,21] and in injuries and adverse effects of consumer products.[22]

Limitations

While all poison centre calls by and about BC residents were captured, individuals who took ivermectin without consequence, who had minimal symptoms, or whose symptoms were so severe that the poison centre was not consulted prior to or in association with a hospital visit would not have been recorded. The information retrieved from poison centre records may have had gaps or inaccuracies based on what the caller told BC DPIC, or what the BC DPIC poison specialist recorded. While poison centre calls can and did signal that ivermectin is being used, they cannot approximate its total use in the province. Determining total use in British Columbia, which was beyond the scope of this study, would require review of PharmaNet data to determine prescription rates for human ivermectin, as well as a review of retail veterinary ivermectin sales, for which there is no readily accessible centralized database.

Tips for health care providers

BC DPIC is available 24/7, 365 days a year to provide consultation on management or to answer questions on any type of suspected or confirmed poisonings by medication, chemicals, and other substances. The service is available to the BC public and health care providers, and is staffed by pharmacists, nurses, toxicologists, and environmental health specialist physicians. When required, callers and patients can be followed by BC DPIC for the duration of symptoms, whether the individual is at home, in the emergency department, or an inpatient. BC DPIC can be reached at 604 682-5050 or toll free at 1 800 567-8911. For more information, go to www.dpic.org.

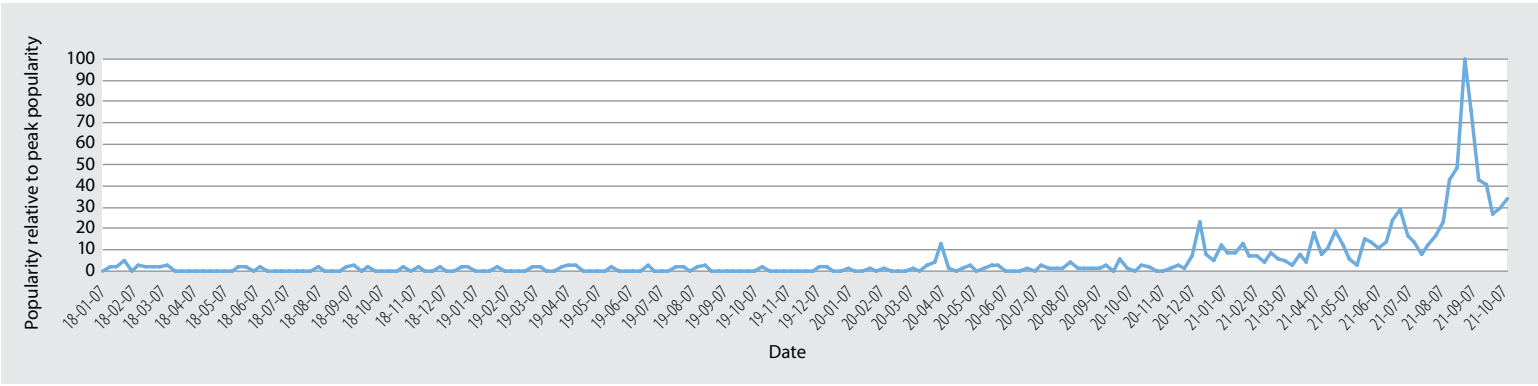


FIGURE 2. Google searches for "ivermectin" in BC 1 January 2018 to 11 October 2021, relative to the highest number of searches in the given time frame, where a value of 100 is the peak popularity for the term and a value of 50 means that the term is half as popular. Data source: Google Trends (www.google.com/trends).

How should physicians assess a patient who has taken ivermectin?

Patients taking ivermectin intended for humans typically will not present with symptoms, unless an excessive dose was ingested. If you are concerned about the potential for toxicity, you can call BC DPIC for guidance. Ask the patient how much they have taken, if the formulation is a human or a veterinary product, and when it was taken. Mild and moderate toxicity can present as abdominal pain, nausea, vomiting, diarrhea, headache, visual disturbances including hallucinations, dizziness, tachycardia, and hypotension; severe toxicity can result in metabolic acidosis, respiratory failure, ataxia, seizures, CNS depression, and death.

The therapeutic dose for treatment of parasitic infections in humans is typically in the range of 0.15–0.2 mg/kg orally for adults and children ≥ 15 kg, with 2 mg/kg being a dose documented in a human safety study to result in no CNS toxicity. Lower doses are less likely to result in toxicity, although it is still possible based on patient factors. Ivermectin achieves peak plasma concentrations 4 hours after oral ingestion, so if medical observation is required, a typical period of observation of 4 to 8 hours in an asymptomatic or mildly symptomatic patient may be reasonable. As there is no antidote for ivermectin, management is typically supportive. If the patient has taken a veterinary product, calculations for dose would be based on the concentration of active ingredient, if known, but since veterinary products often contain drug-delivery vehicles and other filler ingredients that may not have been studied in humans or approved for human use, symptoms of toxicity may not appear as expected and the patient may require closer observation.

What should physicians do if patients ask about ivermectin?

Inform the patient, at this time, that Health Canada has not authorized its use for COVID-19 prevention or treatment because there is insufficient evidence to support this use. Patients may have heard or read about a number of clinical trials for ivermectin and COVID-19, but explain that the large trials and the studies that summarize findings from these trials have not provided strong enough evidence to show that it is effective. You can refer patients to resources and health advisories from Health Canada, the US CDC, and the WHO.

You can also advise patients that veterinary formulations have not been tested in humans, that they often contain filler ingredients with unknown effects on humans, and that taking veterinary products may deliver excessive doses leading to harm. You can inform them about the potential for ivermectin toxicity as described above, and share that there are instances of serious adverse events from ivermectin, including deaths, documented in the US.

If the patient still requests a prescription, inform them that the College of Physicians and Surgeons of BC, the College of Pharmacists of BC, and the BC College of Nurses and Midwives do not approve of the use of ivermectin for either treatment or prevention of COVID-19 and providers must not prescribe it for this purpose. ■

Competing interests

None declared.

Acknowledgments

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References continued on page 37

Obituaries

We welcome original tributes of less than 500 words; we may edit them for clarity and length. Obituaries may be emailed to journal@doctorsofbc.ca. Include birth and death dates, full name and name deceased was best known by, key hospital and professional affiliations, relevant biographical data, and a high-resolution head-and-shoulders photo.

Dr Michael McCann
1958–2021

Dr Michael McCann was born in New Westminster, the second of six children, and grew up in Surrey, where his dad was a dentist in Whalley. Mike met Cynthia on the surgical ward at VGH, where she was a nurse, and they were married in 1986. Mike was the consummate husband and proud father of three sons, Ryan, Kevin, and Matthew.

Mike completed his medical degree at UBC in 1984, followed by a 1-year rotating internship at Dalhousie and a return to BC in 1985. At first he did locums in various parts of BC, centred in the Lower Mainland, and then set up as a solo family physician in Langley in 1987, where he served his patients and his profession until he was diagnosed with metastatic colon cancer in January 2019.

Mike got involved in politics from an early age, serving as president of the UBC Science Undergraduate Society as well as class president in his first year of medical school. He also served on the UBC Senate for 3 years as a representative of the student body. When asked why he became interested in politics at UBC, Mike's answer was, "girls!"

Mike served on the Doctors of BC Board for 10 years as the District 7 representative. He was chair of the Insurance Committee from 1999 until the summer of 2021, as well as co-chair of the Joint Benefits Committee from its inception until the summer of 2021. He also served on the Finance Committee. Many of the benefits that physicians have through Doctors of BC are due in part to the foresight, wisdom, and tireless efforts of Dr Mike McCann.

Mike took great pride in serving the members. He was instrumental in improving our situation, both individually and collectively. We have Mike to thank for a large part of the offerings available in the "Your Benefits" section of the Doctors of BC website.

He worked quietly behind the scenes for many years. The physicians and Doctors of BC staff with whom he worked all describe him the same way—calm, fair, incredibly knowledgeable, dedicated, considerate, kind, trusted, thoughtful, professional, and respected by all. He had no ego. At Doctors of BC he would listen to others' ideas, and after consideration, make suggestions gently, on which everyone else could agree.

While on the medical staff of Langley Memorial Hospital, Mike served as chair of the Credentials Committee, vice chair of the Medical Advisory Committee for several years, and as a member of the Doctors' Needs Committee. He was one of the founding members of the Regional Medical Society. He was selected by the medical staff of South Fraser Health Region to serve, by appointment of then Minister of Health, Joy MacPhail, on the South Fraser Regional Health Board as its first physician member.

In addition to his office practice, Mike also delivered babies, assisted in surgery, and did shifts in the emergency department. He enjoyed the intellectual stimulation and variety of his general practice, never knowing what may come through his office doors on any given day.

Mike described himself as a GP dinosaur. Others describe him as one of the Good Guys.

—David Chapman, MBChB
Surrey

Dr Robert Douglas Burgess
1950–2021

My dear friend Rob passed away at home in his bedroom overlooking his gorgeous lake and mountain vista. He had been lovingly cared for by his wife, Jan; daughter, Micky; and son, Johnny. His illness was sudden and cruelly aggressive. Thankfully, he stuck to his life's motto—if you are going to go downhill, make it fast!

Rob and I met in 1968 in first-year premed at the University of Toronto (my God, we were only 18) and became lifelong friends. In 1972 we drove to Banff for summer employment. While there we both realized that the mountains were going to dominate our future. Amazingly, we navigated the intern matching service and were both accepted into the rotating intern program at St. Paul's Hospital. We also discovered Whistler.

Our first job after St. Paul's took us to the Vernon Jubilee Hospital Emergency Department. Two summers of Vernon, multiple locums, and extended travel led Rob to inquire about a job as physician with the Whistler

Mountain ski patrol. My advice was, take it! He quickly learned that mountain medicine was much different than that in the confines of a hospital, and he thrived. He spent time with the orthopod Dr Pat McConkey and honed his physical diagnostic skills in sports medicine. Rob often complained that he felt bad having his patients pay for an MRI of their knee when he had already given them their diagnosis.

In the early 1980s, Rob, along with Dr Christine Rodgers, offered full family practice services out of an ATCO trailer. The medicine was never boring and was often carried out in challenging outdoor settings. Rob joined an energetic community and worked to expand Whistler's health care facilities to the high standard that is provided today.

Rob gave a lot to the mountain community and the mountain community gave a lot to Rob. He relished the opportunities offered to him. Whether it was as physician to the National Alpine Ski Team or physician guide to various heli-ski companies, all parties benefited.

A few years ago, Rob gave up his family practice but was unable to give up on his community. He continued to be busier than ever with locums and his aviation physicals. He regretted having to give up a COVID vaccine clinic following his diagnosis. His friends and community have been widely supportive following his passing.

To a man well loved and a life well lived. We will all miss you, Rob.

—William Akeroyd, MD
Vancouver

Continued from page 35

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Physician wellness: Doctors taking care of doctors

Participating in a journal club can be a great way of staying connected with colleagues. However, finding high-quality articles to discuss can be time-consuming. That's where the College Library can help. Literature searches can be done on a one-time or ongoing basis, as needed. For topics of ongoing interest, there are two options: for specific topics (e.g., management of a particular disorder), a monthly automated search may be useful; for general topics (e.g., family practice in Canada or hospital medicine), the Library offers a table of contents service—an email is sent whenever a new issue of a selected relevant journal is available. Either service may be canceled at any time.

One-time literature searches are always available to College registrants. For best results, mention that it is for a journal club. Literature searches for other purposes are also welcome.

Registrants may use the Make a Request form on the Library's website (www.cpsbc.ca/registrants/library/make-request) or email medlib@cpsbc.ca with the request. Along with the topic, be sure to indicate the type of search you prefer: a one-time literature search, a monthly automated literature search, or the table of contents service. If you're not sure which option would be best, indicate that and Library staff may be able to make suggestions after seeing the topic. ■

—Niki Baumann
Librarian

This article is the opinion of the Library of the College of Physicians and Surgeons of BC and has not been peer reviewed by the BCMJ *Editorial Board.*

New mobile tool determines if a patient is low risk for true allergy to penicillin

Is your patient *truly* allergic to penicillin? Or is it a misdiagnosed allergy that prevents you, their doctor, from providing them with first-tier care?

Created and developed in BC, the new Penicillin Allergy De-labeling Tool will help doctors determine the legitimacy of a patient's penicillin-allergy claim. This free point-of-care assessment tool is quick, efficient, and mobile, accessible on a cellphone or computer.

As an allergist working at BC Children's Hospital, I have treated many young patients who thought they had this beta-lactam allergy, which is often incorrectly diagnosed in childhood. One study that my team conducted revealed that 93% of over 100 participating outpatients at BC Children's who believed they were allergic to penicillin did not have a true allergy.

When a patient claims to have an allergy to penicillin, busy doctors don't always have the time or resources to confirm if they do. So we err on the side of safety and look for antibiotic alternatives; however, they are often less effective, associated with increased risk of adverse effects, and more costly. Throughout that patient's life, the label gets perpetuated by the patient and multiple types of health care providers. On the basis of an erroneous allergy label, the patient may be denied first-line medications and optimal care. You'll find further details on this topic in an article I co-wrote for the March 2021 issue of the *BCMJ*, "Empowering community physicians to remove erroneous labels of childhood allergy."[1]

This article was submitted by the Specialist Services Committee and has not been peer reviewed by the BCMJ *Editorial Board.*

For me, de-labeling penicillin allergies has become a career focus. I've collaborated with several multidisciplinary teams on Drop the Label, a multifaceted project to de-label penicillin allergies in this province. While doing so, it occurred to me that disproving the existence of an erroneous penicillin allergy should be an easier process. So I assembled a group of doctors and pharmacists and Firstline (an antimicrobial stewardship mobile application) to create this tool, which we launched in June 2021. After multiple rounds of feedback and collegial fine-tuning to adjust the algorithm, the first-ever Penicillin Allergy De-labeling Tool is available on Firstline (https://app.firstline.org/en/clients/39-bc-womens-hospital/steps/40356). The Firstline mobile platform is used by BC Women's and Children's Hospital and many other institutions worldwide.

The tool leads the health care provider to a real-time questionnaire. Physicians can take a history and enter the patient's responses on the spot and receive both a risk category and recommendations for management. If, for example, a patient is at low risk for penicillin allergy, the tool provides instructions for an in-office oral challenge. If the patient is at high risk, the tool will recommend referring them to an allergist for an assessment based on urgency and provide links to cross-reactivity tables for the safe selection of alternative antibiotics.

The Penicillin Allergy De-labeling Tool is being launched across BC first, with a cross-Canada debut expected later.

Our Drop the Label project (www.dropthelabel.ca) has many components. In 2019 and 2020, I was on a multidisciplinary team that shared resources with the BC Centre for Disease Control and BC Women's Hospital to study falsely identified penicillin allergies, which, in addition to children, particularly affect people with sexually transmitted diseases and women who've just given birth. Our teams created penicillin allergy de-labeling systems that include a targeted assessment based on patient history, skin testing, and oral drug challenges. In the summer of 2021, I worked with a second-year UBC medical student (a summer student from the BC Patient Safety and Quality Council internship program) to develop patient facing resources designed to raise awareness about erroneous penicillin allergy labeling and encourage patients to seek assessment. We are expanding our reach to include community physicians, pharmacists, and nurse practitioners across the province.

Penicillin allergy de-labeling is an established public health challenge whose solution requires a concerted effort by health care providers in a variety of settings. Removing erroneous penicillin allergy labels will be a boon to patients and the doctors treating them, and we encourage physicians to use this powerful new assessment tool. ■

—Tiffany Wong, MD, FRCPC
Medical Lead, Allergy Clinic
Clinical Assistant Professor, UBC, Department of Pediatrics
Division of Allergy and Immunology, BC Children's Hospital
Hudson Scholar 2020/22

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Culturally sensitive care and seniors

Canada is a nation of immigrants. From those who crossed over from Asia thousands of years ago, to the more recent immigrants from Europe and elsewhere, Canada has seen continuous waves of people from different lands and cultures. As of 2011, Canada had a foreign-born population of about 6 775 800 people, representing 20.6% of the population, the highest percentage among G8 countries. More than 200 ethnic origins were reported, with 13 different groups surpassing the 1 million mark. Seven out of 10 people lived in Toronto, Montreal, or Vancouver.[1] In BC, 29.6% had a mother tongue that was not English or French.[1]

Although the challenges for people of different ethnic origins apply to all ages, they can be especially difficult for the elderly and those who are at the end of life, who are particularly vulnerable; often they are dependent on care from others, outside of family members. Because of this, culturally sensitive care is vital for this population.

Culturally sensitive care involves taking into account a patient's diverse values and beliefs, which may not be those of our own culture. Issues to be addressed include language barriers, personal biases and assumptions, and lack of knowledge. Fortunately, culturally sensitive care can be incorporated into a medical practice with a few minor modifications.

First, patients and caregivers who have conversational English may not be fluent enough to understand the complexities of medical information presented in English. Consider using a formal translator rather than the patient's caregiver for important discussions. The BC Provincial Health Services Authority provides translation services for acute care facilities and private doctors' offices.[2] Expanding access to translation services for patients in the community and in facilities would support increased access to this type of culturally sensitive care.

Fortunately, culturally sensitive care can be incorporated into a medical practice with a few minor modifications.

Second, it is important for clinicians to recognize and understand their own beliefs and culture and how they may influence interactions and assumptions about patients. How individual patients view illness, medical care, and death and dying may be very different.[3,4] Conflicting belief systems can lead to misunderstandings and a lack of trust, or cause the patient or physician to be labeled "difficult" by the other. Conversely, assuming that a patient of a certain ethnic background would necessarily hold a certain belief is stereotyping. Be curious, ask questions, and listen. We are not expected to hold in our head the myriad belief systems that may exist, but we are obliged to find out the values of the patient in front of us—this is patient-centred practice; it can improve patient trust, avoid misunderstandings, and improve quality of care.

Finally, consider how culturally sensitive care could be incorporated into facilities. Facilities designed for specific cultural groups would be ideal but not practical. Allowing the resident's family members and informal caregivers to participate in care planning and liberalizing visitation can help. Doctors of BC has passed a motion that calls for "family caregivers [to] be formally recognized as partners in the care of residents in long-term care and assisted living." This resolution aligns with recent recommendations from the Office of the Seniors Advocate and recognizes the importance of including caregivers in decisions about individual care plans and their involvement in developing policies that impact residents.

We need to respond to the diversity of cultures and languages in our community. One size fits all is not appropriate any longer, and likely never was. ■

—A. Maria Chung, MD
Chair, Geriatrics and Palliative Care Subcommittee

This article is the opinion of the Geriatrics and Palliative Care Subcommittee, 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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Gathering your feedback: Are you interested in joining our WorkSafeBC Medical Advisor Seminar Series?

The November 2021 article from WorkSafeBC (*BCMJ* 2021:63;392) included information about our just-in-time assistance and accredited outreach to physicians and their offices. We also have internal committees planning continuing professional development; WorkSafeBC Medical Services employs or contracts more than 90 family physicians and specialists, as well as a consultant dentist and chiropractor, known internally as medical advisors and medical specialists. As one element of our internal continuing professional development, we organize a monthly noontime seminar on a variety of topics related to workplace injury and disease. The seminars are accredited for Mainpro+ and MOC Section 1 credits. Our seminar series presenters include community and WorkSafeBC practitioners/consultants. Topics from the past 2 years are provided in the **Box**.

We are currently planning our upcoming series and we would like your feedback:

- Would you be interested in virtually attending a noontime seminar?
- If so, what topics related to workplace injury, disease, and disability prevention would address your learning needs?
- To help with our internal needs assessment, we would appreciate your perspective on areas of education you recommend for medical advisors/specialists.

You may use any of the following methods to provide your thoughts about the seminar series, your level of interest, and any topics you would like to see:

- Fill in our survey at https://bit.ly/3mkK4JR.
- Leave us a voicemail on our Medical Advisor Information Line at 1 855 476-3059. This line directs physicians and nurse practitioners to the RACE Line for immediate callback about a patient with a WorkSafeBC claim; listen past that direction to leave a voicemail.
- Send an email to MedicalServicesEvents@worksafebc.com. Please do not email any personal patient information.

Thank you for your feedback and your continued care of injured workers in BC. ■

—Celina Dunn, MD, CCFP, CIME

—Olivia Sampson, MD, CCFP, MPH, RCPSC

On behalf of the WorkSafeBC Medical Advisor Seminar Series Scientific Planning Committee (Harry Karlinsky, MD, FRCPC, Harvey Koochin, MD, Janice Mason, MD, Brian Ng, MD, MPH, CCFP, FCFP, Peter Zeindler, MD, CCFP, FCFP)

Seminar topics from the past 2 years

- **Chronic pain:**
  - Interventional treatments for spinal pain—a review
- **Interdisciplinary care:**
  - Chiropractic care and the injured worker
  - Nurse practitioners in BC
- **Medical legal issues:**
  - Duty to report
- **Mental health:**
  - Repetitive transcranial magnetic stimulation (rTMS)—what it is and its current role in treatment of mental health conditions
- **Musculoskeletal conditions:**
  - Calcific tendinopathy and rotator cuff tears
  - Work-related back injuries and intervertebral disc degeneration/osteoarthrosis
  - Not just an ankle sprain: A review of uncommon foot and ankle injuries commonly seen in injured workers
  - Ulnocarpal impaction syndrome
- **Occupational disease:**
  - Hand arm vibration syndrome (HAVS)
  - Communicable diseases in the workplace
- **Ophthalmology:**
  - Retinal detachment
  - Common workplace ocular injuries—important management considerations
- **Physician health:**
  - Physician Health Program of BC
- **Rehabilitation:**
  - Review of WorkSafeBC rehabilitation programs
  - Concussion rehabilitation
  - Concurrent care rehabilitation: Mental health and substance use disorder
  - Amputation rehabilitation
- **Telemedicine:**
  - Virtual examination (and when to see in person)—a series:
    - Upper extremity
    - Lower extremity
    - Spine and neurology
- **Work disability prevention:**
  - Perceived justice

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

Guidelines for authors (short form)

The *British Columbia Medical Journal* welcomes letters, articles, and essays. Manuscripts should not have been submitted to any other publication. Manuscripts are subject to copyediting and editorial revisions, but authors remain responsible for statements in the work, including editorial changes; for accuracy of references; and for obtaining permissions. Send submissions to: The Editor, *BC Medical Journal*, journal@doctorsofbc.ca.

For all submissions

- Avoid unnecessary formatting.
- Double-space all parts of all submissions.
- Include your name, relevant degrees, email address, and phone number.
- Number all pages consecutively.

Clinical articles/case reports

Manuscripts of scientific/clinical articles and case reports should be 2000 to 4000 words in length, including tables and references. Email to journal@doctorsofbc.ca. The first page of the manuscript should carry the following:

- Title, and subtitle, if any.
- Preferred given name or initials and last name for each author, with relevant academic degrees.
- All authors' professional/institutional affiliations, sufficient to provide the basis for an author note such as: "Dr Sang is an associate professor in the Department of Obstetrics and Gynecology at the University of British Columbia and a staff gynecologist at Vancouver Hospital."
- A structured or unstructured abstract of no more than 150 words. If structured, the preferred headings are "Background," "Methods," "Results," and "Conclusions."
- Three key words or short phrases to assist in indexing.
- Name, address, telephone number, and email address of corresponding author.

Authorship, copyright, and disclosure form

When submitting a clinical/scientific/review manuscript, all authors must complete the *BCMJ*'s three-part "Authorship, copyright, and disclosure" form, available at www.bcmj.org/authorship-copyright-disclosure-form.

1. Authorship. All authors must certify that they qualify as an author of the manuscript.

Order of authorship is decided by the co-authors.

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3. Disclosure. All authors must disclose if they have accepted any of the benefits listed on the form related to the content of the manuscript. Disclosure represents a commitment to transparency, helps reviewers determine whether the manuscript will be accepted for publication, and may be used for a note to accompany the text.

Note: Consent. If the manuscript is a case report or if an individual patient is described, written consent from the patient (or their legal guardian or substitute decision maker) must also be obtained on the "Patient consent" form, available at www.bcmj.org/submit-article. Manuscripts will not be reviewed without these documents.

References to published material

Try to keep references to fewer than 30. Authors are responsible for reference accuracy. References must be numbered consecutively in the order in which they appear in the text. Avoid using auto-numbering as this can cause problems during production.

Include all relevant details regarding publication, including correct abbreviation of journal titles, as in Index Medicus; year, volume number, and inclusive page numbers; full names and locations of book publishers; inclusive page numbers of relevant source material; full web address of the document, not just the host page, and date the page was accessed. Examples:

1. Gilsanz V, Gibbons DT, Roe TF, et al. Vertebral bone density in children: Effect of puberty. Radiology 2017; 166:847-850.

(NB: List up to four authors or editors; for five and more, list first three and use "et al.")

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(NB: The access date is the date the author consulted the source.)

References to unpublished material

These may include articles that have been read at a meeting or symposium but have not been published, or material accepted for publication but not yet published (in press). Examples:

1. Maurice WL, Sheps SB, Schechter MT. Sexual activity with patients: A survey of BC physicians. Presented at the 52nd Annual Meeting of the Canadian Psychiatric Association, Winnipeg, MB, 5 October 2018.
2. Kim-Sing C, Kutynec C, Harris S, et al. Breast cancer and risk reduction: Diet, physical activity, and chemoprevention. CMAJ. In press.

Personal communications are not included in the reference list, but may be cited in the text, with the type of communication (oral or written), the communicant's full name, affiliation, and date (e.g., oral communication with H.E. Marmon, director, BC Centre for Disease Control, 12 November 2021).

Material submitted for publication but not accepted should not be included.

Permissions

It is the author's responsibility to obtain written permission from both author and publisher for material, including figures and tables, taken or adapted from other sources. Permissions should accompany the manuscript when submitted.

Tables and figures

Tables and figures should supplement the text, not duplicate it. Keep length and number of tables and figures to a minimum. Include a descriptive title and units of measure for each table and figure. Obtain permission and acknowledge the source fully if you use data or figures from another published or unpublished source.

Tables. Please adhere to the following guidelines:

- Submit tables electronically so that they may be formatted for style.
- Number tables consecutively in the order of their first citation in the text and supply a brief title for each.
- Place explanatory matter in footnotes, not in the heading.
- Explain all nonstandard abbreviations in footnotes.
- Ensure each table is cited in the text.

Figures (illustrations). Please adhere to the following guidelines:

- Send scans of 300 dpi or higher.
- Number figures consecutively in the order of their first citation in the text and supply a brief title for each.
- Place titles and explanations in legends, not on the illustrations themselves.
- Provide internal scale markers for photomicrographs.
- Ensure each figure is cited in the text.

Units

Report measurements of length, height, weight, and volume in metric units. Give temperatures in degrees Celsius and blood pressures in millimetres of mercury. Report hematologic and clinical chemistry measurements in the metric system according to the International System of Units (SI).

Abbreviations

Except for units of measure, we discourage abbreviations. However, if a small number are necessary, use standard abbreviations only, preceded by the full name at first mention, e.g., in vitro fertilization (IVF). Avoid abbreviations in the title and abstract.

Drug names

Use generic drug names. Use lowercase for generic names, uppercase for brand names, e.g., venlafaxine hydrochloride (Effexor).

Full guidelines

Please see www.bcmj.org/submit-article for the full Guidelines for Authors.

CME calendar

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. **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. **Planning your CME listing:** Advertising your CME event several months in advance can help improve attendance; we suggest that your ad be posted 2 to 4 months prior to the event. **Ordering:** 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.

PSYCHOLOGICAL PPE, PEER SUPPORT BEYOND COVID-19

Online (every 2nd and 4th Wednesday)

In response to physician feedback, the Physician Health Program's drop-in online peer-support sessions, established in April 2020, are permanently scheduled for every 2nd and 4th Wednesday at noon. The weekly sessions are co-facilitated by psychiatrist Dr Jennifer Russel, and manager of clinical services Roxanne Joyce, and are drop-in with no commitment required. The focus is peer support, not psychiatric care. All participants have the option to join anonymously. To learn more about the sessions and the program, visit www.physicianhealth.com/how-we-can-help/peer-support. Email peersupport@physicianhealth.com for the link to join by phone or video.

MINDFULNESS IN MEDICINE WORKSHOPS AND RETREATS

Various dates and locations

Mindfulness in Medicine workshops and retreats: Physician Heal Thyself. Join Dr Mark Sherman and your community of colleagues for a transformative workshop or retreat. The workshops focus on the theory and practice of mindfulness and meditation, reviewing clinical evidence/neuroscience, and introducing key foundational meditation practices. The meditation retreats are an opportunity to delve deeply into an immersive contemplative practice in order to recharge, heal, and reconnect. Each workshop is accredited for 16 Mainpro+ group learning credits and has a 30-person limit, so please register today! Contact us at hello@livingthismoment.ca, or check out www.livingthismoment.ca/events for more information on these retreats: Foundations of Theory and Practice Workshop for Physicians and Their Partners, which will be held 14–16 January 2022 and 22–25 April 2022 at Long Beach Lodge Resort in Tofino, and Mindfulness in Medicine meditation retreat, which will be held 5–10 January 2022 in Nanaimo and 29 May to 3 June 2022 on Cortes Island.

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INTERNAL MEDICINE IN PRIMARY CARE, THE PEARLS

Online (5 March 2022)

This conference will be recorded for review at a later date. For family physicians, internists, subspecialists, hospitalists and emergency room physicians, pharmacists, nurse practitioners, and nurses. We are very pleased to present our 19th annual Internal Medicine in Primary Care, The Pearls conference. We will be covering many clinically relevant topics that you face every day in your practice both in hospital and office. Accreditation: This group learning program has been certified by the College of Family Physicians of Canada and the British Columbia Chapter for up to 7.00 Mainpro+ credits. Registration: $175 on or before 12 February 2022; $200 after 12 February 2022. Student rate with valid student card: $100. Registration: https://cvent.me/o7LWrL.

Classifieds

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

PRACTICES AVAILABLE

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Family practice and walk-in available, $350 000+ gross per year, 4.5 days per week. Four exam rooms, fully equipped, private doctor's office, experienced MOA, turnkey. Free rent. Expenses only 10%, keep 90%. Free doctor's parking, 3000-patient roster. Complex care, $50 000 per year, optional extra $50 000 per year methadone practice. Email agoosterholt@shaw.ca.

BURNABY—FP AVAILABLE

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COQUITLAM—NEW TURNKEY SPACIOUS MEDICAL CENTRE FOR SALE

This 2200 sq. ft., fully furnished, eight exam room medical clinic is for sale. The recently renovated primary care clinic is ready for practice immediately. The clinic is turnkey and all equipment on site comes with the sale of the business. This includes $200 000 of furnishings and equipment. Email syuan@elicare.ca.

VICTORIA—FP WALK-IN

Fee-for-service practice near downtown Victoria for 30 years with new and long-term patients of varied demographics. Looking to transfer ownership for retirement but will continue regular shifts for smooth transition. Oscar EMR, two exam rooms, equipped for minor procedures. Contact Dr Michael Greenwood at 250 388-9934, jbcentre@telus.net.

EMPLOYMENT

ACROSS CANADA—PHYSICIANS FOR YOU—MATCHING DOCTORS WITH CLINICS

Are you a physician looking for work, or a medical facility requiring physicians? Our team works with Canadian independently licensed physicians, CFPC/RCPSC-eligible international medical graduates, and clinics across Canada. Check out our reviews and current job postings, and call Canada's trusted recruitment firm today! www.physiciansforyou.com.

CALGARY, AB—FAMILY PHYSICIAN NEEDED

We have an immediate, exciting opening for a family physician and specialist physician to join our brand new modern clinic. We have a dedicated and well-trained staff to help our physicians. We also take serious precautions during COVID-19 in the clinic. Our focus is on providing dedicated and exceptional health care to all our patients. We will provide support for those who are new graduates so they feel comfortable and safe while they build their practice. We guarantee our involvement and support to build the patient population or roster the physician needs in order for them to succeed. We are located in a very busy location. Income around 650K. Contact us at info@santimedclinic.com.

NANAIMO—GP

The Caledonian Clinic has availability for a general practitioner (locum or permanent position). We are a well-established, very busy clinic with 23 general practitioners, one first-year resident, one second-year resident, a podiatrist, a geriatrician/internist, and an orthopaedic surgeon. Our EMR

is Profile by Intrahealth. We are located in a modern, new clinic in the Nanaimo North Town Centre. Lab and pharmacy services are on site within the centre. Contact Lisa Wall at 250 716-5360 or email lisa.wall@caledonianclinic.ca. Visit our website at www.caledonianclinic.ca.

NORTH VAN—FP LOCUM
Flexible hours and vacation time with no call. In-office and/or telehealth options available with great MOA support staff and a new competitive split; 100% to doctors for optional hospital visits, nursing home visits, medical-legal letters, etc., or sessional work. For further information contact Kim at 604 987-0918 or kimgraffi@hotmail.com.

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: powellriver medicalclinic.ca.

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

SURREY (BEAR CREEK AND NEWTON)—FAMILY PRACTICE
We are looking for part-time/full-time physicians for walk-ins/family practice to work on flexible shifts between 9 a.m. and 6 p.m.; option to work 7 or 5 days per week. Clinic with eight exam rooms, two physio rooms, and pharmacy on site. Competitive split. For more information please contact Anand at wecaremedical clinic2021@gmail.com or 778 888-7588.

SURREY/DELTA/ABBOTSFORD—GPS/SPECIALISTS
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VANCOUVER—FP/GYNECOLOGIST/PEDIATRICIAN/SPECIALIST, AND RMT
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VANCOUVER/RICHMOND—FP/SPECIALIST
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VANCOUVER—TAX & ACCOUNTING SERVICES

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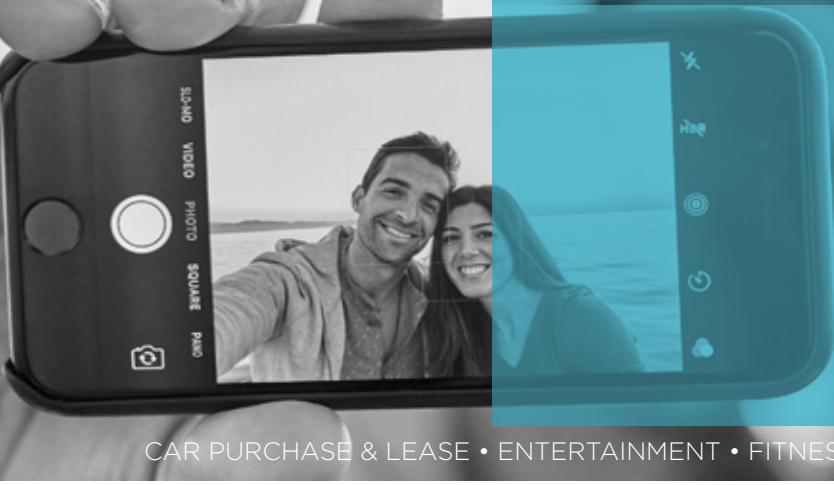

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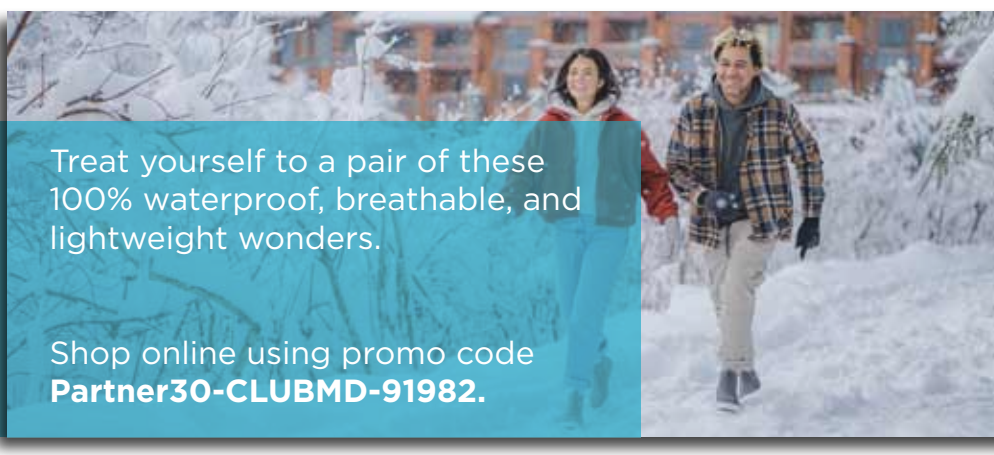

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