

# Gender-affirming care in BC, Part 2

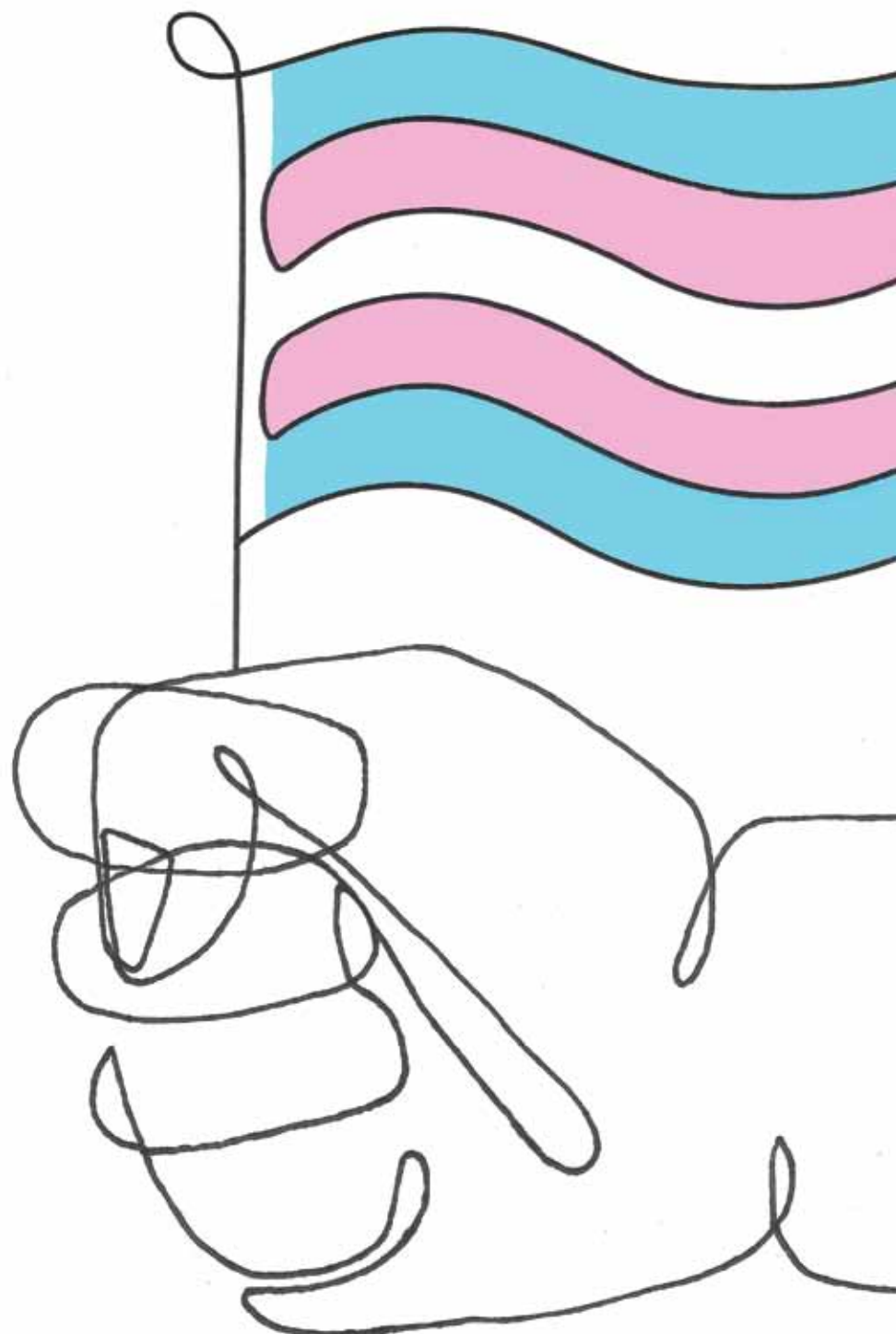
**THEME ISSUE**

**Gender-affirming  
care in BC, Part 2**

**Legal rights of  
transgender youth  
seeking medical care**

**Contraception for  
transgender, nonbinary,  
gender-diverse, and  
Two Spirit patients**

**Fertility options for  
transgender and  
gender-diverse people**



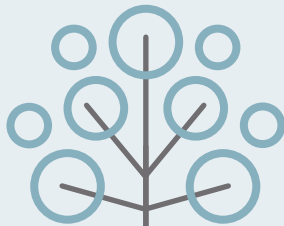
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With the pandemic, WorkSafeBC has shifted to focus not only on high-risk work activities, but also on reducing the risk of workplace COVID-19 transmission. Article on page 81.

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## ON THE COVER

The Transgender Pride flag represents the traditional colors for baby boys and girls, with white in the middle for those who are transitioning and those who feel they have a neutral gender or no gender. Part 2 of our theme issue on transgender care begins on page 64.

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

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*Rural family physician Dr Terry Meadows, shown here with the first guitar he built, is featured in The Good Doctor, beginning on page 86.*

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# The crisis that COVID-19 exposed, highlighted, and worsened (but did not cause)

“It’s interesting to note that in the ‘90s, not a single hospital was built, that 1600 full-time nursing positions were eliminated, and that no additional medical school space was developed.”

—Terry Lake, BC Minister of Health, May 2016

It is with great reluctance that I write about COVID-19. Like many, I am suffering from COVID fatigue. I’ve had my three vaccine doses and have also had multiple (negative) COVID tests, but I am sick of COVID, and no doubt have probably been sick with COVID.

Canadians are inundated daily with media stories of COVID leading to health worker burnout and shortages, hospital and ICU bed deficiencies, and cancellation of lifesaving procedures for non-COVID illnesses and injuries. Patients are paying with their lives.

Those responsible for running our health system should have seen this coming. Both prior and present government actions have greatly worsened this crisis. They have been negligent and need to be held accountable.

In my early years in Canada, there was no shortage of nurses, and our world ranking in doctors per capita varied between fourth and eighth.

Decades ago, three economists, Barer, Stoddart, and Evans (I refer to them as the “terrible triplets”), presented their explanations for rising health costs: too many doctors, treating too many patients, needing too many nurses, in too many hospital beds. The 1991 Seaton Royal Commission accepted their advice. Nursing schools were closed, medical school admissions were cut countrywide from 11% to 30%, and hospital beds were closed. Immigrant doctors were also targeted as government complied with Seaton’s directives to “State clearly that immigrant physicians do not have a right to practise

medicine in BC,” “Require visa trainees to agree not to stay in Canada when they complete their training,” and “Develop a program to limit the number of physicians practising in BC.”

As commissioner Robert Evans had previously written: “A central cause of the problem was the oversupply of physicians, which tended to generate greater utilization of services . . . there are too many doctors . . . and a supply-induced demand . . . a bed built was a (hospital) bed filled.”

This was as logical as reducing the number of security guards, police officers, and prison staff to solve a crime wave that was increasing our prisons’ budgets.

Other direct quotes from Seaton were, “A true health care system would concentrate on reducing our need for doctors and nurses,” and “I honestly don’t believe there is a shortage of nurses.” The Seaton report received national approval and recognition.

Government actions were successful.

We are now 51st in the world in doctors per population.<sup>1</sup>

The VGH nursing school was a major supplier of graduate nurses, but it was among many that were closed in the early 1990s.

The nursing shortage is not just in absolute numbers (we exceed the OECD average in nurses per population). Long before COVID hit, the CBC reported that 25% of Canadian

nurses wouldn’t recommend their hospital and 40% were plagued by burnout.<sup>2</sup>

In Saskatchewan alone (the birthplace of medicare in Canada), Roy Romanow, as premier, closed 52 hospitals. This apparently qualified him for his appointment as leader of the infamous 2002 federal government-sponsored

Royal Commission on the Future of Health Care in Canada. The OECD recently placed Canada 31st in hospital beds per population among developed countries.<sup>3</sup> Perhaps even worse is that for each hospital discharge Canada spends over \$4000 more

than the average of developed countries that provide universal care.<sup>4</sup> This speaks to our extreme inefficiency.

Governments now have the audacity to blame the COVID crisis for pressuring our health system. They use the excuse of a lack of doctors, nurses, and hospital beds, *which they created*. And they are not being held accountable.

The public is subjected to propaganda that many passively tolerate. I am not one of them, and I yearn for the old days when we (and the media) consistently forced governments to accept responsibility for their failings.

If there is one good lesson to learn from the COVID crisis, it is that we need to address our past mistakes. It will take years to achieve the resources we need. We need governments to

*Continued on page 54*

**The VGH nursing school was a major supplier of graduate nurses, but it was among many that were closed in the early 1990s.**

# Fireside chats with our presidents

It is a long-standing *BCMJ* tradition to publish an interview with the incoming president of Doctors of BC to allow members to learn a little about the backstory, history, and motivations of the individual who is going to lead us for the coming year.

A few years ago, I took over as the interviewer; the Board and journal staff felt that such important interviews should be done by the big boss, who should from then on be referred to as M'lord. It is also entirely possible that no one else wanted the job.

I remember preparing for my first interview by researching appropriate questions that would garner the most information and help reflect the true character of the interviewee. I distinctly recall the blank stares I received upon asking

about the average wing speed of a hummingbird and the cube root of 1 367 631. Following my initial flawed interview attempt, the journal staff rescued me by providing a list of more suitable queries, the answers to which are now the basis for what shows up in print.

**Each year I look forward to spending an hour or so chatting with the next anointed one.**

I have come to enjoy the process and look forward each year to spending an hour or so chatting with the next anointed one. The last two interviews have taken place remotely by video due to the pandemic but have been no less enjoyable (also, I didn't have to be wearing pants).

I have been consistently impressed by the outstanding quality of each president I have interviewed. Upon hearing about all they have accomplished, and in some cases what they have overcome, I often ask myself, What have I been doing for the last 30 years? Maybe I should watch a little less Netflix and try to change the world (but that seems like it would take a lot of energy; plus, season five is streaming soon).

Our presidents seem to have boundless energy and are truly interested in medical politics. They share a passion for trying to make a difference and improving the environment for the physicians of BC. They have diverse interests, and despite taking on numerous work challenges, seem to have an amazing capacity to be well rounded and have time for their friends, families, and hobbies. I'm not sure where Doctors of BC finds these quality individuals (perhaps they are grown in a lab), but I applaud the process that produces such outstanding candidates.

My most recent sit-down with Dr Ramneek Dosanjh confirmed that the process works and that the doctors of BC are in good hands for the year ahead. I was very impressed by the challenges she has overcome and all that she has accomplished, both personally and professionally.

I look forward to watching from the sidelines as I click from streaming service to streaming service. Before I know it, this year will be over, and I will have the honor of interviewing our next president. Any questions you would like me to ask? Favorite color? Which animal has the largest platysma muscle?

Let me know. ■

—David R. Richardson, MD

**Crisis** *Continued from page 52*

think long term, not in the 3- to 4-year political and budgetary cycles they currently embrace.

COVID has been a lesson for us all. Let's hope the next pandemic does not involve a more deadly virus. Existing policies and entrenched ideologies have rationed personnel and infrastructure in Canada. Health professionals need to become more involved in operations and decision making in our health system. We have the power if only we are prepared to use it. Let's act now. ■

—Brian Day, MB

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## Our impact can live on forever

The question, “How are you?” has been asked of us countless times over the years, and each time we likely respond with, “I’m good, how are you?” Not particularly meaningful banter, but I guess it’s a way to start the conversation. What if, instead, we were asked, “Why are you?” How would you answer? This question takes some contemplation.

“Why are you?” requires us to seek an answer from our inner consciousness. We are physicians. We spend our working lives taking care of other people’s health and well-being. But have we ever really thought about our purpose. . . our *raison d’être*? For a physician, is it more than to make sure the patients under our watch are taken care of? Or perhaps that is precisely it. But being aware of our purpose could ultimately shift the way we show up for ourselves, our patients, each other, and the world we live in. It could motivate us and allow us to see one another through a more accepting lens. It could inspire a momentous transformation that requires the “why” in all of us.

As we navigate the third year of this pandemic, the moral distress and the pressures we are experiencing, both personally and professionally, are unrivalled. The fragility of life has been amplified by ongoing uncertainty. Our purpose may have shifted. The last 2 years have not been easy, and we wonder about tomorrow. We have all been affected on a visceral level; many of us have experienced grief firsthand and some have absorbed grief vicariously from witnessing tragedy across the country and around the world.

Reflecting on what has transpired these past few years begs us to question what we have learned, and what is the best way to move forward.

Medicine is a world where compassion can enlighten the spirit, a bond can alleviate the deepest sorrows, pains, and fears, and where a moment of darkness can transform into an illumination of hope. Your decisions can ultimately grant life. The sacrifices and commitments you

all have made, along with your unwavering support for one another during a crisis, is commendable. It is pivotal moments such as these that can create everlasting impressions, ones so deeply ingrained within your being that they

leave imprints on your soul. But what happens when we confront our own mortality? What will our legacy be? Do we take our pain and turn it into purpose? Do we take the

uncertainty and lean into connection?

As we use introspection to ponder our mortality, our responsibility, and our relationship in the world, perhaps it could inspire a radical change driven by our “why.”

While our time in this world is finite, our impact can live on forever. Our patients look to us for help, we look out for each other, we are innovative, we strive to do the right thing.

Why are you? ■

—Ramneek Dosanjh, MD  
Doctors of BC President

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## Re: Unnecessary musculoskeletal MRIs

I read with interest the letter to the editor by Dr Kostas Panagiotopoulos in the November 2021 issue of the *BCMJ*. I would like to add another suggestion to save time, money, and resources. For 8 years I was director of St. Paul's F.A.S.T. Clinic (Foot and Ankle Screening and Triage). I also provide lower extremity virtual consultation for GPs in BC for their patients with orthopaedic problems through The RACE Line (Rapid Access for Consultative Expertise). In most cases, imaging has already been obtained before I am consulted. For foot and ankle problems, it is often essential and critical for these issues to be evaluated with weight-bearing radiographs. Unfortunately, most preliminary imaging is done without weight-bearing stress by default. This makes many common conditions such as Lisfranc's fracture dislocation and syndesmosis disruption accompanying ankle injuries very difficult to diagnose. The lack of appropriate imaging also necessitates additional imaging with its additional burden on resources and cost, not to mention the inconvenience to the patient to go back for more X-rays. I strongly recommend to GPs in BC that all foot and ankle radiographs be requested with weight-bearing views unless the severity of the trauma or pain precludes standing imaging.

—Jeffrey L. Nacht, MD

Vancouver

Clinical Professor of Orthopaedic Surgery, UBC Faculty of Medicine

**Comment from Dr Brian Day:** Dr Nacht makes a valid point that I wholeheartedly support. I would simply add that, when possible, weight-bearing views should also be performed in the assessment of hip and knee joint

pathology, especially when there is a possibility that a procedural intervention may be required. As Dr Nacht points out with the foot and ankle, acute trauma where a fracture may be present are exceptions.

## Re: Unnecessary musculoskeletal MRIs

Dr Panagiotopoulos raised the issue of unnecessary musculoskeletal MRIs in the November 2021 issue of the *BCMJ*. This problem of unnecessary imaging studies is not isolated to MRIs. I can corroborate his experience with receiving referrals that are frequently accompanied by unnecessary and clinically unhelpful MRIs and, indeed, other advanced imaging studies (nuclear medicine scans, ultrasounds, CTs, etc.). These studies can at times also be harmful by delaying referral and creating unnecessary patient anxiety through misleading interpretations.

Causative factors appear to include (1) misguided patient demand, (2) a lack of knowledge of indications for advanced imaging on the part of the ordering clinicians, (3) an absence of appropriateness screening by radiology, and (4) the frequent suggestion by radiology to perform advanced imaging that is clinically unhelpful and that primary care clinicians feel obliged to order.

With high demand and long waits, the response from governments and some health authorities was to increase the number of MRI scanners and their hours of use rather than to focus on appropriate use. This has led to a worsening of the problem. In the Northern Health Authority (NHA), between 2018 and 2019 this policy led to an 86.9% increase in the number of MRIs. Estimates put the number of MRIs done in BC annually at 1 per 21 people, and 1 per 18.5 nationally.

Within the central NHA catchment area, we have piloted implementation of strict criteria for musculoskeletal MRIs with some early success in reducing their numbers. This hopefully will be expanded across the whole region.

I have found it frustrating and ironic that ideas and efforts to curb the wasteful spending of health care money are not met with more acceptance from health administration and policy personnel. It seems the mantra is “more is better,” even when it is misguided and wasteful.

—Roger Purnell, MBChB, FRCSC  
Prince George

## Re: Opioid prescribing

Thanks to Drs Hawley and Gallagher for their helpful articles about opioid prescribing in the November 2021 issue of the *BCMJ*. They should be required study for primary care physicians, especially those reluctant to prescribe any form of opioid, including codeine compounds.

Their guest editorial acknowledges the reluctance, giving a background for such policy by the prescribing physician, including the concern of receiving a letter from the College. Despite their reassurance that this is a simple, necessary prescribing enquiry, the actuality may feel more like an inquisition. Thirty years ago, a College letter about my prescribing of liquid codeine as an antitussive resulted in a face-to-face interlocation, with the strong suggestion that such prescription was proscribed; use off-the-shelf preparations. The experience was very unpleasant; I became a nonprescriber. A different atmosphere is needed if primary care physicians are to continue to be opioid prescribers.

One of the articles also mentions that there have been calls to delist codeine, for a variety of reasons. However, for some migraine patients

*Continued on page 58*



# Our path toward a more **equitable, diverse, and inclusive** Doctors of BC

**BC doctors are a diverse group** comprised of different genders, racial backgrounds, religious affiliations, sexual orientations, ages, specialties, practice locations, and more. As physicians, our members also serve a patient population that is equally as diverse in their backgrounds and in their health care needs.

Meaningful work continues to take place on our path to ensuring Doctors of BC is **representative and inclusive of the diversity of our members**, and to supporting our members in contributing to efforts to **ensure BC's health care system is culturally safe, equitable, and inclusive** for providers and patients alike.

For more information visit our updated Equity, Diversity & Inclusion webpage which includes a newly developed vision statement, information on the recently created Diversity and Inclusion Advisory Working Group, details on our ongoing work advancing Indigenous cultural safety and humility, and much more.



For more information visit  
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**Letters** *Continued from page 56*

who do not respond to triptans and ergot, Tylenol #3 remains an effective rescue preparation when administered early in the attack. Even when migraine patients include classic aura in their range of symptoms, it is difficult enough to persuade a personal physician to prescribe a few Tylenol #3s in today's opioid climate, let alone have to escalate that request to a stronger alternative if codeine preparations were to be no longer available. Delisting will predictably result in migraine sufferers ending up under the aggravating bright lights of the ER department for hours, awaiting IV metoclopramide or ondansetron to abort their attacks (personal experience).

—Anthony Walter, MD  
Coldstream

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## Prepare for the unexpected with the contingency planning toolkit

When it comes to treating patients, doctors are always prepared to deal with the unexpected. Since many doctors are business owners as well, it's important to prepare for unexpected situations that may disrupt delivery of essential services. Potential threats may include fire, flood, facility damage, medical emergencies, sudden death, or prolonged absences.

Doctors of BC's new initiative, Business Pathways ([www.doctorsofbc.ca/managing-your-practice/business-pathways](http://www.doctorsofbc.ca/managing-your-practice/business-pathways)), has developed a contingency planning toolkit that provides clear information and outlines steps on how to:

- Confirm your insurance coverage.
- Assign key roles and responsibilities.
- Create and mobilize a communications plan.
- Complete a critical record inventory.
- Create a schedule for review.
- Solidify your personal contingency plans and estate.

Business Pathways will be developing more resources in the coming months to help doctors with the operational side of running their business.

If you have feedback and questions, please contact Julia Dreyer at [jdreyer@doctorsofbc.ca](mailto:jdreyer@doctorsofbc.ca).

## Value of accidental death and dismemberment insurance

Unlike conventional underwritten life insurance that requires the applicant to provide proof of good health to determine eligibility for coverage, there are no health or lifestyle questions necessary to obtain accidental death and dismemberment (AD&D) coverage.

AD&D provides coverage to the insured in case of dismemberment or accidental death due to an unexpected event. Coverage begins immediately upon the initial premium payment. It is designed to pay a lump sum tax-free benefit if you lose your life, limbs, use of limbs, eyes, speech, or hearing due to an accident.

We are fortunate to live in a beautiful province offering a wealth of outdoor activities close to our homes, and it's not uncommon to find underwritten life insurance issued with an exclusion for hazardous sports or activities. A few of the most common exclusions are backcountry skiing, heli-skiing, rock climbing, and mountaineering. However, a serious injury or death can also result from everyday activities such as an automobile accident, slip and fall, choking, or drowning.

Demand for AD&D coverage is increasing, especially among those who have financial dependants such as a spouse, children, or other family members who may not have any life or disability insurance. The AD&D plan is also ideal if the insured or family member would typically be uninsurable or receive a policy with exclusions. In a worst-case scenario, AD&D helps ensure you and your loved ones continue their standard of living should you suddenly become injured or pass away due to an accident.

The schedule of covered losses is comprehensive, and the benefit amount varies depending on the claim. Death benefits are paid at 100% of the benefit amount. In contrast, the loss of use of one hand would pay 67% of the benefit amount. The plan also includes 26 supplemental benefits such as repatriation, rehabilitation, and/or spousal retraining benefits, to name a few.

Doctors of BC offers members individual or family coverage, in \$100,000 increments

up to the maximum of \$2 million. Individual premiums start as low as \$1 per month for \$100 000 up to \$26 per month for \$2 million. Family premiums are slightly higher as your spouse and children are covered.

To learn how AD&D may complement your current coverage, please email [insurance@doctorsofbc.ca](mailto:insurance@doctorsofbc.ca) to schedule a meeting with one of our licensed, noncommissioned insurance advisors.

—Hali Stus  
**Insurance Advisor, Members' Products and Services, Doctors of BC**

### Community-based specialists: No-cost access to UpToDate

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

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Interested, eligible specialists can get their free subscription by emailing the Specialist Services Committee (SSC) at [sscbc@doctorsofbc.ca](mailto: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 the subscription is provided by the SSC, partnering with the General Practice Services Committee. In the past, free subscriptions for specialists with active admitting privileges have been available through health authorities, and for 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.

### Improved gender designation process for people in BC

As of 10 January 2022, Two Spirit, transgender, and gender-diverse people in British Columbia can change gender designations on their BC Services Card, BC Driver's Licence, BCID card, and BC birth certificate without confirmation from a physician or psychologist.

The Ministry of Health, Ministry of Citizens' Services, and the Insurance Corporation of BC have worked together to implement this change. Adults wanting to change their gender designations will be required to complete





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an Application for Change of Gender Designation, which includes a self-declaration. People under 19 will also need to provide proof of parent and/or guardian support.

## BCMJ survey prize winners

Thank you to everyone who completed the 2022 BCMJ survey in January. We had 1403 responses, and we are analyzing the results now. We will provide a summary of the findings in an upcoming issue of the journal. The two winners of the AirPods Pro are Drs Robert Bousquet and Ben Macinnis.

## Mini profiles for 2020

Your 2020 mini profile is now available, exclusively on the Doctors of BC website (login required). The profile provides you with informative statistics based on the MSP payments made to you for services provided in the 2020 calendar year, including any settlements or retroactive payments issued as of 31 March 2021.

This information allows you to monitor your billings in comparison to your peer group and provides valuable information that allows you to address any potential issues quickly and early. Understanding the flags on your profile, which could put you at a higher risk for an audit, can help you determine if you need to make changes to your billings and can alert you to a potential issue with your flagged measures that could be avoided.

Also in the data are claims paid by MSP, on behalf of ICBC and WorkSafeBC. The profiles are an accurate reflection of claims submissions and payments made in the claims record that identified you as the physician who provided the service, or in the case of referred services, identified you as the referring practitioner.

For more information, including FAQs and explanatory notes, go to [www.doctorsofbc.ca/news/gain-more-information-your-billings-checking-out-your-latest-mini-profile](http://www.doctorsofbc.ca/news/gain-more-information-your-billings-checking-out-your-latest-mini-profile).

If you have questions or need help understanding your profile, contact Tara Hamilton, senior advisor, Audit and Billing, at [thamilton@doctorsofbc.ca](mailto:thamilton@doctorsofbc.ca) or 604 638-6058 (toll-free: 1 800 665-2262).

—Tara Hamilton

Senior Advisor, Audit and Billing

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† Based on a 1-month global, randomized, double-blind, parallel-group, placebo- and active-controlled, phase 3 study (SUNRISE 1) in 743 participants with insomnia disorder (age ≥55 years). Participants received placebo (N=208) or DAYVIGO 5 mg (N=266) or 10 mg (N=269) at bedtime. Latency to persistent sleep baselines: placebo, 44 mins; DAYVIGO 5 mg, 45 mins; DAYVIGO 10 mg, 45 mins. Wake after sleep onset baselines: placebo, 112 mins; DAYVIGO 5 mg, 113 mins; DAYVIGO 10 mg, 115 mins.<sup>2</sup>

### **REFERENCES:**

1. DAYVIGO Product Monograph, Eisai Limited, November 3, 2020.
2. Rosenberg R, Murphy P, Zammit G, et al. Comparison of Lemborexant With Placebo and Zolpidem Tartrate Extended Release for the Treatment of Older Adults With Insomnia Disorder: A Phase 3 Randomized Clinical Trial. *JAMA Network Open*. 2019;2(12):e1918254.

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The secondary efficacy endpoint was the mean change from baseline to end of treatment in wake after sleep onset (WASO) measured by polysomnography. WASO was defined as the minutes of wake from the onset of sleep until wake time.

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- DAYVIGO was generally well tolerated.
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# Collaborating as partners and communities to prevent frailty

**G**ood news: people are healthier and living longer. However, if a person's quality of life in their final years is at a bare minimum, and they can no longer engage with others, or in activities that previously gave them joy, the news might not be so good. Sadly, this is the situation for over 1.5 million Canadians who live with frailty, a state of "increased vulnerability and functional impairment that is caused by an accumulation of multisystemic decline"<sup>1</sup> that poses significant risk to an individual's quality of life and their potential for a healthy and happy old age. As our elderly population increases, so does the number of people living with frailty. It is projected that well over 2 million Canadians may be living with frailty within the next 10 years.<sup>2</sup>

## Scope of impact and prevention

With increased understanding of the negative impact of frailty, not just on the individual but also on partners, caregivers, family, the health system, and society as a whole, there has been a growing commitment by the health sector, government, and community organizations to prioritize prevention. Identifying risk factors early and instituting measures to address them can prevent, reduce, or even reverse factors associated with frailty such as deteriorating mental health and cognition, social isolation, risk of falls, and decreased mobility.

Physicians can play an important role in prevention and are well situated to identify and screen for warning signs in their patients'

health, and to help raise awareness of risks with their patients.

Supporting early interventions to mitigate those risks, such as medication reviews, geriatric assessments, care planning, and encouraging exercise and social interaction, can significantly influence the trajectory of a person's life and the lives of those around them. Many physicians are already engaged in this work through their practice, Doctors of BC initiatives, and the Joint Collaborative Committees.

**It is projected that well over 2 million Canadians may be living with frailty within the next 10 years.**

## Raising awareness and facilitating partnerships

Raising awareness of how to prevent and manage frailty has been a focus of Dr Grace Park's work in her capacity as regional medical director of home health/specialized community health services for the complex medical/frail at Fraser Health. Dr Park has also been involved with and shared her knowledge, tools, and resources with physicians and project teams as part of the Shared Care Committee's Coordinating Complex Care for Older Adults initiative.<sup>3</sup>

## Building networks of health and social community supports

In a recorded webinar<sup>4</sup> hosted by Shared Care, Dr Park and geriatrician Dr Belinda Rodis describe how their CARES (Community Actions & Resources Empowering Seniors) model, currently available in Fraser Health, is facilitating health and community partnerships to support those most at risk. They also describe how resources and coaching are helping patients stay well and independent in their communities.

Funded by the Canadian government and the United Way, the CARES model includes an innovative social prescribing component, which allows medical practitioners to refer patients to

a network of community supports, including exercise and social programs to improve health and well-being. First pioneered in the UK, this practice is gaining a foothold in Canada and

## Resources

**BC Guidelines: Frailty in Older Adults—Early Identification and Management:** [www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/frailty#\\_ftn1](http://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/frailty#_ftn1)

**Canadian Frailty Network:** [www.cfn-nce.ca](http://www.cfn-nce.ca)

**Doctors of BC Policy Statement: Healthy Aging and Preventing Frailty:** [www.doctorsofbc.ca/sites/default/files/health\\_aging\\_and\\_preventing\\_frailty\\_policy\\_statement.pdf](http://www.doctorsofbc.ca/sites/default/files/health_aging_and_preventing_frailty_policy_statement.pdf)

**Doctors of BC: Stay Active, Stay Safe—Physical Activity Resources and Recommendations for Older Adults During COVID-19:** [www.doctorsofbc.ca/sites/default/files/stay\\_active\\_stay\\_safe\\_resources.pdf](http://www.doctorsofbc.ca/sites/default/files/stay_active_stay_safe_resources.pdf)

**Fraser Health: Frailty Management for Health Aging:** <http://medicalstaff.fraserhealth.ca/Clinical-Resources/#FrailtyManagement>

**Shared Care, "How to reduce risks of frailty for healthy aging" brochure:** <https://sharedcarebc.ca/resources/frailty-prevention-toolkit>

**Pathways BC (search by community for seniors' activities):** <https://pathwaysbc.ca/login>

**Webinar: Frailty Management in Primary Care: A CARES Model:** [www.youtube.com/watch?v=HvegXXvrKjs&t=2319s](http://www.youtube.com/watch?v=HvegXXvrKjs&t=2319s)

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

has spread across communities in Fraser Health, with opportunities to be adopted elsewhere.

**Brochure highlighting steps to AVOID, reduce, or reverse frailty**

Building on these knowledge-transfer activities, Dr Park has worked with Shared Care to create a brochure for doctors to share with their patients on five key frailty prevention strategies. These can be easily remembered through the Canadian Frailty Network’s acronym, AVOID (activity, vaccination, optimizing medications, interaction, diet).

The brochure “How to reduce risks of frailty for healthy aging” has been designed to easily fit in a person’s purse or pocket by printing an 8.5 x 11 page and folding it in half twice. Color and black-and-white versions are available at <https://sharedcarebc.ca/resources/frailty-prevention-toolkit>.

To explore your own frailty prevention or collaborative project as part of the Coordinating Complex Care for Older Adults initiative, contact your local Shared Care Liaison (<https://sharedcarebc.ca/about-us/committee-members/our-team>). ■

—Jiwei Li, MD  
Co-Chair, Shared Care Committee

**References**

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# Gender-affirming care in British Columbia, Part 2



Gail Knudson, MD, MEd, FRCPC



barbara findlay, MA, LLB, QC



Daniel L. Metzger, MD, FAAP, FRCPC

The care of transgender and gender-questioning children, especially youth, is an area of controversy in many jurisdictions. Some authorities question the capacity of youth to provide truly informed consent for a medical treatment that is completely (e.g., puberty blockers) or partially (e.g., gender-affirming hormones) reversible. Clinicians must balance their mandate to deliver “family-centred care,” which views provision of health care for youth ideally as a mutual decision between parent and patient, with the ethical standard of autonomy for the adolescent, whose gender identity only they can fully know. For most transgender youth, parental support is the major prognostic factor that determines how successful they will be in their transition. Yet not all parents are supportive of their transgender youth, and some are even openly malicious. However, BC has a strong medical, legal, and ethical framework that underpins the provision of thoughtful, safe, and tailored care to

transgender youth so that they may achieve their gender-affirming goals.

This second of two *BCMJ* issues on gender-affirming care in British Columbia features three important areas in transgender and gender-diverse health care: BC law with respect to minors consenting to hormone therapy and surgery, including recent BC court decisions; sexual health of transgender and gender-diverse patients, including contraception options; and reproductive health of those patients, including available reproductive options. ■

**BC has a strong medical, legal, and ethical framework that underpins the provision of thoughtful, safe, and tailored care to transgender youth so that they may achieve their gender-affirming goals.**

—Gail Knudson, MD, MEd, FRCPC

—barbara findlay, MA, LLB, QC

—Daniel L. Metzger, MD, FAAP, FRCPC

## Competing interests

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

*This editorial has been peer reviewed.*



barbara findlay, QC

# Legal rights of transgender youth seeking medical care

BC law regarding transgender youth consent to gender-affirming medical treatment is unambiguous: the youth has exclusive right—provided certain conditions are met by their health care provider.

**ABSTRACT:** Medical care providers have specific legal duties in relation to youth: to respect their human rights and to assess their capacity to consent to treatment. In *AB v CD* (2020), the BC Court of Appeal clarified the responsibilities of health care providers when their patient is under 19 years of age,<sup>1</sup> addressed how the Infants Act<sup>2</sup> and Family Law Act<sup>3</sup> apply in situations where youth and parents disagree about medical treatment.<sup>4</sup> The Court confirmed that under the law, health care providers, not parents, are responsible for two things: assessing the capacity of a minor patient to consent to a treatment and determining whether a treatment is in the best interest of that patient. Where a health care provider assesses a young person to be capable and concludes that the treatment is in their best interests, the young person alone has authority to consent to or refuse treatment. In providing health care to a youth, providers' responsibilities are subject to the scrutiny of their professional bodies and human rights tribunals.

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*barbara findlay, QC, has been legal counsel for transgender people for more than 25 years. She was co-counsel in the case of AB v CD, a 2020 decision of the BC Court of Appeal determining the right of transgender youth to consent to medical care. She is also the 2022 recipient of the Canadian Bar Association's Louis St-Laurent Award of Excellence, recognizing a lifetime of outstanding service.*

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*This article has been peer reviewed.*

## Who decides? Minors' consent to health care

*AB v CD and EF* (2019)<sup>5</sup> is a case in which AB, a transgender youth, sought gender-affirming medical treatment at age 13. His gender clinic endocrinologist, Dr GH, recommended puberty-delaying hormone therapy; his father, CD, disagreed.<sup>6</sup> Both AB and CD went to court: AB for a decision that he was entitled to consent to the recommended hormone therapy; CD to prevent that treatment.

The trial judge dismissed CD's application for an injunction preventing treatment, which enabled treatment to proceed. The trial judge held that CD's guardianship right to determine medical care for his child was limited by section 41(f) of the Family Law Act (2011), which specifies that a guardian's rights are subject to s 17 of the Infants Act (1996).<sup>7</sup> Under s 17 of the Infants Act (1996),<sup>8</sup> if a minor understands a proposed treatment and its consequences, and the minor's medical provider finds the minor

- 
1. The Age of Majority Act RSBC 1996 c 7 sets the age of majority in BC at 19.
  2. Infants Act RSBC 1996 c 223. Though it is called the "Infants Act," it applies to anyone under the age of majority.
  3. Family Law Act SBC 2011 c 25
  4. *AB v CD* 2020 BCCA 11. This case was an appeal from *AB v CD and EF* 2019 BCSC 254. In that case, the BC Supreme Court held that AB had the exclusive right to consent to treatment. The Court of Appeal confirmed the trial court's decision.
  5. The legal situation for transgender youth is outlined in *Houson* (2020) and *Day* (2008).
  6. Because the World Professional Association for Transgender Health (WPATH) recommends a psychological assessment for youth, AB had already had an assessment by a psychologist before he was referred to the Gender Clinic. WPATH Standards of Care: [www.wpath.org/publications/soc](http://www.wpath.org/publications/soc).
  7. *AB v CD and EF* 2019 BCSC 254. There were also many other issues in the case before the initial Supreme Court order, after that order but before the hearing in the Court of Appeal, at the Court of Appeal, and after the decision in the Court of Appeal, which are not addressed in this case note.
  8. Infants Act RSBC 1996 c 223. Section 17 provides the following:
    - 17(1) In this section:
      - "health care" means anything that is done for a therapeutic, preventive, palliative, diagnostic, cosmetic or other health related purpose, and includes a course of health care;
      - "health care provider" includes a person licensed, certified or registered in British Columbia to provide health care.
    - (2) Subject to subsection (3), an infant may consent to health care whether or not that health care would, in the absence of consent, constitute a trespass to the infant's person, and if an infant provides that consent, the consent is effective and it is not necessary to obtain a consent to the health care from the infant's parent or guardian.
    - (3) A request for or consent, agreement or acquiescence to health care by an infant does not constitute consent to the health care for the purposes of subsection (2) unless the health care provider providing the health care
      - (a) has explained to the infant and has been satisfied that the infant understands the nature and consequences and the reasonably foreseeable benefits and risks of the health care, and
      - (b) has made reasonable efforts to determine and has concluded that the health care is in the infant's best interest.

competent and the treatment to be in the best interest of the minor, the minor has the exclusive right to consent to the treatment. So the court held that AB was exclusively entitled to consent; his father could not intervene. The BC Court of Appeal agreed.<sup>9</sup>

There have been two further cases in which a parent who does not support their child's gender identity has sought to have treatment for the child postponed. In *A.M. v Dr. F*,<sup>10</sup> a parent obtained an order without advising the other parties they were seeking an order, restraining surgery. However, that order was set aside, the proceeding was dismissed, and an order was made that the dissenting parent could not start another proceeding about the same issues. And in *G.M.S v Dr. Z*,<sup>11</sup> a parent's request for an injunction was denied. So in BC, the law about consent to treatment by transgender youth is unambiguous.

### Duties of care providers in providing medical care to minors<sup>12</sup>

Health care providers have two statutory duties under the Infants Act (1996) in relation to youth seeking care. They must assess the youth to be capable of making an informed decision about their health care, and they must determine that the proposed treatment is in the youth's best interests.

In the absence of the Infants Act, a youth's parents would have the right and responsibility

to determine their child's best interests and decide their child's medical care. But the Family Law Act, which specifies what rights and responsibilities parents have in relation to their children, specifies that parents' right to consent to medical care for their child ends when their child is mature enough to make their own decisions under the Infants Act.<sup>13</sup> The same rules apply to a child in care: the child decides, if they are determined capable by their doctor.<sup>14</sup>

Once a youth's care provider concludes that the minor is able to understand a proposed treatment and its potential risks and benefits, and that the treatment is in the minor's best interests, then the minor has the exclusive right to consent to treatment. The parents (or the ministry, if the youth is in care) are not entitled to decide what is in the child's best interests. They can neither consent nor refuse consent to the treatment. Note that there is no specific age cutoff in BC: a minor may be competent to decide about a particular medical treatment<sup>15</sup> at a young age, depending on the nature of the treatment and the minor's maturity.

### Assessing youth capacity

If a patient is a under 19 years of age, the first question is always, who is entitled to consent to or refuse a medical treatment<sup>16</sup>—the youth, or the youth's parents? That question depends on whether the youth has capacity to consent.

To assess a minor's capacity, the care provider must explain and be satisfied that the youth understands the nature of a proposed treatment, including the reasons for the treatment, the alternatives, and the reasonably foreseeable risks and benefits.<sup>17</sup> No special assessment form or process is required. It need not be done in writing.

If the care provider concludes that a youth is capable, the care provider also has a duty under the Infants Act (1996) to make reasonable efforts to determine whether the proposed treatment is in the best interest of the minor, and to conclude what is in the minor's best interests. The law does not specify what "reasonable efforts to determine" entails.

Finally, if a minor is capable and the care provider believes a treatment to be in the best interests of the minor, the care provider will elicit the youth's consent, or refusal to consent, to the treatment.<sup>18</sup> The care provider is not permitted to seek consent from a child's parent.

While the Court of Appeal encourages parental involvement, where possible, in the consideration of medical decisions a minor might make, where a minor has capacity, the health care provider must respect the confidentiality of the patient's information and must seek the minor's consent to include their parents in discussions about treatment.<sup>19</sup> One of the risk factors for transgender youth, in particular, is a lack of parental support, which could be caused or exacerbated by inappropriate disclosures by a

9. 2020 BCCA 11. Names of the parties and medical witnesses were anonymized by the court, which also issued a publication ban on information that might lead to the identification of parties or treating professionals, in light of the risk to AB of being outed and the experience of health professionals with online abuse when their names were known.

10. *A.M. v Dr. F* 2021 BCSC 32. [www.canlii.org/en/bc/bcsc/doc/2021/2021bcsc32/2021bcsc32.html?searchUrlHash=AAAAAQAddHJhbnNnZW5kZXIgc3VyZ2VyeSB2ZXhhdGlvdXMAAAAAAQ&resultIndex=2](http://www.canlii.org/en/bc/bcsc/doc/2021/2021bcsc32/2021bcsc32.html?searchUrlHash=AAAAAQAddHJhbnNnZW5kZXIgc3VyZ2VyeSB2ZXhhdGlvdXMAAAAAAQ&resultIndex=2).

11. *G.M.S. v Dr. Z* 2021 BCSC 1915

12. Though some health authorities or other agencies have policies or guidelines for assessing capability and consent, they do not necessarily address the situation of patients who are minors. See, for example, Vancouver Coastal Health's "Capability and Consent Tool": <https://vch.eduhealth.ca/PDFs/IB/IB.100.C33.pdf>; the Canadian Mental Health Association's *Information Sharing in the Context of Mental Health and Substance Use in British Columbia*: <https://www2.gov.bc.ca/assets/gov/health/managing-your-health/mental-health-substance-use/information-sharing/information-sharing-adult-2016-final.pdf>; and HealthLink BC's "The Infants Act, Mature Minor Consent and Immunization": [www.healthlinkbc.ca/healthlinkbc-files/infants-act-mature-minor-consent-and-immunization](http://www.healthlinkbc.ca/healthlinkbc-files/infants-act-mature-minor-consent-and-immunization). There is an excellent handout by BC Children's Hospital and BC Women's Hospital and Health Centre—"Consent to Health Care: A Guide for Young People": [www.bcchildrens.ca/transition-to-adult-care/Documents/ConsentforHealthcareAGuideforYouth.pdf](http://www.bcchildrens.ca/transition-to-adult-care/Documents/ConsentforHealthcareAGuideforYouth.pdf).

13. Family Law Act SBC 2011 c 25

14. Child, Family and Community Service Act, RSBC 1996 c 46 s 25, 32, 47

15. The Court of Appeal was clear that a minor who is capable of consenting to a treatment (for example, to sew up a cut) may not be capable of consenting to all medical treatments (for example, a much more complex physical issue or treatment plan); that assessment is up to the care provider.

16. The Court of Appeal was clear that a youth's competence must be assessed with respect to any treatment. For example, a finding by a doctor that the youth is capable to consent to treatment of a broken leg would not automatically mean the youth is capable to consent to hormone treatments.

17. Clark BA, Virani A, Saewyc EM. "The edge of harm and help": Ethical considerations in the care of transgender youth with complex family situations. *Ethics & Behavior* 2019;30:161-180.

18. If the care provider concluded that a youth was not capable of making the health care decision, the youth's parents would make the decision.

19. BC Freedom of Information and Privacy Association. Health information privacy in British Columbia: children and teenagers. n.d. [www.healthinfoprivacybc.ca/confidentiality/children-and-teenagers](http://www.healthinfoprivacybc.ca/confidentiality/children-and-teenagers).

health care provider.<sup>20</sup> Though no case has decided the issue directly, it is likely that a minor would have to consent to the release of their records to their parents, because creating records is part of health care.<sup>21</sup>

### Old law; new application

The Court of Appeal decision is not new law. Section 17 of the Infants Act has been part of the laws of BC since 1996. So this case is old law applied to a new situation—hormone therapy for transgender youth.<sup>22</sup>

While it is technically possible for a parent to challenge<sup>23</sup> the decision of a health care provider to treat a minor without parental consent,<sup>24</sup> the Court of Appeal has clarified that the challenge will be successful only if a parent can show that the care provider has not followed the Infants Act: that the youth does not have legal capacity to consent to the health care, or that the health care provider has failed to explain the treatment and its risks and benefits, or that the health care provider has failed to make efforts to determine and conclude that the health care is in the youth's best interests. A challenge will never be successful if the challenging parent just has a different opinion than the health care provider about the child's best interests in relation to the care.

### Professional complaint

Care providers who provide gender-affirming care may have a complaint made against them to their professional body by an objecting parent. Such a complaint can threaten the privacy of

the care provider, the patient, and other people adjacent to the main players.

In a recent complaint about the medical care of a transgender youth, the Health Professions Review Board decided that the College of Psychologists be allowed to redact the names of people who had written unsolicited letters of support for the registrant (medical professional).<sup>25</sup>

In a separate decision, the same board held that a letter against a medical professional whom the complainant could not identify because the registrant was the subject of a court-issued sealing order with respect to their identity was a “complaint,” notwithstanding that the registrant was not identifiable by the complainant. The board held that the College of Physicians and Surgeons had incorrectly failed to investigate the complaint because the registrant's identity was shielded by a sealing order. The College had to take reasonable steps to identify the registrant apart from the materials prohibited from being disclosed by the court's orders.<sup>26</sup>

### Human rights of young transgender patients

In addition to having the right to consent to medical care as soon as they are capable, transgender youth have the right to have their human rights respected in the receipt of medical care. Research has shown that transgender people avoid seeking medical care because they are not confident that they will be treated respectfully.<sup>27</sup>

Both federal and provincial human rights

laws protect transgender people from discrimination in the provision of services, including medical care, on the basis of gender identity or gender expression. That is, legal recognition that gender identity (one's internal sense of gender), trumps one's sex (the gender one is assigned at birth). Transgender people in BC can have their birth certificates legally changed so that the gender marker matches their gender identity; currently, they can request a birth certificate and other identity documents showing M, F, or X.<sup>28</sup>

The biggest challenge to accommodating transgender people is to understand that the law recognizes a difference between an individual's sex and their gender identity, and that the law says that transgender people have the right to the recognition of their gender identity (through the use of appropriate names, pronouns, and so on) rather than being processed on the basis of their gender assigned at birth.

To ensure that the right of transgender patients to have their gender identity respected, health care providers may be required to make some modifications to their practice. In particular, health care providers should review their intake forms to ensure that patients are addressed by their preferred name and pronouns, provide training for staff so that they do not misgender waiting patients, and ensure that washrooms are transgender-inclusive.

Best practice is never to rely on the MSP-supplied gender marker that is associated with an individual's health card because that gender marker reflects a patient's birth-assigned sex, not their gender identity.

20. Researchers of transgender teen health found that 1 in 3 youth did not have an adult in their family that they could talk to about problems, and 7 in 10 felt their family did not understand them. When they felt cared about and supported by family, they reported better health. Veale J, Saewyc E, Frohard-Dourlent H, Dobson S, Clark B, and the Canadian Trans Youth Health Survey Research Group. Being safe, being me: Results of the Canadian Trans Youth Health Survey. Vancouver, BC: Stigma and Resilience among Vulnerable Youth Centre, School of Nursing, University of British Columbia. 2015. [www.saravyc.ubc.ca/2018/05/06/trans-youth-health-survey/](http://www.saravyc.ubc.ca/2018/05/06/trans-youth-health-survey/).

21. Health care is defined in s 17(1) of the Infants Act as follows: “health care” means anything that is done for a therapeutic, preventive, palliative, diagnostic, cosmetic or other health related purpose, and includes a course of health care.” That definition likely includes medical records. And nonconsensual release of a transgender person's records may also constitute discrimination under the Human Rights Code.

22. It has been applied, for example, in an Alberta case concerning the right of a teenager to consent to an abortion (*J.S.C. v Wren*, 1986 ABCA 249 (CanLII)), and in a BC case outlining a surgeon's responsibility to explain a procedure to a 12-year-old patient, and holding that explaining the choices to the patient's parents was inadequate.

23. Anyone can sue anyone at any time for any reason: the question is whether they will win.

24. “Health care provider” includes a person licensed, certified, or registered to provide health care in BC: Infants Act s 17(1).

25. *Complainant v College of Psychologists of British Columbia* (No. 1) 2021 BCHPRB 51

26. *Complainant v College of Physicians and Surgeons of British Columbia* (No. 1), 2021 BCHPRB 85

27. Winter S, Diamond, M, Green J, et al. Transgender people: Health at the margins of society. *Lancet* 2016;388:390-400.; Trans PULSE Canada Team. Health and health care access for trans and non-binary people in Canada: National, provincial, and territorial results. 2020. <https://transpulsecanada.ca/results/report-1/>.

28. For a description of the process to change gender designation on a birth certificate, see BC Vital Statistics Agency: [www2.gov.bc.ca/gov/content/life-events/birth-adoption/births/birth-certificates/change-of-gender-designation-on-birth-certificates](http://www2.gov.bc.ca/gov/content/life-events/birth-adoption/births/birth-certificates/change-of-gender-designation-on-birth-certificates). Currently, the American Medical Association is advocating that there be no gender markers on public-facing birth certificates, a result already adopted in some Canadian provinces: [www.webmd.com/a-to-z-guides/news/20210616/remove-sex-from-public-birth-certificates-ama-says](http://www.webmd.com/a-to-z-guides/news/20210616/remove-sex-from-public-birth-certificates-ama-says). Retrieved 3 February 2022.



Practitioners also need to be careful about when and how they request information about a patient's reproductive organs. Do not ask unless the information is necessary; then, ask in a way that makes no assumptions based on the patient's name, MSP gender marker, appearance, voice, and so on.

Even if a health care provider disagrees with a proposed treatment for a transgender youth, the health care provider is required to respect the human rights of the patient. Even if a health care provider offers the names of other care providers who will offer care to a transgender person, the health care provider may not escape liability for a human rights violation. In *Korn v Potter* (1996),<sup>29</sup> a physician whose name had been disseminated in litigation between former lesbian patients decided he would no longer offer insemination to lesbians. He referred a lesbian couple to other physicians. The physician was found to have discriminated against the couple on the basis of their sexual orientation. The BC Supreme Court refused an appeal from a human rights finding of discrimination, even though the College of Physicians and Surgeons had dismissed a complaint against the doctor. So, if a health care provider does not want to provide medical care to a transgender person for their own reasons, they should seek legal advice about how to fulfill their professional and legal obligations to that patient.<sup>30</sup>

## Practice points

Consider the following:

- What are your procedures for determining whether a youth is capable of consent under s 17 of the Infants Act?
  - How do you determine if a youth is capable of understanding the treatment and, therefore, is entitled exclusively to consent to treatment?
  - How do you decide if the treatment is in the youth's best interest?
- Do you document your determination on your file?

29. *Korn v Potter* 1996 CanLII 1818 (BC SC)

30. For a comprehensive overview of trans-affirming care, see Deutsch (2016). An excellent BC resource with respect to trans health care, including resources for care providers, is Trans Care BC: [www.phsa.ca/transcarebc/health-professionals/education/trans-intro](http://www.phsa.ca/transcarebc/health-professionals/education/trans-intro).

- Do you explain your decision to the youth so that they are aware that they are the decision-maker?
- Once you have determined that your patient is a mature minor, do you seek their consent before disclosing information to their parents?
  - Do you make sure that your staff are aware not to communicate with the minor's parents without consent?
- Do you, with the youth's consent, explain to their parents that the youth is exclusively entitled to consent to care?
- If you have a consent form, does the form contain either parental consent or the consent of the mature minor, but not both?
- Have you reviewed your intake and all other office forms and databases to ensure that your patients' gender is recorded only when required, and where recorded, matches their gender identity?
- Can a nonbinary transgender person use the washroom in your office? Is the washroom explicitly transgender-welcoming? ■

## Competing interests

None declared.

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Nicole J. Todd, MD, FRCSC

# At risk of pregnancy? Contraception for transgender, nonbinary, gender-diverse, and Two Spirit patients

Gender-affirming contraception counseling should consider the patient's reproductive goals; contraceptive options, risks, benefits, and side effects; and potential contributors to gender dysphoria.

**ABSTRACT:** Healthy sexual practices should be integrated into gender-affirming health care. People with reproductive potential should be offered counseling on contraception, emergency contraception, abortion, fertility, fertility preservation, and antenatal, intrapartum, and postpartum care. Use of gender-affirming hormones, including testosterone, estrogen, estrogen blockers, progestins, and gonadotropin-releasing hormone agonists, cannot be relied upon for contraception. Patients should be informed that an absence of bleeding does not equate to an absence of ovulation. Many contraceptive options, including combined hormonal contraception (pill, patch, ring) and progestin-only methods (pill, depot medroxyprogesterone acetate), can be provided without the need for an internal examination. Patients should be supported in deciding if intrauterine device placement is conducted in the office or operating room (with procedural sedation, general anesthesia).

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**H**ealthy sexual practices should be integrated into gender-affirming health care. People with reproductive potential should be screened for and offered contraception.<sup>1</sup> Despite this, the reproductive needs of transgender, gender nonbinary, gender-diverse, and Two Spirit people (TGD), including the need for contraception, emergency contraception, abortion, fertility, fertility preservation, and antenatal, intrapartum, and postpartum care, have not been rigorously studied. The recommendations provided here are based on best available evidence and expert opinion. Further complex reproductive care in BC can be accessed through the Rapid Access to Consultative Expertise (RACE) line, Trans Care BC, and the Complex Contraception Clinic at BC Women's Hospital and Health Centre. My intention is to help nurses, nurse practitioners, family physicians, midwives, and specialists integrate contraception into the care of TGD patients. This discussion is limited primarily to those who were assigned female at birth.

## Background

TGD people experience barriers in accessing contraceptive care due to previous trauma, stigmatizing experiences, lack of gender-affirming health care environments, and limited health care practitioner knowledge.<sup>2</sup> Participants in one study felt that only 50% of health care providers were trained to provide inclusive and

gender-affirming sexual health care.<sup>2</sup> Accessing experienced providers may require travel to urban settings, which is not always possible. Measures taken to control the spread of COVID-19 have demonstrated that contraception counseling can be conducted via telehealth, and acceptable contraceptive methods can be provided at the time of consultation or accessed through a local provider.<sup>3</sup> People who engage in sexual activity and have reproductive potential should be offered comprehensive family planning counseling. In one study, when TGD people accessed health care, approximately half indicated contraception was not offered.<sup>4</sup> Additional barriers include being misgendered and receiving counseling about methods that do not align with the patient's sexual behavior.<sup>2</sup> As one patient related, "not everybody who's getting contraception or who's getting an abortion is a woman."<sup>2</sup> Unintended pregnancy has medical, social, psychological, and economic repercussions. Adding to this, testosterone is a teratogen due to the potential for virilization of a female fetus. Sixty percent of transgender males in one study reported using contraception, similar to US rates for cisgendered women.<sup>5</sup> Another study conducted at a well-known transgender-inclusive primary care practice noted 85.3% of patients acknowledged having used contraceptives, with 37.3% currently using them.<sup>6</sup> It should not be assumed that TGD people do not desire fertility. In one

study, most participants desired having a family; 25% desired pregnancy.<sup>5</sup> The overall pregnancy rate among TGD people is not known. The Canadian Trans Youth Health Survey showed that transgender youth have been pregnant or gotten someone pregnant at the same rate as their cisgender counterparts.<sup>7</sup> A US survey of adult TGD people found that 17% had experienced pregnancy, and 12% of them had accessed abortion.<sup>5</sup> Another US study identified a 5.3% pregnancy rate among a TGD population, with 3.3% giving birth.<sup>6</sup> Based on these data, family building, future fertility, and fertility preservation should be discussed with all patients.<sup>8</sup>

Gender-affirming hormone treatments, including testosterone, estrogen, estrogen blockers, progestins, and gonadotropin-releasing hormone agonists, are not contraceptives. In studies, 16% to 20% of testosterone users believed they had adequate contraception by using testosterone.<sup>5,9</sup> In one of those studies, 5% of patients reported that their health care practitioner had indicated that testosterone treatment was a contraceptive.<sup>5</sup> Amenorrhea can occur by 6 months of testosterone use, which may falsely reassure users. Patients should not be reassured that absence of bleeding equates to an absence of ovulation.<sup>1</sup> The physiology of impaired ovulation due to testosterone use is not completely understood.<sup>10</sup> The amenorrhea experienced can be a result of endometrial atrophy and/or anovulation, which makes it an inadequate marker of fertility.<sup>1</sup> Additionally, the dosages of testosterone used are meant to be physiologic, not suppressive.<sup>10</sup> In one review, no studies demonstrated complete suppression of follicle stimulating hormone and luteinizing hormone with testosterone use.<sup>10</sup> Another observational study indicated rapid suppression of the hypothalamic-pituitary-gonadal axis, but the suppression was not consistent with ongoing use, which can lead to potential ovulatory events.<sup>11</sup> Additional contributing factors to inconsistent anovulation include patient compliance with treatment and switching between testosterone preparations.<sup>10</sup>

All contraceptive counseling should begin with a recommendation for long-acting reversible contraception as first-line therapy. Discussions about each method should include compliance, duration of use, efficacy, and

noncontraceptive benefits. Emphasis should be placed on shared decision making, and should include patient preference, noncontraceptive benefits, and informed choice that acknowledges a lack of high-quality research.<sup>1</sup> TGD patients have a higher rate of previous sexual trauma and violence than non-TGD patients, which may influence their choice of contraception (i.e., avoidance of internal examinations).<sup>1</sup> Additionally, patients may wish to avoid gendered experiences of being on “birth control,” experiencing bleeding and cramping, or needing to insert the contraceptive device (combined hormonal contraceptive ring, contraceptive sponge).<sup>1</sup> Contraceptive counseling should consider potential contributors to gender dysphoria: anatomical (internal examinations, placing medication/barrier protection internally), functional (dysmenorrhea, bleeding), medication administration (daily reminder), medication interactions (feminizing effects, chest/breast tenderness), ease of discontinuation, and concealed methods.<sup>10</sup> The use of gendered terms should be avoided when discussing contraceptive options, risks, benefits, and side effects. Instead of saying “this will stop your period,” try “the medication will stop your bleeding.” It is imperative that health care practitioners ensure patients are provided with contraceptive methods that are the most acceptable to them and have the least risk.

## Taking a sexual history

Clinics that do not provide gender-affirming care present a major barrier to TGD people in accessing health services.<sup>2,9</sup> Offices should be inclusive and respectful. This starts at the front door, with inclusive signage, clinic greetings, waiting areas, and patient information. At intake, patients should be asked for their preferred name and pronouns, and this information should be reassessed periodically for any changes. Discrepancies between legal documents and the patient’s preference should be flagged.

Health care training programs need to include gender-affirming care in their curriculum. Training should extend to all office and temporary staff in order to provide an inclusive experience. Handouts should be reviewed regularly to ensure they use inclusive language.<sup>2</sup> The Reproductive Health Access Project has one such option: Birth Control across the Gender Spectrum ([www.reproductiveaccess.org/wp-content/uploads/2018/06/bc-across-gender-spectrum.pdf](http://www.reproductiveaccess.org/wp-content/uploads/2018/06/bc-across-gender-spectrum.pdf)).

Patients should also be asked about their preference of language used for body parts.<sup>2,12</sup> Health care practitioners could consider integrating an “anatomy inventory” into patient charts.<sup>10</sup> Patients should not only be asked if they are sexually active, but what types of sexual activity they are engaged in. Asking about the gender and sex of partners is also important [Box].

### BOX. Taking an inclusive sexual history.

Do you have sex?

What are the gender or genders and bodies of your partner(s)?

How do you have sex with them?

What body parts do you use for sex?

Which of your body parts touch other people’s body parts?

What parts go where?

Are you at risk of pregnancy?

Do you use anything to prevent this?

Do you have plans to build a family?

Do you plan on achieving a pregnancy in the future?

Adapted from “Society of Family Planning clinical recommendations: Contraceptive counseling for transgender and gender diverse people who were female sex assigned at birth,”<sup>1</sup> “Sexual and reproductive health considerations among transgender and gender-expansive youth,”<sup>9</sup> and “Contraception across the transmasculine spectrum.”<sup>10</sup>

## Contraceptive methods

Condoms, combined oral contraceptives, and intrauterine devices (IUDs) are the most commonly reported contraceptives used by sexually active TGD people with reproductive potential.<sup>2,5,6</sup> Common reasons for discontinuing combined oral contraceptives include side effects and concerns regarding estrogen.<sup>5</sup> Long-acting reversible contraceptives (IUD, subdermal progestin implant) are used infrequently by TGD people; however, in one study, these methods were used more commonly by TGD people than the US cisgendered female population (12.7% versus 10.0% for IUD; 2.5% versus 1.0% for implant).<sup>5</sup> It is likely that TGD people use IUDs at approximately the same rate, if not slightly greater, as the cisgendered population.<sup>6</sup> TGD people value contraceptive choices that prioritize high rates of bleeding suppression, low side effects, hormone-free options, and avoidance of dysphoria.<sup>2</sup> TGD people may experience financial barriers in accessing contraception, which lends further support to funded contraceptive programs.<sup>2</sup>

Gender-affirming hormonal treatment is not a contraindication to contraception.<sup>1,10,12</sup> The Society of Obstetricians and Gynaecologists of Canada, the Centers for Disease Control, and the World Health Organization provide comprehensive reviews of relative and absolute contraindications to contraception.<sup>13-18</sup> The US Medical Eligibility Criteria for Contraceptive Use has an excellent app to help health care practitioners incorporate pre-existing health conditions into a safe contraceptive plan. Medical history should include actual and theoretical side effects of gender-affirming treatment. Testosterone use has a theoretical risk of polycythemia, dyslipidemia, liver inflammation, diabetes, cardiovascular disease, and hypertension.<sup>19</sup> Estrogen use has a theoretical increased risk of venous thromboembolism, cholelithiasis, dyslipidemia, liver inflammation, diabetes, cardiovascular disease, hypertension, breast cancer, and benign pituitary tumors.<sup>19</sup> Progestin use has a theoretical risk of cardiovascular disease, breast cancer, mood changes, dyslipidemia, and hypertension.<sup>19</sup> Shared decision making, using a harm-reduction lens, may need to be applied to people with relative and/or absolute contraindications to contraception in order to generate

a contraceptive plan if low-risk methods are unacceptable. These patients can be referred to a specialist for complex contraceptive counseling. Consultations can be held in person or via telehealth.<sup>3</sup>

Prior to initiation of contraceptive methods, only blood pressure needs to be documented. Patients can self-collect for sexually transmitted infection (STI) screening, and this should not be a barrier to providing a contraceptive method. Internal examinations are required only for IUD insertions.<sup>8</sup>

## Gender-affirming hormonal treatment is not a contraindication to contraception.

### Barrier methods

Among the TGD population who are at risk of pregnancy, condoms are the most commonly used contraceptive method, followed by oral contraceptives and IUDs.<sup>6,9</sup> Barrier methods include chemical and mechanical options.<sup>1,18</sup> These methods are coitally dependent, and rely on user access and proper placement to be effective.<sup>1,18</sup> Sexually active people should be counseled on the importance of dual protection, to allow for contraception (if applicable), and barrier methods (contraception and STI prevention). Discussions about condom use should refer to external and internal condoms rather than male and female condoms. The typical use failure rate is 18% for external condoms and 21% for internal condoms.<sup>1,18</sup>

Internal barriers include internal condoms, diaphragms, and cervical caps. Both diaphragms and cervical caps require fitting by a trained health care practitioner. People may also have difficulty acquiring spermicidal jelly in Canada, and the product may cause genital irritation.

The contraceptive sponge is available without a prescription, the user must place it inside prior to penetrative intercourse, and it does not protect against STI.<sup>18</sup> The user can put the contraceptive sponge in place up to 24 hours prior

to intercourse; however, total use should not exceed 30 hours due to the risk of toxic shock syndrome.<sup>18</sup> The contraceptive sponge has a higher failure rate in multiparous compared to nulliparous people. Research data on the use of internal barriers and chemical barrier options by TGD people are lacking.

### Intrauterine devices

Intrauterine devices can be safely offered as first-line therapy to all patients, regardless of age and parity.<sup>13,14</sup> Both copper IUDs and levonorgestrel-releasing IUDs (LNG-IUDs) provide highly effective, long-acting reversible contraception with an efficacy equivalent to permanent contraception.<sup>14</sup> Users may prefer this method because it is coitally independent, discrete, and easily reversible. There is high ongoing use at 1 year.<sup>14</sup> IUDs can be inserted immediately postabortion and postpartum. Counseling patients on choosing between IUD types involves a discussion about their motivation for noncontraceptive benefits; available hormone versus hormone-free options; the need for emergency contraception; and cost. Copper IUDs are highly effective, long-acting reversible contraceptive methods that do not contain hormones. People who use a copper IUD should not expect menstrual suppression, and some may experience prolonged bleeding, heavier bleeding, and increased dysmenorrhea.<sup>8</sup> LNG-IUDs are discussed under progestin-only options.

IUDs can be placed successfully when the patient is in the health care practitioner's office, although some patients may require longer appointments for placement. Health care practitioners should not restrict access to IUD placement for ultrasound and/or STI screening.<sup>14</sup> The process of insertion and possible side effects should be explained in detail, including speculum use, cramping with placement, cramping in the first months after placement, and unscheduled bleeding that can last 3 to 6 months. For patients with genital atrophy secondary to testosterone use, 2 weeks of pretreatment with internal estrogen may be helpful.<sup>1</sup> Patients may find the pelvic examination difficult, dysphoric, and/or triggering due to past trauma.<sup>20</sup> Alternatively, IUDs can be successfully placed under IV sedation or general anesthetic. A



patient-centred approach should be used to find the best setting for IUD insertion.

### Combined hormonal contraception

No studies have examined pharmacological interactions between testosterone and combined hormonal contraceptives (pill, patch, ring).<sup>1</sup> However, expert opinion recommends combined hormonal contraception as a safe option.<sup>1</sup> Little is known about the interaction between combined hormonal contraception and testosterone therapy; therefore, patients should be counseled on close follow-up for changes in androgen effects.<sup>1</sup> Fifty percent of transgender and transmasculine males stopped combined oral contraception due to concerns about the interaction between estrogen and testosterone, and about taking extra hormones.<sup>5</sup> Clinicians should provide reassurance that combined hormonal contraception does not raise overall estrogen levels in nontestosterone users.<sup>8</sup> Given the overall low levels of estrogen in combined hormonal contraception, the patient's estrogen levels would typically be within the expected range for testosterone therapy.<sup>10</sup> Patients can be counseled on cyclic or extended use of the pill, patch, and ring. Extended use provides the added benefit of menstrual suppression. The typical failure rate is 9%, but a reduced failure rate has been recorded with an extended cycle and/or a reduced hormone-free interval (from 7 to 4 days).<sup>16</sup> There is no additional need for a "pill holiday" because menstrual suppression with combined hormonal contraception is safe.<sup>16</sup> Noncontraceptive benefits of combined hormonal contraception, including reduced heavy menstrual bleeding, dysmenorrhea, and premenstrual symptoms, and improvement in acne and migraines, may also be desired.<sup>8,16</sup> Patients may prefer combined hormonal contraception that includes more androgenic progestins (levonorgestrel, norethindrone, gestodene, norgestrel).<sup>1,12</sup> A recent review failed to demonstrate an increased risk of venous thromboembolism among testosterone users.<sup>10</sup> Increased venous thromboembolism risks are associated with the use of combined hormonal contraception. Although the absolute risk is low, it is unclear if the addition of testosterone therapy has an additive effect on this risk.<sup>1,16</sup> Patients should be screened for

additional venous thromboembolism risk factors, and the combination of testosterone and combined hormonal contraception should be avoided in patients with additional risk unless it is the only acceptable method. Blood pressure measurement is the only examination recommended prior to initiating combined hormonal contraception.<sup>16</sup>

**Fifty percent of transgender and transmasculine males stopped combined oral contraception due to concerns about the interaction between estrogen and testosterone, and about taking extra hormones.**

### Progestin-only options

Progestin-only options are generally well tolerated, and users can experience menstrual suppression.<sup>12</sup> Progestin-only options work as a contraceptive via thickened cervical mucous, endometrial atrophy, and impaired tubal transport, which are separate from any interaction between testosterone and the hypothalamic-pituitary-gonadal axis.<sup>10,15</sup>

### Oral

TGD patients may be on progestin treatment to aid with menstrual suppression. In Canada, only one oral formulation (norethindrone acetate, 0.35 mg) is approved for contraception. Patients who are taking other forms of progestins (i.e., medroxyprogesterone acetate, micronized progesterone, dienogest) should be informed that additional contraception is required.<sup>8</sup> Oral progestin has a 9% typical use failure rate.<sup>15</sup> Many patients do not choose this method due to the narrow compliance window (daily, within 3 hours each day) and unscheduled bleeding.<sup>8,15</sup>

### Depot medroxyprogesterone acetate

Depot medroxyprogesterone acetate (DMPA) is a highly effective (92%), coitally independent,

concealed form of contraception.<sup>15</sup> Users may choose this option due to infrequent dosing, the lack of need for internal examination, and the noncontraceptive benefit of reduced dysmenorrhea, premenstrual symptoms, and heavy menstrual bleeding. Approximately 60% to 80% of users experience menstrual suppression.<sup>8,15</sup> The initial 3 to 6 months of use can be associated with unscheduled bleeding, and patients should be informed that the frequency decreases with time. Common reasons for discontinuation include weight gain, unscheduled bleeding, headaches, and acne.<sup>15</sup> DMPA has more androgen side effects than other progestins, and may be preferred.<sup>8</sup> Use of DMPA beyond 2 years can be associated with reversible bone loss, which improves to the bone density of non-users after discontinuation.<sup>15</sup> No long-term studies have demonstrated an association between the use of DMPA and osteoporosis or fractures. Further, there is a paucity of research on the effects of concurrent testosterone and DMPA use on bone health. For this reason, the Society of Obstetricians and Gynaecologists of Canada considers the long-term use of DMPA to be safe.<sup>15</sup> People who are using DMPA should be counseled on calcium and vitamin D supplementation, healthy active living, and smoking cessation.<sup>15</sup>

### Subdermal implant

The progestin subdermal implant is used by many people worldwide. Health Canada has approved a subdermal progestin implant for contraceptive use in Canada.<sup>15</sup> This method is highly effective and does not require an internal examination. The failure rate is similar to that of IUDs and permanent contraception, at approximately 0.05%, with high ongoing use at 1 year.<sup>15</sup> Subdermal implants can be placed postabortion and postpartum. There is no delay in fertility with removal, unlike with DMPA.<sup>15</sup> Obesity does not preclude use of the subdermal implant. The most common side effect is unscheduled bleeding, which can be unpredictable; however, its occurrence is not well studied among those on testosterone treatment. Patients who choose this method should be informed that unscheduled bleeding episodes may occur but generally decrease 3 months postplacement.<sup>15</sup> This may be a good method for those wishing

a less adherence-demanding, concealed form of contraception.<sup>15</sup>

### Intrauterine device

Two levonorgestrel-releasing intrauterine systems (LNG-IUSs) are currently available in Canada: 52.0 mg (Mirena) and 19.5 mg (Kyleena). Both are indicated for use up to 5 years. The LNG-IUS 52.0 mg has been approved for contraception and treatment of heavy menstrual bleeding.<sup>14</sup> While both LNG-IUSs improve heavy menstrual bleeding and dysmenorrhea, the LNG-IUS 52.0 mg has the highest rates of amenorrhea.<sup>8,14</sup> Users of the smaller LNG-IUS 19.5 mg experience less insertional pain and fewer functional cysts than users of the larger LNG-IUS 52.0 mg.<sup>21</sup> LNG-IUS users may experience spotting for the first 3 to 6 months postplacement. Amenorrhea rates may be higher for patients who are already amenorrheic on testosterone; however, this has not been well studied.<sup>12</sup>

### Permanent contraception

Tubal interruption (tubal ligation, salpingectomy) can be offered as a permanent contraceptive option. Hysteroscopic tubal occlusion is no longer available in Canada. Laparoscopic tubal interruption procedures are minimally invasive day procedures that can be performed at the time of abortion, cesarean section, or vaginal delivery. Immediate postplacental tubal ligation may not be readily available at the time of vaginal delivery, and health care practitioners should check if this method is offered at their institution. Interval tubal interruption is also safe and very effective. Patients should be counseled on the permanent nature of these procedures, and that future attempts at pregnancy would involve assisted reproductive technology. There is a movement toward salpingectomy over tubal ligation due to a reduction in ovarian cancer. Longer-term studies are needed to definitively recommend salpingectomy over tubal ligation, and health care practitioners should discuss this with patients.<sup>17</sup> Younger age at procedure has been associated with higher risk of regret; however, access to permanent contraception should not be limited based on age alone.<sup>17</sup> People who have pursued fertility preservation (oocyte cryopreservation, embryo

cryopreservation) would continue to have the opportunity to carry a pregnancy after tubal interruption.<sup>1</sup> Some patients may have plans to proceed with gender-affirming hysterectomy with/without gonadectomy; this also provides permanent contraception. Sexually active people need to be counseled on ongoing STI prevention and screening.

**All sexually active people should be advised about safe sexual practices.**

### Emergency contraception

Testosterone treatment is not a contraindication to emergency contraception.<sup>8,10</sup> Patients should be counseled on available methods for emergency contraception (levonorgestrel, ulipristal acetate, copper IUD), how to access it, the therapeutic window, and expected side effects.<sup>10</sup> Patients should be informed that only copper IUD insertion requires internal examination. Because bleeding patterns may not be consistent or the patient may have amenorrhea, all TGD patients should be counseled to take a urine pregnancy test 4 weeks postemergency contraception use.<sup>10</sup>

### Prevention of sexually transmitted infection

All sexually active people should be advised about safe sexual practices. The practitioner should review barrier options as they pertain to the patient. In one study on transgender youth, 80% indicated that the health care practitioner discussed STI prevention.<sup>4</sup> STI screening should be inclusive for sexual activity, and oral, genital, and rectal sites should be swabbed if they are used during sexual activity. The TGD population has higher rates of STI, including HIV, likely due to mental health illness, homelessness, and high-risk behaviors resulting from marginalization, such as substance use and sex work, and due to barriers accessing health care.<sup>7,8</sup> In asymptomatic patients, a urine sample can be used to screen for chlamydia and

gonorrhea. Patients can submit the sample to the health care practitioner, perform self collection (oral, anal, and/or genital swab), or alternatively access screening via Get Checked Online (<https://getcheckedonline.com/Pages/default.aspx>).<sup>22</sup> Patients should also be screened for high-risk behavior, whereby pre-exposure prophylaxis and/or postexposure prophylaxis would be indicated.<sup>23-25</sup> Estrogen, testosterone, and blockers are not contraindications to pre-exposure prophylaxis and postexposure prophylaxis.<sup>8</sup>

### Summary

All sexually active people should be advised about safe sexual practices. Health care practitioners should be prepared to discuss reproductive concerns with people who engage in sexual activity that could result in pregnancy. Current research and expert opinion suggest that gender-affirming hormone therapy is not a contraindication to contraception, emergency contraception, or abortion care. Patients highly value gender-affirming comprehensive contraception counseling that incorporates consideration of noncontraceptive benefits, contraceptive side effects, and the patient's reproductive goals. ■

### Competing interests

Dr Todd has received speaking honoraria from Bayer and Merck. She sits on the Nextstellis Advisory Board.

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# Fertility options for transgender and gender-diverse people

Comprehensive fertility counseling is critical to the equitable provision of care to transgender and gender-diverse patients and should be the standard of care.

**ABSTRACT:** While transgender and gender-diverse individuals desire parenthood at similar rates as cisgender people, research suggests that many do not receive adequate fertility counseling. Because some medical and surgical gender-affirming therapies may affect the ability to reproduce, comprehensive fertility counseling before the initiation of such therapies is critical to the care of gender-diverse patients. Community physicians can inform transgender, gender-diverse, and nonbinary patients about their fertility preservation options, including sperm, egg, or embryo freezing. When ready to start a family, transgender and gender-diverse patients may choose from a wide spectrum of fertility treatments, including insemination, in vitro fertilization,

and third-party reproduction with a gestational carrier, donor sperm, or donor eggs. Health care providers can improve fertility care for transgender and gender-diverse people by becoming familiar with their reproductive health; inquiring about their gender identity, pronouns, and preferred terms for body parts, and revising clinic forms to include that information; and understanding the potential barriers to care these individuals face, including the cost of care, the risk of elevated dysphoria, limited access to fertility centres in rural communities, and the fear and lived experience of discrimination.

**T**he decision to start a family is important, irrespective of one's gender identity. Transgender and gender-diverse (TGD) people express interest in parenthood at similar rates as cisgender persons.<sup>1</sup> It is estimated that between 1% and 3% of the Canadian population identifies as transgender or gender-diverse, and 40% to 54% of TGD people desire to be parents.<sup>1,2</sup> Overall, a small but important proportion of the Canadian population (0.3% to 0.6%) chooses to undergo gender-affirming medical interventions.<sup>2</sup> Since some medical and surgical gender-affirming therapies can reduce fertility or lead to permanent sterility, it is essential that health care providers counsel TGD people about the options for fertility preservation before the initiation of such therapies.<sup>3</sup> However, physicians may not be equipped to meet this need. A 2018 survey of TGD men in the United States found

that more than half of the respondents had not discussed fertility desires with their health care providers.<sup>4</sup> We review the existing reproductive options for TGD people and emphasize the need for health care professionals to broach fertility planning with their TGD patients.

## Background

“Gender identity” is used to describe a person's sense of their gender as male, female, both, neither, or anywhere else along the gender spectrum.<sup>5</sup> Many diverse, culturally specific terms are used by individuals to describe their gender identities. “Transgender,” which may be abbreviated as “trans,” is an umbrella term for people whose gender identity does not align with the sex they were assigned at birth.<sup>6</sup> “Nonbinary” is an umbrella term for those whose gender identity is not exclusively male or female.<sup>7</sup> Terms such as “gender nonconforming,” “gender-diverse,” “gender-fluid,” and “gender-neutral” are also commonly used to describe gender identities or gender expressions that fall outside the gender binary.<sup>6</sup> “Cisgender” is used to describe people whose gender identity aligns with the sex they were assigned at birth.<sup>5</sup>

“Dysphoria” refers to the discomfort or distress that some TGD and nonbinary people experience as a result of the discrepancy between their gender identity and their sex assigned at birth. “Gender dysphoria” is a medical diagnosis that must be persistent and well documented in order to initiate gender-affirming hormonal and/or surgical therapies in BC.<sup>8-10</sup>

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The application of gender-affirming therapies is highly individualized for each person. In an interview in which he shared his experience with fertility treatments, Trystan Reese, a trans man, explained that “often people think about transition for trans people as being like a one and done thing. . . like it’s a map.”<sup>11</sup> Reese noted instead, that such interventions serve more as a “menu of options” that include hormones, surgery, binding, packing, tucking, padding, hair removal, and other forms of social transition, which TGD people may or may not choose to pursue at different points throughout their lifetime.<sup>11</sup>

Parenthood and pregnancy have been routinely framed within the context of cisgender, heteronormative family structures. Patients whose gender and sexual identities fall outside this framing have historically been discriminated against and denied access to assisted reproductive technologies, and have even had their competency as parents called into question.<sup>2</sup> While the right to access fertility services regardless of gender identity is now widely recognized, there is still much work to be done by the medical community to establish equity in fertility care. More research is needed to better understand the effects of gender-affirming hormone therapy on fertility and to optimize fertility treatment outcomes for TGD patients.<sup>2</sup>

In this review, treatment options are presented in two broad scenarios:

- Fertility preservation for TGD adults who wish to have a biological child *in the future*.
- Fertility treatments for TGD adults who are *currently ready* to start a family.

### Fertility preservation

For TGD adults with ovaries, options for fertility preservation include egg freezing, embryo freezing, and ovarian tissue freezing [Table].<sup>12</sup> The most common fertility preservation option for TGD adults with testicles is sperm freezing.

#### Egg freezing

TGD people with ovaries can undergo ovarian stimulation for egg retrieval and freezing. Even those who have received androgen therapy will respond to ovarian stimulation, although a temporary cessation of testosterone is recommended.<sup>12</sup> In the past, protocols required

a minimum of 3 to 6 months to allow for the return of menses before egg freezing, which is an unacceptable prerequisite for most patients.<sup>13</sup> However, a recent foundational case report by our group demonstrated a normal egg yield after only 7 days of being testosterone-free before initiating ovarian stimulation, and a total of only 24 days off testosterone to complete the entire treatment.<sup>13</sup>

**Parenthood and pregnancy have been routinely framed within the context of cisgender, heteronormative family structures. Patients whose gender and sexual identities fall outside this framing have historically been discriminated against.**

The process of egg freezing for TGD men is largely the same as for cisgender women. Daily subcutaneous injections of exogenous gonadotropins are administered to stimulate ovarian multifollicular growth over a period of approximately 2 weeks. Ultrasounds are performed regularly throughout the stimulation (normally via transvaginal approach, but transabdominal is possible) to monitor follicle growth. Eggs are removed by transvaginal aspiration in a minimally invasive procedure, usually under conscious sedation; however, some fertility clinics can offer a general anesthetic. Mature eggs are frozen in liquid nitrogen in a process called vitrification, or “flash-freezing.” Research suggests that they can be stored for long periods without decreasing in quality.<sup>14</sup> The average cost of an egg freezing cycle can vary by fertility clinic but usually costs around \$8000 for the procedure, \$3000 to \$5000 for medications, and \$500 annually for ongoing storage.

All people with ovaries are born with a finite number of eggs, which diminish over the next 5 decades. Therefore, cisgender women and gender-diverse people with ovaries are subject

to the same decline in egg quality and quantity throughout their lives.<sup>15</sup> The optimal time to freeze eggs is before age 35 when they are still at, or near, their best reproductive potential.<sup>16</sup> Although egg freezing can be performed until age 44, it is often not recommended after age 40 due to substantially lower efficiency and cost-effectiveness.<sup>16</sup> For example, in a person 34 years or younger, 10 frozen eggs confer about a 60% chance of one child in the future. Those same 10 eggs from a person age 41 to 42 years have an estimated live birth rate of 20%.<sup>17</sup> Furthermore, in people with lower ovarian reserve, it is sometimes not possible to obtain 10 eggs in one cycle. A reproductive endocrinologist will perform ovarian reserve testing, such as serum anti-Müllerian hormone and antral follicle count by ultrasound, prior to egg freezing. Finally, it is important to inform patients that no number of frozen eggs can guarantee a live birth in the future.

#### Embryo freezing

On the day of egg retrieval, individuals have the option of freezing their eggs unfertilized or inseminating them and culturing embryos for freezing (vitrification). The latter requires that the individual choose sperm, from either a donor or a partner, to be available at the time of egg retrieval. Freezing embryos instead of eggs has some advantages, such as providing more clarity about how the eggs may fertilize and grow into good-quality blastocysts. Embryos also have a higher vitrification-warming survival rate of 95% to 98% or higher compared to 80% for eggs.<sup>17,18</sup> Finally, embryos at the blastocyst stage can undergo preimplantation genetic testing for aneuploidy, whereas eggs cannot. The principal disadvantages of preserving embryos are the lack of flexibility to change one’s mind about the sperm source in the future and the dual consent required to use the embryos if a partner’s sperm was used.

#### Ovarian tissue freezing

Ovarian tissue freezing, wherein ovarian tissue is collected (often during oophorectomy), cryopreserved, and retransplanted in the future, has resulted in a reported 130 live births in cisgender women to date worldwide.<sup>7,12,19,20</sup> The “experimental” label was removed from

this promising therapy in 2019.<sup>21</sup> However, the American Society for Reproductive Medicine states that ovarian tissue freezing should be offered only to carefully selected patients, given the limited data on its safety, efficacy, and reproductive outcomes.<sup>21</sup> Currently, this procedure is not widely performed in Canada and is rarely used relative to standard egg freezing.

**Sperm freezing**

In TGD people with sperm, the use of gender-affirming estrogen therapy can suppress gonadotropin levels via negative feedback to the hypothalamus and pituitary. Reduced or absent follicle-stimulating hormone and luteinizing hormone levels result in lower stimulation of the Sertoli (sperm-producing) and Leydig

(testosterone-producing) cells, which leads to lower serum and intratesticular testosterone levels and absent spermatogenesis.<sup>22</sup> The extent of luteinizing hormone and follicle-stimulating hormone suppression may be dose dependent. One retrospective cohort study of TGD patients with sperm reported that there was a trend toward worsening semen parameters in those

**TABLE. Family building options for transgender and gender-diverse individuals.\***

Any partner	Patient				
	Patient with ovaries and a uterus	Patient with ovaries and without a uterus†	Patient with a uterus and without ovaries†	Patient with sperm	Patient without ovaries, a uterus, or sperm†
<b>Any partner with ovaries and a uterus</b>	<ul style="list-style-type: none"> <li>IUI‡ with donor sperm (for the patient and/or partner)</li> <li>IVF§ using patient's or a partner's eggs with donor sperm (patient and/or partner may carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IUI with donor sperm (for a partner)</li> <li>IVF using patient's or a partner's eggs with donor sperm (partner to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IUI with donor sperm (for a partner)</li> <li>IVF using a partner's eggs with donor sperm (patient or partner to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>Intercourse</li> <li>Home insemination with patient's sperm</li> <li>IUI with patient's sperm (for a partner)</li> <li>IVF with patient's sperm (a partner to carry the pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IUI with donor sperm (for a partner)</li> <li>IVF with donor sperm (a partner to carry the pregnancy)</li> </ul>
<b>Any partner with ovaries and without a uterus†</b>	<ul style="list-style-type: none"> <li>IUI with donor sperm for the patient</li> <li>IVF using patient's or a partner's eggs with donor sperm (patient to carry the pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using patient's or a partner's eggs with donor sperm (gestational carrier carries pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using a partner's eggs with donor sperm (patient to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using a partner's eggs with patient's sperm (gestational carrier carries pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using a partner's eggs with donor sperm (gestational carrier carries pregnancy)</li> </ul>
<b>Any partner with a uterus and without ovaries†</b>	<ul style="list-style-type: none"> <li>IUI with donor sperm (for patient)</li> <li>IVF using patient eggs with donor sperm (patient or partner to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using a patient's eggs with donor sperm (partner to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with donor sperm (patient or partner to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with patient's sperm (partner to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with donor sperm (partner to carry pregnancy)</li> </ul>
<b>Any partner with sperm</b>	<ul style="list-style-type: none"> <li>Intercourse</li> <li>Home insemination with partner's sperm</li> <li>IUI with partner's sperm (for the patient)</li> <li>IVF with a partner's sperm (patient to carry the pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using patient's eggs with a partner's sperm (gestational carrier carries pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with partner's sperm (patient to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with patient's and/or a partner's sperm (gestational carrier carries pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with a partner's sperm (gestational carrier carries pregnancy)</li> </ul>
<b>No partner or a partner without ovaries, a uterus, sperm†</b>	<ul style="list-style-type: none"> <li>IUI with donor sperm (for the patient)</li> <li>IVF with donor sperm (patient to carry the pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using patient's eggs with donor sperm (gestational carrier carries pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with donor sperm (patient to carry pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with patient's sperm (gestational carrier carries pregnancy)</li> </ul>	<ul style="list-style-type: none"> <li>IVF using donor eggs with donor sperm (gestational carrier carries pregnancy)</li> </ul>
<b>Fertility preservation for the patient</b>	<ul style="list-style-type: none"> <li>Egg/embryo freezing</li> <li>Ovarian tissue freezing**</li> </ul>	<ul style="list-style-type: none"> <li>Egg/embryo freezing</li> <li>Ovarian tissue freezing</li> </ul>	<ul style="list-style-type: none"> <li>No options are currently available</li> </ul>	<ul style="list-style-type: none"> <li>Sperm/embryo freezing</li> <li>Testicular tissue freezing (experimental)</li> </ul>	<ul style="list-style-type: none"> <li>No options are currently available</li> </ul>

\* In addition, all people have the option of adoption and step-parenthood.

† Without/lack of a uterus/sperm/ovaries refers to the biological absence of an organ, a desire not to use the organ, or the impaired reproductive function of the organ.

‡ IUI = intrauterine insemination

§ IVF = in vitro fertilization

\*\*Ovarian tissue freezing is performed only in specialized fertility clinics. See the discussion under the section "Fertility preservation."



who had previous exposure to estrogen compared to those who were estrogen-naïve.<sup>23</sup> The subjects who were using exogenous estrogen at the time of the study had a higher prevalence of abnormal semen analysis results, and three of the seven current users had no sperm at all (azoospermic).<sup>23</sup> Stopping estrogen therapy is recommended to assess for the recovery of sperm parameters before trying to conceive.

To obtain a sperm sample for freezing in those who have already begun estrogen therapy, it is unclear how long hormones should be stopped before normal spermatogenesis resumes.<sup>1,24</sup> The resumption of sperm production after the cessation of exogenous estrogen can be extrapolated from testosterone contraception trials.<sup>25</sup> The recovery of sperm concentration to more than 20 million/mL required a median time off testosterone of 3.4 months.<sup>25</sup> However, it took up to 24 months for 100% of individuals to attain spermatogenesis.<sup>25</sup> In practice, the patient might be advised to perform a routine semen analysis at an outpatient laboratory to screen for the presence and concentration of sperm. Once spermatogenesis has returned, the patient can seek sperm freezing at a fertility clinic. The cost is estimated at approximately \$400 and \$800 annually for storage, but this may vary by clinic.

Some patients do not tolerate the extended cessation of estrogen therapy required to achieve completely normal levels of spermatogenesis (> 39 million sperm per sample).<sup>26</sup> These patients can be counseled to bank a semen sample before the complete restoration of spermatogenesis. In vitro fertilization with intracytoplasmic sperm injection (IVF/ICSI) requires low numbers of sperm, which renders the freezing of samples with even very low numbers of sperm (thousands or tens of thousands of sperm per sample) a feasible option. For fresh sperm samples, extremely low numbers of sperm (tens or hundreds) can be sufficient for IVF/ICSI because the sample is not subject to the freeze-thaw process, through which, on average, the amount of viable sperm is reduced by 50%.<sup>27</sup> To obtain enough sperm for the less costly and less invasive procedure of intrauterine insemination, several samples with normal concentration (> 15 million sperm/mL) should be banked.

### Prepubertal patients

In the pediatric population, reversible gonadotropin-releasing hormone agonist analogs are often prescribed as a means of suppressing puberty and the development of secondary sexual characteristics until patients are ready to begin hormone therapy.<sup>22</sup> The desire for fertility preservation appears to be lower among TGD youth than among TGD adults based on a review that reported an estimated 24% to 36% of TGD youth wanted biologically related children.<sup>1</sup> However, it has been reported that far fewer TGD youth access fertility preservation counseling than are interested, and only a small number ultimately choose to pursue preservation treatment before gender-affirming therapies.<sup>28</sup> However, a 2018 survey of TGD adolescents and young adults reported that nearly half agreed that their feelings about fertility might change in the future.<sup>29</sup> Prepubertal options for fertility preservation are limited to ovarian tissue and testicular tissue freezing.<sup>1</sup> The long-term effect of pubertal suppression on fertility is unknown.<sup>1</sup> Testicular tissue freezing remains experimental, and no reported live births have resulted from this method.<sup>12</sup>

### Fertility treatments

The fertility options for TGD individuals are largely the same as those available to cisgender individuals [Table].<sup>3</sup> However, efforts should be made to limit the exacerbation of gender dysphoria during fertility treatment.<sup>5</sup> Furthermore, patients should be advised that the current practice is based on expert opinion, small case studies, and extrapolations from cisgender populations.<sup>1</sup>

### Patients with ovaries

Testosterone therapy potentially affects ovarian architecture and function.<sup>30</sup> One study of TGD individuals undergoing oophorectomy who had a history of long-term testosterone therapy found a histologic trend toward polycystic ovarian morphology (increased ovarian volume and numerous ovarian follicles).<sup>31</sup> However, another study reported no change in the distribution of ovarian follicles.<sup>32</sup> There are conflicting findings on the effect of exogenous testosterone on ovarian reserve. Anti-Müllerian

hormone is produced by the granulosa cells in small ovarian follicles and has been validated as an accurate measure of ovarian reserve, regardless of cycle timing.<sup>33</sup> Research suggests that anti-Müllerian hormone levels are significantly lower after the initiation of testosterone therapy in TGD individuals.<sup>34</sup> However, a 2016 study of adolescent TGD patients reported no change in anti-Müllerian hormone levels with hormone therapy.<sup>35</sup> It seems plausible that testosterone therapy would not interfere with the measurement of ovarian reserve, as anti-Müllerian hormone is only slightly lower in long-term users of oral contraceptive pills.<sup>36</sup>

In light of the paucity of safety data, the World Professional Association for Transgender Health and the American Society for Reproductive Medicine presume a loss of fertility with the use of hormone therapy and recommend reviewing the options for fertility preservation prior to the initiation of any hormonal or surgical gender-affirming care.<sup>2</sup> While high-quality evidence is needed,<sup>23,30</sup> it is reassuring to note that several case reports and cohort studies have shown promising in vitro fertilization and egg freezing outcomes even after years of hormone therapy.<sup>11,12,22</sup>

TGD patients with ovaries who wish to have someone else carry the pregnancy can undergo ovarian stimulation and egg retrieval for the purposes of in vitro fertilization. A 2019 retrospective cohort study that compared assisted reproductive technology outcomes in TGD individuals with ovaries and outcomes in cisgender women found similar ovarian stimulation outcomes between the two groups.<sup>37</sup> Most of the TGD patients were undergoing testosterone therapy at the time of presentation, with a mean time of 44 months on testosterone and an average of 4 months cessation before beginning ovarian stimulation. There was no significant difference between TGD and cisgender patients in terms of the number of eggs retrieved, which suggests that even long periods of testosterone therapy do not have negative effects on ovarian stimulation.<sup>37</sup>

For many patients, the requirement to stop or delay testosterone therapy is a major deterrent to proceeding with ovarian stimulation.<sup>37</sup> In the largest study of its kind, a review of 53 patients found that less than 50% of the cohort

who originally presented for fertility consultation ultimately proceeded with treatment.<sup>37</sup> The cessation of gender-affirming hormones is one of several aspects of the fertility process that may amplify patients' experience of gender dysphoria.<sup>19</sup> For TGD individuals, the administration of exogenous gonadotropins needed for ovarian stimulation and its subsequent increase in endogenous estrogen production may be a "highly feminizing" and distressing experience.<sup>19</sup> Egg retrieval and repeated transvaginal ultrasound assessment may also lead to discomfort. It is important to discuss these considerations with patients. Strategies to help reduce patient dysphoria during this process include the addition of an aromatase inhibitor (estrogen blocker) during ovarian stimulation and the use of transabdominal rather than vaginal ultrasonography when possible.<sup>19</sup>

#### Patients with a uterus

TGD people with a uterus can carry a pregnancy as long as testosterone is not used during gestation because it could lead to virilization of a female fetus.<sup>19</sup> Some TGD patients with a uterus and ovaries may choose to stop hormonal therapy and resume spontaneous ovulation to conceive by intercourse, home insemination, or intrauterine insemination.

If the intent is to conceive with embryo transfer from in vitro fertilization, the return of spontaneous menses is not a prerequisite. Even if the patient does not stop hormone therapy long enough to attain a menstrual cycle, exogenous estrogen and progesterone can be administered to induce endometrial growth and receptivity. This is common practice for postmenopausal cisgender women who achieve pregnancy with donor eggs. Pregnancy has been reported in TGD individuals who were previously exposed to exogenous testosterone, but the available studies are small and observational.<sup>19,30,38</sup> After giving birth, some TGD people may choose to chestfeed their infants (even if they have had prior chest masculinization surgery).<sup>39</sup> Of note, testosterone abstinence is recommended during this time because the elevated serum testosterone level can suppress lactation.<sup>40</sup> Obstetrical care providers should use gender-inclusive language to discuss pregnancy, childbirth, and lactation, and should be aware

of the potentially undesired physical changes associated with these experiences.

#### Patients with sperm

For TGD people with sperm, fertility options include intercourse, home insemination, intrauterine insemination, or in vitro fertilization. People with sperm can choose to fertilize a partner's eggs or donor eggs and use a partner's uterus or gestational carrier to gestate the

**While high-quality evidence is needed, it is reassuring to note that several case reports and cohort studies have shown promising in vitro fertilization and egg freezing outcomes even after years of hormone therapy.**

pregnancy [Table]. Although IVF/ICSI is often successful, even with extremely low sperm counts, there are limited data describing IVF outcomes with sperm from TGD individuals.<sup>24</sup>

Masturbation as a means of sperm collection for fertility treatments may prove distressing to TGD patients. The requirement to temporarily stop or delay gender-affirming therapy may also worsen dysphoria. In order to minimize this stress, alternative options for sperm collection include penile vibratory stimulation, transrectal electroejaculation, or surgical sperm retrieval.<sup>28</sup> Some of these minimally invasive options may require local or general anesthesia.

#### Fertility after gender-affirming surgery

Some TGD people choose to access surgical gender-affirming therapies as part of their transition process. Surgical interventions such as hysterectomy and/or gonadectomy may result in permanent sterility unless gonadal tissue, sperm, or eggs are frozen ahead of time. There are currently no fertility preservation options available for patients who have completed these

procedures [Table].<sup>12</sup> For TGD men who undergo hysterectomy without oophorectomy, egg retrieval for in vitro fertilization or egg freezing can still be performed.

#### Barriers to care

In addition to the risk of elevated dysphoria during the fertility process, TGD individuals experience many systemic barriers in accessing fertility care. As societal inequities contribute to TGD people being disproportionately affected by poverty, homelessness, and unemployment, cost is routinely cited as a major barrier to accessing fertility treatments.<sup>9,12</sup> There is no provincially funded medical coverage for fertility preservation, in vitro fertilization, or insemination in BC, and the financial burden of treatment may prove particularly onerous for young people.<sup>19</sup> Infrequent fertility inquiry and counseling by providers, inadequate provider knowledge of TGD reproductive health, limited access to fertility centres in rural communities, and the fear and lived experience of discrimination are also significant barriers.<sup>7,28,38</sup>

Providers can improve fertility care for their TGD patients by inquiring about their gender identity, pronouns, and preferred terms for body parts, and by revising clinic forms to include this information.<sup>41</sup> Providers should be familiar with TGD reproductive health and the potential barriers to care.<sup>19</sup> Fertility counseling regarding egg/sperm preservation and reproductive options should be the standard of care for all TGD patients.<sup>24</sup> Reproductive counseling can be delivered by the primary care physician or referred to a specialist in endocrinology, urology, obstetrics-gynecology, or infertility.

#### Summary

Comprehensive fertility counseling is critical to the equitable provision of care to TGD patients. While TGD individuals desire parenthood at similar rates as cisgender individuals, research suggests most fail to receive fertility counseling from any health care providers.<sup>4,24</sup> Because some medical and surgical gender-affirming treatment may negatively impact future fertility, it is critical to address the options for fertility preservation and family-building options before initiating such therapies.<sup>3</sup> ■

**Competing interests**

None declared.

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**Additional resources**

**ASRM Today—Transgender care: A patient's view with Trystan Reese [podcast]** <http://asrmtoday.org/asrm-today-transgender-care-a-patients-view-with-trystan-reese>

**Inappropriate questions: "How did you get pregnant?" [podcast]** [www.cbc.ca/radio/iqpodcast/how-did-you-get-pregnant-1.5622930](http://www.cbc.ca/radio/iqpodcast/how-did-you-get-pregnant-1.5622930)

**Trans-inclusive abortion services [PDF]** [www.optionsforsexualhealth.org/wp-content/uploads/2019/07/FQPN18-Manual-EN-BC-web.pdf](http://www.optionsforsexualhealth.org/wp-content/uploads/2019/07/FQPN18-Manual-EN-BC-web.pdf)

**Gender inclusive language [PDF]** [www.phsa.ca/transcarebc/Documents/HealthProf/Gender\\_Inclusive\\_Language\\_Clinical.pdf](http://www.phsa.ca/transcarebc/Documents/HealthProf/Gender_Inclusive_Language_Clinical.pdf)

**Gender-affirming care for trans, Two-Spirit, and gender diverse patients in BC: A primary care toolkit [PDF]** [www.phsa.ca/transcarebc/Documents/HealthProf/Primary-Care-Toolkit.pdf](http://www.phsa.ca/transcarebc/Documents/HealthProf/Primary-Care-Toolkit.pdf)

**Sexual & reproductive health: Information about sexual health and reproductive planning for trans and gender diverse people [web resource]** [www.phsa.ca/transcarebc/care-support/access-care/sexual-hlth](http://www.phsa.ca/transcarebc/care-support/access-care/sexual-hlth)

**Fertility options for every LGBTQ family out there [article]** [www.huffingtonpost.ca/dr-caitlin-dunne/fertility-options-for-every-lgbtq-family-out-there\\_a\\_23078542/](http://www.huffingtonpost.ca/dr-caitlin-dunne/fertility-options-for-every-lgbtq-family-out-there_a_23078542/)





## Engaging community physicians on COVID-19 prevention in the workplace

**T**hroughout the COVID-19 pandemic, WorkSafeBC has continued to deliver its essential services across the province. Those include prevention services to help ensure workers remain safe.

Every year, we focus our prevention efforts on high-risk work activities in health care and community social services worksites under our high-risk strategy. With the pandemic, we've had to shift our focus to also include reducing the risk of workplace COVID-19 transmission.

Engaging community physicians has been a key element of our COVID-19 prevention response, for two reasons. First, physicians and their staff play an important role as health care providers to the injured workers we support. Second, with the high risk of COVID-19 transmission in health care, physicians play an instrumental role as employers in keeping their own workplaces and workers safe.

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

### How we've been engaging community physicians

From January 2020 to 21 December 2021, we engaged with 122 community physician offices and employers on health and safety matters related to the pandemic. These engagements consisted of 85 workplace inspections conducted by our prevention officers to verify that employers are meeting their obligations to manage the risk of COVID-19 in their workplaces and 37 consultations conducted by our Occupational Health and Safety Consultation and Education Services team to share information and guidance specific to the needs of the employer.

In May 2020, one of our Prevention Services team members and a medical advisor copresented, as panelists, a webinar titled "Office-based primary care: Safety for your patients, your staff, and yourself" in the COVID-19 UBC CPD webinar series.

### Our continuing engagement

In recognition of the important role community physicians play in worker health and safety,

WorkSafeBC will continue to engage with you on both your pandemic and nonpandemic workplace health and safety needs.

We'll also provide updates on health and safety information that is relevant to physicians and your industry group, including changes to regulations and health and safety resources. We would like to hear your feedback about industry-specific health and safety concerns and challenges, and we will incorporate this feedback when reviewing current resources or developing new ones in collaboration with Doctors of BC.

### For more information

Visit [www.worksafebc.com](http://www.worksafebc.com) to learn more about COVID-19 prevention and our Health Care and Social Services High Risk Strategy. Contact our Prevention Information Line at 604 276-3100 or 1 888 621-SAFE if you have questions or concerns about workplace health and safety. ■

—**Jacqueline Holmes**  
**Manager, Prevention Field Services**

# Are antibiotic courses for common infections simply too long?

From the beginning of antibiotic therapy, the length of prescription or days of therapy (DOT) was not evidence driven. Practice settled on 1 or more weeks, predicated on the *incorrect* belief that longer courses (well past clinical remission) might reduce the risk of relapse or of antibiotic resistance.<sup>1,2</sup> There is increasing evidence that shorter durations of antibiotic therapy are as effective as longer ones for many common infections.<sup>3</sup> In fact, extended courses that continue beyond resolution of the infection predictably increase the risk of antibiotic resistance. Here we report on the duration of therapy of community antibiotic prescriptions in British Columbia in the context of up-to-date guidelines from the Association of Medical Microbiology and Infectious Disease Canada.<sup>4</sup>

BC PharmaNet prescription data from our last pre-pandemic year (2019) were used to calculate the median duration (quartiles: Q1, Q3) of antibiotic prescriptions overall, by prescribing profession and drug. Physician prescriptions (~85% of total) were anonymously linked to MSP billing data to describe DOT distribution by indication.

In 2019, median DOT (Q1, Q3) per prescription in BC for all antibiotic prescriptions was 7 (7, 10) days, with the exception of naturopathic physicians where it was 14. Under-scoring practice's focus on 7 days as a standard measure, the median DOT per prescription was 7 days across all diagnoses. Distributions skewed further to the right (more long courses) for cellulitis, pyelonephritis, and acute bronchitis [Figure].

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

The median DOT for community-acquired pneumonia was 7 days overall, but courses of 10 days duration remain common. Most treatments were prescribed for 7 to 10 days, except azithromycin, which was 5 days. Current guidance emphasizes the adequacy of 3 to 5 days of treatment, and this is not limited to long-acting macrolides.<sup>5</sup>

Cystitis also saw a 7-day median DOT overall. For uncomplicated infections in women (the majority), current guidance recommends 5 days of nitrofurantoin, 3 days of cotrimoxazole, or 1 day of fosfomycin.<sup>4</sup> DOT for nitrofurantoin and other specific drugs often exceeded these recommendations.

Ciprofloxacin was the most commonly prescribed antibiotic for pyelonephritis, followed by cefixime. While median duration of treatment was appropriately 7 days, 10-day courses were almost as popular. While this is appropriate

in complicated or slowly responding cases, it is more than is needed to resolve most pyelonephritis cases.<sup>4</sup>

For cellulitis, current guidance emphasizes 5 to 7 days of treatment.<sup>4</sup> Few prescribers in BC have adopted the shorter end of this range, and

10-day courses of cephalexin and clindamycin are common [Table].

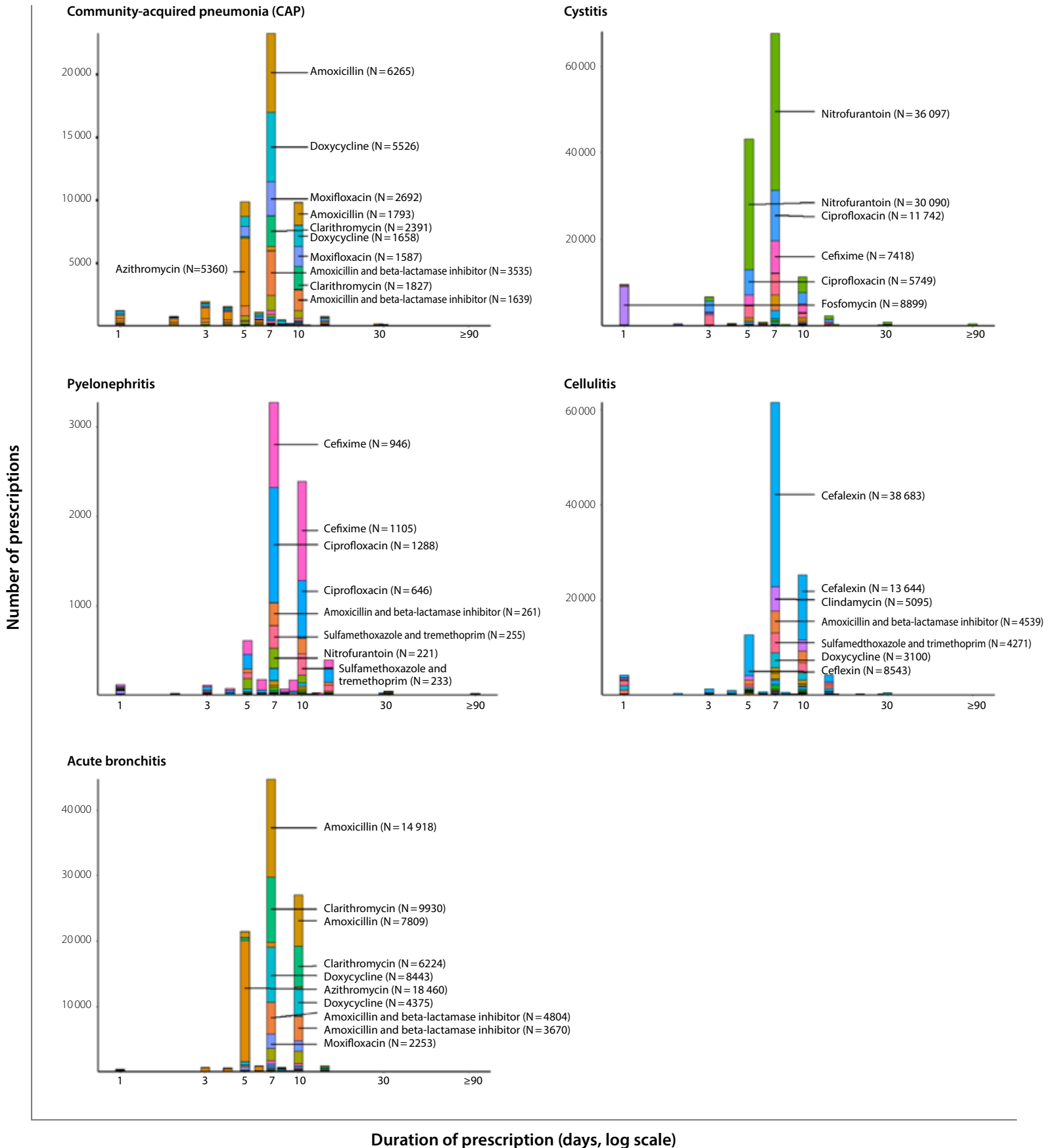
In BC, durations of antibiotic therapy observed during 2019 frequently exceeded the evidence-based recommendations. Prescribers must be able to exercise clinical judgment in man-

aging complicated or atypical cases, but generally, should aspire to have population prescribing patterns that align with guidelines. The benefits include a reduced risk of immediate adverse effects and lower individual and population risk of selecting for resistant organisms. If we collectively update our prescribing practices to align with current evidence on duration of

**In BC, durations of antibiotic therapy observed during 2019 frequently exceeded the evidence-based recommendations.**

**TABLE. Summary of recommendations for duration of therapy in selected common infections (excludes infants ≤ 2 months of age). Adapted from "Duration of antibiotic therapy for common infections."<sup>4</sup>**

Infection	Population	Recommended duration
Community-acquired pneumonia	Children and adults	3–5 days <sup>5</sup>
Uncomplicated cystitis	Women/adolescents	Nitrofurantoin–5 days TMP-SMX–3 days Fosfomycin–1 day
Pyelonephritis and urosepsis	Adults	<ul style="list-style-type: none"> <li>Consider an initial dose of IV dose aminoglycoside or ceftriaxone at outset</li> <li>Quinolones or β-lactams 7 days</li> </ul>
Uncomplicated non-purulent or purulent cellulitis	Children and adults	5–7 days unless hospitalized with extensive or severe disease



**FIGURE.** Duration of prescription for different drugs prescribed for common infections in 2019 in BC.

Article continued on page 85



# Who said tax was fair?

The Canadian tax system is complex. It is prudent to consult an accountant and tax advisor to minimize your taxes today and plan for the future.

Heather S. Loblaw, CPA, CA



**Y**ou've studied hard at school, spent many years training, and worked endless hours, only to have the tax collector come and take half of it away. This is a frustration of many professionals; it makes it seem as though the Canadian tax system is working against them. A couple of specific frustrations are the lifetime capital gains exemption and GST, both of which I explain here, along with describing how you can still take advantage of some ways to save some tax.

## Lifetime capital gains exemption

You may have heard about the last of the great Canadian tax advantages, the lifetime capital gains exemption, which is available to business owners in Canada. The exemption allows each shareholder to realize a capital gain on the sale of company shares of up to \$892,218 (2021) tax free, a savings of approximately \$238,000 in BC.

However, Canada Revenue Agency does not give easy access to this exemption, and not every private Canadian company will qualify.

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*This article has been peer reviewed.*

The company must meet certain tests, including:

- The exemption is available only to individuals (not corporations) who have disposed of qualifying shares of a Canadian company.
- The individual must have owned the shares throughout the 24-month period prior to the disposition.
- All or substantially all (at least 90%) of the company's assets must be used in an active business carried on primarily in Canada at the time of the disposition.
- More than 50% of the company's assets must have been used in an active business carried on in Canada throughout the 24 months prior to the disposition.

In the case of a medical practice, a physician must find someone willing to purchase their professional corporation and practice from them, which is not that common as new family physicians can build their own practice quite easily.

It is also typical for a physician to build wealth in their company in the form of cash and other passive investments such as marketable securities, rental properties, etc. All of these would put the company offside for the asset tests noted above as they are not needed to run the business (often referred to as redundant assets). In view of these restrictions (and in the absence of advance planning), many physicians are, unfortunately, not able to take advantage of this tax exemption.

Before making any decisions as you reach retirement, it is important to contact your tax advisor to plan for tax minimization. There are tax rules that can work in your favor.

**Incorporation.** A medical practice that is carried on in the form of a professional corporation will pay only 11% corporate income tax in BC on its active business income up to \$500,000 in a given taxation year. If a physician earned that income personally, their marginal tax rate could be as high as 53.5%. As such, incorporating the medical practice can provide a tax deferral of 42.5% on the cash that the physician does not require to fund their lifestyle. If the deferred tax is invested, the deferral can amount to a significant sum over a career of, say, 30 years, which an unincorporated individual or an employee would lose out on.

## **BOX.** What else can physicians do to reduce the tax burden?

- Pay a salary to a spouse or child for services rendered to help you earn your self-employment income. This must be at a rate that you would pay another third party for similar services.
- Consider setting up an individual pension plan.
- Contribute to a registered retirement savings plan.
- Contribute to a tax-free savings account.

**Investments.** If a company pays less tax on earnings, this leaves more money to invest and earn a return on. Although passive nonbusiness income (e.g., interest, rental income) is taxed at 50.67% in BC, the company would have more money to invest initially and, therefore, would produce a greater nest egg in the end. However, it should be noted that investment income of more than \$50 000 in a taxation year can reduce the amount of income subject to the 11% rate. Generally, the low rate is available on the first \$500 000 of taxable income from the medical business. Any medical income over the \$500 000 limit is subject to a tax rate of 27% in BC.

**Refundable taxes.** Investment income (passive nonbusiness income) is subject to a higher tax rate than business income (50.67% versus 11%), but a portion of the higher rate is refunded when the company distributes taxable dividends to its shareholders. A tax pool (refundable dividend tax on hand) is created at a rate of 30.67% for each \$1 of passive nonbusiness income earned. A tax refund is available to the company at a rate of 38.33 cents per \$1 of taxable dividends paid, limited to the balance in the refundable dividend tax pool. This refundable tax approximates the tax that would be paid personally if the passive nonbusiness income were earned personally. It also approximates the additional taxes that could be paid personally on a dividend.

**Retirement.** Once a physician reaches age 65, and assuming their tax professional advised them to have their spouse as a nonvoting participating shareholder of the company, they can income split with their spouse. Thus, in retirement years, when the cash that has been invested in the company is needed, a dividend can be paid to both the physician and their spouse. This results in paying tax at lower marginal rates than if the physician had to report the entire dividend personally.

The physician will have paid tax on the corporate business income at the lowest tax rates and have been able to defer the tax on funds not withdrawn. This is a huge advantage over most Canadians who are employees and are taxed on all their income at much higher marginal tax rates.

### GST on contract work

When a physician is contracted to do work, they are typically charged an overhead fee by the third party. The overhead must have GST (5%) charged on it, and because medical services are a nontaxable supply, physician contractors are unable to recover the GST they pay. Over many years of working as a contract physician, this 5% charge can really add up. Other examples of businesses that cannot recover the GST paid include dentists, chiropractors, physiotherapists, insurance brokers, insurance companies, and banks (i.e., exempt businesses). However, as a contractor (versus an employee of a third party) a physician does receive other benefits, such as:

- Paying the low corporate tax rate of 11%, if incorporated.
- The ability to split income upon retirement (over age 65), if incorporated.
- The ability to deduct other expenses such as office supplies, medical dues, travel, and legal and accounting fees.

GST paid is also nonrecoverable if the physician operates their own medical practice directly or through a corporation. This applies to all exempt businesses and can represent a huge cost. In some cases, these businesses attempt to identify expenses that are not associated with the activity that is exempt from GST to try to recover some of the GST paid. However, this may be difficult in the context of a physician operating a medical practice. Contracting physicians are also not required to charge GST on their services, which is a benefit to patients.

The Canadian tax system is complex and can appear unfair to the average taxpayer. It is prudent to consult an accountant and tax advisor regularly to ensure you are minimizing your taxes today and planning for your future. See the **Box** for additional tax-reducing considerations. ■

*Continued from page 83*

treatment, we can make a difference against antimicrobial resistance. As with much drug treatment, shorter is often better. ■

—**Abdullah A. Mamun, MD**  
BC Centre for Disease Control

—**Daniela Michel, MPH**  
BC Centre for Disease Control

—**Max Xie, MSc**  
BC Centre for Disease Control

—**Edith Blondel-Hill, MD**  
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# Dr Terry Meadows: The dreams and decisions that shaped a life

“To accomplish great things, we must not only act, but also dream; not only plan, but also believe.”

—Anatole France

This quote inspired the author to reflect on the unique journey that Dr Meadows has traveled since he began it in Prince George in 1952.

Hilary Spicer

**D**r Terry Meadows is one of my heroes. I am proud of him: proud of the example he offers, quietly, of following a dream, of working hard to achieve it, of committing to do his best, be it advising others about their health, comforting someone who is dying, being a great dad and husband, growing his own vegetables, making furniture, building guitars. . . the list goes on. He is modest, well read, compassionate, knowledgeable on a variety of topics, and guided by his faith. He has worked for years as a highly skilled family physician, his last assignment as a consultant in the Victoria Cancer Clinic. His story, which is still being written, has inspired me; I know it will inspire you as well.

Terry began life in Prince George, born into a family with little material wealth. There were no frills in his home. Life was simple. He learned early to work hard. His affinity for working with wood emerged when he learned how to make toys, guided by his father and

grandfather, and moved to building soapbox cars at age 13. He was an enthusiastic participant in soapbox derbies, and gained sponsorship from a Prince George tire company. Over 3 years, he designed and built three increasingly efficient and sophisticated versions of his soapbox cars. He won his local derby in Prince George and eventually placed second at the Western Canada Championship races in Mission. Throughout secondary school, Terry's dream grew into wanting to train for formula racing. To raise the funds needed to reach his goal, he delivered papers, worked 7 days a week at a local gas station while attending school, and later worked in Prince George pulp mills.

At age 18, after completing high school, he headed to Norfolk, England, to attend the Jim Russell Car Racing School, where he learned to drive and race Formula Fords. During spring and summer months, he worked on construction sites to support his goal of becoming a successful racing car driver. During the winters, Terry returned to Prince George to work in pulp and lumber mills in order to purchase and race his own Formula Ford in Britain. He continued crossing the Atlantic over 5 years to financially support his racing dream.

On one of these occasions, the Prince George mill administrator invited Terry to write an aptitude test with the possibility of

training to become a maintenance supervisor at the mill. Terry scored very high and was offered the position; however, he chose instead to continue pursuing his racing dream.

The subsequent 4 years of racing were challenging. The Formula Ford he had purchased had a faulty design—when Terry started working for the race car builder, he identified a basic problem with suspension geometry that made the car's handling unpredictable. Additionally, with time, it became apparent that he was

missing two crucial ingredients in his quest to become a racing professional: money and talent. Finally, after the racing death of a close comrade, Terry decided that he needed a new direction in life.

Initially, Terry returned to the construction trades.

With encouragement from

friends and his church community, and his own realization that he loved to work with his hands as well as his mind, he started thinking about applying to dental or medical school, and began the long trek to get the med school prerequisite courses under his belt. He studied at the College of New Caledonia for 2 years, again supporting himself by working at a local lumber mill, and was then accepted into third-year honors human physiology at UBC. When it came time to apply to medical school, he passed his MCAT on the first try and began his medical studies in earnest.

**“Do not follow  
where a path may lead.  
Go instead where  
there is no path  
and leave a trail.”**

—Ralph Waldo Emerson

---

*Ms Spicer has been a faculty associate at UBC and SFU in the faculties of education, teacher training. She has volunteered in Cuba since 2001 almost every year and spent 2017–18 as a volunteer teacher trainer in Ghana. She has also produced educational resources on teaching through the arts as well as on gender equity. Dr Meadows is her brother-in-law.*

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*This article has been peer reviewed.*





Taken at racing school in Snetterton, England, 1976.

**“A dream doesn’t become reality through magic; it takes sweat, determination and hard work.”**

—*Colin Powell*

Terry certainly lived this quote. He graduated with an MD in 1985, then headed to Quesnel as a resident in the newly minted UBC Rural Family Practice Residency Program and did rotations in obstetrics and pediatrics in Kelowna. He spent 3 years there, honing his skills as a locum physician and doing ER work. In 1989, Terry purchased a practice in Brentwood Bay on Vancouver Island, where he worked the full gamut of a family medical practice for the next few years. In 1993, he bought an old house in the area, renovated it, and turned it into a neighborhood walk-in clinic as well as a home for his family practice. He was based there until 2006 when he began to do rural locums in communities such as Fort St. James, Port McNeill, and Tofino. During this time, Terry took courses in palliative care, which he put to compassionate use in the Victoria Cancer Clinic, caring for patients on the wards and supporting their families.

Terry recently retired from this position and has embarked on another interest, building the most exquisite guitars. His affinity for guitars began at age 16, when he, like many young people, strummed a guitar to Eric Clapton and the Beatles. He also studied classical and flamenco guitar for a time with a teacher in Prince George.

Terry considers the work of building guitars to be a science and an art. Art determines the grain and the color selections of the wood (wood is appropriate for its sonic qualities). Engineering principles are applied to the construction of some of the shapes of the instrument and how it is otherwise adorned. With every instrument he builds, there are problems to solve, which can be intellectually challenging, yet creating a musical instrument from raw wood is also immensely satisfying. He loves the hours he now spends in his workshop each day.

Terry loved practising medicine and still misses the intellectual stimulation and camaraderie of his colleagues, but he does not miss the stress and pressure that was often involved. His family, faith, being able to spend more time outdoors and in the garden, as well as his interest in music and building guitars, are helping him transition to this new chapter. He encourages young physicians to continue to build and maintain ties to family and friends, and to keep up with interests outside of medicine. For those physicians thinking of retiring, he acknowledges that it may be hard, but it is wonderful to realize that there is another world out there and that, ultimately, a person’s identity is not tied up with what they do for a living.

Terry Meadows lives in Saanichton with his wife, Robin, and daughter, Rachel. His son, Ben, is away at university. ■



Terry’s graduation photo, UBC Medical School, 1985.



Terry with the first guitar he built.

# 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](http://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 cofacilitated 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](http://www.physicianhealth.com/how-we-can-help/peer-support). Email [peer.support@physicianhealth.com](mailto:peer.support@physicianhealth.com) for the link to join by phone or video.

## CME ON THE RUN! PRENATAL, PEDIATRICS, AND ADOLESCENTS SESSION

### Online (8 April and 3 June 2022)

The CME on the Run! sessions are offered online. Registrants will receive an email on how

to log in to the online virtual portal before each session. Each session runs on Friday afternoons from 1–5 p.m. and includes great speakers and learning materials. Session topics and dates: 8 April 2022 (Prenatal, Pediatrics, and Adolescent): Common Newborn Concerns During Well Baby Assessments; the Limping Child: Normal and Worrisome Gait Disturbances; Latest on Long-Acting Contraceptives in Adolescents; Two Years Later: COVID-19 Infection and Pregnancy; Update on Genetic Prenatal Screening; Asthma vs. Reactive Airways Disease in Children—Identification and Treatment; Childhood Cancer—What Not to Miss; and Review on Breastfeeding Benefits—How to Educate and Support Patients. The next session is on 3 June (Internal Medicine). Learn more and register at <https://bit.ly/cotr2021-2022> or e-mail [cpd.info@ubc.ca](mailto:cpd.info@ubc.ca).

## 21st ANNUAL BC ENDOCRINE DAY

### Online (13 May 2022)

The Endocrine Research Society is pleased to present the 21st BC Endocrine Day, an annual CFPC- and RCPSC-accredited case-based

review of common endocrine problems encountered in clinical office practice. Join us virtually from home or work over Zoom for a full-day presentation series presented by expert physicians. This course will review a variety of endocrine health topics such as adrenal, thyroid, pituitary, gonadal, and pediatric disorders, as well as hypertension, diabetes, and some interesting endocrinology cases. Target audience: open to general practitioners, internists, specialists, trainees, and allied health professionals. Register now as space is limited. Online registration at [www.endocrineresearchsociety.com/events/21st-bc-endocrine-day](http://www.endocrineresearchsociety.com/events/21st-bc-endocrine-day). Please contact Calvin Chang at the Endocrine Research Society for more information or registration questions. Email [endocrine.research.society@gmail.com](mailto:endocrine.research.society@gmail.com), or call 604 689-1055.

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Circa 1997  
Eric Silver MD and Elan Eisen - co-founders of RSRS.



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We welcome letters, blog posts, articles, and scientific manuscripts from physicians in British Columbia and elsewhere. Manuscripts should not have been submitted to any other publication. Articles 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. The corresponding author of scientific articles will be asked to check page proofs for accuracy.

The *BCM<sup>J</sup>* endorses the “Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals” by the International Committee of Medical Journal Editors (updated December 2019), and encourages authors to review the complete text of that document at [www.icmje.org](http://www.icmje.org).

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## Editorial process

Letters to the editor, articles, and scientific manuscripts must be reviewed and accepted by the *BCM<sup>J</sup>*'s eight-member Editorial Board prior to publication. The Board normally meets on the last Friday of most months, at which time submissions are distributed for review the following month. We do not acknowledge receipt of submissions; the editor will contact authors of articles by email once the submission has been reviewed by the Board (usually within 8 to 10 weeks of submission). The general criteria for acceptance include accuracy, relevance to practising BC physicians, validity, originality, and clarity. The editor contacts authors to inform them whether the manuscript has been rejected, conditionally accepted (that is, accepted with revisions), or accepted as submitted. Authors of letters are contacted only if the letter is accepted and editorial staff need further information. Scientific manuscripts and other articles typically take 5 to 10 months from the date of receipt to publication, depending on how quickly authors

provide revisions and on the backlog of manuscripts scheduled for publication. Access to the *BCM<sup>J</sup>* is available for free on our website.

## For all submissions

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

## Opinions

**BCMD2B (medical student page).** An article on any medicine-related topic by a BC physician-in-training. Less than 2000 words. The *BCM<sup>J</sup>* also welcomes student submissions of letters and scientific/clinical articles. BCMD2B and student-written clinical articles are eligible for an annual \$1000 medical student writing prize.

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**The Good Doctor.** A biographical feature of a living BC physician. Less than 2000 words.

**Letters.** All letters must be signed, and may be edited for brevity. Letters not addressed to the Editor of the *BCM<sup>J</sup>* (that is, letters copied to us) will not be published. Letters commenting on an article or letter published in the *BCM<sup>J</sup>* must reach us within 6 months of the article or letter's appearance. No more than three authors. Less than 500 words.

**Point-Counterpoint.** Essays presenting two opposing viewpoints; at least one is usually solicited by the *BCM<sup>J</sup>*. Less than 2000 words each.

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**Special Feature.** Articles, stories, history, or any narrative that doesn't fit elsewhere in the *BCM<sup>J</sup>*. Less than 2000 words.

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

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- 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.
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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.)
2. Mollison PL. *Blood Transfusion in Clinical Medicine*. Oxford, UK: Blackwell Scientific Publications; 2020. p. 78-80.
3. O'Reilly RA. Vitamin K antagonists. In: Colman RW, Hirsh J, Marder VJ, et al. (eds). *Hemostasis and Thrombosis*. Philadelphia, PA: JB Lippincott Co; 2015. p. 1367-1372.
4. Health Canada. *Canadian STD Guidelines, 2017*. Accessed 15 July 2021. [www.hc-sc.gc.ca/hpb/lcdc/publicat/std98/index.html](http://www.hc-sc.gc.ca/hpb/lcdc/publicat/std98/index.html).

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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.

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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).

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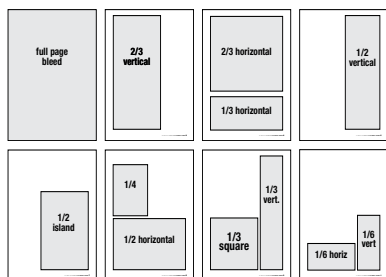
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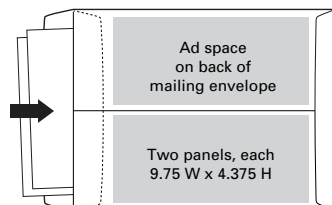


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