BCMJ
BC Medical Journal

October 2022: 64:8
Pages 333–368

Managing menopause: New guidelines

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Myths versus facts: COVID-19 vaccine effects on pregnancy, fertility, and menstruation. Article begins on page 354.

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Environmental impact
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ON THE COVER

In 2021 the Society of Obstetricians and Gynaecologists of Canada and the Canadian Menopause Society jointly released a new *Managing Menopause* guideline. Our two-part series covers vasomotor symptoms and hormone therapy and breast cancer, cardiovascular disease, and premature ovarian insufficiency. Articles begin on page 344.

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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Reflections on Canadian abortion care in a post-Roe world

"Every mother a willing mother. Every child a wanted child."

—Dr Henry Morgentaler

The legal framework for abortion in Canada dates back to 1892, when abortion, as well as the sale, distribution, and advertising of contraceptives, was banned under the Criminal Code.[1] It was not until 1969[2] that the government decriminalized contraception and provided allowances for abortion, when performed in hospital, for circumstances in which the health of the mother was in danger. That same year, abortion activist Dr Henry Morgentaler[1] opened an outpatient abortion clinic in Montreal. He endured years of persecution and legal battles, including serving 10 months in jail in 1975–76 and the 1992 firebombing[3] of his Toronto clinic.

It was in 1988 that Canada's Supreme Court struck down the abortion law because it was in violation of the Canadian Charter of Rights and Freedoms, specifically a woman's right to "life, liberty and security of person."[1] As UBC's Dr Dorothy Shaw wrote on the 30-year anniversary of the Morgentaler decision: "Dr Henry Morgentaler was a leader who risked his life to provide women access to safe abortions. He was integral in the Supreme Court of Canada's decision to overturn the abortion law. . . . That was a landmark decision for reproductive rights for women."[2]

However, the battle for access to a safe abortion did not end peacefully after the Supreme Court ruling. Abortion was thereafter controlled by the provinces and medical regulations. Threats of legislation continued, such as an attempt in 1990 to pass a bill that would imprison doctors who performed elective abortions.[1] There were also numerous attempts at provincial restrictions throughout the 1990s and 2000s, some of which were successful at targeting the abortion procedure or its funding. Reading a CBC article[1] detailing a timeline of abortion in Canada, I was surprised to see so many contemporary challenges to a procedure that, throughout my medical career, I have taken for granted as a treatment available to anybody in Canada with a uterus. The article educated me about some of the hard-fought battles brought forth by activists and doctors long before I graduated medical school. There have been many violent incidents, including in 1994 when Dr Gary (Garson) Romalis was the first Canadian abortion doctor to be shot. I had the privilege of working with Dr Romalis during my obstetrics-gynecology residency, and I would encourage anyone to read more about him in the recent *BCMJ* blog post by Dr George Szasz.[4]

Although abortion is not a component of my practice, I regularly prescribe Mifegymiso (mifepristone plus misoprostol) for medical management of miscarriage, and I also use assisted reproductive technologies like in vitro fertilization (IVF). I continue to ponder how I would feel if these essential tools of gynecological care were not available to my patients in a post-Roe America. It could be devastating. Take IVF,[5] for example. If state laws recognize an embryo as a person, it might prevent the discarding of genetically abnormal embryos, or limit how many eggs can be fertilized during IVF. I have read several articles[6] that point out the irony that laws aimed at "saving lives" by stopping abortion could also reduce fertility for many people. Furthermore, abortion laws that directly or indirectly restrict fertility treatments in America may also disproportionately impact people of color, who experience infertility at higher rates, and people of lower socioeconomic status, who may not be able to travel to access treatment, which can be expensive to begin with. Thankfully, most of my colleagues to the south do not appear to be facing an imminent threat to fertility care, but there are signs of an ongoing debate.[7] According to an opinion piece in the *Los Angeles Times*,[8] "a now-dead bill[9] introduced in the Louisiana [State] Legislature this year sought to 'ensure the right to life and equal protection of the laws to all unborn children from the moment of fertilization by protecting them by the same laws protecting other human beings.' The bill spoke of 'prenatal homicide,' assault and battery."

Doing research for this editorial made me even more grateful to the generations of physicians and advocates who shaped the practice of modern gynecology in Canada. It is because of this groundwork that I may help patients however and whenever they choose to grow their families. ■

—Caitlin Dunne, MD, FRCSC

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Protecting reproductive rights and freedoms

As our neighbors to the south face the devastating effects of the US Supreme Court's decision to overturn *Roe v. Wade,* we must consider how this landmark decision may affect abortion care in Canada as well. Shortly after this decision, Prime Minister Justin Trudeau called the overturn "horrific," reiterating his support for women in Canada's right to choose. It is reassuring to know that safe abortion care remains an essential medical service in Canada. However, up to 26 US states may ban or nearly ban abortion, and many of those states share a border with Canada. This may lead to an uptick of women traveling to Canada to get a safe abortion.

As a country, we have long had the obligation to provide this essential medical service to patients who live in Canada, and it would be prudent for us to maintain the infrastructure and capability to continue to do so. What does it mean for patients living in Canada who are looking for abortion care if we begin to see an influx of patients coming from the US looking for the same care? We need to ensure we maintain equal standards across provinces as well as safe access.

Women of lower socioeconomic status and women of marginalized races and ethnicities will be disproportionately affected by the decision to overturn *Roe v. Wade*. Unfortunately, in Canada, access to abortion care is similarly more difficult for certain populations. A 2013 Canadian study found that 18.1% of women living in Canada had to travel more than 100 km to access abortion services.[1] The uneven distribution of clinics across provinces also makes access to care variable, depending on which province one lives in. Currently, each province's delivery of abortion care varies widely in terms of the number of clinics and providers available, as well as the legally allowed gestational limit.[2] Clinics that provide abortion services do not advertise their services for obvious reasons, and many patients may not be aware that the majority of clinics accept self-referrals. This could result in patients relying solely on their primary care providers for information and could lead to differences in how patients access abortion care.

Additionally, abortion care providers in Canada continue to face challenges regarding their anonymity and safety. It is crucial that the essential work they do continues to be supported by the government. There are still many areas of uncertainty as we navigate through the effects of the US Supreme Court's decision to overturn *Roe v. Wade*.

Reflecting further on women's health and rights, it has also been discouraging to hear about the recent severe formula shortage in the US, which left many mothers and babies scrambling to find a basic life necessity for the many babies who may not be able to breastfeed. The shortage impacted Canada's formula supply as well, given our close proximity and many people crossing the border to look for formula. The lack of formula particularly impacts low-income mothers who may not have the ability to maintain a breastfeeding relationship due to inadequate maternity leave policies or lack of support from employers to allow pumping at work. Although breastfeeding is protected by the Canadian Charter of Rights and Freedoms, the reality is that many workplaces and institutions still do not provide adequate support for working mothers to breastfeed. As health care providers, we can normalize breastfeeding and support mothers who choose to breastfeed. There should also be increased awareness around breastfeeding in the medical school and residency curriculum.

Given what has happened to abortion care in the US, this is an important opportunity to reflect on what we currently have in Canada. We are fortunate enough to have this fundamental right protected here, but access is an ongoing issue. Access to abortion services must be made consistently available to those in need, and as a society, we must continue to raise awareness about the challenges women face with regard to their reproductive rights and freedoms. ■

—Yvonne Sin, MD

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Reflections on Canadian abortion care in a post-Roe world

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Climate change is a health care issue

Climate change has been called the greatest global health threat of the 21st century. In the past year alone we witnessed the detrimental effects that flash floods, a heat dome, forest fires, and poor air quality had on our communities, our health, and our well-being. But what will it take for us to become more climate conscious and make permanent changes to the way we do things? First, we must acknowledge the magnitude of climate change and the magnitude of the related impacts on human health. Then we must increase our awareness about how we are affected and what we can do to help.

According to the World Health Organization, climate change is already impacting human health in many ways. Not only in the deaths and illnesses directly related to more frequent extreme weather events, but also in the devastating repercussions—disruptions to our food systems, increases in diseases carried by insects and animals, food- and waterborne diseases, and mental health issues. The impacts of climate change are also faced disproportionally by the most marginalized and vulnerable populations, including women, children, ethnic minorities, immigrants, displaced persons, aging populations, and people with underlying chronic health issues. On top of this, climate change will continue to undermine our ability to support the social determinants of health. We know that simple everyday actions can have a collective impact. We also know that in health care there is an immense opportunity for us to radically shift the way we do things to become more climate conscious and responsible. Did you know that prescribing dry-powder inhalers instead of metered-dose inhalers saves the equivalent of 150–400 kg of carbon dioxide per year? The Canadian health care system ranks third highest in per capita greenhouse gas emissions and contributes 4% of Canada's total emissions. There is plenty of room for us to drastically reduce our carbon footprint and the negative impact it has on our planetary health. When it comes to our waste and paper consumption, could we not pivot away from the way we have always done something and instead make use of advances in technology and digital information sharing to lessen the burden on our environment? Imagine a health care commitment to our planet's sustainability and the impact it would have on human health. Imagine climate-conscious spaces, clinics, and hospitals with green spaces and clean air. Imagine finding new approaches to minimize our biohazardous waste and contemplate our energy sources.

The Canadian health care system ranks third highest in per capita greenhouse gas emissions and contributes 4% of Canada's total emissions.

I have had the opportunity to engage with some of our physicians dedicated to climate change and planetary health: Dr Warren Bell, founder of the Canadian Association of Physicians for the Environment (CAPE); Dr Melissa Lem, president-elect of CAPE and founder and director of PaRx, Canada's national nature prescription program powered by the BC Parks Foundation; and Dr Douglas Courtemanche of Doctors for Planetary Health. Their outstanding contributions, expertise, and dedication to the betterment of our planet as physicians are awe-inspiring. My hope is that their fervor and calls to action for climate and planetary emergencies can motivate all of us as individuals and as a profession.

As an organization, Doctors of BC recognizes the significant threat climate change poses to our collective health and safety and the valuable role physicians can play in communicating about these impacts. Last year we released our Climate Change and Human Health policy statement, which outlines our commitments and recommendations in support of climate change prevention, mitigation, and adaption measures (www.doctorsofbc.ca/policy-database). And in March 2022 we shared our Equitable Access to Green Spaces resolution, in which we support efforts to increase access to green spaces for all British Columbians.

As physicians, we are all leaders and trusted advocates for our patients and our communities. Now is the time to use this leadership to communicate about the health impacts of climate change, to contribute to short- and long-term strategies that reduce potential harms, and to actively make changes in the health care system for the good of our patients and our planet. ■

—Ramneek Dosanjh, MD
Doctors of BC President

Letters to the editor

We welcome original letters of less than 500 words; we may edit them for clarity and length. Letters may be emailed to journal@doctorsofbc.ca, submitted online at bcmj.org/submit-letter, or sent through the post and must include your mailing address, telephone number, and email address. Please disclose any competing interests.

Informed consent for gender-questioning youth seeking gender-affirmative care is a complex issue

[Revised version; earlier version was published in the September 2022 issue]

Care of gender-dysphoric youth is an issue of current debate. It demands closer attention to the science and also to the gaps in scientific evidence and informed-consent processes.

In their guest editorial for Part 2 of the Gender-affirming care in BC series, Dr Knudson, Dr Metzger, and Ms findlay state that "not all parents are supportive of their transgender youth, and some are even openly malicious."[1] If parents who support their child's gender dysphoria but question medicalization are deemed "unsupportive," distressed youth can become alienated from their families. We must acknowledge established theories of adolescent identity development and the complex etiological pathways to gender dysphoria. It is imprudent to suggest that not supporting medicalization is causing harm when it is entirely possible that the reverse may be true. The best long-term interests of the youth need to be kept in mind, including supporting healthy connections to family.

The failure to mention the weak evidence for medical gender affirmation is of significant concern. Based on systematic reviews of the literature, Sweden, Finland, France, and the UK have concluded that the risks outweigh potential benefits and now tightly regulate medical interventions for youth under 18, in favor of psychological treatments. The interim report of the UK's Cass Review outlines some of these concerns.[2]

Related articles also fail to address the sharp rise in youth presentations, particularly in adolescent girls.[3] We wonder if research on these cohorts is disregarded as it is a challenge to the gender-affirmation and informed-consent models that are based on the premise that gender is innate and immutable. The increasing numbers of desisters and detransitioners[4] suggests that gender identity is, in fact, mutable. This is especially important given that research has shown that most youth presenting with gender dysphoria who are not socially or medically transitioned realign with their bodies by the end of adolescence, growing up to be gay, lesbian, or bisexual. For example, the largest study to date of boys found an 88% rate of desistance.[5]

Given evidence of the mutability of gender identity, Ms findlay's informed-consent model is weakened, because we do not know for whom gender identity is immutable (and gender dysphoria persistent).[6] Further, the article avoids discussion of whether youth are capable of consenting to medical treatments that show potential negative impacts on long-term mental and physical health. These treatments are known to cause permanent damage to sex organs and future sexual and reproductive capacity. Someone who has not experienced an orgasm cannot understand what they would be giving up in terms of their sexual functioning. Levine and colleagues[7] provide a good review of the issues regarding informed consent for gender dysphoria.

Clinical practice and informed consent must acknowledge less invasive, nonmedical options such as watchful waiting, treating underlying psychiatric conditions, and exploratory therapy. The affirmation model excludes these treatments, leaving youth open to lifelong morbidity. The potential for harm is significant if we medicalize youth to soothe distress in the moment rather than treat the underlying cause(s). We need more research to help us understand which youths would benefit from a medicalized approach.

—Joanne Sinai, MD, MEd, FRCPC
Victoria

—Leonora Regenstreif, MD, FCFPC, MScCH
Hamilton, ON

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Editor's note: An incorrect version of this letter was published in the September 2022 issue. The following related letters and premise were submitted in response to this version of this letter, and are published in the September issue:

- *"A closer look at the evidence for gender-affirming care"*
- *"Guest editors reply to Drs Sinai, Regenstreif, and Leising"*
- *"Gender-affirming care for youth—separating evidence from controversy"*

Re: Courageous leadership

It was a delight to read Dr Dosanjh's President's Comment regarding courageous leadership in the July/August issue of the *BCMJ* [2022;64:248]. The thoughtful and articulate call to our best selves—both as citizens and

as doctors—has rarely been more urgently needed. In a local, provincial, national, and global environment of unnecessary strife and easy access to weapons—both technological and verbal—it does indeed take leadership courage to rise above the temptations of the fray to imagine what we need to make positive contributions to complex problems—many of which threaten the survival of ourselves and our planet. Dr Dosanjh's call, as our president, to bring to this crisis our best selves, rather than self-serving finger-pointing, is worth heeding. If we style ourselves as healers of patients and societies, then she points us in that difficult, seemingly impossible direction. And isn't that what we seek to address daily with each patient and each community we serve—from the local to the global? If not us, then who? If not now, when? Thank you, President Dosanjh.

—Bob Woollard, MD
Vancouver

Re: Valuing time and care

While getting a haircut recently (for a price higher than the $31 average family practice fee) I was thinking about Dr David Chapman's editorial, "Valuing time and care" [*BCMJ* 2022;64:197].

My 40 years as a GP began in 1967. In those days, I would bill MSA $6 for an office visit. Gold was $30 an ounce, and a full hour of work on my car at a dealership was $5. Office overheads were easily manageable, and my secretary could handle the office (and billing) with a typewriter and a telephone. MSA would increase insurance premiums as necessary to cover costs.

Now, health care policy has made MSP payments to family physicians unrealistic, and overheads have become huge. To function properly, a family practice needs a secretary, nurse, and office manager. Their salaries come out of the undervalued payments to family physicians from MSP. Rents have skyrocketed, along with the many other overhead costs.

Recently, my plumber charged $266 for a 15-minute job that needed no new parts. Asked why, the answer was "overheads." My car

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News

We welcome news items of less than 500 words; we may edit them for clarity and length. News items should be emailed to journal@doctorsofbc.ca and must include your mailing address, telephone number, and email address. All writers should disclose any competing interests.

Left to right: Drs David Richardson, Caitlin Dunne, David Chapman, and Terri Aldred

BCMJ Editorial Board transitions

After 14 years of service at the helm of the *BCMJ* Editorial Board, Dr David Richardson retired from the position in May 2022. Dr Richardson joined the Board in 2006 and became editor in 2008, and the journal has thrived under his leadership. He will be missed by staff, Board members, and readers of his editorials alike.

We are pleased to announce that Dr Caitlin Dunne has been confirmed as the new editor of the journal. Dr Dunne joined the Editorial Board as a member in 2019 and has contributed her enthusiasm and valuable expertise both to her work on the Board and as an author in the journal over the years. She practises in Burnaby as a subspecialist in infertility, egg freezing, and women's reproductive health and is also co-director at the Pacific Centre for Reproductive Medicine and a clinical associate professor at UBC.

Many thanks to Editorial Board member Dr David Chapman, who stepped into the role of interim acting editor while selection of the new editor took place. His calm and thoughtful approach was the steady hand at the tiller that the *BCMJ* needed during this time of transition.

We also warmly welcome Dr Terri Aldred, who is joining the Editorial Board as its newest member. Dr Aldred is Carrier from the Tl'azt'en territory located north of Fort St. James. She is a member of the Lysiloo (Frog) Clan, who are traditionally known as the voice of the people. She follows her mother's and great-grandmother's line, Cecilia Pierre (Prince). Dr Aldred grew up in both the inner city of Prince George and on the Tachet reserve (in Lake Babine territory) and these experiences helped motivate her to go to medical school so she could give back to her community. She has a doctor of medicine degree from the University of Alberta and completed the Indigenous family medicine residency program through the University of British Columbia. At present, Dr Aldred is the medical director for primary care for BC's First Nations Health Authority, the site director for the UBC Indigenous family medicine program, a clinical instructor with UBC and UNBC, a family physician for the Carrier Sekani Family Services primary care team, which serves 12 communities in north-central BC, and the Indigenous lead for the Rural Coordination Centre of BC. For the past 3 years, Dr Aldred sat as an elected board member for the BC College of Family Physicians. Through her various roles she sits on a number of committees and leads several initiatives on cultural safety and humility. She is also an avid speaker about Indigenous health, cultural safety and humility, and anti-Indigenous racism, and has co-authored articles on diverse topics related to Indigenous health.

The history of the Family Practice Oncology Network and its digital future

In 2003, the BC Cancer Agency launched the Family Practice Oncology Network (FPON) to provide oncology education, resources, and connections to strengthen family physicians' ability to care for people living with cancer in their communities. In 2016, FPON expanded to become the BC Cancer Provincial Primary Care Program, with a multipronged mandate:

- Bring the lens of primary care into the strategic work of BC Cancer.
- Facilitate support for primary care providers through education.
- Codevelop primary cancer care guidelines.
- Advocate for clear lines of communication between primary care and oncologists to provide adequate resources to care for this complex population.

Our initial goal was to address the education and training needs for the implementation of general practitioners in oncology (GPOs) so every community with a catchment of 15 000 or more would have access to cancer treatment as close to home as possible through collaborative care with oncology specialists at a regional or provincial centre. The goal has expanded to provide twice-yearly GPO Education Sessions supporting new GPOs, nurse practitioners in oncology (NPOs), and residents in palliative care. Our annual GPO Case Study Day sees case-based, collaborative, interactive presentations by GPOs and oncology specialists on management topics relevant to GPOs and NPOs in regional cancer centres and community oncology sites throughout BC and Yukon. To promote interprofessional networking, GPO Case Study Day is offered as part of the BC Cancer Summit in November.

Educational activities (many in partnership with UBC CPD) for family physicians and members of the broader primary care team have expanded over the years to include:

- Monthly primary care webcasts (8:00 a.m. on the third Thursday of each month except July, August, and December) with presentations on a variety of cancer topics.
- An annual primary care CME day (next CME event 1 April 2023).
- Twice-yearly production of the *Journal of Family Practice Oncology* (spring and fall).

The journal brings follow-up articles to many of our webinars and CME events as well as updates relevant to community primary care and their patients with cancer. We have also partnered with the Guidelines and Protocols Advisory Committee to develop a number of primary care cancer guidelines, most recently on lung cancer.

Since 2013, the journal has been distributed to 6500 family practitioners, nurse practitioners, and other primary care providers across BC and Yukon in hard copy. Beginning with the fall 2022 edition, the journal has moved to a digital-only format and can be found at www.fpon.ca, along with electronic copies of previous editions.

We have recently developed a database to improve our ability to communicate with community providers about the latest FPON news, educational updates, practice gems, and other BC Cancer primary care communications, including information on the electronic publishing of the journal. To subscribe, scan the QR code and sign up for our communications database.

Questions? Please contact us at fpon@bccancer.bc.ca.

—Catherine Clelland, MD
Medical Director, Primary Care, BC Cancer

The importance of disability insurance review and the GIB period

The standard insurance-industry recommendation is to carry 60% of your net income in tax-free disability insurance, and the Guaranteed Insurability Benefit (GIB) rider is a valuable tool for maintaining the right disability coverage as your practice and income grow over time. Reviewing your disability insurance and exercising your GIB during the annual open enrolment period (1–30 November) will help ensure that your disability coverage continues to protect your needs. The GIB allows you to increase your disability insurance during the open enrolment period by up to $2500 without proof of health. Your personal tax return and corporate financial statements may be needed to determine that your income justifies the increase.

As your income grows, your lifestyle may grow with it. You may start a family, purchase a home, or begin planning for your children's education. As a physician, you also need to fund your own retirement during your earning years. The disability insurance you needed 3 or 5 years ago may not cover the expenses you have today. If you were unable to work tomorrow due to illness or injury, your family's monthly expenses would continue. Is your current disability benefit enough to maintain your family's lifestyle, or would you face difficult decisions such as canceling your children's activities, pausing mortgage payments or education-fund contributions, or depleting your savings to cover ongoing costs?

To increase your disability insurance outside of the annual GIB period or above the maximum annual limit, or if you did not select the GIB rider when you originally applied for coverage, you'll need to provide proof of health. The insurer will review your existing health and lifestyle to determine your eligibility and may decline your application or issue coverage with exclusions for health conditions or activities.

Scheduling a disability insurance and GIB review with a licensed Doctors of BC insurance advisor will help you protect the lifestyle you and your family enjoy today, as well as your plans for the future. Email insurance@doctorsofbc.ca or call 604 638-7914 for a complimentary meeting.

—Laura McLean, Client Services Administrator
Members' Products and Services

LETTERS

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dealership attaches an hour-rated fee to each service item, with a charge of well over $100/hour.

Family practice is an expensive business, but paying for those costs is hamstrung by the inability to pass them on to the customer. They have to come out of the payments from MSP, which have become limited in such a way that they are akin to a salary, without the perks of payments for sickness, holidays, or a pension.

It is no wonder that new physicians are shunning this branch of medicine.

—Anthony Walter, MD
Coldstream

Business Pathways: Where we came from and where we are going

The Business Pathways program (www.doctorsofbc.ca/business-pathways) was initiated by Doctors of BC in response to physician members asking for more information on how to run the business side of their practice.

The Doctors of BC Board of Directors prioritized this work to provide physicians with the business resources and information they needed. Initially, the organization interviewed physicians from across the province in both urban and rural settings to identify business challenges and opportunities to provide clarification. Physicians who were interviewed identified the following as areas of top concern: managing fixed costs, contracts (noncompensation related), billing education and audit prevention, taxes, and human-resource guidance.

This process generated a gap analysis that indicated a need to develop new resources, consolidate important business-related resources from key health care and government partners, and house them in a single easy-to-find location. Business Pathways has started to address these needs by creating new toolkits, resources, and information physicians can access from the website.

Supporting you throughout your career

Business Pathways resources are categorized into three sections to support each stage of a physician's career: starting in practice, managing your office, and closing your practice.

Each section contains information, resources, and customizable templates to help doctors begin to organize their operational tasks, including finding new job opportunities, applying for a licence, incorporating a business, hiring and maintaining staff, planning for emergencies, and preparing for retirement.

Saving on business services

To provide physicians with cost savings in their business operations, Business Pathways has negotiated discounted rates on legal, financial, and professional management services through Club MD, a Doctors of BC program that provides exclusive discounts and deals for members. To keep up-to-date on Club MD offerings, sign up for the monthly newsletter at www.doctorsofbc.ca/account/subscriptions (member login required).

Leading your practice teams

The human resource toolkit (www.doctorsofbc.ca/human-resources-toolkit) is a step-by-step guide created through consultations with family doctors and specialists in both urban and rural communities to support physicians with hiring, managing, and terminating staff. The toolkit includes practical and customizable templates and tools, and information that can be adapted to suit the needs of any clinic, in three easy-to-navigate sections:

- Hiring and onboarding
- Managing staff and the work environment
- Ending employment

Preparing for an emergency

The contingency planning toolkit (www.doctorsofbc.ca/contingency-planning) was developed, with input from the Emergency and Public Safety Committee and a physician consultation group, to help doctors prepare their practices and personal affairs for unexpected emergencies, ranging from natural disasters to office damage and physician illness. Since all businesses in British Columbia are required by WorkSafeBC to have an emergency plan, the toolkit helps doctors meet this requirement by supporting them to create a business continuity plan for their clinic.

New resources in the toolkit provide information on how to notify staff, patients, and other key partners during an adverse event, create a plan to streamline processes during a crisis, identify essential services, and ensure timely retrieval of critical records.

Connecting with us

Business Pathways is continually developing resources to help physicians as a practical one-stop shop for navigating business needs. Through robust discussions and feedback from our Doctors of BC colleagues, physician consultation groups, government, and all BC physicians, the Business Pathways program is committed to ensuring the information and supports provided by the program are useful and valuable to members.

Physicians can keep up-to-date with new releases from the Business Pathways program by:

- Subscribing to DocTalks: A Doctors of BC podcast for short episodes from physicians and other experts about topics that doctors will find practical and useful as they run their business. All episodes can be found at www.doctorsofbc.ca/doctalks.
- Reading the Business Corner (www.doctorsofbc.ca/business-corner), which features articles on a variety of practical topics about business operations.
- Participating in educational webinars. Past sessions have focused on topics such as preventing physical and online violence for doctors, optimizing safety with WorkSafeBC, and need-to-know information about incorporating a practice (www.doctorsofbc.ca/managing-your-practice/business-pathways/virtual-events).

We value your feedback, comments, questions, and suggestions. Visit the Business Pathways Contact Us page (www.doctorsofbc.ca/business-pathways/contact-us) to submit a query.

—Holly Pastoral
Program Manager, Physician Business Services

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Managing menopause Part 1: Vasomotor symptoms

This first article in a two-part series reviews the Society of Obstetricians and Gynaecologists of Canada's 2021 clinical practice guideline on managing vasomotor symptoms associated with menopause.

ABSTRACT: Menopause symptoms, experienced by most women during their lifetime, can significantly hinder their quality of life. When counseling menopausal women, it is essential that care providers are up-to-date on hormone therapy recommendations. This article is the first of a two-part review of the Society of Obstetricians and Gynaecologists of Canada's 2021 *Managing Menopause* clinical practice guideline and focuses on vasomotor symptoms and their management via hormone therapy and nonpharmacologic measures. Estrogen remains the most effective means for treating vasomotor symptoms, with progestogen added as required to prevent endometrial hyperplasia. Hormone therapy regimens are individualized based on preference, contraindications, and treatment goals. Drugs recently approved by Health Canada include the tissue selective estrogen complex and tibolone. There is limited evidence for many lifestyle and alternative treatments, but clinical hypnosis, cognitive-behavioral therapy, and weight loss appear to be effective.

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This article has been peer reviewed.

In 2021, the Society of Obstetricians and Gynaecologists of Canada and the Canadian Menopause Society jointly published a new *Managing Menopause* guideline, which officially replaced the 2014 guideline.[1] The updated version includes seven guidelines within it:

A. Menopause: Vasomotor Symptoms, Prescription Therapeutic Agents, Complementary and Alternative Medicine, Nutrition, and Lifestyle[2]
B. Menopause and Genitourinary Health[3]
C. Menopause: Mood, Sleep, and Cognition[4]
D. Menopause and Sexuality[5]
E. Menopause and Cardiovascular Disease[6]
F. Menopause and Breast Cancer[7]
G. Menopause and Osteoporosis[8]

The *Managing Menopause* guideline can be accessed from the College of Physicians and Surgeons of BC Library. To do so, you must first log into the College website with your username and password, then paste the following URL into your browser: www.clinicalkey.com/#!/browse/journal/17012163/latest or search for the *Journal of Obstetrics and Gynaecology Canada* through the Library's website.

This two-part review summarizes the key recommendations from the 2021 guideline and highlights clinically relevant changes from the 2014 guideline in order to inform health care providers who prescribe menopausal hormone therapy. This article focuses on guideline A: the treatment of vasomotor symptoms via prescriptive agents, alternative medicines, and lifestyle measures. Part 2 focuses on guidelines E and F: the effect of hormone therapy on breast cancer, cardiovascular disease, and premature ovarian insufficiency. Although the other sections (B, C, D, and G) are important and informative, this two-part review focuses on updates in hormone therapy.

Overview

Menopause can be declared retrospectively after 12 months of nonpathologic amenorrhea.[9] In developed countries, the mean age of menopause is 51 years (95% CI, 41.9-57.8).[10] Perimenopause is a period of menopausal transition during which significantly fluctuating levels of estrogen disrupt menstrual cyclicity. The Stages of Reproductive Aging Workshop (STRAW) criteria, a standardized staging system for reproductive aging, defines perimenopause as the time from which there is a minimum 7-day change in cycle length to 12 months after the final menstrual period.[9]

Menopausal symptoms affect 80% of women.[2] Furthermore, the prevalence of symptoms is increasing as Canada's population ages. The sudden onset of vasomotor symptoms and alterations in mood, cognition, and physical appearance can be very distressing for women who are in a demanding time of their life as they balance careers and family obligations. It is important that providers who care for mature women are well prepared to counsel them in order to optimize their quality of life.[11]

Vasomotor symptoms

Section A of the 2021 guideline emphasizes the high prevalence of vasomotor symptoms, such as hot flashes and night sweats, and the

burden they may cause women in midlife.[2] A hot flash is an unwanted sensation of heat that typically starts in the chest, rises upward, and lasts an average of 3 to 4 minutes.[12] Up to 20% of women experience severe symptoms, with as many as 20 to 30 episodes daily.[2] Vasomotor symptoms tend to be more prevalent among women who are obese or of Black or Hispanic origin.[13,14] Data from the Study of Women's Health Across the Nation that were published after the 2014 guideline was written suggest that the median duration of vasomotor symptoms during menopausal transition is 7.4 years.[15] The 2021 guideline reflects this updated information.

Much about the pathophysiology of hot flashes remains poorly understood. The 2021 guideline notes that in addition to the currently accepted narrowing of the thermoneutral zone, there appears to be a role for hypothalamic hormones, including kisspeptin, neurokinin B, and dynorphin (KNDy). The neurons that release these hormones hypertrophy in the postmenopausal low-estrogen environment. New medications that block the KNDy neuron receptors are being tested as therapy for vasomotor symptoms.[16] Beyond symptom management, the 2021 guideline notes the independent link between vasomotor symptoms and cardiovascular disease, thus raising the important point that women with vasomotor symptoms should also be counseled for disease prevention.[17] Cardiovascular disease in menopause is discussed in detail in Part 2 of this review.

The 2021 guideline reaffirms that hormone therapy containing estrogen is the most effective treatment for vasomotor symptoms during menopause. Both the 2014 and 2021 guidelines reference a 2004 Cochrane systematic review of randomized controlled trials, which found that estrogen alone or estrogen plus a progestogen significantly reduced the frequency of hot flashes by 75% (95% CI, 64.3-82.3) compared with placebo.[18,19] Estrogen is the main agent responsible for reducing vasomotor symptoms, whereas progestogen is required only to prevent endometrial hyperplasia in women with a uterus. Before beginning hormone therapy, a careful risk assessment should be undertaken. The guideline includes sections on assessment and risk management of menopausal women, and special considerations (e.g., vaginal bleeding, premature menopause, endometriosis). The contraindications to systemic estrogen-containing hormone therapy listed in the 2021 guideline are similar to those in the 2014 guideline; they include:

- Undiagnosed abnormal vaginal bleeding.
- Known, suspected, or history of breast cancer.
- Known or suspected estrogen-dependent cancers.
- Coronary heart disease.
- Active or history of venous thromboembolism.
- Active or history of stroke.
- Known thrombophilia.
- Active liver disease.
- Known or suspected pregnancy.

New additions to the contraindications list are:

- Known thrombophilia.
- Known or suspected pregnancy.

The 2021 guideline lists many scenarios in which transdermal estrogen is preferred. It appears to have a lower risk of venous thromboembolism than oral formulations, does not have a first-pass effect through the liver, and provides more consistent estrogen levels.

The 2021 guideline also modified the wording of venous thromboembolism to include *past* and active venous thromboembolism (previously, only *active* venous thromboembolism).

The key contraindications to the use of progestogens are undiagnosed abnormal vaginal bleeding and current or previous breast cancer. In terms of systemic androgen therapy, off-label use of transdermal testosterone is newly endorsed in the 2021 guideline for improving sexual function in menopause, but it is not recommended for treating vasomotor symptoms. Contraindications to testosterone therapy include pregnancy, severe acne, hirsutism, androgenic alopecia, and high baseline free testosterone levels.[5]

Prescribing hormone therapy

Hormone therapy can be prescribed to menopausal women, using either a cyclic or continuous regimen. In both regimens, estrogen is taken daily to manage vasomotor symptoms. In the continuous regimen, progestogen is also used daily, which eliminates a withdrawal bleed by continually opposing the proliferative effects of estrogen on the endometrium. In the cyclic regimen, progestogen is taken for 12 to 14 days per month, which induces cyclic endometrial shedding (withdrawal bleeding).

The 2014 guideline included tables of prescription therapeutic agents for hormone therapy, separated into estrogens, progestogens, and combination products. The 2021 guideline lists all individual and combination hormone therapy products in one table **[Table]**, which practitioners can print or screenshot for easy reference.

Available formulations of estrogen can be delivered in many ways, including oral, transdermal, and vaginal routes. The guideline lists each formulation's generic name, trade name(s), available strength, and suggested starting dosage.

Symptom improvement is usually apparent within 2 to 4 weeks of starting therapy. The 2021 guideline recommends periodic re-evaluation of patients on hormone therapy, although similar to the 2014 guideline, there is no specific time frame or duration of use. Women may continue beyond age 65 if they have persistent bothersome symptoms. The old adage that hormone therapy should be given in the lowest effective dose for the shortest amount of time is controversial and not endorsed by the 2021 guideline. There is insufficient evidence that lower dose and shorter duration therapy is any safer or better than average dose and medium- to long-term therapy [**Table**].

Although a range of estrogen products is available, the 2021 guideline lists many scenarios in which transdermal estrogen is preferred. It appears to have a lower risk of venous thromboembolism than oral formulations, does

TABLE. Systemic hormone therapy options in Canada.

Drug name	Route	Brand name	Strengths	Starting dosage
Estrogens				
Conjugated	Oral	Premarin	0.3, 0.625, 1.25 mg	0.3–0.625 mg (1×/day)
17 β estradiol	Oral	Estrace	0.5, 1, 2 mg	0.5–1 mg (1×/day)
		Lupin-Estradiol	0.5, 1, 2 mg	
17 β estradiol	Transdermal patch	Estradiol Derm	50, 75, 100 µg	25–50 µg (2×/week)
		Estradot	25, 37.5, 50, 75, 100 µg	
		Oesclim	25, 50 µg	
		Climara	25, 50, 75, 100 µg	25–50 µg (1×/week)
17 β estradiol	Gel	Estrogel	0.06% gel 0.75 mg estradiol per 1.25 g metered dose	1–2 metered doses (1×/day)
		Divigel	0.1% gel 0.25, 0.5, 1 mg sachets	0.5–1 mg sachet (1×/day)
Progestogens				
Medroxyprogesterone	Oral	Provera	2.5, 5, 10 mg	2.5 mg daily for continuous use or 5 mg daily for 12–14 days/month for cyclic use
		Apo-Medroxy	2.5, 5, 10 mg	
		Pro-Doc Limitee	2.5, 5, 10 mg	
		Teva-Medroxyprogesterone	2.5, 5, 10 mg	
Progesterone (micronized)	Oral	Prometrium	100 mg	100 mg daily for continuous use or 200 mg daily for 12–14 days/month for cyclic use
		PMS-Progesterone	100 mg	
		Reddy-Progesterone	100 mg	
		Teva-Progesterone	100 mg	
Norethindrone acetate	Oral	Norlutate	5 mg	5 mg (1×/day)
Levonorgestrel intrauterine system	Intrauterine	Mirena	52 mg per intrauterine system	5 years' duration
		Kyleena	19.5 mg per intrauterine system	
Combined therapies				
17 β estradiol + norethindrone acetate	Oral	Activelle	1 mg estradiol + 0.5 mg norethindrone acetate	1 tablet/day
		Activelle LD	0.5 mg estradiol + 0.1 mg norethindrone acetate	
17 β estradiol + norethindrone acetate	Transdermal patch	Estalis 140/50	50 µg estradiol + 140 mg norethindrone acetate	2×/week application
		Estalis 250/50	50 µg estradiol + 250 mg norethindrone acetate	1×/week application
17 β estradiol + drospirenone	Oral	Angeliq	1 mg estradiol + 1 mg drospirenone	1 tablet/day
Tissue selective estrogen complex				
Conjugated estrogen + bazedoxifene	Oral	Duavive	0.45 mg conjugated estrogen + 20 mg bazedoxifene	1 tablet/day
Synthetic steroid				
Tibolone	Oral	Tibella	2.5 mg	1 tablet/day

Adapted with permission from guideline A of the Society of Obstetricians and Gynaecologists of Canada's 2021 *Managing Menopause* guideline.

not have a first-pass effect through the liver, and provides more consistent estrogen levels.[20] Use of transdermal estrogen is preferable in smokers, shift workers, and women with high triglyceride levels, hypertension, gall bladder disease, migraines, or malabsorption syndromes.[21-23] In the 2014 guideline, transdermal estrogen was also specifically recommended for women with a high risk of venous thromboembolism, metabolic syndrome, or sexual dysfunction.[24,25]

In women with a uterus who use estrogen therapy, either a progestogen or a selective estrogen receptor modulator is required to oppose the proliferative effects of estrogen on the endometrium and prevent hyperplasia. Either micronized progesterone or a synthetic progestin (medroxyprogesterone acetate, norethindrone, or drospirenone) can be prescribed in a continuous or cyclic fashion. A progestin-releasing intrauterine system also provides endometrial protection, but it has not yet been approved by Health Canada for this indication.[26] The 2021 guideline includes suggested doses for endometrial protection with standard doses of estrogen but notes that higher progestogen doses may be indicated when the estrogen dose is higher.

In some situations, patients cannot or do not wish to take estrogen. The 2014 guideline had a subsection on progestogen-only therapy, androgen therapy, and dehydroepiandrosterone, but it is not included in the 2021 guideline.

The 2021 guideline introduces some new options in Canada for menopausal therapy: the tissue selective estrogen complex and tibolone. Neither of these options requires endometrial protection with a progestogen. The tissue selective estrogen complex is a daily tablet that contains both conjugated estrogen and bazedoxifene, a selective estrogen receptor modulator. The estrogen component works to control vasomotor symptoms, while the estrogen receptor modulator antagonizes estrogen receptors in the endometrium to prevent hyperplasia. The number of moderate to severe hot flashes declined by 74% at 12 weeks in women who received a 0.45 mg conjugated estrogen and 20 mg bazedoxifene dose, with no increased endometrial risk, versus 51% for those who received a placebo.[27,28] The risks and adverse events with the tissue selective estrogen complex are similar to those for estrogen, and while long-term studies are needed, there does not appear to be an increased risk of breast cancer with up to 2 years of use.[27]

Tibolone is new to the Canadian market, but as the guideline points out, it has been available for decades in other countries. Tibolone is a synthetic agent similar to progestin. It is taken as a daily tablet and, once ingested, is converted into three metabolites with weak estrogenic, progestogenic, and androgenic properties. A 2016 Cochrane review concluded that tibolone was effective against vasomotor symptoms but was not as effective as estrogen.[29]

The 2021 guideline introduces some new options in Canada for menopausal therapy: the tissue selective estrogen complex and tibolone.

Advice for troubleshooting adverse effects such as bloating and breakthrough bleeding are outlined in the 2021 guideline. For example, micronized progesterone capsules can be administered vaginally if they induce unwanted drowsiness. Micronized progesterone preparations should be used with caution in patients with peanut allergies, because, although the preparation marketed as Prometrium is made with sunflower oil, some generic preparations contain peanut oil.

The term "bioidentical" is also addressed more thoroughly in the 2021 guideline than in the 2014 guideline: "Bioidentical hormone therapy . . . is often used to refer to compounded formulations; however, many commercially available products approved by Health Canada would be considered bioidentical or 'body identical.'" Bioidentical therapies should not be considered more natural or safer because they have not been scrutinized in the same manner as Health Canada–approved products. Many claims about their safety are misleading and not substantiated by evidence.[30]

The 2021 guideline lists additional nonhormonal options, most of which are similar to those in the 2014 guideline. They include selective serotonin reuptake inhibitors, serotonin-norepinephrine uptake inhibitors, gabapentinoids, clonidine, and oxybutynin. Bellergal was listed in the 2014 guideline but is not listed in the 2021 guideline.

Lifestyle changes and complementary therapy

At the end of guideline A of the 2021 guideline, lifestyle changes and complementary therapy for vasomotor symptoms are addressed. With the rising popularity of alternatives outside of conventional medicine, it is important for clinicians to be prepared to counsel women who often feel overwhelmed by choice and uninformed about product safety and efficacy.[31] This topic was briefly reviewed in the 2014 guideline but was in a section that was separate from the prescription agents.

Nutrition recommendations were taken from the 2019 update to Canada's food guide. A table of lifestyle modifications summarizes the evidence for a range of options for treating vasomotor symptoms. Weight loss, cognitive-behavioral therapy, and clinical hypnosis are considered to be efficacious.[32-34] Mindfulness-based stress reduction and paced respiration have also shown some evidence of benefit.[35,36] There is insufficient evidence of the efficacy of cooling techniques, avoiding triggers, and exercising,[37-39] and acupuncture and yoga do not appear to be helpful.[40,41]

The 2021 guideline presents significantly more information than the 2014 guideline about the evidence, or lack thereof, supporting the use of natural health products. The 2014 guideline stated that "Canadian legislation in January 2004 removed Natural Health Products from the food category and placed them in a special drug category to allow regulation. . . . To date, little appears to have been accomplished in the regulation of Natural Health Products in Canada."[42] The 2014 guideline also mentioned that pharmaceutical product trials require participants to have at least seven hot flashes per day, and many studies of herbal products have been open-label trials and have been conducted in women with as few as one or two hot flashes per day.[1]

The 2021 guideline outlines the mechanism of action, evidence for efficacy, and recommendations for 13 natural health products. Only two of them may be beneficial for treating vasomotor symptoms: fermented soybean extract and soy (S-equol).[43,44] There is insufficient efficacy data to recommend the use of red clover, flaxseed, black cohosh, wild yam, crinum, dong quai root, evening primrose oil, ginseng, pollen extract, hops, and maca.[45-53]

When referring to the efficacy of these natural health products, the 2014 guideline drew attention to placebo effects. In particular, a 2004 Cochrane review showed participants who received placebo as treatment had an improvement in vasomotor symptoms by up to 50%.[19] In terms of counseling patients with vasomotor symptoms, the 2021 guideline introduces the importance of a collaborative process between patients, clinicians, and cultural leads to ensure cultural safety and humility are achieved.

Summary

Overall, the 2014 and 2021 guidelines both emphasize the prevalence of vasomotor symptoms and their effect on quality of life. Estrogen-containing hormone therapy remains the most effective option for treating vasomotor symptoms. The 2021 guideline contains information on new agents (tibolone and the tissue selective estrogen complex) and tabular summaries of natural health products and lifestyle interventions. The **Table**, adapted from the 2021 guideline, lists currently available prescription hormone agents and may be helpful for practitioners. The 2021 guideline contains many more details on the topics discussed in this article and should be referenced for a deeper understanding. ■

Competing interests

Dr Rowe was involved in writing the Society of Obstetricians and Gynaecologists of Canada recommendations and is a past member of the *BCMJ* Editorial Board. He is also a current member of the advisory boards for BioSyent, Lupin Pharma Canada, Pfizer Canada, and Astellas. Dr Dunne was a member of the *BCMJ* Editorial Board when this article was written, and is now the journal's editor, but did not participate in making the publication decision regarding this article.

Bioidentical therapies should not be considered more natural or safer because they have not been scrutinized in the same manner as Health Canada–approved products.

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Managing menopause Part 2: Hormone therapy and breast cancer, cardiovascular disease, and premature ovarian insufficiency

This second article in a two-part series reviews the Society of Obstetricians and Gynaecologists of Canada's 2021 clinical practice guideline on managing special circumstances associated with menopause.

ABSTRACT: Updated guidelines for the use of hormone therapy during menopause and its role in patients with breast cancer, cardiovascular disease, and premature ovarian insufficiency were released by the Society of Obstetricians and Gynaecologists of Canada in 2021. The relationship between hormone therapy and breast cancer remains complex and controversial. Although risks are low in healthy postmenopausal women, systemic use remains contraindicated in breast cancer survivors due to higher relapse rates. Hormone therapy is also not recommended for the prevention of cardiovascular disease, the leading cause of mortality in Canada. Furthermore, estrogen is associated with increased risks of venous thromboembolism across all age groups. For women with premature ovarian insufficiency, hormone therapy is advised until the average age of menopause to mitigate chronic disease risks such as osteoporosis, cardiovascular complications, and impaired cognition.

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This article has been peer reviewed.

The first part of this review focused on guideline A of the Society of Obstetricians and Gynaecologists of Canada's 2021 *Managing Menopause* guideline: managing vasomotor symptoms via hormone therapy and nonpharmacologic measures. This second part focuses on guidelines E and F: the role of hormone therapy in patients with breast cancer, cardiovascular disease, and premature ovarian insufficiency.[1,2]

Hormone therapy and breast cancer

After nonmelanoma skin cancer, breast cancer is the most prevalent malignancy in Canadian women, representing 26% of new cancer cases and 13% of all cancer deaths. It is estimated that 1 in 8 women will develop breast cancer during their lifetime, and 1 in 31 will die from it.[3]

Similar to the 2014 guideline on managing menopause,[4] the 2021 guideline reiterates that there is a complex and controversial association between hormone therapy and breast cancer development. The North American Menopause Society states that breast cancer risk may be influenced by the type of menopausal hormone therapy, duration of use, regimen, route of administration, prior exposure, and an individual's characteristics.[5]

To better understand breast cancer risks, much of the 2021 guideline focuses on long-term follow-up data from clinical trials mentioned in the 2014 guideline. Of note, the 2002 Women's Health Initiative study consisted of two randomized clinical trials involving more than 20 000 participants. In the first trial, women received either estrogen–progesterone therapy or placebo. Results showed a 27% increase in relative breast cancer risk from hormone therapy based on 38/10 000 and 30/10 000 cases in the treatment and control groups, respectively.[6] However, to put this into perspective, eight additional breast cancer cases per 10 000 women per year translates to an absolute risk of merely 0.0008. Overall, the initial study showed a small increase in breast cancer risk after 5 years of hormone therapy. The 2021 guideline highlights the agreement between the postintervention and recently released long-term Women's Health Initiative data. After being followed for 9 to 14 years, women who received estrogen–progesterone hormone therapy had a higher

risk of breast cancer (hazard ratio [HR] 1.28; 95% CI, 1.13-1.45; $P < .001$) but no significant difference in breast cancer death (HR 1.35; 95% CI, 0.94-1.95; $P = .11$).[7]

In a second Women's Health Initiative trial, women with prior hysterectomy received either conjugated estrogen alone or placebo. Those who received conjugated estrogen had a significant decrease in breast cancer risk (relative risk [RR] 0.77; 95% CI, 0.62-0.95).[8-10] This aligned with the recently released Women's Health Initiative follow-up data (HR 0.78; 95% CI, 0.65-0.93; $P = .005$), thus confirming that estrogen–progestogen therapy carries greater risk for breast cancer than estrogen alone.[7] For this reason, the 2021 guideline highlights estrogen only as the preferred treatment for vasomotor symptoms in patients without a uterus (because they do not require a progestogen to prevent endometrial hyperplasia).

Both the 2014 and 2021 guidelines emphasize the importance of putting breast cancer risk into perspective. The 2014 guideline includes a table that compares cases and deaths from breast cancer to deaths from all causes in order to highlight that women on hormone therapy are much more likely to die from cardiovascular disease and other chronic conditions. The 2021 guideline also includes a table of risk factors for breast cancer and their attributed relative risks. This highlights how factors overscrutinized by the media (such as estrogen–progestogen hormone therapy, alcohol consumption, and obesity) actually carry only modest relative breast cancer risks of 1.2 to 1.3. Unmodifiable factors such as genetic predisposition (the BRCA1 mutation) have more significant implications, with a relative risk of 200.[11]

To mitigate breast cancer concerns, the 2021 guideline emphasizes the importance of providing the hormone therapy regimen with the lowest possible risk for healthy postmenopausal women with vasomotor symptoms. This can be achieved by careful consideration of both the timing and type of hormone therapy. For instance, new studies have shown that oral micronized progesterone (Prometrium, PMS-Progesterone, Reddy-Progesterone, Teva-Progesterone) is associated with a lower risk of breast cancer than are synthetic progestins.[12,13] In addition, long-cycle combined hormone therapy, with continuous estrogen and the addition of progestogen every 3 months, may be protective against breast cancer due to progestin withdrawal prompting apoptosis of breast epithelial cells. However, this potential benefit must be balanced against the increased risk of endometrial hyperplasia.[14]

To mitigate breast cancer concerns, the 2021 guideline emphasizes the importance of providing the hormone therapy regimen with the lowest possible risk for healthy postmenopausal women with vasomotor symptoms.

Systemic hormone therapy continues to be contraindicated in breast cancer survivors with vasomotor symptoms. This contraindication was initially informed by preliminary results from the HABITS (hormonal replacement therapy after breast cancer—is it safe?) and Stockholm studies discussed in the 2014 guideline and reinforced by 10-year follow-up data mentioned in the 2021 guideline, as both showed increased rates of breast cancer relapse in these women.[15-17] Nonhormonal alternatives can be used to treat vasomotor symptoms in patients with a personal breast cancer history. In particular, venlafaxine is considered the first-line alternative therapy for breast cancer survivors.[18] Second-line options for refractory vasomotor symptoms include oxybutynin and clonidine. A long-acting form of paroxetine has recently been approved for breast cancer survivors in the United States but has not been approved in Canada.[19]

Hormone therapy and cardiovascular disease

Cardiovascular disease continues to be the leading cause of death in women and a significant contributor to chronic illness, costing Canadians $22 billion annually.[20] However, most cases of cardiovascular disease are preventable. More specifically, the INTERHEART study showed that 94% of cardiovascular disease risk could be attributable to modifiable factors such as diabetes mellitus (odds ratio [OR] = 2.37), hypertension (OR = 1.91), abdominal obesity (OR = 1.62), current smoking (OR = 2.87), and psychosocial stress (OR = 2.67).[21] Consequently, early identification of risk factors and intervention is key. The Canadian Cardiovascular Society's 2016 *Dyslipidemia Guidelines* recommend that women older than 40 years or those who are postmenopausal undergo a cardiovascular risk assessment every 5 years using the modified Framingham Risk Score, an estimate of an individual's 10-year risk for cardiovascular events. The 2014 *Managing Menopause* guideline had an extensive, checkbox-style appendix, "Menopause Lifestyle and Risk Assessment Tool," which included the Framingham Risk Assessment. This was not included in the 2021 guideline.[4]

In line with the 2014 guideline, the 2021 guideline cautions that hormone therapy is not indicated for primary or secondary prevention of cardiovascular disease. Primary prevention, in particular, has long been an area of controversy because age has been found to be a confounding variable for coronary artery disease outcomes in patients receiving hormone therapy. This led to the development of the "critical window" hypothesis outlined in the 2014 guideline. It suggests that in younger postmenopausal women with healthy coronary arteries, hormone therapy may be cardioprotective via anti-atherosclerotic effects. In contrast, in older postmenopausal women who are more likely to have undetectable atherosclerosis, hormone therapy can promote plaque rupture and thrombosis.[22-24]

The 2021 guideline emphasizes a Cochrane review that further supported the critical window hypothesis. It showed that hormone therapy within the first 10 years of menopause was associated with lower rates of both coronary heart disease (RR = 0.52; 95% CI, 0.29-0.96) and all-cause mortality (RR = 0.70; 95% CI, 0.52-0.95).[25] In contrast, when hormone therapy was initiated more than 10 years after menopause, it had no effect on coronary heart disease (RR = 1.07; 95% CI, 0.96-1.20) or all-cause

mortality (RR = 1.06; 95% CI, 0.95-1.18).[25] This is one of the reasons the 2021 guideline emphatically defines the time frame in which postmenopausal women can safely begin hormone therapy: less than 60 years of age or less than 10 years postmenopause.

The 2021 guideline reaffirms that hormone therapy is also associated with increased risk of venous thromboembolism in all age groups. However, based on the Cochrane data, the degree of risk varies with age. Women less than 10 years postmenopause or more than 10 years postmenopause had relative risks for venous thromboembolism of 1.74 (95% CI, 1.11-2.73) and 1.96 (95% CI, 1.37-2.80), respectively.[25] As a result, the 2021 guideline claims that for women with vasomotor symptoms who are less than 10 years postmenopause, there is insufficient evidence to advocate any route of administration over another for venous thromboembolism safety. However, for older users or women with additional risk factors, lower dose transdermal estrogen may have safety advantages. More details are provided in Part 1 of this review. The prescription of hormone therapy, with consideration of special circumstances, is outlined in the **Figure**.[26,27]

Premature ovarian insufficiency and menopause

Premature ovarian insufficiency, referred to as "premature ovarian failure" in the 2014 guideline, is defined as the onset of menopause at less than 40 years of age, with serum follicle-stimulating hormone levels greater than 40 international units per litre. It can be attributed to genetic, autoimmune, and iatrogenic causes.[28]

The 2014 guideline had a chapter dedicated to addressing special considerations, including management of women with premature menopause. In the 2021 guideline, recommendations for women with premature ovarian insufficiency are addressed throughout the different sections. However, new data continue to support treatment recommendations made in 2014. Because women with loss of ovarian function have an increased risk of osteoporosis, cardiovascular disease, cognitive impairment, and early mortality, those who are less than 45 years of age should consider undergoing replacement hormone therapy until the average age of menopause.[29-32]

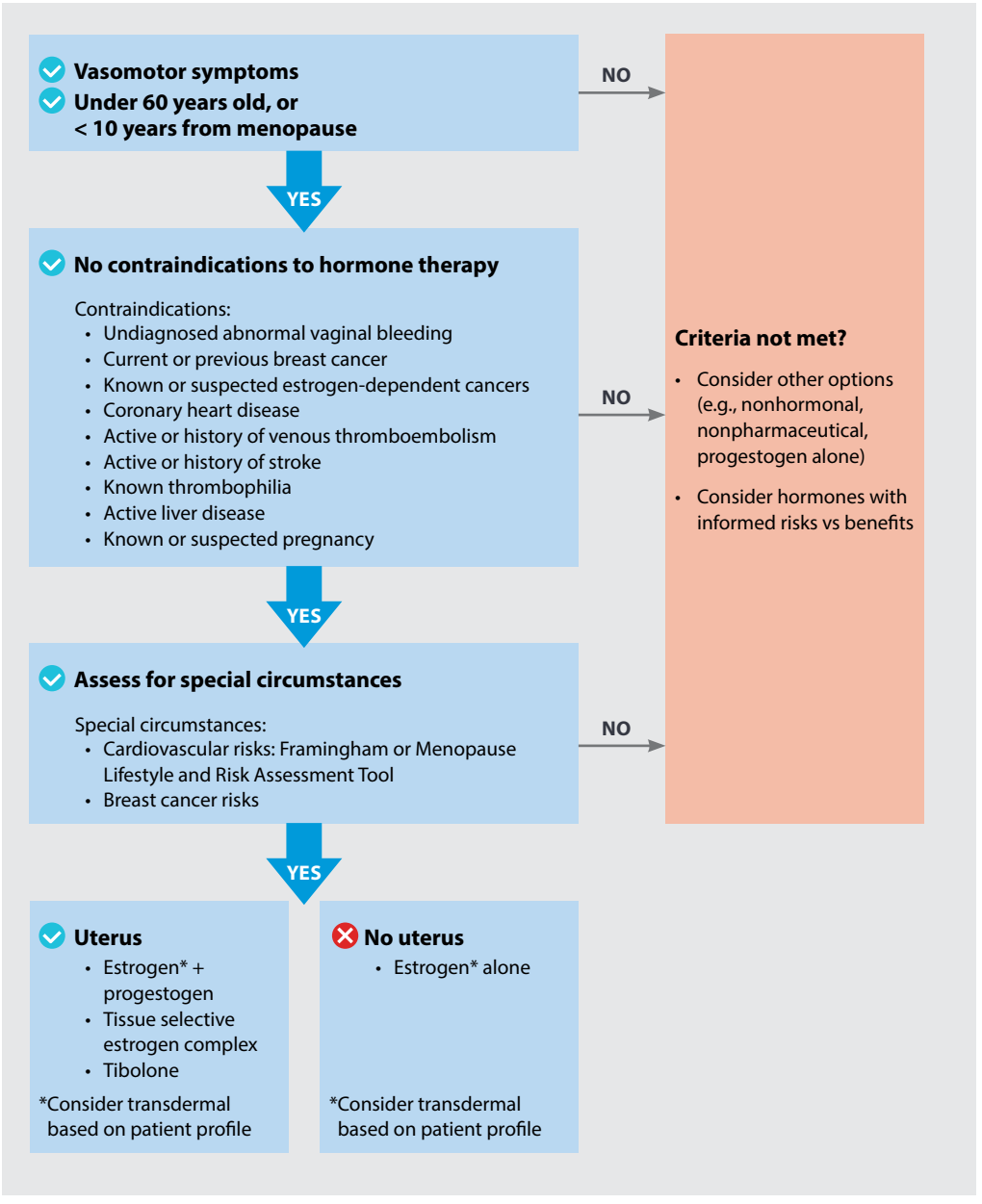

FIGURE. Prescribing menopausal hormone therapy.[26,27]

Summary

Although breast cancer is a common concern for women with vasomotor symptoms, the relative risks of hormone therapy are very low in comparison to women with unmodifiable risk factors such as genetic susceptibility. Estrogen therapy alone is preferred for women who have had a hysterectomy. For those with a personal history of breast cancer, systemic hormone therapy is contraindicated, and nonhormonal alternatives for vasomotor symptoms are available. Cardiovascular disease remains the leading cause of mortality in Canada, and screening and prevention are key. Although hormone therapy is not indicated for primary or secondary prevention of cardiovascular disease in postmenopausal women, it is recommended prophylactically for those with premature ovarian insufficiency to reduce chronic disease risks. ■

Competing interests

Dr Rowe was involved in writing the Society of Obstetricians and Gynaecologists of Canada recommendations and is a past member of the *BCMJ* Editorial Board. He is also a current member of the advisory boards for BioSyent, Lupin Pharma Canada, Pfizer Canada, and Astellas. Dr Dunne was a member of the *BCMJ* Editorial Board when this article was written, and is now the journal's editor, but did not participate in making the publication decision regarding this article.

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Although breast cancer is a common concern for women with vasomotor symptoms, the relative risks of hormone therapy are very low in comparison to women with unmodifiable risk factors such as genetic susceptibility.

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Myths versus facts: COVID-19 vaccine effects on pregnancy, fertility, and menstruation

Some of the most prevalent myths and the latest facts about fertility and COVID-19.

Jocelyn Y. Wong, Chelsea Elwood, MD, FRCSC, Deborah Money, MD, FRCSC, Caitlin Dunne, MD, FRCSC

Reproductive-age women and birthing persons may be hesitant to receive the COVID-19 vaccines due to concerns about hypothetical effects on pregnancy and fertility. Community physicians are well positioned to help share reliable and trustworthy advice with patients who may have been exposed to disinformation online. However, keeping up with the latest myths and facts can be challenging in an era where both science and social media move rapidly. This article addresses some of the most prevalent myths and shares the latest facts about fertility and COVID-19.

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Fact: The COVID vaccine does not cause infertility.

Disinformation about vaccines and miscarriage appears to have flourished in December 2020, when a blog post surfaced citing that a former employee of Pfizer believed that antibodies resulting from the COVID-19 vaccine could attack the placenta.[1] Subsequently, a myth propagated that antibodies that recognize the SARS-CoV-2 spike protein could cross-react with placental proteins called syncytins. Syncytin-1 protein acts in cell-to-cell adhesion, playing an essential role during placental attachment to the uterus during pregnancy; therefore, these claims provoked fear of placental damage with COVID-19 vaccination.[2] Since then, the original blog post has been taken down, and this myth has been debunked in several ways. Researchers have investigated the coronavirus's spike protein and compared it with placental syncytin-1, finding no significant similarities in their amino acid sequences.[3] They also looked at serum from women with COVID-19 and did not detect reactions between these patients' antibodies and the syncytin-1 protein.[3] Furthermore, if these myths were true about COVID-19 antibodies attacking placental syncytins, the pandemic would have theoretically led to mass sterilization and miscarriage in women naturally infected with the virus, which has not occurred.

Despite the accumulating safety data, false rumors have continued to spread about the COVID-19 vaccines and infertility, generating feelings of hesitancy among pregnant people and people who plan to conceive. Recently, vaccine clinical trials have demonstrated that the rate of accidental pregnancies in vaccinated groups (29 of 39 848 individuals, 0.073%) was not significantly different from that in unvaccinated groups (28 of 39 845 individuals, 0.070%).[1] These findings suggest that fertility rates do not decrease with COVID-19 vaccination. A recent statement from the Society of Obstetricians and Gynaecologists of Canada confirmed: "There is absolutely no evidence, and no theoretic reason to suspect that the COVID-19 vaccine could impair male or female fertility. These rumors are unfounded and harmful."[4]

Research has also been conducted to address concerns regarding the impact of COVID-19 infection on fertility and assisted reproductive technology outcomes. A retrospective cohort study published in *The Lancet* followed 65 patients positive for SARS-CoV-2 antibodies and 195 matched patients negative for SARS-CoV-2 antibodies who underwent assisted reproductive technology treatments.[5] Clinical pregnancy rates in the control group (54 clinical pregnancies out of 110 embryo transfer [ET] cycles, 49.1%) were not significantly different from rates in patients with mild or asymptomatic COVID-19 infections

(14 pregnancies out of 32 ET cycles, 43.8%).[5] Overall, results showed no differences in ovarian reserve, ovarian response, biochemical pregnancy rate, clinical pregnancy rate, early miscarriage rate, and implantation rate between the case and control groups, demonstrating that COVID-19 infection has no impact on female fertility or assisted reproductive technology outcomes.[5] Another observational study looked at 1347 pregnant women positive for SARS-CoV-2 infection in which 1273 (94.5%) had spontaneous pregnancies and 74 (5.5%) had IVF pregnancies. The distribution of asymptomatic and symptomatic patients was similar between the two conception groups (43.2% of IVF pregnancies had asymptomatic infections versus 51.5% of spontaneous pregnancies with asymptomatic infections; $P = .166$), and the analysis of clinical presentation (mild to moderate symptoms, pneumonia, complicated pneumonia/shock) between the two groups showed no significant differences.[6] Overall, the COVID-19 symptomatology and symptom severity were the same in both the IVF and spontaneous conception groups.[6] Furthermore, recent investigations show that receiving the SARS-CoV-2 mRNA vaccine has no effects on patients' performance in their subsequent IVF cycle, specifically no differences in patients' ovarian reserve or developing gametes and embryos.[7] Thirty-six couples received two doses of vaccines and resumed their subsequent IVF treatment cycle 7 to 85 days after the second vaccine.[7] Three pregnancies were recorded in 10 patients who underwent ET, indicating an acceptable pregnancy rate (30% per transfer).[7] In January 2022, a study published in *Obstetrics & Gynecology* included 222 vaccinated and 983 unvaccinated patients who underwent ovarian hyperstimulation cycles.[8] Results show no association between COVID-19 vaccination and fertilization rates.[8] Moreover, 214 vaccinated and 733 unvaccinated patients who underwent frozen-thawed embryo transfer also showed a lack of significant association between COVID-19 vaccination and clinical pregnancy (adjusted odds ratio [aOR] 0.79; 95% CI, 0.54-1.16).[8] Community physicians might find it helpful to be aware of these emerging findings regarding assisted reproductive technology, COVID-19, and COVID-19 vaccines to address patient questions with accurate information and guide clinical decision-making.

Fact: The COVID-19 vaccine does not increase the risk of miscarriage or stillbirth.

Some young women and birthing persons are reluctant to be vaccinated because they fear it might affect a current or future pregnancy. This myth has become so pervasive that even some health care professionals have reported delaying vaccination. For example, members of the BC Nurses' Union were reported to have expressed concerns about the effects of COVID-19 vaccines on fertility and pregnancy, which contributed to many young nurses and other health care workers in BC remaining unvaccinated.[9] Several studies have debunked these myths and confirmed that the risk of miscarriage after receiving the COVID-19 vaccine was not increased compared to the general population.[10] Correspondence published in the *New England Journal of Medicine* found that out of 2456 participants enrolled in the Centers for Disease Control and Prevention's v-safe COVID-19 Vaccine Pregnancy Registry, the cumulative risk of spontaneous abortion from 6 to less than 20 weeks of gestation was 14.1% (95% CI, 12.1-16.1). This is consistent with the expected risk of spontaneous abortion of 11% to 22% in all recognized pregnancies.[10] Additionally, BORN Ontario reports the stillbirth rate in individuals who received one or more COVID-19 vaccine doses before or during pregnancy to be 0.35%, which is similar to background stillbirth rates of 0.4% to 0.6% in Ontario.[11] The University of Washington conducted a prospective cohort study including 17 525 participants who were pregnant, lactating, or planning a pregnancy at the time of their first dose of the COVID-19 vaccine.[12] Results show that the odds of having several reactions were statistically significantly decreased in pregnant individuals (i.e., fever after Pfizer dose 2: OR 0.44; 95% CI, 0.38-0.52; $P < .001$ and after Moderna dose 2: OR 0.48; 95% CI, 0.40-0.57; $P < .001$) compared with individuals who were not pregnant or lactating.[12] Obstetrical symptoms were reported in 346 of 7809 (4.4%) pregnant participants after the first vaccine dose and in 484 of 6444 (7.5%) pregnant participants after the second dose.[12] Overall, vaccine reactions and experiences were well tolerated and similar between pregnant or lactating individuals versus age-matched individuals who were neither pregnant nor lactating.[12] These findings were consistent with early data from the Canadian COVID-19 Vaccine Registry for Pregnant and Lactating Individuals (COVERED), showing no adverse events associated with the vaccines.[12] A large registry published in the *New England Journal of Medicine* reported that among 35 691 v-safe participants aged 16 to 54 who identified as pregnant, local and systemic reactions (injection-site pain, fatigue, headache, myalgias) were similar to patterns observed in nonpregnant women.[13] Of the 3958 participants enrolled in the v-safe pregnancy registry, 827 individuals completed their pregnancies, with 86.1% live births, 12.6% spontaneous abortions, 0.1% stillbirths, and 1.2% with other outcomes. These findings were comparable to incidences published in current literature; therefore, results do not indicate any adverse pregnancy or neonatal outcomes in those who received mRNA COVID-19 vaccines.[13] In summary, all the data at hand confirm that COVID-19 vaccines do not increase miscarriage or stillbirths in pregnant persons, and current literature suggests no safety concerns in those who are pregnant or lactating.

Current research shows that COVID-19 vaccines do not cause infertility or increase the risk of miscarriage or stillbirth.

In contrast, a considerable amount of data show that outcomes are worse in pregnant individuals infected with SARS-CoV-2. COVID-19 is more likely to adversely affect pregnant women, leading to a 7% to 11% risk of being hospitalized for COVID-19-related morbidity, and a 1% to 4% risk of requiring intensive care.[14] A Canada-wide study, CANCOVID-Preg, reported that pregnant people with COVID-19 infection have a stillbirth rate of 1.06%, which is twice that of the general population, though recent data suggest

the numbers are closer to population-level rates of 0.5%.[15] Another complication is premature delivery, occurring in around 21.8% of pregnant individuals infected with COVID-19.[16] Preterm birth can result in extended stays in the neonatal intensive care unit (NICU) and may even lead to infant mortality. Research has also shown an association between certain risk factors, including age (≥ 35 years old), asthma, obesity, diabetes, hypertension, and heart disease, which increases the risk of severe morbidity from COVID-19 infections in pregnant persons.[14] Given the abundance of data available, there are strong recommendations from the Society of Obstetricians and Gynaecologists of Canada and the National Advisory Committee on Immunization for pregnant, breastfeeding, and planning-to-become-pregnant individuals to receive the COVID-19 vaccine.[14,17] Community physicians continue to take on the challenging and vital role of addressing the public's concerns about vaccine safety and encouraging vaccinations in pregnant people and people who plan to conceive.

Fact: The COVID-19 vaccine does not have enduring effects on menstrual periods.

News media have raised concerns regarding COVID-19 vaccines and their effects on menstruation.[18] Until recently, information surrounding abnormal vaginal bleeding after vaccination has been anecdotal, and vaccine manufacturers did not record or report side effects related to menstruation.[19] However, patient experiences may prompt questions about the vaccines and their effects on the menstrual cycle.[19] In particular, vaccine hesitancy in the young population has been driven by false claims that COVID-19 vaccines and changes in menstrual cycles could negatively impact future pregnancy.[20] These concerns highlight the need for reproductive health outcomes to be included in postvaccine surveillance. Five institutions are now funded by the National Institutes of Health to conduct studies to examine this relationship between vaccination and irregular menstruation, and to address concerns that may be preventing women from receiving their COVID-19 vaccines.[21]

In January 2022, a study published in *Obstetrics & Gynecology* included 3959 individuals (2403 vaccinated) who prospectively tracked their cycles on a smartphone application. Overall, vaccination was associated with a less-than-one-day change in menstrual cycle length (first dose 0.71-day increase; 98.75% CI, 0.47-0.94; second dose 0.91-day increase; 98.75% CI, 0.63-1.19).[22] Additionally, a retrospective study included 177 patients in a menstrual analysis and found that a quarter of patients with COVID-19 infections had influences on menstrual volume (20% had a significant decrease in menstrual volume and 5% had an increase in menstrual volume). Further analysis showed that 18% of patients had prolonged menstrual cycles, 3% had shortened cycles, and 7% showed cycle disorders. Follow-up determined that 84% of participants returned to their normal menstrual volume and 99% returned to their regular menstrual pattern after 1 to 2 months, suggesting that menstrual changes due to COVID-19 were temporary and quick to resolve.[23] Likewise, in the UK, most individuals who observed menstrual changes after vaccination also reported that their cycles returned to normal and changes were transient.[24] In total, 51 211 suspected menstrual cycle reactions were recorded in the UK, which is relatively low given that 74.1 million doses of COVID-19 vaccines had been administered by May 2022.[24] These studies, together, increase our confidence in the minimal impact of COVID-19 vaccines on menstruation. Current theories of changes in menstrual cycles focus on changes in the immune system after receiving vaccinations.[25] In particular, shedding of the uterine lining during menstruation is an inflammatory response that involves the immune system. Therefore, vaccines that function by activating an immune response may temporarily change the normal course of menstruation. However, it is expected that if changes are noted, these changes would be short-term. To confirm these theories, controlled studies will need to be conducted, and researchers should put greater emphasis on including menstrual cycle tracking in future vaccine clinical trials. ■

Key points

- Current research shows that COVID-19 vaccines do not cause infertility or increase the risk of miscarriage or stillbirth.
- COVID-19 infection in pregnant women increases the risk of hospitalization, ICU admissions, premature delivery, and NICU admissions.
- Several guidelines, including those from the Society of Obstetricians and Gynaecologists of Canada and the National Advisory Committee on Immunization, strongly recommend COVID-19 vaccination for pregnant, breastfeeding, and planning-to-become-pregnant individuals.
- Recent studies are reporting minimal impact of COVID-19 vaccination on menstruation.
- Community physicians have a challenging and important role to play in keeping up with emerging vaccine myths versus scientific data to address the public's concerns about vaccine safety and to increase the public's trust in vaccines.

Competing interests

Dr Dunne was a member of the *BCMJ* Editorial Board when this article was written, and is now the journal's editor, but did not participate in making the publication decision regarding this article.

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Monkeypox: What primary care providers need to know about testing

Since May 2022, monkeypox infections have been reported in many countries where they had not been seen previously, including Canada. Timely diagnostic testing using polymerase chain reaction (PCR) is key for both clinical management and public health control measures in British Columbia. This article provides guidance to primary care providers on when, who, and how to test for monkeypox infection, which can be done safely in primary care settings.

Clinical presentation

The typical clinical presentation consists of a short prodrome, followed by the progressive development of a rash and lesions. The clinical presentation can be highly variable, with some individuals experiencing no prodrome, and a range of lesion patterns, from small lesions in a discrete area to large numbers of lesions, often in the genital region, including the perianal and anal regions.[1]

The diagnosis of monkeypox can be challenging, given the broad differential diagnosis and the nonspecific nature of the prodromal illness. Clinicians should consider these other conditions and test for them as indicated: syphilis, herpes simplex virus (HSV), molluscum contagiosum, and varicella zoster virus (VZV).

Who to test for monkeypox

Testing for monkeypox should be based on clinical judgment, taking into account patient history, physical examination, and epidemiologic factors.

At the time of writing, in the current Canadian monkeypox outbreak, nearly all cases have occurred in the context of close, intimate contact during sex, in members of the gay, bisexual, and other men-who-have-sex-with-men communities. While monkeypox cases have been identified outside of this population globally, including among women and children, these cases have been rare.[2] For individuals outside of the current risk groups, other types of infections remain higher on the differential, but it is important to remain vigilant to the spread of monkeypox within the broader community.

How to collect specimens for monkeypox testing

Testing for monkeypox should be performed using appropriate personal protective equipment, which includes droplet and contact precautions (gown, gloves, medical mask, and eye protection). This will also provide protection for other infections included in the differential diagnosis.

The clinical presentation should guide diagnostic testing.

If rash/lesions are present: The highest yield for monkeypox PCR testing is from skin and mucosal lesions. If lesions are present on different areas of the body, use a different swab for different anatomic areas. Swab 2–3 lesions per area, unroof vesicles, and/or vigorously swab dry or crusted lesions using a single swab. In addition to lesion swabs, do oropharyngeal and rectal swabs where clinically appropriate (e.g., symptomatic proctitis).[3]

If prodromal symptoms are present but there is no evidence of skin lesions: Collect an oropharyngeal and a rectal swab, as this will maximize sensitivity of detection. Where appropriate, consult with the BCCDC microbiologist on call (604 661-7033) and/or your local hospital microbiologist to ensure that all possible etiologic agents are considered.

For more information:

- Detailed information on sample types and containers can be found by searching the eLab Handbook for monkeypox (www.elabhandbook.info/phsa).
- Additional detailed information about monkeypox for health care providers can be found on the BCCDC website (www.bccdc.ca/health-professionals/clinical-resources/monkeypox).

The type of swab used to sample possible monkeypox lesions is the same swab normally used for HSV/VZV testing and should be placed in Universal Transport Medium. Multiple viruses (e.g., HSV, VZV, enterovirus, monkeypox) can be detected from a single sample collection. Monkeypox PCR testing is offered at the BCCDC Public Health Laboratory and select other regional laboratories.

Testing is *not* recommended for individuals without symptoms, even for contacts to a confirmed monkeypox case, if they remain asymptomatic.

Advice to patients with suspected monkeypox

The turnaround time for testing is 24 hours once specimens are received at the BCCDC Public Health Laboratory. While test results are pending, patients suspected of having monkeypox should be instructed to limit their contact with others and practise frequent hand and respiratory hygiene (including wearing a medical mask if out in public). Lesions should be covered whenever possible, and contaminated objects should be handled by the case only. If test results are negative, these measures can be discontinued.

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

If monkeypox infection is confirmed

Advise the patient to continue infection control measures until all lesions have healed (i.e., the scabs have fallen off and re-epithelialization has occurred). Local public health will follow up with the patient for case and contact management. Treatment is largely supportive and focused on symptoms. ■

—Troy Grennan, MD, MSc, FRCPC

—Agatha Jassem, PhD, (D)ABMM, FCCM

—Mel Krajden, OBC, MD, FRCPC

—Mark Gilbert, MD, MHSc, FRCPC

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Sarcopenia in older adults: Use it or lose it

One of the major health challenges in an aging population is mobility impairment, along with the resulting cascade of negative health outcomes, including disability, loss of independence, and reduced quality of life. Recognizing frailty and sarcopenia creates opportunities to intervene to preserve seniors' quality of life and mobility.

The concept of sarcopenia was introduced by concerned physicians in the late 1980s in an attempt to increase awareness about age-related muscle loss and its effects on the freedom of the elderly.[1] The European Working Group on Sarcopenia in Older People defines sarcopenia as a muscle disease (failure) characterized by low muscle strength as the principal determinant of the diagnosis; it is also associated with low muscle quantity and quality.[2] This loss of muscle mass and strength is involuntary, age associated, and not disease related, and differs from cachexia, a wasting disorder, which is the disease-related loss of body cell mass. Some separate sarcopenia (loss of muscle mass) from dynapenia (loss of muscle strength), with more emphasis on loss of muscle strength.[2]

Pathological changes in this important metabolically active tissue can have profound consequences on the older adult, including loss of function, disability, and frailty, and are also associated with acute and chronic disease states (e.g., rheumatoid arthritis), increased insulin resistance, fatigue, falls, and mortality. Sarcopenia impacts recovery from any condition that renders a senior less mobile, such as an acute illness or hospitalization. It is one of the most important causes of functional decline with loss of independence in older adults, contributing to increased hospitalization risk and need for long-term care placement.[2]

Recognition of sarcopenia and sarcopenic obesity by health care providers has important implications for patients, including promotion of active lifestyles and good nutrition[3] as well as recognition of its contribution to delayed return of mobility after an acute illness or hospitalization. For example, surgeons should be aware of sarcopenia (and sarcopenic obesity) contributing to prolonged post-op stays and encourage prevention pre-op for elective surgeries.

Observing National Seniors Day on 1 October 2022, it is important to raise awareness, among all physicians, of this condition in the elderly to highlight its role in declining health and to promote preventive strategies such as physical exercise (weight-bearing and resistance) and adequate protein nutrition. Further nonpharmacological and pharmacological ways to prevent or offset sarcopenia have been reviewed in the literature.[4] Sarcopenia must be recognized as a preventable and prevalent condition in order to allocate adequate resources to prevent and treat it.

Seniors now make up 20% of BC's total population.[5] As the number of seniors in the province continues to grow, optimal care for people with sarcopenia is essential to address the high personal, social, and economic costs that accumulate when sarcopenia is left unrecognized and untreated. Health care professionals need to receive adequate training in identifying, diagnosing, and treating it to prevent progression of functional decline and maintain a high quality of life for our seniors. ■

—Katharine McKeen, MD
Member, Council on Health Promotion

—Eileen M. Wong, MD, CCFP, FCFP
Member, Council on Health Promotion

This article is the opinion of the authors and not necessarily the Council on Health Promotion or Doctors of BC. This article has not been peer reviewed by the BCMJ *Editorial Board.*

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Evidence-Based Practice Group answers clinical questions

A critical component behind WorkSafeBC's mission to provide workers with appropriate medical treatment and rehabilitation on their road to recovery and return to work is assessing the breadth of medical and health technology information available. Within the greater Policy, Regulation, and Research Department, a dedicated team specializes in just such medically relevant topics.

The Evidence-Based Practice Group, headed by Dr Craig Martin, was established in 2002 and is mandated to address the many medical and policy issues that WorkSafeBC officers and clients—such as surgeons, medical specialists, and rehabilitation providers—deal with on a regular basis. Examination of these medical and policy issues is conducted by Evidence-Based Practice Group members, who apply established techniques of critical appraisal and evidence-based medicine to evaluate health technologies, clinical treatments, assessments, diagnostic procedures, and any other such questions that arise during the provision of services to injured or occupationally diseased workers. Sometimes, less complex queries may be resolved through direct discussion with one of our group members, or we can make a referral for the inquirer to other relevant sources of information that address the inquiry.

For inquiries that require investigation and review, the Evidence-Based Practice Group uses a systematic review approach and also seeks cross-divisional input to reflect the diverse nature and impact of these reviews, as necessary.

A typical review process may look something like this:

1. A request for review of a topic is submitted.
2. If the topic is deemed appropriate for review, a group member is assigned as the owner of the topic.
3. The topic owner then applies WorkSafeBC's established, systematic literature-review process, including:
   - Refining a focused research question.
   - Developing a literature research protocol and identifying any other relevant avenues of information.
   - Compiling a final report that outlines the review process, the literature search and analysis results, and a discussion/summary of the findings.

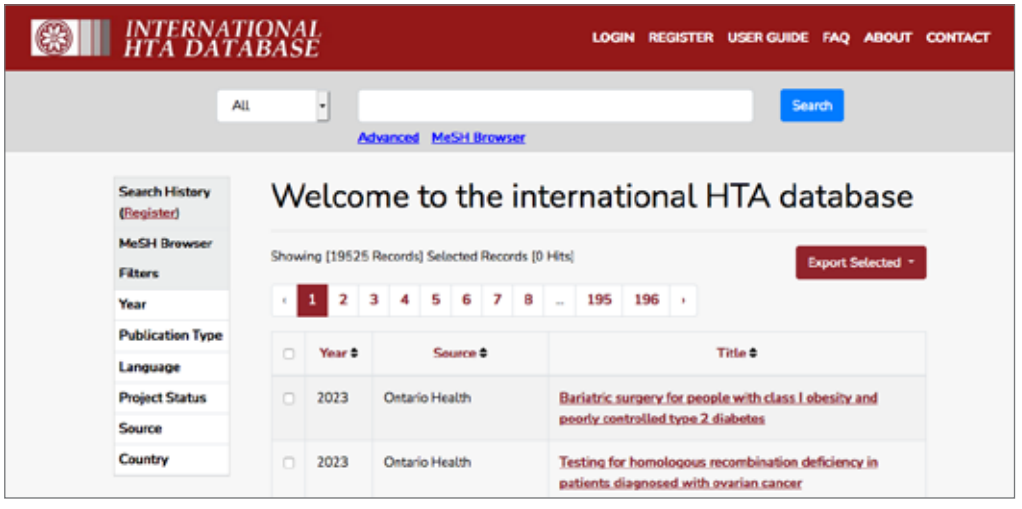
The final report is then provided to the original inquirer. Additionally, as part of our greater goal of reinforcing WorkSafeBC's overall mandate of worker support and strengthening awareness of occupational health and safety issues, our reports are made accessible to our wider public audience. Accessing our published reports on WorkSafeBC's website is easy—our reports are housed at www.worksafebc.com/en/evidence. There, users can review a list of our reports or use the search function to locate relevant reviews and topics.

- In the "Systematic reviews and Rapid reviews" section, you will see a short list of topics.
- To access a complete list of topics, click the "More systematic reviews" link.
- If you are searching for a specific topic, enter your keywords into the "Search Forms & Resources" search bar. The results will be limited to our evidence-based practice publications.

You can also access our reviews from the International Network of Agencies for Health Technology Assessment (INAHTA) database (https://database.inahta.org). This is a freely available international repository of bibliographic information about ongoing and completed health-technology assessments commissioned or undertaken by members of INAHTA and other health-technology assessment organizations.

The Evidence-Based Practice Group is always ready to answer queries regarding our work. Comments and questions may be sent to EBPG@worksafebc.com. ■

—Cindy Lau, MA
Policy Analyst, Policy, Regulation and Research
WorkSafeBC



You can also access our reviews from the International Network of Agencies for Health Technology Assessment database: https://database.inahta.org.

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

Obituaries

We welcome original tributes of less than 700 words; we may edit them for clarity and length. Obituaries may be emailed to journal@doctorsofbc.ca. Include birth and death dates, full name and name deceased was best known by, key hospital and professional affiliations, relevant biographical data, and a high-resolution head-and-shoulders photo.

Dr Judy Kalla

1934–2022

Dr Judy Kalla (née Hornung) died on 16 August 2022 at the age of 88.

Judy was born in Czechoslovakia in 1934; her idyllic childhood was upended by the Nazi occupation. Her family barely escaped the Holocaust to England in 1939, following a harrowing journey through Prague and Berlin. The war years were tumultuous for young Judy, who was separated from her family for much of it. Despite the early childhood trauma, Judy's perpetually sunny disposition never faltered, and she was eventually reunited with her family after her father, Leo, settled into a family practice in North London. Determined to follow her dad into medicine, she completed medical school at St. Mary's Hospital, one of only 15 women in her class.

With a love of travel and an eagerness for new experiences, Judy decided to finish her postgraduate training abroad. She arrived in Vancouver in 1958 and, in typical Judy fashion, happily threw herself into an internship at Vancouver General Hospital, forging lifelong friendships and a love for her newly adopted city. In 1959, she met her husband, Frank, a doctor and a Hungarian refugee, on a blind date. Despite what she would later describe to one of her granddaughters as a challenging first date due to Frank's then-limited English, they soon fell deeply in love and were married within 4 months.

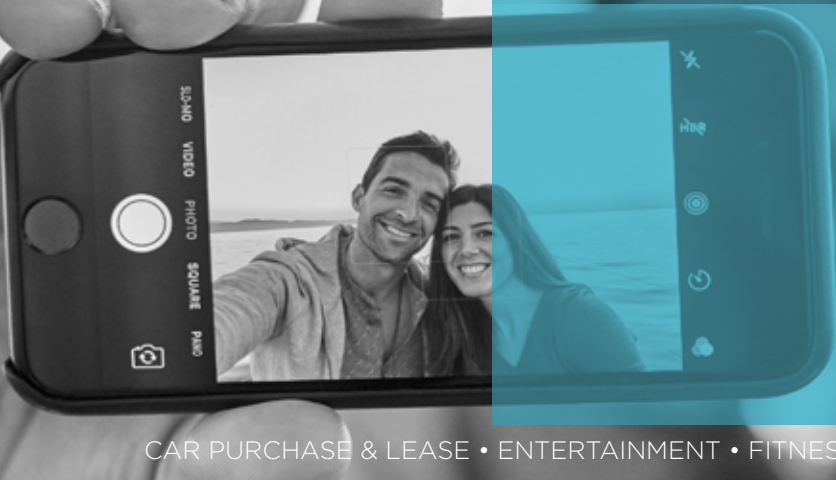
Frank and Judy started a family practice in Vancouver, which they shared until their retirement in 1997. They were active staff members at St. Paul's Hospital and later St. Vincent's for their entire careers. They complemented each other's skill sets: Frank was trained as a surgeon, while Judy was a people person whose patients adored her, and vice versa. She fondly remembered sharing a laugh with one patient after he asked her to review his "autopsy report." Judy was passionate about learning and, throughout her career, pursued other opportunities to augment her practice, including working in public health, screening schoolkids for signs of scoliosis, teaching medical students, and participating in the early evolution of the College of Family Practice.

Born to participate, Judy was an avid, skilled skier and tennis and squash player. She loved music, art, history, literature, and travel, and she was unfailingly generous with her time, resources, and devotion. But of her countless pursuits and passions, family always came first. Judy was a beloved daughter, sister, wife, mother, and grandmother. Despite working full-time, she was a devoted mother to her three sons: Tim, Tony, and Dan. And when that streak of maleness gave way to a raft of girls in the next generation, she tirelessly dedicated herself to her granddaughters: Melissa, Chelsea, Samantha, Gabrielle, Ashley, and Charlotte.

Judy touched so many lives. She will be long remembered for her contagious smile, her passion for life, her selflessness, her unconditional love of family and friends, and her penchant for making anyone she encountered feel heard and supported.

In lieu of flowers, the family asks that donations be made to St. Paul's Hospital Foundation (http://donate.helpstpauls.com/judith-kalla) in honor of the wonderful care Judy received there and the deep family ties to the institution.

—Dan Kalla
Vancouver



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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:** 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. 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 second and fourth 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. Email peer support@physicianhealth.com for the link to join by phone or video.

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MINDFULNESS IN MEDICINE WORKSHOPS AND RETREATS

Multiple locations (Sept 2022–Mar 2023)

Join Dr Mark Sherman and your community of colleagues for a transformative workshop or retreat! The workshops focus on the theory and practice of mindfulness and meditation, reviewing definitions, clinical evidence, and neuroscience, and introducing key practices of self-compassion, breath work, and sitting meditation to nurture resilience and healing. Our meditation retreats are an opportunity to delve deeply into meditation practice in order to recharge, heal, and reconnect, and to build a practice for life. Workshops accredited for 16 Mainpro+ group learning credits. Foundations of Theory and Practice Workshop for Physicians and Their Partners, 23–26 September 2022 and 20–23 January 2023 at Long Beach Lodge Resort in Tofino. Heal Thyself: A Meditation Retreat for Physicians and Health Professionals, 1–6 December 2022 online and 23 February–5 March 2023 at Bethlehem Centre in Nanaimo. Contact hello@livingthismoment.ca, or check out www.livingthismoment.ca/events for more information.

GP IN ONCOLOGY EDUCATION

Online (12–23 Sept and 3–17 Oct 2022)

BC Cancer's Family Practice Oncology Network offers an 8-week General Practitioner in Oncology education program beginning with a 4-week virtual introductory session every spring and fall at BC Cancer–Vancouver. This program provides an opportunity for rural family physicians, with the support of their community, to strengthen their oncology skills so that they can provide enhanced care for local cancer patients and their families. Following the introductory session, participants complete a further 30 days of clinic experience at the cancer centre where their patients are referred. These are scheduled flexibly over 6 months. Participants who complete the program are eligible for credits from the College of Family Physicians of Canada. Those who are REAP-eligible receive a stipend and expense coverage through UBC's Enhanced Skills Program. For more information or to apply, visit www.fpon.ca or contact Dilraj Mahil at dilraj.mahil@bccancer.bc.ca.

THE 34th ANNUAL DIABETES DIRECTORS SEMINAR

Vancouver (21 Oct 2022)

The Endocrine Research Society is pleased to present the 34th Annual Diabetes Directors Seminar—a UBC-accredited annual gathering of leading diabetes experts and caregivers across British Columbia. Join us at the Holiday Inn Vancouver-Centre (Broadway) for a full-day presentation series covering the latest and most pertinent aspects of diabetes therapeutics and clinical care. Target audience: specialists and family physicians with an interest in diabetes care, as well as nurses, dietitians, pharmacists, and other diabetes educators responsible for diabetes management within their own groups and communities. Register online now at www.endocrineresearchsociety.com/events/34th-diabetes-directors-seminar. Space is limited. Contact Sahara Frojmovic at the Endocrine Research Society for more information or with registration questions. Email saharafro.ers@gmail.com, or call 604 689-1055.

INFECTIOUS DISEASES UPDATE 2022, HOT TOPICS & WHAT'S NEW

Online (4–5 Nov 2022)

Join us for the 25th year of this very popular event. Although COVID-19 is foremost in our mind, we cannot lose sight of the other significant infectious diseases in our community. Topics will include locally relevant infectious diseases as well as global medicine. A recording of this conference will be available for future viewing for those unable to attend. This group learning program has been certified by the College of Family Physicians of Canada and the British Columbia Chapter for up to 12.00 Mainpro+ credits. Registration fees: $200 on or before 14 October 2022, $225 after 14 October 2022. Student rate, with valid student ID card: $100. Register online at https://cvent.me/GM1gxX or visit https://novaclinical.com. For more information email info@novaclinical.com.

Classifieds

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

PRACTICES AVAILABLE

BURNABY—FULL-TIME FAMILY PRACTICE AVAILABLE

Organized, well-established family practice available. Med Access EMR; 12-year-old office building at PrimeCare Medical Centre with four FT and six PT colleagues and support of walk-in and urgent-care clinics. Obstetrics/hospital optional. Willing to consider part-time. Income split or 100% less overhead. Enquiries to ron.demarchi@primecaremed.ca or 604 520-3006.

KAMLOOPS—SOLO PRACTICE AVAILABLE FOR FAMILY PHYSICIAN

Family physician with solo practice in Kamloops is looking to turn over a fully equipped practice to a physician able to provide longitudinal care for his patients. The clinic is centrally located and is set up with a well-managed and organized EMR (Telus Med Access). Available December 2022. For further information contact Santie at 778 220-0848.

SURREY—FP

Family physician in Fleetwood looking for a part-time/full-time associate/locum with flexible hours. Busy family medicine clinic with mostly South Asian patients, and Oscar EMR. Well-equipped modern facility with four examination rooms and experienced staff. Punjabi speaking an asset. Call 604 585-9696 or email drsohal@shaw.ca.

EMPLOYMENT

ACROSS CANADA—PHYSICIANS FOR YOU – MATCHING DOCTORS WITH CLINICS

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

LANTZVILLE—IMMEDIATE OPPORTUNITY FOR FT/PT FAMILY PHYSICIANS

The Sow's Ear Medical Clinic is looking for physicians to join our family practice. We are a busy multiphysician clinic with an on-site lab and adjoining pharmacy. This is a great opportunity to join an established clinic with a built-in patient panel or to start your own patient panel in a new location! The clinic is located in Lantzville, just outside of Nanaimo on Vancouver Island. This prime location means you can enjoy an oceanfront village feel with the comforts of big city amenities only minutes away. Multiple openings available: start your own practice immediately or take over an existing practice in June 2023. For more information, contact Vicky Smith at sowsear-docs@shaw.ca.

NANAIMO—GP

The Caledonian Clinic has availability for a general practitioner (locum or permanent position). We are a well-established, very busy clinic with 23 general practitioners, one first-year resident, one second-year resident, a podiatrist, a geriatrician/internist, and an orthopaedic surgeon. Our EMR is Profile by Intrahealth. We are located in a modern new clinic in the Nanaimo North Town Centre. Lab and pharmacy services are on site within the centre. Contact Lisa Wall at 250 716-5360 or email lisa.wall@caledonianclinic.ca. Visit our website at www.caledonianclinic.ca.

NORTH VAN—FP LOCUM

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

POWELL RIVER—LOCUM

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

RICHMOND/STEVESTON—OUTSTANDING LONG-TERM OWNERSHIP OPPORTUNITY

Guaranteed income: work-to-own family/aesthetic practice(s). Two turnkey strata units. Technologically advanced practice(s). Individual or group of family doctors/NPs. Can start with a guaranteed income and buy real estate earlier in your career. Tax efficiency planning. Dermatologist may be interested in aesthetic practice. For more information contact msinghalmd@gmail.com.

SOUTH SURREY/WHITE ROCK—FP

Busy family/walk-in practice in South Surrey requires GP to build family practice. The community is growing rapidly and there is great need for family physicians. Close to beaches and recreational areas of Metro Vancouver. Oscar EMR; nurses/MOAs on all shifts. CDM support available. Competitive split. Please contact Carol at

peninsulamedical@live.com or 604 916-2050.

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

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

VANCOUVER—FP/GYNECOLOGIST/PEDIATRICIAN/SPECIALIST, AND RMT
Cross Roads Clinics: Opportunity to join our large multidisciplinary clinic with excellent support focusing on family health, preventive health, and the care of women and children. Virtual care, extended flexible hours/scheduling, and vacation friendly. Modern 9000 sq. ft. facility with 34 patient rooms and gymnasium. Physiotherapy, massage therapy, naturopathic medicine, acupuncture, dermatology, minor surgery, pediatrics, women's health, infertility, contraception, menopause, and incontinence clinic on site. No need to build your practice as we have patients immediately available to you. Potential service contract for family medicine. Great opportunity to focus on patient care, whether new to practice or semi-retiring; allow us to manage the rest. Please contact admin@crossroadsclinics.com.

VANCOUVER/RICHMOND—FP/SPECIALIST
We welcome all physicians, from new graduates to semi-retired, part-time or full-time. Walk-in or full-service family medicine and all specialties. Excellent splits at the busy South Vancouver and Richmond Superstore medical clinics. Efficient and customizable Oscar EMR. Well-organized clinics. Contact Dr Balint Budai at medicalclinicbc@gmail.com.

VANCOUVER—RESEARCH ASSOCIATE
The Division of Cardiology at Vancouver General Hospital is seeking a full-time research associate. The successful candidate will work under the supervision of the principal investigator and will be a major contributor to implementing and publishing research studies related to cardiac sciences, not limited to: the impact of published research, methods of peer review at funding agencies and among health research journals, measures of excellence and equity in research and among researchers, and advanced methods of reporting research. This research has international scope—the content is not limited to Canada. The research associate needs to have a strong background in cardiac sciences and communication, as the job entails knowledge translation and engagement. For more information, contact Jackie Chow: Jackie.Chow@vch.ca.

MEDICAL OFFICE SPACE

VANCOUVER—MEDICAL OFFICE TO SHARE: BROADWAY CORRIDOR
Medical office space to share on Broadway corridor near VGH. Fully equipped and furnished, 1450 sq. ft. Two exam rooms, aesthetic room, two offices, spacious two-person reception area. Beautifully furnished with unobstructed city views. To share with semi-retired plastic surgeon. Five days available. Ideal for plastics or dermatology. Inquiries 604 500-4357.

VANCOUVER—SPACE IN MULTIDISCIPLINARY CLINIC AT BROADWAY/GRANVILLE
Fantastic Broadway/Granville location. Bright, airy, modern facility with variety of sublet space available suitable for MDs, psychologists, kinesiologists, physio, audiologist, dietician, etc. Available spaces include exam rooms with basic furnishings (exam bed, sphygmomanometer, credenza, desk, chair); consult room suitable for counseling or coaching; and a large space for rehab, kinesiology, physio, energy work, etc. For more information or to view, contact lbrooking@healthcode.ca.

MISCELLANEOUS

BRITISH COLUMBIA—DOCTORCARE MEDICAL MSP BILLING SERVICES
Let DoctorCare take the stress out of your medical billings with pain-free billing management. We deliver fully transparent and detailed financial reporting, analytics, insights, and simple recommendations to ensure doctors are optimizing their revenue monthly and have peace of mind in understanding exactly how they're paid. We can also review, fix, and resubmit any claims errors and integrate with most popular EMR platforms including Oscar, Accuro, Telus, and others. Email us at info@doctorcare.ca or visit www.doctorcare.ca/msp-billing-bc to learn more.

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

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Easy Bill MD Inc. provides full-service billing, monthly rebill services including remittance and reconciliation, account audit and claim recovery, uninsured billing, WorkSafeBC billing support, after-hours billing support, billing advice, and calls to MSP. Call for a FREE assessment! Phone 647 242-9021, email admin@easybillmd.com, or visit www.easybillmd.com.

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

PATIENT RECORD STORAGE—FREE
Retiring, moving, or closing your family or general practice, physician's estate? DOCUdavit Medical Solutions provides free storage for your paper or electronic patient records with no hidden costs, with patient mailing and reference of calls included. Contact Lupe Cardenas at DOCUdavit Solutions by calling 1 888 781-9083, ext. 118, or emailing lupe@docudavit.com. You can also visit our website, www.docudavit.com. We also provide great rates for closing specialists with no minimum patient transfers to qualify.

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Hosting an educational activity and need a platform to collect registration? We can help! UBC Continuing Professional Development provides safe, secure registration services for groups looking to offer hassle-free registration to attendees. We manage registration tracking, credit card payments, and receipting, as well as customizable registration sites, unique registration links, online registration anytime, phone/voicemail assistance, secure payment options, CPD website event listing, real-time reporting, name badges (for a fee), flexible cutoff dates, reminder emails, GST collection, financial reconciliation, and more. Contact us for a quote! Visit ubccpd.ca, call 604 675-3777, or email sandy.m@ubc.ca.

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

6th Annual Fertility and Reproductive Medicine Symposium

Medico-Legal Considerations in Virtual Care

Kim J. Yee, Partner at Harper Grey LLP

Infertility Workup & Treatment for the Virtual Community Physician

Dr. Caitlin Dunne

Contraception—Selecting the Optimal Method for Your Patient

Dr. Brigid Dineley

Male Fertility—Impact of Cannabis and Lifestyle Factors

Dr. Chris Wu

In Vitro Fertilization and Embryo Selection by PGT-A and Emerging Technologies

Dr. Jon Havelock

Endometriosis: A Practical Approach to Diagnosis and Non-Surgical Treatment

Dr. Catherine Allaire

Bowel Disease & Pregnancy Considerations

Dr. Yvette Leung

Virtual Symposium

October 19, 2022 12:00-16:30 PT

Earn CME Section II Credits

Registration Complimentary

RSVP - CME@pacificfertility.ca

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