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Bariatric surgery

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ON THE COVER

Management of obesity requires lifestyle modification counseling, diagnosis and treatment of psychological and eating disorders, teaching of coping mechanisms, medication use, and an assessment for bariatric surgery. When surgery is included in this approach, patients can lose more than 70% of their excess weight. Theme issue articles begin on page 146.

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Rain-birding

By the time this editorial is published I will have survived another winter. Now, don't get me wrong, I love living in British Columbia and particularly the Lower Mainland. I have called it home since preschool, and love the people and beauty of our province. I can't imagine residing anywhere else. I have taken care of numerous retirees who disappear around November only to reappear in my office the next April. These snowbirds escape winter by fleeing to warmer destinations. I remember thinking that if I were retired I wouldn't have a need to go south and would spend my time enjoying all the fabulous local activities. However, over the years I find myself dreading the onset of another Vancouver winter. It's not that I'm afraid of being wet or cold (I realize we are waterproof and I can always put on more clothes) but find the seemingly endless dreary, wet, and grey days harder to tolerate with each subsequent year. I become less motivated and slightly irritable. My energy plummets and I drag myself around. Previously, when I listened to patients describe seasonal affective disorder, I would think to myself, nope, not me. I certainly don't remember lying around as a teenager (well, yes, I do, but that is just a side effect of being a teenager) thinking about the rain and hoping it would stop.

I intend to fine tune my winter escape plan as I don't think my late onset seasonal affective problem is likely to resolve.

So, what to do? I don't feel my symptoms merit medication, and sitting in front of a light box would detract from couch surfing and Netflix bingeing. Therefore, I decided to build sun breaks into my winter schedule. Thankfully, I have the financial means to get on an airplane and head to sunnier destinations. I am still working out the details, as all-inclusive vacations to places such as Mexico nurture my inner 300-pound alcoholic who can't seem to refuse any offered beverage or food item no matter the time of day or night. I return solar satiated but filled with disgust and self-loathing of my gluttony. Looking for an alternative, I attended a cycling camp in sunny California this past February. Daily guided rides offset the evening gorging and calorie fest so I at least returned home weight neutral but not without a few tender areas.

Moving forward I intend to fine tune my winter escape plan as I don't think my late onset seasonal affective problem is likely to resolve. In fact, I anticipate some worsening as the years go by.

Lastly, if you think about it, shouldn't retirees who leave Vancouver from November to April really be called rain-birds?

—DRR

My back pages

1971 was a heckuva year, as George W. Bush might have said. Justin Trudeau was born in 1971; so too were Elon Musk, Amy Poehler, and Pavel Bure. So, too, was Greenpeace. As if that wasn't enough, 1971 was the year in which I graduated from medical school. That was 47 years ago, and medical practice was … different.

In 1971, the *BCMJ* was already 12 years old and had become an essential part of provincial medical life. The pages of the *BCMJ* at that time included some clinical articles, but the majority of space was taken up with that era's pressing practice issues: a physician's take-home income, difficulties with peer review of practices, and (believe it or not) the increasing problem of "narcotic addicts." The April 1971 issue gave an overview of a proposed treatment program, noting that the treatment facilities at the Narcotic Addiction Foundation of BC should be expanded to include subclinics in the four major "problem areas" outside the Greater Vancouver area: Victoria, Prince George, Kamloops-Vernon, and Trail-Nelson. The July 1971 issue included the results of a survey of general practitioners' contact with heroin users. Other articles reported on perinatal mortality rates in the province and pediatric bed utilization. The only article in 1971 that described a study with a prospective design was one reporting the effects of different forms of exercise on cardiac rehabilitation in 14 men after myocardial infarction. The authors noted that the average attendance of participants for the exercise programs was more than 95%, in contrast with the dropout rate of 50% in such programs elsewhere, and programmed exercise resulted in significant improvements in physical work capacity, blood pressure, and serum cholesterol. In the context, it was a brave and important study, and the related article was starkly different from the others published in that year. Did it change things? There was no immediate related correspondence.

Many of the tools of practice that we now cannot do without were either unavailable in 1971 or were in the earliest stages of development. In medical imaging, there was no ultrasound, no CT scanning, and certainly no MRI. According to the *BCMJ*, in 1971 surgical management of intracranial vascular anomalies relied entirely on arteriography; hemispherectomy was performed in children with neurological challenges characterized primarily by EEG findings. Thinking back to those glory days, radio-immunoassays had limited availability; steroid hormone assays were performed using colorimetry in large-volume urine collections. Antibiotics had barely reached a second generation. The management of cancer was aggressive and grim. How did we manage?

Well, medical practice relied on a basis of theoretical knowledge followed by an accumulation of clinical experience. The older you were, the more you had seen. In 1971 there were far fewer medical journals than today, and those that were most read contained many more clinical studies and case reports than is the case today. The *BCMJ* did provide some, but it primarily provided a community for BC physicians—a place to share experiences in a collegial way.

As such, the *BCMJ* was invaluable and, now in its 60th year, it has remained invaluable for those of us who live and work here in a vibrant medical community. In another 60 years, though, will there be a *BCMJ*? Will advancing technology and social media have made everyone a physician—and thereby marginalized the need for a medical profession? Discuss.

—TCR

The art and heart of medicine

When I went to university, the first major decision I had to make was whether to choose the Faculty of Arts or the Faculty of Science. I was drawn to science because I wanted to be a doctor (and thus needed the prerequisites) and because I saw it as more intellectually challenging. But my university offered something unique: the option of a Bachelor of Arts degree with a science major. The philosophy was that the broader-based education would ensure both a depth of knowledge in your major and a breadth of knowledge across disciplines, and it explains why I have a BA in zoology.

I think this broad-based philosophy is integral to the study of medicine and is too often buried in the quest to only study and eventually practise in a concrete, evidence-based world. This attitude fuels the trend toward more and more specialization and subspecialization, where it is possible to tackle the immense amount of scientific knowledge available. This in turn fuels the development of silos of care, and the disrespect often exhibited to more broadly based generalist disciplines.

I recently attended a meeting where physicians expressed some burning issues and concerns. One that interested me in particular was a fear of the impact of artificial intelligence on certain areas of practice. If computers can do a better job of interpreting diagnostic tests, what are the implications for physicians? If certain procedures can be performed by robots, what does this imply for the doctors performing the same procedures?

This made me consider my job in general practice, where the undifferentiated patient with a list of 10 complaints presents to my office. I don't have much fear that I'll be replaced by a machine. We deal with human beings with physical and emotional complexity. The daily challenge of diagnosis and treatment requires a solid background in physiology, pathology, and perhaps microbiology or genetics, as well as the skills to deal with humans. The ability to really look, listen, and empathize, and to determine when the presenting complaint is merely a clue to an underlying emotional trauma. This is one part of the art that is medicine. Sir William Osler described medicine as "an art, based on science" and stated, "The art of the practice of medicine is to be learned only by experience; 'tis not an inheritance; it cannot be revealed. Learn to see, learn to hear, learn to feel, learn to smell, and know that by practice alone can you become expert."

Quality, safety, evidence, and standards are important, but they are meaningless without compassion, caring, and communication.

Recently there was a discussion on social media about the experience of Dr Bernard Lown, a retired Harvard cardiologist, who authored *The Lost Art of Healing*. Dr Lown was recently hospitalized with pneumonia at the age of 96, and he described his experience of being the last one to know anything about his treatment plan, finding that his opinion hardly mattered to his medical team. In his book he warned that when one only considers the biomedical sciences, then "healing is replaced with treating, caring is supplanted by managing, and the art of listening is taken over by technological procedures." Unfortunately, it would appear this is what happened to him as a patient.

Too often we focus on treatment options for a disease without taking time to inquire about our patient's wants or goals. With some of my cancer patients it is particularly challenging to discuss the fact that palliative chemotherapy does not offer a cure for their disease. One must weigh the potential increase in quantity of life against the quality, and if we make the patient sicker than the disease has already done, then we have done them no favors. One of my patients had a very specific goal: to experience another enjoyable ski season. The medical team was able to tailor the treatment to make this possible—by focusing on how the patient wanted to live the remainder of their life.

I believe the art of medicine is equally as important as the science of medicine. To focus medicine exclusively on the pursuit of scientific accuracy and achievement is doomed to failure, given our constantly evolving landscape. Many of yesterday's standards of care and guidelines are obsolete today. Quality, safety, evidence, and standards are important, but they are meaningless without compassion, caring, and communication. Science is essential, but the art lies in how we use it in the practice of medicine. Our profession needs balance in all things, and we must restore a healthy medical culture that supports us all to be healers in the truest sense of the word.

—Trina Larsen Soles, MD
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Cyclospora infection: A tropical disease in our midst

A 45-year-old healthy female presents to you with a 3-week history of nonbloody diarrhea. Initially she experienced 5 to 10 watery bowel movements per day with abdominal pain, low-grade fever, fatigue, and nausea. Although she has improved, she continues to have relapsing semiliquid stools every 2 days with abdominal pain and bloating. She is otherwise well and on no medications. She has not traveled recently, nor has she had contact with other symptomatic people. A stool C&S performed at a walk-in clinic was negative. You order a stool O&P. The laboratory reports the presence of *Cyclospora cayetanensis* oocysts. You decide not to treat but to see her again in a week, at which point her symptoms have improved considerably. A few weeks later, the media reports that BC is affected by a *Cyclospora* outbreak associated with imported fresh herbs.

Spring marks the start of the *Cyclospora* risk period in Canada (www.bccdc.ca/health-info/diseases-conditions/cyclospora-infection). Nearly every year for the last decade, BC has been affected by outbreaks of locally acquired *Cyclospora* infection (**Table**).

Cyclospora cayetanensis is a protozoan parasite that causes a protracted, relapsing gastrointestinal illness. Symptoms include frequent watery diarrhea, anorexia, abdominal cramps and bloating, nausea, flatulence, fever, and weight loss.[1] Symptoms typically last 2 weeks to 2 months, and often wax and wane in intensity. Biliary disease, Guillain-Barré syndrome, and reactive arthritis have been reported following infection. Symptoms may resolve spontaneously, but patients with a severe or prolonged course and those who are immunocompromised should be treated with TMP/SMX or ciprofloxacin.[2]

Cyclospora infection is diagnosed by stool ova and parasite (O&P) by microscopic examination. All BC laboratories use acid-fast staining to detect *Cyclospora* on all O&P samples. The Infectious Diarrhea – Guideline for Ordering Stool Specimens[3] recommends O&P testing for patients with mild to moderate diarrhea with a likely infectious cause lasting more than 2 weeks. If initial results are negative and symptoms persist, a second O&P may be necessary.

People are infected by ingesting contaminated food or water. The infection is not spread from person to person. Infected individuals excrete oocysts in their feces. Oocysts require 7 to 15 days to sporulate in the environment before becoming infectious and may contaminate food where it is grown.

Cyclospora is not endemic in BC or Canada. Most infections are acquired from consuming contaminated food or water during travel to Central and South America or Asia in the spring and early summer. When infection occurs in a BC resident who did not travel, it is likely associated with imported food from an endemic country and leads to an outbreak investigation (**Table**).

Physicians play an important role in identifying outbreaks in the community. If patients present with acute but prolonged relapsing diarrhea, consider stool O&P testing even when no travel is reported. *Cyclospora* infection is reportable to public health. If a patient may be part of an outbreak or there is more than the usual number of patients with similar symptoms in a short period, report this to your local health unit or medical health officer for public health investigation.

—Eleni Galanis MD, MPH, FRCPC
—Linda Hoang, MD, MHSc, FRCPC

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Table. ***Cyclospora*** **outbreaks affecting BC residents, 2013–2017.**

Year	Duration of outbreak	Number infected	Suspected imported food sources
2013	June–September	25	Blackberries, raspberries, lettuce
2014	April–August	85	Blackberries, cilantro
2015	May–August	97	Blackberries, lettuce, basil
2016	May–August	87	Blackberries, lettuce
2017	May–August	158	Blackberries, cilantro

Source: PHAC 2018

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

Dr Sharadh Sampath

A nonsurgeon's guide to bariatric surgery

The subject of bariatric surgery often receives very little attention despite the profound impact it can have on the care of patients suffering from the disease of obesity and its related comorbidities. Some of the myths about bariatric surgery need to be countered with the realities, and the surgical outcomes and current treatment options available in British Columbia need to be better understood.

When I was a medical student, the subject of bariatric surgery was not covered, nor was the larger subject of obesity management. I received a single 30-minute lecture on the subject during my entire 6-year general surgery residency. During residency, when we encountered bariatric surgery patients in the ER, they were often suffering from dreadful complications after aggressive open procedures. The sordid history of bariatric surgery from the 1970s to the 1990s was one of high complication rates and poor outcomes that left the subject shrouded in mystery and controversy.

It is no wonder that so few medical professionals are familiar with bariatric surgery for obesity and struggle to discuss it with patients. Obesity is a complex disease and was only officially recognized as such by the Canadian Medical Association in 2015. It is ubiquitous and epidemic and, in my opinion, the mother of many other diseases.

This article has been peer reviewed.

What is bariatric surgery?

It is important to start by stating what bariatric surgery is not: it is not a cosmetic procedure, nor is it a quick fix or an easy way out. Bariatric surgery is a treatment for obesity and obesity-related diseases. It is safe and exceptionally effective when done for the right patient using a multidisciplinary approach. The two gold standard procedures, the proximal gastric bypass and the sleeve gastrectomy, are both performed laparoscopically and are fully covered by MSP in British Columbia. When the surgery is done in a high-volume centre with today's surgical techniques, patients rarely suffer from chronic diarrhea, malabsorption, or other surgical complications.[1-3]

Why should you care?

Whether you practise in primary or subspecialty medicine, you almost definitely care for patients who suffer from the disease of obesity. And make no mistake, this is a disease and a very complex one. Telling patients to "eat less and exercise more" is often futile and unsustainable. Restrictive diets and exercise typically produce limited results in the long term.[4] Telling patients that this disease is "their fault" can only harm our relationships with them.

Management of this disease requires a multimodal approach: lifestyle modification counseling, diagnosis and treatment of psychological and eating disorders, teaching of coping mechanisms, medication use, and assessment for bariatric surgery.

When surgery is included in a multimodal approach, patients can lose more than 70% of their excess weight.[5,6] Without surgery, treatment for obesity is often far less effective.[7,8] More importantly, surgery combined with multimodal therapy can have an almost unbelievable impact on obesity-related comorbidities such as diabetes. After bariatric surgery, more than 70% of diabetic patients can cease taking medications for diabetes.[6,9] Mortality rates are dramatically improved[10-11] and health care costs are reduced.[12-14]

What is metabolic surgery?

The dramatic impact of weight-loss surgery on a whole spectrum of obesity-related diseases has become increasingly apparent. Conditions such as gastroesophageal reflux disease, polycystic ovary syndrome, dyslipidemia, degenerative joint disease, and obstructive sleep apnea have been found to improve within days and months of surgery. In the case of type 2 diabetes, high rates of complete remission have been seen[7,15,16] and this has led to use of the term "metabolic surgery," which more appropriately encompasses the far-reaching impact that bariatric surgery can have and helps us better understand the complex relationships between obesity and its comorbidities.

In 2016, global guidelines were developed at the 2nd Diabetes Surgery Summit (DSS-II).[17] Metabolic surgery should be considered for patients with type 2 diabetes and BMI of 30.0 to 34.9 kg/m^2 if hyperglycemia is inadequately controlled despite optimal treatment with either oral or injectable medications. These BMI thresholds should be reduced by 2.5 kg/m^2 for Asian patients as this population is prone to complications of obesity at a lower BMI.

The DSS-II guidelines are supported by multiple RCTs looking at bariatric surgery to treat diabetes in patients with a BMI greater than 35.0 kg/m^2.[16] I believe that "metabolic" will eventually replace "bariatric" when we describe weight-loss surgery and this will make it easier for patients to access surgical resources appropriately.

This theme issue tackles some of the major considerations for weight-loss surgery, whether the term "bariatric" or "metabolic" is used. These considerations include the surgical options, the clinical assessment process, and the prevention and management of surgical complications. I hope you enjoy these articles and find them useful in future discussions with your patients.

—Sharadh Sampath, MD, FRCSC
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Ekua Yorke, MD, FRCSC

Bariatric surgical options and future directions

Many patients with obesity-related comorbidities meet the criteria for bariatric surgery but do not pursue treatment, even though excellent outcomes are possible with procedures such as the laparoscopic vertical sleeve gastrectomy and Roux-en-Y gastric bypass.

ABSTRACT: Bariatric surgery is now accepted as a safe and effective procedure for severe obesity. Despite excellent outcomes with current procedures, most patients with obesity-related comorbidities who meet the criteria for surgery do not pursue treatment. Common bariatric procedures performed in Canada are vertical sleeve gastrectomy and Roux-en-Y gastric bypass. A less common procedure is biliopancreatic diversion with a duodenal switch. All of these procedures are performed laparoscopically and require dietary and behavior modification along with education and support from a multidisciplinary team of experts. Patients face some challenges in accessing bariatric surgery that could be addressed by increasing awareness of surgical options. Efforts should be made in BC to support bariatric surgery programs that are accessible to both referring physicians and patients.

This article has been peer reviewed.

The adverse effects of obesity impact every aspect of the health care system. Studies have demonstrated that diet, lifestyle modifications, and currently available pharmaceutical agents are relatively ineffective in treating severe obesity in the long term.[1] Bariatric surgery is the only evidence-based approach for sustainable weight loss in patients with severe obesity. It is proven to be safe and effective for comorbid disease resolution and to reduce health care costs.[2] A consensus statement updating an earlier statement from the National Institutes of Health supports bariatric surgery for those who strongly desire substantial weight loss and have obesity-related comorbidities.[3] The 2nd Diabetes Surgery Summit (DSS-II) guidelines state that bariatric surgery should be considered for patients with type 2 diabetes and a BMI of 30.0 kg/m^2 to 34.9 kg/m^2 if hyperlycemia is inadequately controlled despite optimal treatment with either oral or injectable medications.[4] Despite such recommendations and the excellent outcomes with current procedures, most obese patients with obesity-related comorbidities who meet the criteria for surgery do not pursue treatment.

Bariatric procedures have traditionally been classified as restrictive, malabsorptive, or a combination of both. Restrictive procedures reduce the storage capacity of the stomach and lead to decreased caloric intake. Malabsorptive procedures reduce the functional length of the small intestine and lead to decreased absorption of nutrients. Evidence is emerging that another mechanism involving gut hormones plays a significant role, an understanding that is reducing the utility of the traditional classification system.

Regardless of which surgical option is chosen, success requires dietary and behavior modification as well as education and support from a multidisciplinary team of experts. The two most common bariatric procedures in Canada are vertical sleeve gastrectomy (VSG) and Roux-en-Y gastric bypass (RYGB), all of which are performed laparoscopically (**Figure**). Laparoscopic adjustable gastric band (AGB) is still offered, but is no longer being performed as frequently as it once was due to poor

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long-term success rates. In British Columbia, RYGB and VSG are covered by MSP, while AGB is not. Another procedure also available, but used less commonly and not yet being done in British Columbia's is the biliopancreatic diversion with a duodenal switch (BPD-DS).

Adjustable gastric banding

Adjustable gastric banding is not covered by MSP and has largely been abandoned by bariatric surgeons in Canada. We include it primarily because many medical tourism patients have this procedure done abroad. AGB is a restrictive procedure that partitions the stomach to create a small gastric pouch that empties slowly to prolong satiety. An inflatable silicon gastric band is placed around the proximal part of the stomach and adjusted gradually by accessing a subcutaneous port. AGB-induced weight loss is slow and steady over 1 to 2 years, and typically averages between 22 and 27 kg. At the ideal restriction, the patient should lose between 0.5 and 1.0 kg per week without any vomiting.[5-7] Some patients cannot tolerate the optimal restriction without nausea and vomiting, which can also be an indication of complications or lifestyle/nutritional struggles. Complications and failure to sustain weight loss may lead to removal of the band. The removal rate can be up to 4% per year, and at 15 years almost half of all gastric bands have been removed.[8] AGB is the least common of the procedures currently performed in Canada.

Vertical sleeve gastrectomy

The vertical sleeve gastrectomy was initially introduced as the first stage in the two-stage process for biliopancreatic diversion with duodenal switch. The VSG is now an important stand-alone procedure that involves removing a portion of the stomach to leave behind a banana-shaped gastric pouch with a capacity of between 60 and 100 mL. While VSG is primarily a restrictive procedure, there is evidence that it leads to a decrease in levels of ghrelin—a peptide hormone produced in the fundus of the stomach that has been linked with hunger control.[9] A reduction in hunger thus augments the restrictive effect of VSG, which can achieve an average excess weight loss (EWL) of between 56.3% and 62.3% at 5 years postoperatively.[10] Although further studies are needed, current reports note a 66.2% remission rate for diabetes[11] and a hypertension resolution rate that ranges from 42.0% to 88.8%.[12-15] VSG is becoming increasingly popular.

Roux-en-Y gastric bypass

Roux-en-Y gastric bypass is the most studied of all the bariatric surgeries. A gastric pouch is created and separated from the remainder of the stomach. A gastrojejunostomy is performed to connect the gastric pouch with the alimentary (Roux) limb. This alimentary limb is then anastomosed to the biliopancreatic limb at a distance ranging from 100 to 150 cm of the gastrojejunal anastomosis to form a common limb. RYGB can achieve an average EWL of between 60% and 70% and have an impact on diabetes, hypertension, dyslipidemia, and obstructive sleep apnea. In one meta-analysis, diabetes was resolved or improved in 86% of patients.[2] Although RYGB is a restrictive procedure, alterations are also seen in gut hormones such as ghrelin, incretins, and peptide YY. These key contributors to clinical efficacy are not fully understood. RYGB is currently the most common bariatric surgery performed in Canada.

Biliopancreatic diversion with a duodenal switch

Biliopancreatic diversion with a duodenal switch is a more complex, higher-risk surgery that combines both restrictive and malabsorptive components. The malabsorptive component is achieved by constructing

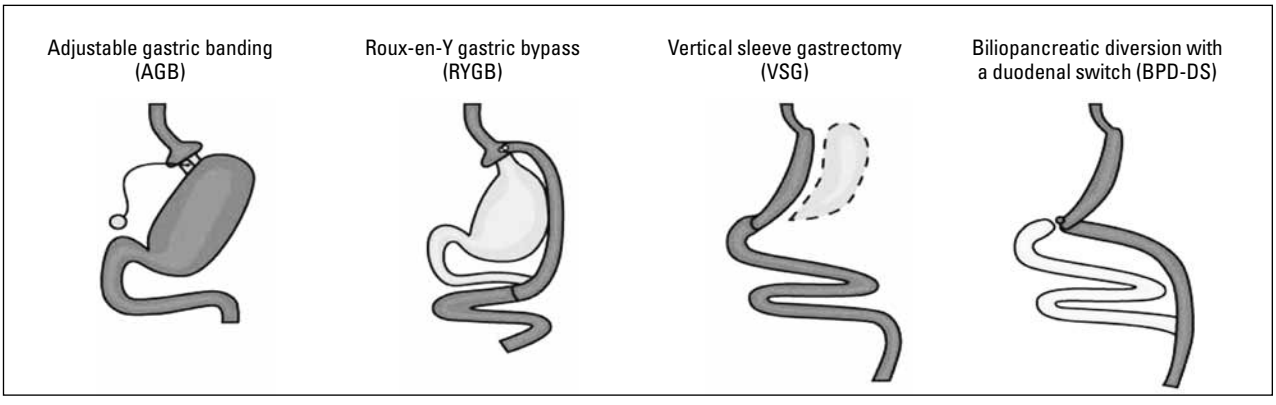

Figure. Bariatric surgical options.

Image courtesy of Walter Pories, MD (East Carolina University, Greenville, NC).

a long-limb Roux-en-Y anastomosis with a short common channel of approximately 50 cm. BPD-DS tends to be reserved for patients with "super obesity" (usually meaning a BMI greater than 50.0 kg/m^2). Although BPD-DS may be superior to RYGB in long-term weight loss, direct comparative studies have been difficult to perform.[16] Associated complications such as intestinal obstruction, nutritional deficiencies, and foul smelling stools have limited the use of BPD-DS in clinical practice and extensive long-term follow-up is needed. BPD-DS is performed at only a few centres in Canada.

Future directions

There is an urgent need to address the obesity epidemic given the significant individual and societal costs. Preventing and managing obesity requires acknowledging that it is a disease and improving access to treatment.

Therapies and initiatives for preventing obesity should be differentiated from those for managing obesity through weight loss and weight-loss maintenance because the physiology, behavioral issues, and treatment goals of each are distinct. Also, because severe obesity can begin early, prevention should focus on promoting a healthy lifestyle in the prenatal, neonatal, and early childhood years when nutritional choices can affect long-term chronic disease risk. Surgical options should be reserved for weight loss and weight-loss maintenance, and further research into the biology and psychology of weight-loss maintenance should be undertaken to develop more effective approaches. Finally, more intensive public health campaigns and training opportunities are needed to better inform providers, industry representatives, insurers, policymakers, and the general public about the health impact of obesity and the need for medical management.

Summary

Surgery has consistently proven to be the most effective long-term therapy for treating obesity. Despite excellent outcomes with current procedures, including biliopancreatic diversion with duodenal switch, vertical sleeve gastrectomy, and Roux-en-Y gastric bypass, most obese patients with obesity-related comorbidities who meet criteria for surgery do not pursue treatment. This is likely due to a combination of poor access to bariatric surgery programs and a lack of patient awareness of surgical options. A bariatric surgery program that employs a multidisciplinary approach will promote better outcomes and quality of life for patients. Efforts should be made in BC to support bariatric surgery programs that are accessible to both referring physicians and patients. BCMJ

Competing interests

None declared.

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Clinical assessment to determine a patient's suitability for bariatric surgery

Screening for surgical safety, history taking, physical examination, laboratory investigations, and clinical interviews are all needed to establish whether a patient with obesity can benefit from a bariatric procedure.

ABSTRACT: Bariatric surgery is a safe and effective treatment for obesity and its comorbidities. In order to qualify for bariatric surgery, a patient must have a BMI greater than 40.0 kg/m² or a BMI greater than 35.0 kg/m² with one or more obesity-related comorbidities such as depression, hypertension, or type 2 diabetes. Clinical assessment should be done over a period of time by a multidisciplinary team and include screening for surgical safety in accordance with the literature as well as history taking, physical examination, and laboratory investigations. Interviews are needed to determine if the patient understands the procedure and postoperative demands involved and to establish whether the necessary social supports required by bariatric procedures are in place or whether any psychiatric conditions exist that might impair the patient's ability to handle the surgery. Although 1 million Canadians satisfy the criteria for bariatric surgery, only 6500 undergo this treatment each year, suggesting this surgery is far too limited in its use.

This article has been peer reviewed.

Criteria for bariatric surgery

Great strides have been made in the field of bariatric surgery, with procedures that are relatively free of complications and provide effective treatment for obesity and its comorbidities.[1-6]

The Canadian criteria for selecting patients to undergo either sleeve gastrectomy or gastric bypass are not without limitations. In order to qualify for bariatric surgery, a patient must have a BMI greater than 40.0 kg/m² or a BMI greater than 35.0 kg/m² with one or more obesity-related comorbidities (e.g., depression, hypertension, type 2 diabetes, obstructive sleep apnea, hyperlipidemia, coronary artery disease, arthritis, fatty liver).

The limitations of these criteria stem from the use of body mass index, a simple measurement of weight against height.[7] BMI is only a surrogate measure of body fatness because it describes excess weight rather than excess body fat and does not take into account factors such as age, sex, ethnicity, and muscle mass or the pathophysiological effects that certain fat tissue has in the development of obesity-related comorbidities.[8]

By using a simple equation we limit the overall understanding of obesity-related risks in a patient. Women, for example, tend to have more fat than men.[9] As well, age plays a role in fat distribution, and BMI in isolation does not point to the location of body fat. Intra-abdominal fat has been shown to be far more toxic metabolically than subcutaneous fat.[10]

BMI is a simple and convenient tool that has its merits, but it should not be used in isolation when managing patients with the disease of obesity. While BMI remains central to establishing eligibility for bariatric surgery, clinicians can and should take obesity assessment beyond BMI in all clinical settings.

Comorbidities

Patients should be assessed for obesity-related comorbidities whether they are pursuing bariatric surgery or not. The Edmonton Obesity Staging System

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(EOSS)[11] takes into account the severity of obesity-related comorbidities as well as the patient's metabolic, functional, and psychological state:

- Stage 0. No obesity-related comorbidities. No effects on a patient's metabolic, functional, or psychological state.
- Stage 1. No obesity-related comorbidities. Mild effects on a patient's metabolic, functional, or psychological state. For example, the patient has metabolic syndrome and/or mild anhedonia associated with obesity.
- Stage 2. Patient has an obesity-related comorbidity such as diabetes, arthritis, or depression.
- Stage 3. Patient has an obesity-related comorbidity with organ dysfunction such as type 2 diabetes with renal dysfunction or obstructive sleep apnea with right heart failure.
- Stage 4. Patient has end-stage comorbidities associated with obesity.

Although the EOSS is not the clinical standard for establishing a patient's eligibility for bariatric surgery, it can be a useful clinical tool for determining the potential risk of obesity and the potential benefit of bariatric surgery.

Contraindications for bariatric surgery

Bariatric surgery is contraindicated[12] if the patient presents with any of the following:

- Cirrhosis.
- Portal hypertension.
- Uncontrolled psychiatric disorder.
- Suicide attempt within the last 18 months.
- Uncontrolled inflammatory bowel disease.
- Active substance abuse.
- Active smoking (patients must be smoke-free for at least 6 months).
- Chronic long-term steroid use.
- Mental or intellectual limitations that would make adherence to dietary or lifestyle modifications a challenge.
- Inability to care for self.
- Serious chronic disease where surgery itself would be contraindicated.
- Active bulimia nervosa.

Clinical assessment

The cornerstone of a bariatric surgery program is clinical assessment to determine if surgery is safe and appropriate for a particular patient with obesity. Clinical assessment should be done over a period of time and by a multidisciplinary team that includes a dietitian, a physician, a surgeon, and, when necessary, a psychologist or psychiatrist. Ideally, some clinical assessment will have been done by a primary care provider before the patient is referred to a bariatric program for surgery. A more in-depth assessment is then done by the bariatric team.

Clinical assessment includes screening for surgical safety in accordance with the literature, and involves history taking, physical examination, laboratory investigations, and interviews to determine a patient's motivation for undergoing surgery and how much the patient understands about the procedure and postoperative demands. Clinical interviews also provide information about the patient's weight-loss and weight-gain history and current eating behaviors, and establish whether the patient has the necessary social supports bariatric procedures require or any psychiatric conditions that might impair the patient's ability to handle the surgery.

Metabolic and other disorders

All patients preparing for bariatric surgery should undergo general metabolic screening. Many patients will have disorders such as diabetes, hypertension, and dyslipidemia. Screening for these allows the bariatric team to better manage a patient's comorbidities preoperatively.[13]

All patients should have a baseline fasting glucose test, an HbA1c test, a full cholesterol panel, and testing for liver function, renal function, and thyroid function. Patients being considered for a gastric bypass should also have vitamin B12, vitamin D, and multivitamin baseline assessment. All patients should have an electrocardiogram to screen for arrhythmias and silent ischemia. Further cardiac and pulmonary testing should be based on the patient's specific clinical state and comorbidities.

Obstructive sleep apnea

All patients undergoing bariatric surgery should be screened for obstructive sleep apnea (OSA). This is done by a polysomnography test. Untreated OSA remains one of the key contributors to perioperative mortality after bariatric surgery.[14] In a pivotal study of 359 bariatric patients evaluated for OSA preoperatively, 309 (86%) had positive test results. On the basis of apnea-hypopnea index (AHI) scores, 18% of the 359 patients had mild OSA, 17% had moderate OSA, and 51% had severe apnea.[15] An analysis of patients by preoperative BMI showed that the following tested positive for OSA:

- 34 of 37 patients with BMI values of 35.0 to 39.9 kg/m^2 (92%).
- 178 of 218 patients with BMI values of 40.0 to 49.9 kg/m^2 (82%).
- 78 of 85 patients with BMI values of 50.0 to 59.9 kg/m^2 (92%).
- 19 of 19 patients with BMI values of 60.0 kg/m^2 or greater (100%).

It is because of studies like this that the American Society of Metabolic and Bariatric Medicine recommends polysomnography for all patients undergoing bariatric surgery.[16]

Psychological fitness for surgery

Best practice guidelines for assessing

a patient's psychological fitness for surgery do not yet exist, although we do know that such an assessment can rarely be done in a single visit. Not all patients preparing for bariatric surgery need to be evaluated by a psychologist or psychiatrist. However, the effect of certain critical psychosocial changes resulting from weight loss should be considered before surgery.[17]

Weight-loss and weight-gain history

A weight-loss and weight-gain history (weight cycling) should be obtained. This allows the clinician to screen for secondary causes of obesity and eating disorders. It can also help delineate physiological triggers of weight gain such as medications and endocrinopathies. Not all patients need a complete hormonal workup for obesity.[16] Baseline thyroid function and screening for diabetes and dyslipidemia should be done in all patients but not everyone pursuing bariatric surgery needs to be screened for Cushing syndrome or polycystic ovarian syndrome. This is where clinical judgment is paramount. Focusing on weight-loss and weight-gain history also allows a clinician to gauge a patient's readiness for surgery.

Current eating behaviors

Patients should be questioned about past and present patterns of eating, timing of meals, and the presence of emotional triggers for eating. They should be asked to keep a food diary and to record their eating patterns preoperatively. Patients should also be screened for eating disorders.

Eating disorders are not uncommon in bariatric surgery patients. Bulimia nervosa, binge-eating disorder (BED), and night eating syndrome are all clinically relevant when determining suitability for surgery.[18]

Bulimia nervosa is an absolute contraindication for surgery while binge-eating disorder is not.[19] Unlike bulimia nervosa, binge-eating disorder does not involve purging after eating. It is estimated that 10% to 25% of bariatric patients meet criteria for BED, which involves the consumption of a large quantity of food in less than 2 hours, during which the person feels a subjective loss of control.[19]Additionally, some patients report night eating syndrome, which is defined as the consumption of more than 35% of daily calories after dinner, and disruption of sleep by episodes of nocturnal eating.

Estimates of bariatric surgery candidates with BED range from 5% to 50%, likely a gross overestimate. When patients are assessed using a structured clinical interview and strict criteria, the prevalence rate ranges from 5% to 25%.

Study results are mixed regarding the effects of binge eating on a patient's postoperative success. Some studies find preoperative binge-eating disorder has no negative effects on outcomes after bariatric surgery, and indicate that bingeing resolves postoperatively as the neurohormonal mediators of bingeing are corrected by the surgery itself. Other studies show that "grazing" behavior persists postoperatively and becomes a barrier for weight loss. All patients are encouraged to consider supportive counseling when they binge frequently or are concerned with being able to control the binges after surgery.

Motivation for surgery

Patients should be asked the simple question "Why have surgery?" to assess their readiness and suitability for bariatric surgery. This allows the clinician to determine patient expectations of the procedure itself and overall motivation for having the surgery. It is crucial to prevent patients from entering into the surgical process lightly and without a good sense of the implications. No one can understand all the implications of a decision in advance, but suitable patients will understand the demands involved.

It is imperative that clinicians gain a sense of the patient's social supports and find out whether the patient is aware of the potential social consequences of having the surgery.

Understanding the procedure and postoperative demands

Patients should be asked to describe the procedure, its risks and benefits, and the preoperative and postoperative diet. Bariatric patients need to be prepared for their "new normal." They must appreciate that they are essentially trading one disease for another. A relatively healthy gut is being altered anatomically to gain a therapeutic advantage: a more favorable disease state that will require lifestyle changes.

A discussion about the procedure and postoperative demands can reveal any gaps in understanding and allow the clinician to address these. If patients are unable to demonstrate knowledge of what they are undertak-

ing, they can be referred for further education about the role of surgery as a treatment tool and the need to adhere to lifestyle modification throughout in order to garner the greatest benefit from this treatment as a whole. The vast majority of bariatric patients are enrolled in multidisciplinary programs where most have attended seminars preoperatively and talked with people who have had the surgery. Very infrequently, intellectual testing is needed to determine basic competence for informed consent.

Social supports

Patients should be asked about who lives in their household, how these loved ones have reacted to the planned surgery, what the eating habits and/or weight issues of other household members are, and who will be available to help immediately after surgery. A variety of studies show that bariatric patients are more successful when they have supportive environments and that bariatric surgery in itself is a social stressor, which is seen in the fact that divorce rates are higher after surgery.[20]

It is imperative that clinicians gain a sense of the patient's social supports and find out whether the patient is aware of the potential social consequences of having the surgery by asking appropriate questions: Have loved ones expressed negative opinions about the surgery or demonstrated jealousy and discomfort when the patient is losing weight? Have loved ones tried to sabotage the patient's weight-loss efforts in the past? What will meal arrangements look like when the patient is unable to eat and drink in a fashion similar to others in the household? Surgery can change social dynamics and it is important to prepare a patient for that when necessary.

Psychiatric history

Because psychiatric conditions can impair a patient's ability to handle the surgery, patients should be assessed for depression, anxiety, mania, psychosis, suicidal ideation, substance abuse, history of abuse, family history of mental health issues, and any psychiatric treatment experiences. Compared with the general population, patients affected by obesity have a higher rate of mental illness, addiction, and sexual abuse. Depression is especially common,[20] and patients with a BMI above 40.0 kg/m^2 are 5 times more likely to suffer from depression than those with a lower BMI. This can affect a patient's adherence to preoperative and postoperative demands. Anxiety can also affect a patient's ability to cope with the entire surgical experience.[21]

Patients who are at higher risk of mental illness or who have a history of uncontrolled mental illness should undergo psychiatric screening.[16] Ideally, bariatric surgery teams will include a psychologist, a psychiatrist, or both. Further counseling should be mandated when clinically necessary. In patients with a history of psychiatric illness it will be important to plan for postoperative adjustments in medication in the short and long term.

Although best practice guidelines do not yet exist for psychological evaluation of the patient undergoing bariatric surgery, evidence is growing with regard to the critical elements and domains for assessment and the various functions the assessment must serve.[21]

Example of clinical assessment

The case of a fictional 36-year-old woman with obesity illustrates how a comprehensive assessment can answer two questions:

- Is bariatric surgery safe for this patient?
- Is bariatric surgery appropriate for this patient?

"Michelle" has carried extra weight for much of her life and tried many weight-loss programs, all with limited success. She has never been able to keep weight off for a considerable time, even though she diets with vigor. She will embrace a new weight-loss program but inevitably is challenged to continue with the required lifestyle modifications over the long term.

She had a deep vein thrombosis in university that was thought to be due to the birth control pill, and 3 years ago she was diagnosed with type 2 diabetes. Her diabetes is well managed on oral hypoglycemic agents, and her hypertension and dyslipidemia are under control. She has never been screened for obstructive sleep apnea. She has mild arthritis in both knees.

Michelle is interested in bariatric surgery. Her BMI of 38.0 kg/m^2 and her comorbidities alone qualify her for this surgery. She has an overall EOSS risk profile of stage 2, which confirms that she is likely to be a suitable candidate for this treatment.

Michelle begins an in-depth assessment for surgery by undergoing medical, metabolic, and psychiatric screening. She is found to have a long history of mild depression that has been well managed with antidepressants. She has a good understanding of the procedure proposed for her, a sleeve gastrectomy. She has done online research, attended an orientation meeting, and joined a preoperative support group. She has been exercising and keeping a regular food diary. In short, she is adhering to lifestyle modifications that will be needed postoperatively. She has been seeing a psychologist for over a year as her husband does not support her having the surgery.

After several months of assessment by the entire bariatric team, Michelle is approved for surgery.

Intervention needed

In October 2015, the Canadian Medical Association acknowledged that obesity is a chronic disease requiring long-term therapeutic approaches. One in four Canadians has obesity, and more than 3% of Canadians meet criteria for bariatric surgery. But although 1 million Canadians meet the criteria for bariatric surgery, only 6500 undergo this treatment each year. This is not to say that all patients meeting the BMI criteria should undergo bariatric surgery, but it does suggest that this surgery is far too limited in its use.

Our profession and our mandate demand that we pay attention to this global and national epidemic. Obesity is the greatest public health crisis this country has ever seen and as such requires intervention on all levels, from the bedside to the ballot.

Summary

Bariatric surgery has been shown to be a safe and effective procedure for the treatment of obesity. As with any treatment, screening and assessment are needed to determine a patient's suitability for surgery. After initial assessment by the referring primary care provider, clinical assessment should be done over a period of time by a multidisciplinary team that includes a dietitian, a physician, a surgeon, and, when necessary, a psychologist or psychiatrist. Patients should be screened for metabolic and other disorders, including obstructive sleep apnea, and interviewed about their understanding of the procedure and the postoperative demands involved. The relatively small number of eligible patients undergoing bariatric procedures in Canada each year suggests this surgery is far too limited in its use. BCMJ

Competing interests

None declared.

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Prevention and management of complications after bariatric surgery

Patients undergoing sleeve gastrectomy or gastric bypass should be prepared to recognize complications such as anastomotic leak and dumping syndrome, and to follow instructions regarding dietary progression, nutritional supplementation, and exercise.

ABSTRACT: Patients undergoing sleeve gastrectomy and gastric bypass require support from health care professionals so that they can recognize complications and make appropriate postsurgical lifestyle adjustments. After surgery, patients must follow a postoperative dietary progression that begins with liquids for 3 weeks and continues with pureed and then soft solids before concluding at 10 weeks with a transition to very small amounts of regular food. Possible complications after surgery include anastomotic leak, internal hernia, ulcer, dumping syndrome, and gallstone formation. As well as watching for such complications after surgery, patients must make adjustments regarding constipation management, medication use, alcohol consumption, nutritional supplementation, contraception, and lifestyle behaviors. Failure to follow dietary guidelines and a lack of exercise can be reasons for regaining weight or not losing enough weight after surgery. With a change in lifestyle and successful weight loss after surgery, patients can reduce obesity-related comorbidities and increase their overall energy and confidence.

Patients who have undergone sleeve gastrectomy or gastric bypass are typically discharged from hospital 1 to 2 days after surgery and followed closely by a multidisciplinary team of health care professionals. Before surgery, patients will have been counseled extensively on recognizing complications such as anastomotic leak, internal hernia, ulcer, dumping syndrome, and gallstone formation. They will have received information about constipation management, medication use, alcohol consumption, nutritional supplementation, contraception, and lifestyle behaviors. As well, patients will have been prepared for the following postoperative dietary progression:

1. Liquid diet (no caffeinated, carbonated, or alcoholic drinks) for 3

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weeks; hydrate first before adding protein.
2. Pureed diet for 2 weeks.
3. Soft and moist solids for 4 weeks.
4. Transition to regular food in very small amounts at week 10.

For the long term, patients are advised to use a small plate and to separate their intake of solids and liquids by 30 minutes.

Possible complications

Patients need to be aware of complications that can occur after bariatric surgery.

Anastomotic leak

If an anastomotic leak occurs, it usually happens within the first few days of surgery and rarely after 2 weeks. Symptoms include tachycardia, worsening abdominal pain, leukocytosis, fever, and oliguria. Anastomotic leaks occur after sleeve gastrectomy with a reported incidence rate of 1.06%[1] and after Roux-en-Y gastric bypass (RYGB) with a reported incidence rate of 1.10%.[2] The most common site for a leak is the proximal end of the stapler line near the gastroesophageal junction. A CT scan with oral contrast or an upper gastrointestinal series can be used to investigate an anastomotic leak.

Internal hernia

Internal hernia occurs when the bowel protrudes through one of the surgically created mesenteric defects. The creation of space with weight loss may contribute to internal hernia, which often presents in a delayed fashion and can result in small bowel obstruction, ischemia, or infarction. With presenting features that include abdominal pain, nausea, vomiting, and nonspecific gastrointestinal symptoms, diagnosis can be difficult. While abdominal X-ray (three views) may not show the classic air fluid levels because the obstruction is proximal, CT can reveal the subtle rotation of mesenteric vessels (whirl sign) that suggests an internal hernia. Although internal hernia occurs after RYGB with a reported incidence rate of 4.5%,[3] the risk can be reduced if the mesenteric defects are closed with running sutures.[4] Treatment for internal hernia is laparoscopic surgery with hernia reduction and defect closure.

Dumping syndrome

Dumping syndrome occurs when a meal is ingested and a hypertonic carbohydrate load empties rapidly into the small intestine. Symptoms include abdominal pain, cramping, vomiting, diarrhea, flushing, palpitations, tachycardia, and hypotension. These gastrointestinal and vasomotor symptoms result when excess insulin is produced in response to the rapid entry of food and fluids into the small intestine. Early dumping syndrome occurs less than 1 hour after eating with distention of the small bowel. Late dumping syndrome occurs 1 to 3 hours after eating with symptoms similar to those of low blood glucose levels. Dumping syndrome can usually be prevented and treated by avoiding simple carbohydrates and eating protein-based meals.

Before surgery, patients will have been counseled extensively on recognizing complications such as anastomotic leak, internal hernia, ulcer, dumping syndrome, and gallstone formation.

Ulcer

Ulcers are common after bariatric surgery. To minimize the risk of ulcer formation and gastroesophageal reflux symptoms, a proton pump inhibitor (PPI) is prescribed at the time of discharge. Typically, sleeve gastrectomy patients use a PPI for 6 weeks and gastric bypass patients use a PPI for 6 months. If a patient has persistent reflux symptoms, a PPI may be used on a long-term basis. NSAID use is contraindicated after RYGB because of the increased risk of marginal ulcers between the stomach pouch and the Roux limb. NSAID use is also discouraged after sleeve gastrectomy because of ulceration risk and the limited opportunity for surgical intervention with the smaller gastric pouch.

Gallstone formation

Gallstone formation can occur with rapid weight loss. A Swedish population-based study noted the increased incidence of cholecystectomy after bariatric surgery. While 8.5% of the study cohort underwent cholecystectomy with a standardized incidence ratio of 5.5, 3.2% of the cohort

underwent emergency cholecystectomy with a standardized incidence ratio of 5.2.[5] The study authors suggest that the increased incidence may be due to detection bias rather than an elevated risk of symptomatic gallstones. Nonetheless, biliary complications are more common after RYGB. Endoscopic retrograde cholangiopancreatography for common bile duct stones is a very difficult procedure after RYGB because access to the duodenum through the mouth is not easy with the partition in the stomach. Concurrent cholecystectomy may be recommended for select patients.

Postsurgery adjustments

As well as recognizing and addressing any postoperative complications, patients must be prepared to make other adjustments.

Constipation management

Constipation is experienced by many patients after bariatric surgery. Ideally, patients will drink small amounts of water frequently to ensure adequate hydration, which requires more than 1.5 L/day PO. Prune juice, docusate, and polyethylene glycol (PEG) laxative are recommended to treat and prevent constipation.

Medication use

Postsurgical weight loss will alter water and fat body composition and change the absorption and distribution of drugs in the patient's system. In addition, a restrictive procedure such as sleeve gastrectomy may change gastric emptying time, pH, and mucosal exposure.[6] Patients who undergo a procedure such as Roux-en-Y gastric bypass, which has both restrictive and malabsorptive effects, may experience a reduction in drug absorption with the decreased functional length of the intestine and decreased absorptive surface.[6] Higher or lower absorption rates for orally administered drugs may occur, although empirical evidence on this is limited.

Many patients will experience rapid resolution of obesity-related comorbidities such as diabetes, hypertension, and dyslipidemia, and will require less insulin and reduced doses of oral hypoglycemic, antihypertensive, and lipid-lowering agents. Patients will require regular follow-up to monitor medication adjustments.

Alcohol consumption

Weight loss following bariatric surgery and the rapid emptying of alcohol from a gastric pouch contribute to faster abosorption of alcohol, lower metabolic clearance, and higher blood alcohol content for each alcoholic drink consumed.[7] Patients should be strongly discouraged from drinking alcohol during the rapid weight loss period after surgery. In the long term, increased sensitivity to alcohol has ramifications for operating a motor vehicle and heavy equipment; doing so after drinking even a small amount of alcohol is not recommended. Furthermore, alcohol is a source of empty calories and can contribute to the development of marginal ulcers.

Nutritional supplementation

After bariatric surgery nutritional supplementation is required indefinitely to address deficiencies in iron, vitamin D and other fat-soluable vitamins A, E, and K (most common after RYGB), vitamin B12, folate, calcium, and other micronutrients. Reduced gastric acid production affects the absorption of calcium and this in turn increases a patient's risk of osteoporosis. Reduced gastric acid production also affects the absorption of iron. Ascorbic acid (vitamin C) can be taken to acidify the stomach and increase absorption of iron and vitamin B12, although absorption of B12 depends not only on acidity but on intrinsic factor, a glycoprotein produced in the bypassed part of the stomach.

Recommended supplementation includes:

- Multivitamin with minerals (containing iron, folate, thiamine), 1 to 2 tablets daily (minimal requirement).
- Elemental calcium, 1200 to 1500 mg daily, in diet and in citrated supplement in divided doses (calcium citrate does not require acid for absorption).
- Vitamin D, at least 3000 IU daily (titrate to > 30 ng/mL).
- Vitamin B12 (as needed for normal range levels).
- Iron, 45 to 60 mg via multivitamins and additional supplements (needed most commonly after gastric bypass procedures).[7]

Contraception

Contraception is recommended for female patients of childbearing age for 2 years after surgery. This gives sufficient time to ensure nutritional adequacy before patients embark on pregnancy.

Lifestyle behaviors

Bariatric surgery in itself does not guarantee success. The window of opportunity for establishing beneficial lifestyle behaviors is the first 12 months after surgery, when peak weight loss occurs. Some of the reasons for regaining weight or losing insufficient weight (defined as less than 40% to 50% of excess body weight) include:

- Failure to follow dietary guidelines (e.g., consuming high-calorie liquid meals or snacks; "grazing"; eating starches and carbohydrates; drinking liquids with meals or drinking liquids right after eating, which flushes food out of the gastric pouch before it can stretch and send satiety signals).

- Lack of exercise.
- Psychiatric issues (e.g., depression, anxiety, binge eating).
- Postsurgical issues (e.g., large or dilated gastric pouch, dilated gastrojejeunal anastomosis).

According to the National Heart, Lung, and Blood Institute website,[8] people who want to maintain their weight loss, as well as people who want to lose a large amount of weight (more than 5% of their body weight), may need to be physically active for more than 300 minutes a week (e.g., 1 hour of moderately intense activity for 5 days a week). While not everyone has the time or the financial resources to work out at a gym, adding steps to each day whenever and wherever possible may be enough to initiate change. Encouragement and support from health care professionals can go a long way toward helping patients lose weight and improve their metabolic abnormalities, reduce obesity-related comorbidities, and increase their overall energy and confidence.

Summary

After a sleeve gastrectomy or gastric bypass, patients must follow a postoperative dietary progression that begins with liquids and concludes with a transition to very small amounts of regular food. Possible complications after surgery include anastomotic leak, internal hernia, ulcer, dumping syndrome, and gallstone formation. Patients must be prepared for adjustments that involve constipation management, medication use, alcohol consumption, nutritional supplementation, contraception, and modification of lifestyle behaviors. Inadequate weight loss and weight regain will occur if patients fail to make lifestyle changes regarding diet and physical activity or if patients have psychiatric comorbidity. Patients' determination to initiate and maintain lifestyle changes coupled with support from health care professionals will ensure successful weight loss after surgery. BCMJ

After a sleeve gastrectomy or gastric bypass, patients must follow a postoperative dietary progression that begins with liquids and concludes with a transition to very small amounts of regular food.

Competing interests

None declared.

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Kevin Wing, MD, FRCSC, Alastair Younger, MD, FRCSC

Regional variations in access to orthopaedic care in BC

A study of wait times for a pathologically and geographically diverse group of patients found that the average journey from referral to surgery was worrisomely long at 59.5 weeks, and that more regional variation existed for consultation wait times than for surgery wait times.

ABSTRACT

Background: **There has been longstanding concern among orthopaedic surgeons regarding timely access to consultation and, if warranted, surgery. On behalf of the British Columbia Orthopaedic Association, we sought to measure aspects of the patient journey from referral to surgery, and to consider regional variations in access.**

Methods: **Currently, 49 orthopaedic surgeons from five BC health authorities contribute anonymized scheduling data to a secure server that aggregates information about key time points: the date a patient is referred for surgical consultation, the date consultation occurs, the date a decision is made regarding surgery, and the date of surgery. Data collected for consultations and surgeries occurring between 1 May and 31 July 2017 were analyzed to establish wait times for patients seen or treated in this 3-month period.**

Results: **Consultations were completed for 4100 patients and surgeries were completed for 1129 patients during the study period. Patients waited 19.5 weeks on average for consultation, with significant regional variation. All health authorities had difficulties with long waits for consultation, with 10% of patients identified as long waiters. Patients waited 34.1 weeks on average for surgery after consent. Less regional variation was seen for average surgery wait times (between 29.4 and 36.3 weeks) than for average consultation wait times (between 15.7 and 31.0). Among patients who had surgery, the average time from referral to surgery was 59.5 weeks, with regional variation between 49.5 and 66.5 weeks.**

Conclusions: **All health authorities in BC have on average long waits for consultation and surgery. Regional variation in access to orthopaedic consultation exists in BC, and the average journey from referral to surgery is worrisomely long. Lower wait times for consultation in Island Health, Interior Health, and Vancouver Coastal Health may be attributed to surgeon-led multidisciplinary clinics that utilize centralized intake and "first available surgeon" strategies to reduce wait times. We believe that standardized recording of patient unavailability dates would help us better understand the situation of patients who experience very long waits, and we remain committed to improving patient access to orthopaedic care by promoting best practices that match the right patient with the right surgeon at the right time. Greater focus on the experience of patients accessing orthopaedic care is required in all regions of BC.**

This article has been peer reviewed.

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Background

British Columbia, like other provinces in Canada, continues to struggle with poor access to orthopaedic care as a result of rationing in the publicly funded health care system.[1-6] Moreover, it is difficult to obtain accurate information regarding access to orthopaedic consultation and surgery in BC. Although a review of the Ministry of Health's surgical patient registry website (https://swt.hlth.gov.bc.ca) would suggest access to surgery in BC takes only a few weeks, the British Columbia Orthopaedic Association (BCOA) has long known that patients can wait up to 1 year for nonemergency access to orthopaedic consultation and care.

On behalf of the BCOA, we sought to quantify wait times for consultation and surgery in BC, paying special attention to regional variations in access to care. Data analyzed were from a BCOA wait times initiative (http://bcoa.ca/information-for-patients/wait-times-for-surgery/) that began after a detailed privacy impact assessment was performed in collaboration with Doctors of BC and the Specialist Services Committee.

Methods

Currently, 49 orthopaedic surgeons from five BC health authorities contribute anonymized scheduling data from their electronic medical record (EMR) systems to a secure server that aggregates information about wait times. These surgeons represent approximately 25% of all the full-time orthopaedists in the province. Key time points in the data they contribute are the date a patient is referred for surgical consultation, the date consultation occurs, the date a decision is made regarding surgery, and the date of surgery. A high level of accuracy is assured with the automated extraction of scheduling dates from the EMR systems of participating surgeons.

Using the anonymized data, we quantified wait times for patients who were either seen in consultation or received surgery between 1 May and 31 July 2017. Patients who waited less than 42 days for consultation or surgery were excluded in order to avoid analyzing data for patients seen rapidly after urgent referral from the emergency department while a surgeon was on call.

Results

During the study period, surgeons completed consultations with 4100 patients seen on a nonemergency basis. Patients waited 19.5 weeks on average for consultation. There was significant regional variation, with a low of 15.7 weeks in Island Health and a high of 31.0 weeks in Northern Health.

All health authorities had difficulties with long waits for consultation, with 10% of patients identified as "long waiters." The wait for consultation in this group was 59.6 weeks on average. Regional variation was also significant, with a range between 38.1 and 84.5 weeks.

During the study period, surgeons performed 1129 surgeries. Patients waited 34.1 weeks on average after providing consent for surgery. Less regional variation was noted for the average wait from consent to surgery than for consultation, with a range between 29.4 and 36.3 weeks.

BC, like other provinces in Canada, continues to struggle with poor access to orthopaedic care as a result of rationing in the publicly funded health care system.

Once again however, each region had difficulty with long waiters from consent to surgery with 10% of patients waiting between 68.0 and 95.1 weeks for surgery.

For patients who had surgery during the study period, the time from referral to surgery was 59.5 weeks on average, with regional variation between 49.5 and 66.5 weeks.

Conclusions

To obtain evidence regarding wait times for consultation and surgery, the BCOA executive determined they would need the accurate and nuanced data available in the EMR systems surgeons use to manage their wait lists and book patients. A data-collection initiative for measuring wait times was originally funded by the Specialist Services Committee and is now funded solely by the BCOA on behalf of its surgeon membership.

We believe that the relatively low wait time of 15.7 weeks on average for consultation in Island Health can be largely attributed to the positive effect of the RebalanceMD clinic in Victoria. We note that both Interior Health, with a consultation wait time of 17.8 weeks, and Vancouver Coastal Health, with a consultation wait time of 25.2 weeks, also have surgeon-led multidisciplinary clinics that utilize centralized intake and "first available surgeon" strategies to reduce wait times for consultation.

Less variation was noted between regions from the time consent was provided for surgery to the date of surgery. We note with interest that despite having the lowest wait times for consultation, Island Health had the highest wait times for surgery. It is our understanding that Island Health is bringing significantly increased surgical capacity on line to deal with this backlog of surgical cases. Improved real-time and cost-effective collaboration between the office of the nonhospital-based surgeon and the hospital surgical booking office is clearly desirable.

The BCOA remains very concerned that British Columbians are waiting 59.5 weeks on average for nonemergency orthopaedic surgery, and have every reason to believe that patients are sustaining mental, physical, and financial harm as a result of these lengthy waits.[7-13] The BCOA also believes that wait time reporting should be more transparent in all health authorities, and that more patient-focused research is required to better quantify patient experience.

The BCOA remains very concerned that British Columbians are waiting 59.5 weeks on average for nonemergency orthopaedic surgery... Patients are sustaining mental, physical, and financial harm as a result of these lengthy waits.

In the United Kingdom, the National Health Service has set a wait-time target of 18 weeks from general practice referral to surgery for 92% of patients. In BC, hospitals try to have patients treated within 1 year of the date the surgeon's office submits the surgical booking card to the hospital. However, we have observed that when this 1-year target for surgical care is missed, only the patient feels the negative repercussions.

Orthopaedic surgeons provide both urgent care at the request of an emergency room physician, and nonemergency care, most commonly at the request of a patient's family physician. For example, hip fracture patients are commonly treated within 48 hours of admission. Wait list findings for both consultation and surgery can be confused by EMR-based data that capture both the patient who has a hip fracture and the patient who has waited 2 years for an ankle replacement. In this study we attempted to avoid blending data for two very different patient populations by excluding all patients who received consultations in less than 42 days.

Impact of wait times

This study captured wait times for a pathologically and geographically diverse group of patients, including patients waiting for hip replacement in Prince George, knee surgery in Trail, or shoulder surgery in New Westminster. For orthopaedic patients, long wait times can have a significant impact on quality of life and mental and emotional well-being.[1,7-9,11] The literature suggests that the impact of waiting varies by condition. For cancer and conditions involving the circulatory system, including the heart, long wait times can lead to sudden adverse events, disability, or death.[14-16] Our daily hospital experience indicates that many other procedural specialties are significantly affected by long wait times for care.

Study limitations

The limitations of this study are those inherent to any study that attempts to quantify the experience of an entire provincial population while sampling only a portion of it. We believe this to be especially true for Fraser Heath, where our sampling rate was the lowest. We anticipate that the BCOA will have more surgeons participating in this data collection and analytic process in the near future.

We believe that standardized recording of patient unavailability dates would help us better understand the situation of patients who experience very long waits.

The BCOA remains committed to improving patient access to orthopaedic care by reporting on wait times

and promoting best practices that will help match the right patient with the right surgeon at the right time.

Summary

Regional variations in access to orthopaedic consultation exist in BC. While there is less variation in wait times for surgery than for consultation, the average journey from referral to surgery is worrisomely long at 59.5 weeks. Greater focus on the experience of patients accessing orthopaedic care is required in all regions. BCMJ

Regional variations in access to orthopaedic consultation exist in BC.

Competing interests

None declared.

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Managing type-III acromioclavicular joint injuries

Between 2009 and 2016, WorkSafeBC accepted almost 1880 claims for acromioclavicular (AC) joint injuries. More than 80% of injured workers were males in the construction, service trades, or transit operator sectors. Only 1% required surgical correction, while others received appropriate rehabilitation. Treatment of type-III (completely displaced) AC joint injuries (**Figure**) has been controversial. In the 1970s, treatment was generally surgical, and while this has changed to some extent, the debate regarding surgical and nonsurgical treatment persists.[1]

Mechanism of injury

The most common mechanism of AC joint injury is direct trauma to the lateral aspect of the shoulder, when the arm is in an adducted position. The direct force drives the acromion interiorly while the clavicle remains in place, leading to disruption of the acromioclavicular and coracoclivicular ligaments.[1-3] Indirect mechanisms of injury resulting from a fall on an outstretched arm or elbow have also been reported.[1,3]

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

Clinical evaluation

Patients typically present with the injured arm in an adducted and supported position. Pain will localize to the AC joint on palpation and can be accentuated with abduction and cross-body adduction of the arm, though this is usually challenging, given the acuity of the injury. Tenting of the skin may also be present, depending on the degree of displacement.[3] The authors' practice is to clinically attempt a reduction of the AC joint to help discern a type-III from a type-V injury (**Table**). Done carefully, this can result in minimal discomfort to the patient.

Imaging

Radiographs are the initial and frequently only investigations required for AC joint injuries. The anteroposterior (AP), axillary, and Zanca (AP with 10- to 15-degree cephalad tilt) are the recommended views. The AP and Zanca views identify the amount of superoinferior displacement, and the axillary view evaluates anteroposterior displacement. The AP and Zanca views should be performed bilaterally to allow for comparison to the uninjured side.[1-3]

Historically, stress views with the patient holding weights in each arm were performed. These are not required, as they are generally painful and have no impact on clinical decision making.[1-3]

Classification

AC joint injuries are classified according to the Rockwood Classification (**Table**).

Management of type-III AC joint injuries

Management of type-III injuries has been controversial, a major reason being the introduction of arthroscopic innovation. Unfortunately, no comparative data on minimally invasive versus nonsurgical management of this injury currently exists. The Canadian Orthopedic Trauma Society performed the most useful randomized controlled trial, which centred on plate fixation versus nonoperative management.[4,5] This study and its follow-up, reported in 2017, failed to show a benefit to the acute surgical management of these injuries. Other studies in this area include a series of patients with AC joint injuries who were treated with hook plate fixation.[6] This series had a small sample size and lacked a comparative nonoperative group.

Several studies have questioned the benefit of hook plate fixation. A

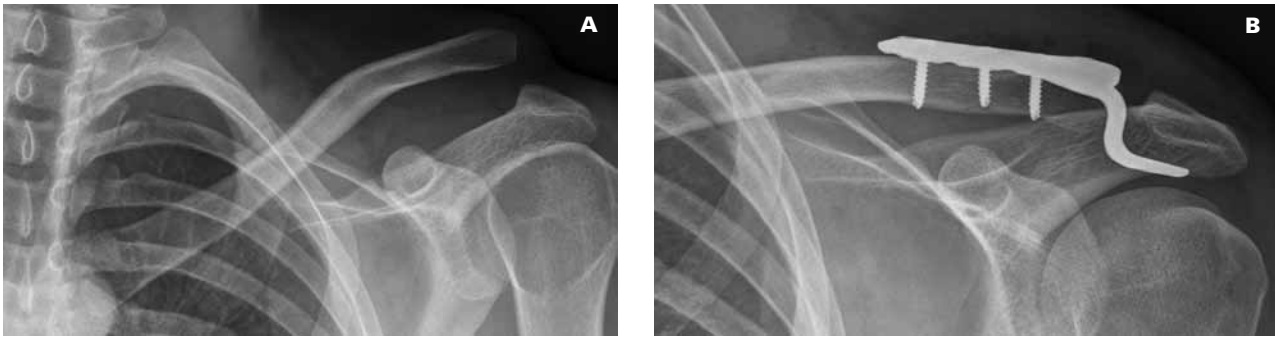

Figure. Two cases of type-III AC joint injuries. A. Type-III AC disruption. B. Postoperative repair of type-III AC disruption.

retrospective cohort study compared the clinical outcomes between hook plate fixation and conservative management, using quality-of-life measures and patient questionnaires.[7] The operative group consisted of 5 type-III injures and 6 type-V injuries treated with hook plates. The conservative group included 4 type-III and 17 type-V. Mean follow-up time for the surgical group was 32.4 months, and for the conservative group, 34.77 months. No difference was noted in SF36, VAS, DASH, Constant, or Global Satisfaction scores. With radiographic follow-up, a significant difference in persistent AC joint dislocation (100% of the conservative group versus 36.36% of the operative group, $P=0.0001$) was noted. Despite the difference in radiographic outcome, there seemed to be no difference in functional outcomes.

Several studies support the acute management of AC joint stabilization arthroscopically.[8-10] The one major limitation of these studies is the lack of comparison to a nonoperatively treated cohort. Given the superior outcomes following nonsurgical care, caution must be exercised when performing an acute stabilization with an innovative procedure that has not been shown to be superior to nonoperative care.

Complications

The most common complications associated with nonsurgical treatment are development of late AC joint arthrosis and persistent instability. Surgical options for these late complications include distal clavicle resection and ligament reconstruction, depending on the exact complaint and degree of displacement.[1] Identifying the correct patient for chronic AC joint reconstruction remains a challenge.

Summary

At this time, evidence supports the nonsurgical treatment of acute type-III AC joint injury. Although significant innovation toward minimally invasive techniques has been made, the literature supporting its use is lacking.

For assistance

For assistance with an injured worker patient with a type-III AC joint injury, please contact a medical advisor in your nearest WorkSafeBC office.

—Ben Jong, MD
Resident, UBC Department of Orthopaedic Surgery
—Danny P. Goel, MD, MSc, FRCSC
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Table. Rockwood Classification of AC joint injuries.

Type	Direction of clavicle displacement	Radiographic findings
I	None	No increase in coracoclavicular (CC) interspace
II	Superior	CC interspace increase of < 25%
III	Superior	CC interspace increase of 25% to 100%
IV	Posterior	Axillary view necessary to diagnose. Distal clavicle displaced posteriorly through trapezius.
V	Superior	CC distance > 100% of contralateral (clavicle herniated through deltotrapezial fascia)
VI	Inferior	Distal clavicle is subacromial or subcoracoid. Rare injury.

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Dr Charles Rally
1928–2017

Dr Charles Rally, known to all as Charlie, passed away from surgical complications on 16 November 2017. Charlie was born on 1 September 1928 in North Vancouver. Some years before, his parents had emigrated from France and set up homestead near Savona, BC. They moved to the Lower Mainland prior to Charlie's birth. His early schooling was at St. Edmonds in North Vancouver and later at Kitsilano High School, where he graduated at the tender age of 15. He attended UBC for undergraduate work and considered becoming an optometrist. His father, thinking that optometry required going to medical school, sent him to McGill where he graduated second in his class in 1952. Postgraduate work in Montreal and Vancouver resulted in his entering practice in Vancouver with G.F. Strong, Don Monroe, and Bruce Paige. Cardiology was his specialty, but he excelled in all fields of internal medicine.

In the practice of medicine, Charlie's clinical acumen was outstanding, as many can attest. I personally remember discussing with him a complex case that had me puzzled. In a short few minutes of consideration, he presented a clear and precise solution. His dedication to and respect for all his patients and his gentle and thoughtful nature were displayed to all he met. Being a quiet man, he never presented an overbearing approach, but whatever he said was notable and well thought out.

Charlie was involved in the Division of Cardiology at Vancouver General Hospital, but he also worked at Shaughnessy Hospital and taught medical students at UBC. Other work activities involved being the medical director or underwriter for many of Canada's insurance companies. The knowledge gained from this work made him an expert in life expectancy statistics, and he was frequently consulted in this area.

Despite his dedication to medicine, Charlie always found time for his family. In Montreal he met Rose, the true love of his life, and she remained so until his recent death. She told me the following story, which speaks to his medical expertise.

A short time after being introduced to Charlie, Rose was walking down a street in Montreal when she ran into him. Charlie was then a third-year medical student at McGill. They started discussing the unusually hot weather and the fact, she felt, that it had given her a heat rash. Charlie immediately said, "That is not a heat rash; you have chicken pox." He was correct. Whether that encounter sealed the deal or not, they eventually married and remained so for 64 years.

Charlie and Rose had four children: Anne, Charles Jr., Elisabeth, and David. From them came 14 grandchildren and one great-grandchild. The family was a unit and even after the children grew up and had progeny of their own, Saturday night always meant dinner at the Rallys'. Each summer was spent in Vernon with children and grandchildren. In 1999, a property was purchased on Kalamalka Lake where all could vacation together. The bonds formed with the cousins speak to the success of family life at the Rallys'.

Charlie had many other activities at which he excelled. He was an expert gardener, superior wallpaper hanger, bird-watcher, and traveler. He loved tennis and routinely dismissed my efforts. Monday nights were reserved for a bridge group that started in 1966 and continued until 2001. One of the best players, and Charlie's dearest friend, was David Bachop. After David's death in 1988, Charlie, along with John Ankenman and Don Farquhar, was instrumental in setting up the Dr David M. Bachop Gold Medal for Distinguished Medical Service given out by Doctors of BC to a BC doctor who has made an extraordinary contribution in the field of organized medicine and/or community service.

Fishing, too, was a passion since childhood. Visits to Bella Coola, during which he often included his children who also loved to fish, allowed Charlie to combine his talents as a physician with those as a fisherman, and gave him some valuable dad-time as well. With these visits, he provided expert medical care to this underserviced area, while reaping the benefits of well-stocked streams.

Traveling was also important to Charlie and Rose, but not to popular and frequented places: they visited countries most would not consider. As Rose will tell you, she has been to the Khyber Pass in Afghanistan and to West Africa, slept in yurts in Uzbekistan, and ridden up winding roads in Yemen, but she has never been to Paris.

With Charlie's passing, we have lost an intelligent, passionate, caring physician: one of the old-fashioned types who was loved by patients, colleagues, and friends. I feel privileged to have known him.

—Michael Moscovich, MD
Campbell River

A mental health resource for all communities: The Salt Spring Island Youth Suicide Intervention Toolkit

When a child or youth appears to be struggling with suicidal ideation, talking with them about it can be difficult—for physicians, parents, teachers, and friends alike. But as physicians know, these conversations are important: statistics show that suicide is the second highest cause of death for youth age 10 to 24 in Canada.[1] Suicide intervention is a particularly pressing issue for rural physicians: BC Coroners Service data on suicide deaths in BC between 2006 and 2015 show that suicide rates in Vancouver Island Health and Northern Health regions are 34% and 68% higher (respectively) than in the Vancouver Coastal Health region.[2]

A provincial youth suicide prevention guide created by the Ministry of Children and Family Development in 2016[3] provides provincial-level resources and supports conversations from a practitioner perspective. Recognizing that doctors, caregivers, and youth in their region needed access to local suicide intervention resources, the Local Action Team (LAT) of the Child and Youth Mental Health and Substance Use (CYMHSU) Collaborative—with the Salt Spring Island Chapter of the Rural and Remote Division of Family Practice as a key partner—created a grassroots solution: the Salt Spring Island Youth Suicide Intervention Toolkit. To support conversations from several different perspectives, three versions of the toolkit are available: one for youth and their friends, one for professionals, and one for parents and caregivers:

- Salt Spring Island Youth Suicide Intervention Toolkit
- A Suicide Intervention Toolkit for Professionals on Salt Spring Island
- A Suicide Intervention Toolkit for Parents and Caregivers on Salt Spring Island

All versions of the toolkit provide information on supports and resources in the community, crisis lines and apps, self-management strategies, and ways to identify risk factors. Information included is practical and evidence-based, using language that is simple and jargon-free. Answers are provided to difficult questions such as, "How do you talk to a youth who has suicidal thoughts?" "What do you say or not say?" "Will talking about suicide cause more harm than good?" Questions are answered from different perspectives geared toward the toolkits' three different audiences.

The professional version of the toolkit also includes risk assessment and universal precautions, while the youth version incorporates stories from other teens who have experienced suicidal ideation and are now on the road to recovery.

Funding from the Shared Care Committee was the key enabler in creating the toolkit. The Salt Spring Island LAT contracted two local CYMHSU clinicians to compile base content for the toolkits, which were then revised as part of a team effort by the LAT to shape it into the final document. Salt Spring Island Chapter physician lead Dr Paula Ryan guided the content creation process, and the LAT hired a project lead whose experience includes working as the executive director for NEED2—a not-for-profit organization that works on suicide prevention and education, and runs a youth crisis hotline.

Feedback on the kits was provided by LAT members—clinicians, physicians, Island Health program leadership, and youth from the community. Once the kits were finalized, Dr Ryan worked with physician colleagues to champion distribution of the kits in hospital and clinic settings on Salt Spring Island.

A resource for all BC communities

The Salt Spring Island LAT and the Rural and Remote Division of Family Practice have made the toolkit content and design files available to other BC LATs so they can customize them with their own local information. For information on accessing the customizable toolkit design files, contact ruralandremote@divisionsbc.ca.

The kits have now been repurposed and distributed in 11 communities throughout BC.

—Afsaneh Moradi
Acting Director, Community Partnership & Integration, Doctors of BC

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

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Facility Engagement: Relationships drive change

The Facility Engagement Initiative continues to gain momentum with 69 hospital-based physician groups now organized and leading more than 500 projects across BC. So what is energizing this activity?

Mainly, it's relationships. My father, who was an obstetrician, worked at the tertiary care teaching hospital in Edmonton. He used to say he would not infrequently see Dr Snell—the CEO of the hospital at the time—in the hallway. If there was an issue to discuss, the two of them would just talk about it.

Today, doctors may never see the CEO or other senior executives. There's not a one-on-one relationship anymore, for a variety of reasons. The pressure on resources, staff, and the whole system is so much greater. We can't expect to be able to stop Dr Snell in the hallway and talk to him about our issues.

As a result, for the past few decades, physicians have felt that they've lost their voice. They are not always asked about critical decisions that impact patients. When concerns arise, often physicians don't know whom to contact in the health authority structure. After asking the same question over and over, nothing changes, and they stop engaging. I experienced this personally, and have heard it consistently in surveys and interviews with hospital-based doctors.

That's why we introduced Facility Engagement. It specifically aims to remove this barrier that doctors feel so discouraged about. It encourages health authorities and doctors to talk to each other and build relationships, and gives physicians time and more opportunity to influence decisions affecting their workplace and patient care.

We're optimistic that Facility Engagement is creating an environment for change, but it will continue to take effort on the part of physicians and health authorities.

How will we know if it is working? When doctors are able to prioritize the issues most important to them and discuss them with the health authority, and say, "We're organized now. We'd like to be involved." And when the health authority comes to physicians to ask for input about their 10-year plan or important clinical decisions before they make them, and says, "We should talk to these doctors. They know what they're doing."

That doesn't mean that every doctor will get what they want. But if physicians have a chance to weigh in and be involved, we will make some progress.

We also realize that doctors need to do a better job of talking to each other about their issues. Through this initiative they are doing more of that, and I hear they are enjoying it.

In my previous role as head of surgery, my colleagues and I agreed to reallocate some OR time from one surgical service to another, based on information that we discussed openly. The group that gave up the OR time realized it was not right that cancer patients from the other service were waiting longer than their own patients who had less-serious problems.

Supported by good information, we simply talked, and our patients benefited, which, in the end, is the whole point.

Facility Engagement is sponsored by the Specialist Services Committee, one of four committees representing a partnership of Doctors of BC and the BC Government. Read more about Facility Engagement progress at www.facilityengagement.ca.

—Sam Bugis, MD
Executive Director, Physician and External Affairs, Doctors of BC

PVD: It's not in your head

On 6 October 2017 the Women's Health Research Institute (WHRI) in Vancouver located on the BC Women's Hospital campus helped to launch an awareness campaign titled #ItsNotInYourHead. This campaign, championed by Dr Lori Brotto, a women's health researcher, clinician, and executive director of the WHRI, centres on a chronic genital pain condition called provoked vestibulodynia (PVD).

PVD is a type of localized vulvodynia (pain in the vulva). The estimated prevalence of this condition is about 12% in the general population and approximately 20% of women under the age of 19. It is characterized by intense pain provoked with direct contact to the vulvar vestibule (located at and around the entrance of the vagina). This can happen during sex, when attempting to use menstrual products, during physical medical exams, when wearing tight clothing, or even when sitting (to name a few examples).

Many women who live with PVD suffer in silence for years. The average length of time it takes to receive an accurate diagnosis spans 3 to 7 years, and that's with multiple visits to a variety of health care professionals. This is, unfortunately, because PVD is difficult to diagnose based on a physical exam as there is no physical sign of pain, infection, abrasions, or trauma. In addition, most of the symptoms (intense itching, stabbing pains, burning) are similar to those of other common conditions, such as yeast infections. All of these factors often result in women being told that their pain is in their head, which can lead to feelings of isolation, anxiety, depression, and distress.

One way that PVD can be diagnosed is with a cotton swab test:

a clinician uses a moistened cotton swab to lightly touch around the vulvar vestibule. A touch on the woman's thigh is felt but does not provoke pain; a touch on the vulvar vestibule, however, produces immediate sharp, shooting, and stinging pain. Recommending patients to a gynecologist who specializes in vulvovaginal health or sexual medicine is also instrumental to receiving diagnosis.

The #ItsNotInYourHead campaign is bringing attention to evidence-based psychological treatment options for PVD: mindfulness meditation, and cognitive behavioral therapy. The cause of PVD is unknown and likely multifactorial, but thankfully these treatments have shown to be effective in managing pain for many women in clinical trials carried out at UBC and with funding from the Canadian Institutes of Health Research. With the help of a patient collaborator, Dr Brotto commissioned a short video that follows one woman's journey from the onset of PVD through to her diagnosis. The video also describes the findings from the research and lets others who are suffering from the condition know that they are not alone, and that their pain is real.

To learn more about PVD, check out the campaign on Twitter, Facebook, and Instagram at @NotInYourHead17.

Respect in the maternity ward

The anticipation, the excitement, the unknown, and the unrelenting desperation to deliver a healthy baby are shared by every woman in pregnancy. Respect and the opportunity to participate in one's own decisions in childbirth are likely assumed as automatic. But according to the World Health Organization (WHO), that is not necessarily so.

In response to WHO's report on the mistreatment of women during childbirth in health facilities, childbearing women in BC have created a new tool to measure respectful maternity care. WHO conducted a review across 34 countries of documented claims of human rights abuses in childbirth but was left to conclude there is no consensus on how to measure disrespect in maternity care practices. However, the work of Dr Saraswathi Vedam, principal of the University of BC's Birth Place Lab and associate professor of midwifery at BC Women's Hospital, is changing that.

Funding from partners at the Vancouver Foundation, BC Women's Hospital Foundation, and the Michael Smith Foundation for Health Research enabled Changing Childbirth in BC, a community-led research project, and led to the development of the MADM (Mother's Autonomy in Decision Making) scale and MORi (Mothers on Respect index). These tools recently received an Innovation Award from the National Quality Forum. With new tools in place to quantify a patient's experience, this data could now be used to measure current practices and inform new ones.

More than 4000 women across BC were surveyed about their childbirth experiences and reported variations in respect and autonomy during pregnancy depending on their health status and preferences for care, as well as where and how they gave birth. Overseen by Dr Vedam, the project is run through a steering group of women from different cultural and socioeconomic backgrounds. Despite the diversity of the participants, Dr Vedam says they all raised similar concerns.

Women who were dissatisfied with their role in decision making had very low MADM scores, indicating a lack of autonomy. Dr Vedam's research also found women with higher medical or social risks during pregnancy were four times as likely to have low MORi scores, indicating they felt less respected by their care providers. Recent immigrants and refugees, or women with a history of substance use, incarceration, poverty, or homelessness were twice as likely to have low MORi scores. Women with midwifery care reported higher MADM and MORi scores compared with women with just physician care.

—J. Stewart
Senior Director Communications and Media Relations, BC Women's Hospital Foundation

Stories for Caregivers: Finding solace in a social platform

The role of the caregiver is crucial to the physical and mental health of outpatients. However, those providing essential support are often desperately in need of help themselves. There are approximately 1 million caregivers in BC, and research[1] from the Office of the Seniors Advocate indicates that 30% of them feel distressed and, therefore, unable to continue in their caring activities. The research also found that the support available to unpaid caregivers is less accessible now than it has been in previous years. It's estimated that to replace family caregivers with paid employees would cost BC $3.5 billion a year, which would place increased strain on a health care system already under immense pressure.

To combat the issues of distress, anger, and depression within the caregiving community, Vancouver-based Coup Group has created a new not-for-profit social platform: www.storiesforcaregivers.com.

Stories for Caregivers aims to improve the quality of life for family caregivers through emotional support, access to free resources—such as educational videos and webinars—and a website for users to share their advice and experiences.

Dr Yvette Lu, a family physician from Burnaby, also hosts an educational video series called *House Call* on the site. In the series, she visits caregivers and finds practical solutions to the daily challenges they face.

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Is current medical training preparing physicians to prescribe exercise to their patients?

To reduce the pandemic of chronic disease, the World Health Organization implores physicians to target physical inactivity as a key risk factor. Chronic disease causes the majority of Canadian deaths, and if physical inactivity, poor diet, and smoking were eliminated, 80% of all heart disease, stroke, and type 2 diabetes, and 40% of cancers would be prevented.[1] Physical activity is effective treatment and prevention in 25 chronic conditions.[2]

Exercise follows a dose response curve, with greater health benefits accrued by those who attain higher levels of fitness, with 50% reduced risk of all-cause mortality and cardiovascular disease death compared with those with the lowest fitness.[3] If Canadians attained the physical activity guideline level of 150 minutes of moderate to vigorous physical activity (MVPA) per week, premature deaths of Canadians would decrease 30%.[2] From a population health perspective, significantly smaller amounts of physical activity also provide substantial health benefits. Inactive patients can lower their mortality risk by 10% by simply walking 10 minutes a day.[2]

Despite the irrefutable benefits of exercise, only 17.6% of Canadians attain guideline levels of physical activity,[4] and only 15.8% of Canadian physicians provide patients with exercise prescriptions.[5] Why this disconnect? Physicians cite lack of time and remuneration as barriers to exercise prescriptions. The most common barriers, however, among medical students, residents, and clinicians are lack of knowledge, training, and competence in exercise prescriptions.

The importance of preparing physicians to counsel and prescribe exercise to patients is widely recognized outside the medical community. Education, training, and the clinical practice of writing exercise prescriptions have been identified in global strategies and national policies, including the Canadian Senate's report, *Obesity in Canada,* which makes recommendations to "encourage improved training for physicians regarding diet and physical activity" and "promote the use of physician physical activity counseling, including the use of prescriptions for exercise."[6]

[Small] amounts of physical activity also provide substantial health benefits.

UBC undergraduate medical education has started to incorporate exercise medicine into the curriculum, yet most residency training programs have not. In a recent study of 396 UBC family medicine residents, 95.6% indicated prescribing exercise will be important in their future practice, yet only 14.9% perceived their training in exercise prescriptions as adequate.[7] Furthermore, 91% of these future physicians indicated they wanted more training in exercise medicine and exercise prescribing.[7] Such training can impact behavior, with Canadian doctors reporting greater confidence discussing exercise and providing more written exercise prescriptions 3 months following a 1-day workshop.[8]

All patients are impacted by physical activity. This underscores the universal importance of doctors having foundational knowledge in exercise medicine. Physicians and trainees are currently insufficiently prepared to discuss physical activity and prescribe exercise to their patients. Addressing this deficiency at all stages of medical training is urgent, given the increasing prevalence of chronic disease and its unprecedented health and economic implications on our society. BC has an opportunity to challenge the status quo, create educational opportunities in exercise medicine, and improve the health and lives of our patients and our communities.

A CME-accredited half-day workshop in exercise prescription is coming to Vancouver on Saturday, 28 April, at VGH. For more information and to register, visit http://casem-acmse.org/event/eimc or email eimc.ubc@gmail.com.

—Kara Solmundson, MD, CCFP (SEM), Sport Med Dip, MSc

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

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The creator of Stories for Caregivers, Bannister Bergen, says that nearly 30% of Canadians over the age of 15 care for a family member or loved one, but they receive a lack of attention and support. Stories for Caregivers is there to let them know that they are not alone.

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cme calendar

MOVEMENT IS MEDICINE
Vancouver, 28 Apr (Sat)
Few doctors feel comfortable prescribing exercise to their patients—do you? Movement is Medicine: What's Your Patients' Best Exercise Prescription, is an interactive half-day workshop designed to empower primary health care providers with the skills, confidence, and tools to provide exercise counselling and prescription to patients of all ages. Learning objectives: review evidence for the harms of physical inactivity and benefits of physical activity; understand the Canadian Physical Activity Guidelines for patients of all ages; learn to incorporate the Exercise Vital Sign into your office visits in 1 minute, or less; use simple motivation interview strategies to reframe barriers and enhance behavioral change; is exercise safe? Do I need to medically clear patients for exercise? Learn what the best approach is for your patients with pre-existing chronic disease.Credits: 7 Mainpro+ credits. To register and for more information, visit casem-acmse.org/event/eimc/ or email eimc.ubc@gmail.com.

VULVOVAGINAL HEALTH UPDATE
Vancouver, 3 May (Thu)
UBC CPD is excited to announce the first BC conference addressing vulvar health! We expect a strong regional interest as vulvovaginal disorders are one of the top reasons women seek help from their family doctors. To be held at UBC Robson Square, this unique conference was planned with women's health care providers in mind and will provide education in vulvovaginal disorders. Areas that will be addressed include: vulvar skin conditions, urogenital symptoms of menopause, sexual health concerns, vulvar pain conditions, and recurrent vulvovaginal infections. The focus will be on practical diagnosis and management. Target audience: family physicians, gynecologists, dermatologists, nurse practitioners, residents, medical students. Presentation by invited speaker Lynne Margesson, MD, Geisel School of Medicine, Dartmouth, on Vulvar Ulcers Update and Office Management of Hidradenitis Suppurativa of the Vulva. Conference information, program details, and online registration: ubccpd.ca/course/vulvar-health-2018. Tel 604 875-5101, fax 604 875-5078, email cpd.info@ubc.ca; web https://ubccpd.ca.

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CME listings rates and details

Rates: $75 for up to 150 words (maximum), plus GST per month; there is no partial rate. If the course or event is over before an issue of the *BCMJ* comes out, there is no discount. Visa and MasterCard accepted.

Deadlines:

Online: Every Thursday (listings are posted every Friday).

Print: The first of the month 1 month prior to the issue in which you want your notice to appear, e.g., 1 February for the March issue. The *BCMJ* is distributed by second-class mail in the second week of each month except January and August.

Send material by email to journal@doctorsofbc.ca. Tel: 604 638-2815. Please provide the billing address and your complete contact information.

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

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TROPICAL AND GEOGRAPHIC MEDICINE
Vancouver, 7–11 May (Mon–Fri)
The University of British Columbia Faculty of Medicine is pleased to once again offer this short intensive course for health care providers who seek an update on infectious tropical diseases and determinants of health in these geographic settings. This course runs 8 a.m. to 5 p.m. and is especially useful for those who intend to practise in areas endemic for these diseases. Material to be covered includes clinical descriptions and approaches to evaluation and treatment of tropical diseases, strategies for infection control within communities, and a focus on infections whose management makes a critical difference to survival. Participants will gain practical experience through laboratory and problem-solving exercises. Nearly 250 physicians, nurses, pharmacists, and other health professionals have successfully completed this course. Spaces filled quickly in each of the past 4 years since this course was first offered in Canada. Register early. For course details and to register: http://spph.ubc.ca/continuing-education/tgm2018. Contact: spph.ce@ubc.ca. Tel: 604 822-9599.

CME ON THE RUN
VGH and various videoconference locations, 11 May–8 Jun (Fri)
CME on the Run sessions are held at the Paetzold Lecture Hall, Vancouver General Hospital, and there are opportunities to participate via videoconference from various hospital sites. Each program runs on Friday afternoons from 1 p.m.–5 p.m. and includes great speakers and learning materials. Topics and dates: 11 May (Infectious Disease & Travel). Topics include: Zika update; *c. difficile* management update; HIV 2018 update: PrEP; STI update; Managing skin infections: Best treatments options; Practice tips: Advising our patients on preparation and risks before travelling; Herpes zoster: A review on vaccines and avoiding disease complications; Worm infestations: Risk assessment, diagnosis, and management. 8 Jun (MSK, sports medicine, and rheumatology). To register, and for more information visit ubccpd.ca, call 604 875-5101, or email cpd.info@ubc.ca.

DIABETES DIRECTORS SEMINAR
Vancouver, 11 May (Fri)
The Endocrine Research Society is pleased to present the 30th Diabetes Directors Seminar, an annual, UBC-accredited gathering of leading diabetes experts and caregivers across British Columbia. Join us at The Sandman Vancouver City Centre Hotel 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, nurses, dieticians, pharmacists, and other diabetes educators responsible for diabetes management within their own groups and communities. To register, and for more information, please contact Aria Jazdarehee at the Endocrine Research Society, Endocrine.Research.Society@gmail.com; 604 689-1055.

PRACTICE SURVIVAL SKILLS
Vancouver, 9 Jun (Sat)
UBC CPD's 11th annual Practice Survival Skills—What I Wish I Knew in My First Years of Practice will be held at UBC Robson Square. This course will emphasize practical, nonclinical knowledge crucial for your career, with topics such as billing, navigating through the medical organizations, accreditation, practice audits, medicolegal advice and report writing, job finding, office skills and management, physician resources, practice management, and avoiding physician burnout. Target audience: family physicians, specialty physicians, lo-

cums, IMGs, physicians new to BC, family practice and specialty residents, physicians working in episodic care settings. Course format: Collaborative didactic lectures and interactive small group workshops; plenty of networking opportunities; practice-based exhibits. Join us at the end of the day for a job fair and networking reception to meet with colleagues and make career connections! Conference information, program details, and online registration: ubccpd.ca/course/practice-survival-skills-2018. Tel 604 875-5101; fax 604 875-5078; email cpd.info@ubc.ca; web https://ubccpd.ca.

FERTILITY & REPRODUCTIVE MEDICINE SYMPOSIUM
Vancouver, 13 Jun (Wed)
This symposium is hosted by the Pacific Centre for Reproductive Medicine and will be held at the Chan Centre for Family Health, 950 W 28 Ave. The program starts with breakfast and registration at 7:30 a.m., includes a refreshment break at 9:45 a.m., lunch at 12:15 p.m., and ends with a reception at 5 p.m. Excellent local faculty featuring Drs Caitlin Dunne, Jeff Roberts, Jon Havelock, Ken Poon, Rebecca Warburton, Sabrina Gill, Sheona Mitchell, Tim Rowe, and Ken Seethram. Admission is complimentary. RSVP auni@pacificfertility.ca. Check out our physician resources page at pacificfertility.ca.

GP IN ONCOLOGY TRAINING
Vancouver, 10 Sep–21 Sep and 18 Feb–1 Mar 2019 (Mon–Fri)
The BC Cancer Agency's Family Practice Oncology Network offers an 8-week General Practitioner in Oncology training program beginning with a 2-week introductory session every spring and fall at the Vancouver Centre. This program provides an opportunity for rural family physicians, with the support of their community, to strengthen their oncology skills so that they may provide enhanced care for local cancer patients and their families. Following the introductory session, participants complete a further 30 days of customized clinic experience at the cancer centre where their patients are referred. These can be scheduled flexibly over 6 months. Participants who complete the program are eligible for credits from the College of Family Physicians of Canada. Those who are REAP-eligible receive a stipend and expense coverage through UBC's Enhanced Skills Program. For more information or to apply, visit www.fpon.ca, or contact Jennifer Wolfe at 604 219-9579.

MINDFULNESS IN MEDICINE
Molokai, HI, 13–20 Oct (Sat–Sat)
The culture and practice of medicine offers unique challenges to physicians in terms of self-care and wellness. This can lead to unhealthy stress, mood disorders, relationship challenges, and burnout. Join us on the pristine Hawaiian island of Moloka'i for this 7-day meditation retreat for physicians. Learn mindfulness and meditation for deep relaxation and healing; connect with fellow physicians; and bring a restored perspective and vitality into your personal and professional lives. This retreat will offer instruction in basic and more advanced meditation skills interspersed with small group discussion and sharing, as well as opportunities for self-reflection and deep rest. Please see www.livingthismoment.ca for more information and to register. This retreat only has room for 18 participants so please register today. Contact mark@livingthismoment.ca for more information.

Audit red flag: Treating a family member or yourself, and billing for it

In 2014 the Patterns of Practice Committee published the following information about physicians billing for family members or themselves. Despite this, there continue to be incidents of physicians treating and billing for family members or themselves.

Physicians are reminded of Preamble C. 19 of the MSC Payment Schedule and the *Doctors of BC Guide to Fees*, which states:

1. Services are not benefits of MSP if a medical practitioner provides them to the following members of the medical practitioner's family:
   a. a spouse
   b. son or daughter
   c. a step-son or step-daughter
   d. a parent or step-parent
   e. a parent of a spouse
   f. a grandparent
   g. a grandchild
   h. a brother or sister, or
   i. a spouse of a person referred to in paragraph (b) to (h)
2. Services are not benefits of MSP if a medical practitioner provides them to a member of the same household as the medical practitioner.

Physicians should also be aware that billing for services to a family member is in contravention of the CMA Code of Ethics, which states: "Limit treatment of yourself or members of your immediate family to minor or emergency services and only when another physician is not readily available; there should be no fee for such treatment." Furthermore, physicians whose family billings exceed $1000 are now being reported to the College of Physicians and Surgeons of British Columbia.

Billing for family members raises an ethical flag, which can lead to increased attention from the Billing Integrity Program—something most doctors would like to avoid.

—Lorne Verhulst, MD
Chair, Patterns of Practice Committee

This article is the opinion of the Patterns of Practice Committee and has not been peer reviewed by the BCMJ *Editorial Board. For further information contact Juanita Grant, manager, audit and billing, Physician and External Affairs, at 604 638-2829 or jgrant@doctorsofbc.ca.*

Finding clinical practice guidelines

Clinical practice guidelines are "statements that include recommendations intended to optimize patient care and are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options."[1] Their utility and limitations have recently been well described by D. Etches in This Changed My Practice.[2]

Given that many guidelines are created outside of the scholarly publishing industry, these documents are not necessarily indexed in databases such as Medline. This creates a challenge to locate and access current guidelines. Fortunately, the two other directories make finding guidelines easy:

- The Canadian Medical Association maintains CPG Infobase,[3] a directory of guidelines produced in Canada by health organizations, societies, governments, or expert panels or by similar non-Canadian groups. These guidelines have been created or reviewed within the last 5 years and are based on literature searches. CPG Infobase provides a link to the online full-text version or contact information for the producer.

For guideline suggestions or assistance locating copies of guidelines, please contact the College of Physicians and Surgeons of BC library.

- The National Guideline Clearinghouse[4] (NGC) is an American directory of guidelines with an international scope including Canadian guidelines and those from SIGN and NICE in the UK. The NGC provides remarkably detailed summaries and links to the full text where available. Criteria for inclusion in this directory are more rigorous than the CPG Infobase, requiring systematic literature reviews and explicit reflections on benefits and harms.

For guideline suggestions or assistance locating copies of guidelines, please contact the College of Physicians and Surgeons of BC library at 604 733-6671 or medlib@cpsbc.ca or view a list of guideline sources on our Practice Guidelines page.

—Karen MacDonell, PhD, MLIS
Director, Library Services

References

1. Institute of Medicine (US) Committee on Standards for Developing Trustworthy Clinical Practice Guidelines; Graham R, Mancher M, Miller Wolman D, et al., editors. Clinical practice guidelines we can trust. Washington (DC): National Academies Press (US); 2011.
2. Etches D. Guidelines. This Changed My Practice. 21 Feb 2018. Accessed 7 March 2018. http://thischangedmypractice.com/guidelines.
3. CPG Infobase: Clinical practice guidelines. Canadian Medical Association. Accessed 7 March 2018. www.cma.ca/En/Pages/clinical-practice-guidelines.aspx.
4. National Guideline Clearinghouse. Agency for Healthcare Research and Quality (US). Rockville, MD. Accessed 7 March 2018. www.guideline.gov.

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practices available

N VANCOUVER—PRACTICE TAKEOVER OPPORTUNITY

Permanent physician or long-term locum required to take over a well-established and high-revenue family practice in North Vancouver—an area known for its great lifestyle, outdoor pursuits, and wonderful community. This is a latchkey practice with group support and an associated walk-in clinic. There is an established base of 2800 patients with the current physician billing $300K-plus per year working 4.5 days per week. There is the opportunity to buy into the clinic if desired. Experienced MOAs, electronic records, and well-set-up supportive and harmonious working environment. Contact Dr Rockford Samborski at lvclinic@telus.net.

QUADRA ISLAND—PRACTICE FOR SALE

Family practice for sale: $1.00! The right doctor for this clinic wants a low-stress, no-hospital, full- or part-time practice with nurse practitioner support and rural CME and locum funding in an amazing, beautiful, small island community a short ferry ride from Vancouver Island. Call Mary at 250 285-3540 or email office@qimc.ca.

VANCOUVER—FP BREASTFEEDING MEDICINE

The Vancouver Breastfeeding Centre is looking for an enthusiastic physician with a special interest in breastfeeding medicine to join the clinic. The retiring MDs will offer mentorship as needed. Maternal and child health experience and IBCLC qualification are assets. Visit www.breastfeedingclinic.com for further information.

VICTORIA—OPPORTUNITY: JOIN OR BUY

Well-established, busy walk-in clinic with family practices on site. Looking to add more owners or to sell clinic outright. Attractive business/practice opportunity. Reply to victoria mdclinic@gmail.com.

employment

ABBOTSFORD—LOCUMS

Full-service East Abbotsford walk-in clinic requires locum physicians for a variety of shifts, including weekends and evenings. Generous split; pleasant office staff and patient population. Please contact Cindy at 604 504-7145 if you are interested in obtaining more info.

ARMSTRONG—FT FAMILY PHYSICIAN

Haugen Medical Group, located in the heart of the North Okanagan, is in need of a full-time family physician to join a busy family practice group. Flexible hours, congenial peers, and competent nursing and MOA staff will provide exceptional support with very competitive overhead rates. Obstetrics, nursing home, and inpatient hospital care are not required, but remain optional. Payment schedule: fee for service. If you are looking for a fulfilling career balanced with everything the Okanagan lifestyle has to offer, please contact Maria Varga for more information at mariaka1@telus.net.

BURNABY—FP/WALK-IN, FT OR LOCUM

Canway Medical Centre, Burnaby, is seeking an associate to join their team of family physicians. Clinic has diverse patient population (ages and genders). We have OSCAR EMR; friendly, knowledgeable, and skilled staff. Flexibility to work full- or part-time, walk-ins or build your own practice. This clinic is bright and spacious, situated in a Burnaby neighbourhood close to businesses, BCIT, and Burnaby Hospital. We have a pharmacy and free parking on site. We have an overwhelming flow of patients. If interested or for more information, call 604 428-8123, email canwaymedical@shaw.ca, or visit our website: www.canwaymedicalcentre.ca.

KELOWNA—FAMILY PHYSICIAN

Busy family practice clinic centrally located in Canada's four-season playground looking to add a third family physician. Modern, spacious, recently renovated clinic; congenial staff; fully computerized; EMR. Opportunity to branch into residential care, immigration medicine, medical arts research. Hospital optional. Contact griswold1605@gmail.com.

KELOWNA—LOCUM NEEDED

Locum needed for solo practice in Lower Mission any part or all of 29 April to 20 May 2018. Brand-new office with beautiful facilities and great MOAs. If you wish to work FT hours there is plenty of work; I usually only work T-W-Th and cover about 20 nursing home patients. No obs, no inpatients. Call Pam at 250 863-8456 or email pamandderm@gmail.com.

KELOWNA—RADIOLOGIST LOCUM

Our busy hospital and community clinic practice is in need of locum coverage from mid-March to the end of December 2018 due to maternity leave. Short and longer terms available. Modalities covered include fluoroscopy and DR, US with procedures, CT with biopsies, MRI, mammography and stereo biopsies. NM, angio/interventional available but not required. Contact Dr Mike Partrick at michael.partrick@interiorhealth.ca.

NANAIMO—GP
General practitioner required for locum or permanent positions. The Caledonian Clinic is located in Nanaimo on beautiful Vancouver Island. Well-established, very busy clinic with 26 general practitioners and 2 specialists. Two locations in Nanaimo; after-hours walk-in clinic in the evening and on weekends. Computerized medical records, lab, and pharmacy on site. Contact Ammy Pitt at 250 390-5228 or e-mail ammy.pitt@caledonianclinic.ca. Visit our website at www.caledonianclinic.ca.

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

NORTH VAN—FP LOCUM
Physician required for the busiest clinic/family practice on the North Shore! Our MOAs are known to be the best, helping your day run smoothly. Lucrative 6-hour shifts and no headaches! For more information, or to book shifts online, please contact Kim Graffi at kimgraffi@hotmail.com or by phone at 604 987-0918.

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

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

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

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TERRACE—FAMILY PHYSICIAN, NEW CLINIC
Join our new primary care office opening in Terrace, BC. Only 80 minutes north of Vancouver. Opening in August 2018, the HG Health Centre offers complete provision of medical office infrastructure to operate your own professional family practice. Outstanding specialist support: gen surg, int med, peds, OBGYN, psych, ENT, urology, ophthalmology, and oncology. Obstetrics and ER available, not mandatory. ER: uniquely APP funded, and point-of-care diagnostics. DI dept includes MRI and on-site radiology. Expand your scope and vision in your own family practice, and sculpt your personal work-life-balance in this unique opportunity. Please contact hermangreeff@gmail.com.

VANCOUVER/RICHMOND—FP/SPECIALIST
We welcome all physicians, from new graduates to semiretired, either part-time or full-time. Walk-in or full-service family medicine and all specialties. Excellent split at the busy South Vancouver and Richmond Superstore medical clinics. Efficient and customizable OSCAR EMR. Well-organized clinics. Please contact Winnie at medicalclinicbc@gmail.com.

VANCOUVER—FP
Mainland Medical Clinic is seeking a family doctor for our modern, multidisciplinary street-level clinic in Yaletown, downtown Vancouver. We have been operating for over 13 years in a comfortable setting shared with a chiropractor, massage therapists, and a nutritionist to complement our three family doctors. Ideally seeking someone with an existing practice—perhaps relocating or cutting back. We serve a broad spectrum of patients, both walk-ins and appointments. Excellent revenue split. The clinic offers a pleasant work environment in an upbeat, fun neighborhood. Contact Dr Brian Montgomery at brian@mainlandclinic.com or 604 240-1462, or just drop by.

VANCOUVER—FT/PT FAMILY PHYSICIANS & PSYCHIATRISTS
New medical office in the Fairmont Medical Building is looking for family physicians who want to move or start a practice. Office features four fully furnished exams rooms; able to accommodate both paper and EMR (Accuro) practices. Office hours are flexible and available 7 days a week (7 a.m. to 7 p.m.). MOA and support staff provided. Clinic has many unattached patients looking for a family doctor, and is accompanied with available VDofP supports to help build a practice. Offering 70/30 split. Email raz@elitemedicalassociates.com.

VANCOUVER—PSYCHIATRIST NEEDED
Together We Can Drug & Alcohol Addiction and Education Society is looking to contract a psychiatrist for our residential treatment program. Our clientele is composed of men entering recovery from substance misuse and who struggle with concurrent mental health issues. Please look at our website at TWCVancouver.org. Those who are interested can contact either Matt Rands, reporting counselor, at 604 358-7843, or Vince Pirozzi, resident services manager, at 604 441-8988.

VICTORIA—GP/WALK-IN
Shifts available at three beautiful, busy clinics: Burnside (www.burnsideclinic.ca), Tillicum (www.tillicummedicalclinic.ca), and Uptown (www.uptownmedicalclinic.ca). Regular and occasional walk-in shifts available. FT/PT GP post also available. Contact drianbridger@gmail.com.

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

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medical office space

VANCOUVER (BRDWY & CAMBIE)—MED OFFICE SPACE FOR SALE OR LEASE
Highly desirable Broadway and Cambie location, minutes walk to VGH and Broadway-City Hall Canada Line station. Underground visitors' parking for patients' convenience. Medical office space for sale or lease: 500 to 600 sq. ft.; lease: 3162 sq. ft. Visit www.550WestBroadway.com or call 604 505-6810 for more details.

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VANCOUVER—TWO RENOVATED OFFICES CLOSE TO VGH
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