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Rural Evidence Review

**Patients Travelling From Urban Geographies To Rural Hospitals
For Procedural Care:
A Realist Consideration**

A scoping review of the evidence through
the Rural Evidence Review project | **November, 2017**



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Introduction and Context

Timely access to surgical services has been established as a policy priority in British Columbia (BC Ministry of Health, 2014; BC Ministry of Health, 2015a) through the mechanisms of understanding demand, developing sustainable surgical care delivery models, solving recruitment and retention challenges and using IT/IM tools and processes to support distributed surgical care (BC Ministry of Health, 2015a). Alongside the surgical service priorities, the BC Ministry of Health has also highlighted the need for strategies to improve access to health care in rural and remote communities (BC Ministry of Health, 2015b). Although the distance/geography/low volume conditions that define rural health care access may distinguish it from urban access, the strategic directions articulated to address these issues align with the surgical strategy: recruiting and retaining engaged, skilled health care providers and supported by enabling IT/IM tools and processes (BC Ministry of Health, 2015b). There is an imperative to weave these resonant strategies together to increase the sustainability of low-volume rural surgical sites and in turn increase access to care for rural residents.

In the fall of 2017, the BC Ministry of Health and the Doctors of BC, through the Joint Standing Committee on Rural Issues, funded the Rural Surgical and Obstetrical Networks (RSON) program as a mechanism through which to enhance the health status of British Columbians. RSON is designed to support and enhance BC's rural surgical programs and, concomitantly, obstetrical service delivery. A cohesive and synergetic framework for delivering high quality rural services with rigorous documentation and reporting of outcomes is key to the initiative, along with 4 'pillars' designed to support networked care: clinical coaching, increased scope and volume, continuous quality improvement and virtual presence technology.

Beyond the intrinsic value of RSON in reducing disparities in access to services for rural communities, there is potential to bridge provincial surgical objectives (shorten wait-times and improve access within a patient-center approach) and the rural objectives (sustainable care closer to home) through networks of surgical care between small rural sites and regional referral centers. Alongside supporting surgical care by Family Physicians with Enhanced Surgical Skills in rural ORs, networks of care also support outreach surgery done by specialists from larger centers, both with rural surgical candidates but also with a case load that may migrate with the urban surgeon with the reward of shortened wait-times. Both of these mechanisms have potential to positively impact surgical wait-times by reducing the load on regional ORs. This approach has been successfully implemented in Australia and parts of the United States (Glazebrook and Harrison 2006; Pollett and Harris 2002; Welch and Power 1995).

One unknown predictor of success, however, will be the willingness of urban surgical patients to travel to rural sites for care. This review explores the question of willingness to travel through a rural lens, reversing the usual scenario of rural patient travel to urban centres. Starting with an understanding of the best available literature positions us well as we embark on the natural experiment that is occurring in British Columbia.

Methods | *Realist Approach*

This paper uses a realist approach to evidence. The purpose of a realist approach is to consider the mechanisms of desired system outcomes within their rich context to identify what works, for whom, in what circumstances, in what respects and how (Pawson 2002). Most health and health services research is performed through a positivist lens, seeking to strip away or mute the context of systems to provide a clear answer to a narrowly defined question. This approach can be highly effective for determining the relative merits of a controlled clinical intervention. However, in health services, the success of an intervention is contingent on a variety of complex factors, both social and structural. A realist approach is intended to generate a detailed, practical and sophisticated understanding of that complexity so it can be considered when making policy and programming decisions (Pawson et al. 2005).

In most realist reviews, a complex hypothesis is proposed, then nuanced and adapted as the research continues. This is called a Context-Mechanism-Outcome (CMO) model. The result is an understanding of how the contributing context “fired” certain mechanisms to produce desired outcomes.

As we discovered that no existing research has focused on urban patients’ amenability to travel to rural locations for elective surgery, we have approached the literature through a modified scoping review framework instead of a standard realist review (see Greenhalgh et al. 2011 and Wong et al. 2013). The lack of existing evidence points to the novelty of a rural site solution for meeting the surgical needs of residents in BC.

Methods | *Scoping Review Method*

This review draws on the Joanne Briggs Institute [JBI] (2015) protocol for scoping reviews. Specifically, JBI (2015) defines a scoping review as a ‘map’ of the evidence on a given topic. In contrast to other scoping review methodologies, the protocol of the JBI method allows for broad and flexible inclusion criteria to attend to the context of a given topic. This method works well alongside a realist approach (Kastner et al. 2016), but involves different protocols from a realist review (see Tricco et al. 2016).

Methods | *Structure and Strategy*

In response to the lack of primary research, an ad hoc method of literature searching was employed, which involved mapping out from reference lists and Google Scholar a ‘web’ of material on various component parts of the original research question. Specifically, we considered literature on:

(1) The reduction of wait times using alternative surgery sites within the same health system

(2) Research which asked rural patients about moving to urban locations

(3) Research which examined patient priorities regarding either waiting or travel, to gain more insight into patient experiences and perspectives

The search (detailed below) led to the most useful cognate information, which was then explored through cited reference searching. Extensive term testing was performed to optimize the sensitivity and specificity of our search for both patient preference and rurality (a concept later dropped from the search). The details of this testing are available upon request, and the terms used below reflect the most successful iterations.

Concepts	Keywords Used	Reasoning
Patient Willingness	Patient Satisfaction / Patient Preference / Patient Choice / Choice Behavior / Decision Making / Delivery of Health Care / Patient Acceptance of Health Care	This review focuses on patient willingness, which draws in sundry considerations of preferences, choice behavior, satisfaction, availability and acceptance. This part of the search was done with the goal of maximizing sensitivity, finding over 280,000 articles in the Medline database alone.
Travel for Procedural Care	Travel / Medical Travel	This search was done to maximize specificity. Both the MeSH term and key word 'travel' were used, alongside 'medical travel.' Medical tourism was trialed and abandoned. Medical tourism added only 600 results to the search, all of which were deemed inappropriate from title review. When adding travel and patient willingness together, Medline returns roughly 1,500 results.

Some term confusion exists between medical tourism and medical travel in database structures, but the specific term 'Medical Tourism' largely returns material on elective procedures, dubious marketing efforts, and ethical issues related to such tourism. It seems that medical tourism is associated with a particular normative frame that falls outside the scope of this review. Medical Travel, however, returned a large number of articles that might be described as medical tourism (international movement for care) but with a clearer focus on patient-centred issues of preference, decision making, and satisfaction.

From the nearly 1,500 results found in Medline, 302 were selected as potentially relevant. From those, just 35 were selected for full article review. The list continued to narrow with further review, but alongside additions through citation searching, 35 articles were selected for consideration herein.

Methods | *Type and Nature of Studies Included*

In keeping with the protocols of realist and JBI scoping reviews, this paper has broad inclusion criteria. Quantitative and qualitative studies are included with no restriction on methodology, design or sample size. Further, a traditional hierarchy of research (where controlled studies are considered more robust than descriptive studies) is not used to evaluate those studies included below. Instead, studies of every type in the area of interest are considered to illuminate the phenomenon.

Functional limitations include considering only studies in English, and more recent studies are given priority (though no date exclusion was used). This was due to centralization being a recent phenomenon in world health services with rapid intensification since 2000 as economy-of-scale administrative principles have globalized.

Limitations

As noted above, no research on this specific topic was found to exist. Urban patients have not previously been asked about traveling to lower-volume settings in the same medical authority to have elective surgery. The concept is, fundamentally, a proposed policy solution and this paper presents preliminary research regarding the necessary context and mechanisms for this solution.

Further, this study is not a systematic or fulsome review of any particular area of research and so presents considerable risk of bias. As the core research question has not been studied through primary research, this secondary review of research cannot provide a concrete answer. Primary research is still needed.

Most importantly, this study cannot offer evidence on the relative safety of this potential policy solution. Primary and administrative data is needed to examine the relative effectiveness and safety of surgery in rural hospitals.

It should be noted that the commonly held bias of rural sites being less safe are largely political and has been shown in other reviews to be the consequence of misunderstanding volume relationships (Kornelsen and McCartney and McCartney 2016). Consequently, transparent and available clinical data is a key recommendation of this work and a necessary compliment to the movement of patients for the reduction of wait times and for general accountability with a public health system.

Discussion

Sources were reviewed using four practical component questions with careful attention paid to context for understanding how various policy and program interventions used elsewhere might be transposed to BC's provincial setting. Taken together, these data offer insight into the question at hand.

The four thematic areas of the literature were:

- Will urban patients travel to rural hospitals for elective surgical care?
- Under what circumstances or conditions?
- What are the enablers of patient satisfaction with this process?
- What system-level features are required for urban patients to travel to rural centres for care?

The following section is organized around these four questions.

Will urban patients travel to rural hospitals for elective surgical care?

Key Points

- International evidence suggests that as many as 60% of patients on elective surgical wait lists will opt to travel to a more distant hospital to shorten their wait time
- The decision by patients to travel for care requires balancing travel time (distance), waiting time, and quality of care/perceived quality of care
- System administration can play a significant role in decision making, especially through communication of health system information
- Policy regulation of waiting times can distort the traditional rationing mechanisms of care, particularly affecting access to care for rural patients

While no research has directly addressed whether urban patients will travel to rural centres for procedural care, international research indicates patient willingness to accept re-referral or choose more distant hospitals to reduce the length of their procedural wait. Two important considerations merit note as context: regionalized health care and BC's increasing reliance on out-sourced (private) clinic for care.

For more than two decades under health care centralization, considerable research has examined the willingness of rural patients to travel to urban centers for medical care. The outcomes of these studies are well known (see Kornelsen and McCartney 2015 for an overview), showing that patients want both high-quality and local care. Centralization has been shown to have deleterious consequences for many rural patients and to contribute to population health disadvantage among rural Canadians (CIHI 2006) through the de-stabilization of primary care (Klein et al. 2002). Meanwhile, increasing distance to basic care has been shown to have dramatic negative consequences for the health outcomes in BC, (Grzybowski, Stoll and Kornelsen 2011), Canada (Grzybowski et al. 2015), Australia (Kildea et al. 2015), Finland (Heminki, Heino and Gissler 2011; Viisainen et al. 1999), France (Blondel et al. 2011; Combier et al. 2013), Norway (Gunnarsson et al. 2014), the Netherlands (Ravelli et al. 2011), New Zealand (Hiscock et al. 2008), Wales (Paranjothy et al. 2014) and the United States (Losina et al. 2004; Nesbitt et al. 1997; Sontheimer et al. 2008).

Time-to-services has been described as a 'rationing mechanism' for health services. Where changes to medical technology, funding and governance in the health system, alongside the aging of the general population have led to increased demand for elective surgical care in British Columbia, pressure has mounted to replace time with other rationing mechanisms, notably money. A popular argument suggests that a dual private-public system will relieve pressure on wait lists by allowing those who can afford private insurance to access immediate private care, removing themselves from the lists.

Roughly 60,000 non-emergency surgeries are performed by private clinics in BC annually (Fayerman, April 24, 2017), of which between 5,000 (Ministry of Health 2015) and 10,000 (Fayerman, June 11, 2015) are paid for publicly through various mechanisms, including WCB claims, RCMP officer care, and public subsidies to private clinics. This is congruent with the Ministry of Health's "Future Directions for Surgical Services in British Columbia" (2015) policy paper, which argued for changes to private care clinic legislation to allow private clinics to perform inpatient procedures with a stay of up to 3-nights and recommended using public dollars to pay private surgeons to help clear BC's growing wait list of (particularly) elective orthopedic procedures. In 2014, 700 of the 896 surgeons in BC held privileges in private facilities (Ministry of Health 2015; CMA.ca 2014). The estimated cost of the most common private procedure (arthroscopic knee surgery) was estimated at \$1,300 within the public system (CBC, May 11, 2017) and between \$2,200 and \$3,500 in the private system (as of 2008; BC Business 2008).

The tension created by the imperatives of regionalization and the use of private mechanisms of health service delivery within a publicly-funded system highlights the need for innovation in reducing wait-times, one such innovation being travel to a distant facility.

International evidence indicates that many urban patients would accept re-referral to a more distant hospital in order to reduce their surgical wait times. In the Netherlands, 60% of orthopedic surgical patients with a wait time of greater than six months accepted such re-referral in exchange for shorter waiting times (Birk and Onsberg Henriksen 2006). As the Netherlands does not have isolated rural towns like British Columbia, Birk and Onsberg Henriksen (2006) were examining urban-to-urban travel and found that distance, familiarity with the other city or hospital, and perceived quality were contributing factors in the decision to accept or not accept re-referral. Critically, communication using specific dates was found to lead to much higher rates of accepting re-referral. That is, when wait times were communicated in estimated intervals (e.g. 4-6 months without re-referral, 2-3 months with), patients were less likely to accept re-referral than if specific dates were used.

Considerable research from around the world links poor and unclear communication regarding wait times with anxiety (Carr et al. 2009; Connor-Spady et al. 2011; Robling et al. 2009; Robling et al. 2009; Sanmartin, Berthelot and McIntosh 2007). Clear communication using specific dates (including language such as 'not before date') can reduce anxiety in both waiting and deciding on traveling for care (Robling et al. 2009).

Patient choice for surgical procedure is relatively new in public health systems. The National Health Service (NHS) in England began offering patients a choice of provider and hospital in 2006. Prior to 2006, elective surgical care options were limited to local care options. In 2006, patients had to be offered a choice of at least four different providers, and starting in 2008, patients could choose from any qualified providers anywhere in the country. Moscelli (et al. 2016) found that the number of patients by-passing their most local surgical provider for elective care rose from 25% to 50% after implementation of this policy as patients became more likely to choose to travel to reduce their waiting times. Literature examining the reasons for local hospital by-pass also finds that shorter wait times is a contributing factor in the Netherlands (Varkeviser and van der Geest 2007), England (Ryan et al. 2000), Australia (Gleeson and Duckett 2005) and the United States (Sanders et al. 2015).

In the case of both re-referral and open patient choice, patients in other jurisdictions will travel to reduce their waiting times for elective surgical care. The conditions of that choice remain somewhat complex and are discussed in the section below.

Under what circumstances?

Key Points

- Self-perceived health deterioration and/or life interruption is a significant indicator of whether patients will electively travel for care
- Assurance of care quality is a necessary condition of accepting travel for care
- Stigma of rural health services as lower quality or higher risk must be addressed

Perceived safety is a key consideration of whether patients will or should travel for elective care. Elective surgeries have consistently shown a positive volume-to-outcomes relationship, meaning that higher volume surgeons and hospitals have better post-operative outcomes than lower volume sites (Urbach 2015). However, volume-to-outcomes relationships are less pronounced and less common in public health care systems (including Canada), where competition for patients and financial incentives toward risk are mitigated (Urbach et al. 2005). Moreover, the mechanism underlying volume relationships remains under-studied and unknown and could be the excellence of individuals or, more likely, the consequence of better processes of care in better resourced hospitals (Urbach 2015). In the case of the former mechanism, high-performing individual surgeons could support and train other surgeons to improve system-wide outcomes. In the case of the latter mechanism, the opportunity to improve the outcomes of lower volume units through knowledge and resource sharing is clear.

Critical to both high quality outcomes and the movement of urban patients to rural hospitals is the need for assurances of safety from both a system and patient perspective. Rural health services can be stigmatized as being inferior, technologically under-resourced, and inadequately staffed. In jurisdictions where clear data on service quality is not available to patients, patient perspectives on quality often play an important role in choosing a hospital or surgeon (Yahanda et al. 2015; Zhukovsky et al. 2016). A systematic review of how patients choose a surgeon found that reputation of both the surgeon and hospital were critical factors in the decision, but that the reputation was often determined through anecdotal sources and pre-existing biases (Yahanda et al. 2015). Examining social media to investigate the choice of changing medical jurisdictions for care, Zhukovsky (et al. 2016) found that existing biases were important to patients in decision making, but could be resolved with access to clear clinical data.

The importance of safety relative to other factors of care has been studied frequently among rural populations facing centralization of services. From this literature, we can gain insight into how patients imagine risk and balance priorities of care.

Svederud (et al. 2015) interviewed patient representatives and patient associations to find that those representing rural Swedish patients saw safety as the most important factor among patient preferences. A discrete choice study on maternity care in Scotland (Pitchforth et al. 2007) found that rural maternity patients chose safety over locality as the key factor of care, while a discrete choice study in America focused on personal care preferences found a much more complicated set of preference factors, including respect, trust, potential for shared decision making and multidisciplinary care (Muhlbacher et al. 2016). Studies examining how and why people choose surgeons in particular show this same complex process, wherein a surgeon's reputation, interpersonal skills, and patient references combined with hospital reputation and distance to care as decision factors (Yahanda et al. 2015), and longer expected wait times and teaching hospital status each influence patients away from a given hospital (Losina et al. 2004; Varkevisser and van der Geest 2007).

A broad pattern emerges from this literature suggesting that safety becomes more important when making the decision for others while patients prioritize different features of care for themselves and are more tolerant of hypothetical risk with their own health. For example, Finlayson (et al. 1999) found as many as one-fifth in America focused on personal care preferences found a much more complicated set of preference factors, including respect, trust, potential for shared decision making and multidisciplinary care (Muhlbacher et al. 2016). Studies examining how and why people choose surgeons in particular show this same complex process, wherein a surgeon's reputation, interpersonal skills, and patient references combine with hospital reputation and distance to care as decision factors (Yahanda et al. 2015), and longer expected wait times and teaching hospital status each influence patients away from a given hospital (Losina et al. 2004; Varkevisser and van der Geest 2007).

Transparent data accessible to patients on the outcomes of both hospitals and surgeons are necessary for patients to make informed decisions about their elective surgeries. An online booking system of reporting both traditional clinical data and patient reported outcomes measures (PROMs) is the core of the UK elective surgical system (Moscelli et al. 2016). Research continuously points to the complexity of how patients choose their preferred care provider (Gutacker et al. 2015; Muhlbacher et al. 2016; Yahanda et al. 2016; Zhukovsky et al. 2016). While centralized elective care referral systems struggle to meet the priorities and expectations of diverse patient groups, systems which allow patients to manage their prioritized factors offer the promise of greater patient satisfaction without a change to the nature of care itself. Such a system must include clear and understandable data on clinical outcomes, patient experiences, location and wait times.

Peter Sivey (2012) argues that when wait time is managed without a robust and transparent system, a false market is created based on the perception of quality. Wait time policies which demand hospitals meet specific time-based goals can lead to excessive demand on highly regarded hospitals and surgeons irrespective of other factors of care. Patients not able to be seen in those preferred hospitals may report lower satisfaction regardless of outcome simply because access to the most highly regarded units may become an expectation of the patient (Connor-Spady et al. 2011). Being able to show the clinical quality of British Columbia's hospitals alongside their expected wait times will allow the patient to make a decision best fitting her/his personal priorities.

What are the enablers of satisfaction?

Key Points

- 'Total wait time' is often used as a quantitative measure of acceptability, but patients experience and express the acceptability of wait times based on other factors that can be improved
- Wait times should be communicated by using specific dates to reduce anxiety and to allow patients to compare wait times among institutions
- Canadians place strong cultural importance on fairness in healthcare and so are more willing to wait when the reasons for their queue placement (or wait time change) are made clear
- Managing expectations through communication during the waiting period could have a significant impact on reported dissatisfaction with waiting times

Wait time duration has become a key marker of patient satisfaction with care as well as an easily quantified indicator of system efficiency. Early Canadian research on wait times showed that satisfaction and length of wait were well correlated, with those reporting unacceptable wait times waiting on average four times longer than those who reported acceptable wait times (see Sanmartin, Berthelot and McIntosh 2007 for a brief review). However, patient satisfaction with wait times is not solely dependent on the quantitative amount of time spent waiting. Recent Canadian and international research has shown that patient satisfaction with longer wait times can be achieved through more effective communication regarding both the length of wait expected and the fairness of that wait and through acknowledgement of the emotional as well as physical hardship of waiting.

Connor-Spady (et al. 2011) articulates the important role of patient expectation in achieving patient satisfaction. Using a disconfirmation hypothesis (in which satisfaction is a function of how experience deviates from expectation), Connor-Spady (et al. 2011) found that dissatisfied patients exaggerated when reporting their wait times after surgery while satisfied patients reported shorter times than they had actually waited. The opportunity to manage patient expectations and improve their experience is considerable, even without changing the actual time patients wait.

Congruent with other international research, Connor-Spady (et al. 2011) found that Canadians who experienced health deterioration during their wait time were more likely to be dissatisfied. As noted above, the most common reason for reported health deterioration among waiting patients is consistently found to be anxiety (Robling et al. 2009; Sanmartin, Berthelot and McIntosh 2007). System and care provider communication is a key area of potential improvement. More definitive communication of wait times (Carr et al. 2009; Connor-Spady et al. 2011; Robling et al. 2009), robust communication regarding changes in wait times due

to emergency use of resources (Connor-Spady et al. 2011), and a sense of control for patients through active choice (Moscelli et al. 2016; Sivey 2012) are areas of potential impact on satisfaction regardless of changes to actual wait times.

Improved access to provincial data and the consolidation of the referral system into a more transparent patient choice frame also improves the perceived fairness in waiting. Fairness was a key issue among Canadians that had an impact on their satisfaction (Connor-Spady et al. 2011). A mixture of public and private referral systems in the UK prior to 2008 was found by Robling et al. 2008 to cause perceived unfairness and concomitant stress for patients. The BC policy directive from 2015 indicating greater use of private facilities for public patients includes this potential for multiple streams of access causing negative reactions due to a perceived lack of fairness. Where patients can see wait times in other facilities and communities alongside other usage and quality data, their perception of fairness within their own community may improve.

There is growing evidence on patient satisfaction with the experience of surgery, beyond the most commonly reported attributes – survival and quality of life measures. Beyond this, interpersonal experiences of feeling heard, cared for, and supported are found to substantially influence patient satisfaction with care (Gutacker et al. 2015; Yahanda et al. 2016). Yahanda's (et al. 2016) systematic review of how patients chose their surgeon found that office appearance and their interpersonal relationship with the office assistant or manager were contributing factors.

While patient satisfaction and choice are critical components of a high-functioning patient-oriented healthcare system, the movement of urban patients to rural sites requires a number of structural and systemic changes to accommodate and support, as discussed below.

What are the system-level features necessary to support urban-to-rural surgical migration?

Key Points

- Patients require clear, public clinical quality data to make decisions that meaningfully balance distance, wait times and risk
- Provider networks will ensure high-quality care across sites
- Surgeons traveling from urban sites to rural hospitals for operating time could schedule urban patients in that same rural hospital, allowing for continuity of care in the urban community and more effective use of under-used rural facilities
- Transport support is necessary for those patients traveling for care

Although there is a dearth of research evaluating urban migration to rural sites, there is data on emerging multi-site care networks. The networks link urban specialists with rural patients and facilities to make efficient use of rural hospital facilities and improve training and care across the patient journey (Li et al. 2016). The opportunity to leverage digital technology to both efficiently communicate with patients and connect otherwise siloed hospitals across the province has already been shown in other jurisdictions to improve care outcomes and reduce waiting times. As well, inter-site support for rural surgical teams is necessary to ensure best practice and continuity of care. This can be accomplished through surgical networks between specialist and generalist surgeons (Iglesias et al. 2015), including the surgical network currently being established in British Columbia.

Conclusion

Growing surgical wait times in Canada, and in BC specifically, have led to increased pressure toward privatization and concomitant decreasing patient satisfaction with care. This is despite the potential for relieving the system stressors on wait-times and at the same time providing increased support to rural sites through increased scope and volume brought by urban surgical slates. This is contingent on having urban patients travel to rural hospital sites for elective surgical procedures by either traveling urban surgeons or rural surgeons, all linked via a virtual and administrative surgical network.

This solution requires that patients are able to choose their site of care based on transparent and accessible information regarding the clinical outcomes, patient reported care quality (PROMs), and wait times of care units around the province. Travel support would be necessary for some patients to ensure true equity in access to services.

Although the direct evidence on acceptability of urban patient travel to rural settings to reduce surgical wait times does not exist, contiguous literature suggests:

- The willingness of patients on surgical wait-lists to travel for care to shorten wait-times;
- The influence of self-perceived health deterioration/life interruption as a variable in willingness to travel;
- The importance of transparent and available clinical data to inform patients of local versus away wait times in discrete intervals (i.e., 2-4 weeks versus 12-16 weeks);
- The importance of clear communication of reasons should queue placement or wait times change;

- The importance of assurances of quality at all potential sites through publicly available, current outcomes metrics;
- Transport support is necessary for patients traveling for care.

Recommendation

Although indications may be gleaned from the related literature drawn on for this review, primary research is necessary to evaluate the acceptability of urban-to-rural transport for procedural care in British Columbia. Rather than a policy imperative, it is more likely that urban to rural migration for surgical care will occur in response to prioritized patient decision making. The natural experiment that will occur will provide opportunity for such primary data.

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