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Documenting surgical triage in rural surgical networks: Formalising existing structures

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Abstract

Objective: It is essential that the embedded process of rural case selection be highlighted and documented to provide reassurance of rigour across rural surgical services supported by generalist surgeons, general practitioners with enhanced surgical skills and general practitioner anaesthetists. This enables feedback and improves the triage and case selection process to ensure the highest quality outcomes. Therefore, this research aims to explore participants' rational criteria for decision making around rural case selection.

Design: Participants participated in a series of semi-structured in-depth interviews which were coded and underwent thematic analysis.

Setting: Six community hospitals in British Columbia, Canada.

Participants: General practitioners with enhanced surgical skills, general practitioner anaesthetists, local maternity care providers, and specialists.

Results: Based on participant accounts, rural surgical and obstetrical decision-making processes for local patient selection or regional referral had five major components: (1) Clinical Factors, (2) Physician Factors, (3) Patient Factors, (4) Consensus Between Providers and (5) the Availability of Local Resources.

Conclusion: Decision-making processes around rural surgical and obstetrical patient selection are complex and require comprehensive understanding of local capacity and resources. Current policies and guidelines fail to consider the varying capacities of each rural site and should be hospital specific.

KEYWORDS

general practitioner anaesthetists, general practitioners with enhanced surgical skills, obstetrical decision-making processes, rural case selection, rural health, surgical decision-making processes

1 | OBJECTIVE

The emergence of networks of rural surgical and obstetrical care in British Columbia has been built on established and effective referral patterns developed over time. The Rural Surgical and Obstetrical Network (RSON) project was in part established to formalise and optimise these referral patterns in identified geographies as a way of ensuring quality outcomes by supporting safe and appropriate surgery, operative delivery and maternity care closer to home for rural communities.[1,2] To achieve sustainable care in these rural and regional communities, procedures

are being delivered within rural networks supported by generalist specialist surgeons who are trained across surgical disciplines, General Physicians (interchangeably known as Family Physicians) with enhanced surgical skills (FPESS), and General Physician Anaesthetists (GPAs).[1,2] In Ontario and Eastern Canada, rural surgical services are provided almost exclusively by generalist general surgeons. In Western Canada, including British Columbia, general surgeons are supported by about 150 FPESS providers working either collaboratively with specialists or by themselves in the smaller programs.[2] In the RSON communities, surgical care is usually carried out by FPESS and GPAs, with some assistance from regional specialists when required.

There is growing evidence pointing to the importance of including patient-reported outcomes, process outcomes and team functioning alongside procedural health outcomes as markers of quality of care.[2] One such process that is fundamental to optimal outcomes is ensuring that patient care occurs in the appropriate location (a rural centre or at a referral centre) by the most appropriate provider at the most appropriate time.[2]

With regards to location of care, multiple studies have shown that outcomes are similar for the procedures performed in the small-volume surgical programs in rural Canada compared to large-volume programs for comparable procedures.[2–4] A review of the international literature also endorses the safety of broad-scope FPESS care.[2,4,5] To ensure safety and quality health outcomes, this requires FPESS to appropriately triage, selecting appropriate patients for local care based on risk identification, provider and team availability and skills, and facility resources.[1,2,6] Although this discussion occurs routinely between rural maternity, operative proceduralists, and anaesthetists with their patients, as well as between these rural providers and their regional specialist colleagues, it has not been clearly documented and made transparent to those not directly involved in the patients' care.[1,2] In a recent study of general surgeon's attitudes towards family physicians with enhanced surgical skills, one of the thematic concerns was regarding appropriate case selection.[3] As one participant noted:

> Let me tell you where I run into some problems. Sometimes I find that the family docs that I work with are wanting to do stuff that I think is beyond what they should be doing in the obstetrics program.[7]

It is essential that the embedded process of rural case selection be highlighted and documented to provide reassurance of rigour across rural surgical services supported by FPESS and to allow for feedback to improve the triage and case selection process to ensure the highest quality outcomes. Due to the limited number of studies on FPESS and their decision making around patient selection, this research aims to explore participants' rationale criteria for decision making.

What this study adds:

- Insight into and documents the triage/decision-making processes around patient selection for rural surgical and obstetrical services employed by rural generalists/clinicians
- Support for the safety and need for rural surgical and obstetrical services
- Support for the need for locally specific guidelines over standardised rural surgical triage guidelines

What is already known on this subject:

- Optimal health outcomes occur when patients receive obstetrical and procedural care in the most appropriate location, by the most appropriate provider, at the best time
- There is a significant paucity of research in the area of rural surgical triage and decision making around patient selection
- No study looked at rural surgical triage in its entirety
- Minimal studies looked at FPESS/GPAs decision-making processes
- In studies on decision-making processes around patient selection for local care or for referral to specialists/transfer to larger hospitals, there were three main topics identified: the structural reasons for patient transfer; medical indications for transfer; and surgeons', anaesthetists' and family physicians' reasons for referral

2 | PARTICIPANTS AND SETTING

Interview participants were intentionally sampled from six community hospitals participating in the RSON, a funding initiative to enhance the surgical and obstetrical capacity of select rural sites in British Columbia, Canada. All Family Physicians with enhanced surgical skills (FPESS), General Practitioner Anaesthetists (GPAs) and maternity care providers (GPs and midwives) from the six RSON sites were invited to participate in an interview as part of a broader evaluation of the program. Some physicians interviewed are both FPESS and GPA-qualified.

In total, 12 interviews were conducted with 13 participants. An additional four interviews from previous RSON evaluation site visits in 2019 were included due to their thematic relevance to rural health care provider decision-making processes, bringing the total number of interviews included in the data set to 16. A breakdown of the number of different types of clinicians (e.g. FPESS or GPA) in the participant group can be found in Table 1, while Table 2 lists the types of procedures and surgeries that may be available at the RSON sites.

3 | DESIGN

3.1 | Interview methods

All interviews were led by the Principal Investigator for the RSON project evaluation (JK), who has extensive experience in qualitative interviewing. A semi-structured interview guide with open-ended questions was used to explore health care providers' decision-making processes when considering whether to keep a patient or send them to a referral centre. This included probing for non-identifiable examples of patient selection related to surgical and obstetrical procedures. Since there is minimal literature on rural providers' decision making around patient selection processes, this research was exploratory. Nine of the interviews were conducted in-person at two sites, while three were conducted via videoconference. The semi-structured interview guide can be found in Appendix A.

3.2 | Data analysis

Interview transcripts were analysed using the principles of thematic analysis.[31] Each of the 12 transcripts in the primary data set were read several times by two coders who were present for the interviews, in order for them to become familiar with the content of the entire data set. The coders used NVivo qualitative data analysis software to organise the data and develop their own codebooks. The two coders then compared their individual codebooks and came to a consensus on any discrepancies, amalgamating them into one final codebook. The final codebook was then tested against the additional five transcripts from previous field visits and subsequently reapplied to all transcripts by the primary coder. Horizontal and lateral comparison of the codes were used to generate emerging themes to explain rural surgical and obstetrical decision-making processes around local or regional patient selection. The analysis process was iterative in that preliminary themes were validated by checking back to the transcripts and modified as needed in order to ensure that all salient concepts were covered.

TABLE 1 Participants

Interviewee type and representation	
Total number of participants	17
General physician anaesthetists	10
General physicians with enhanced surgical skills/ obstetrical surgical skills	7
Maternity providers (GP & midwife)	2

3.3 | Ethics

The research study was granted approval through the University of British Columbia's Behavioural Research Ethics Board (BREB) (RISe#: H18-01940-A009 BoR#: 2018–19-055-H). Prior to data collection, verbal and written consent was obtained from all interview participants. Transcripts were de-identified, assigned a random name and password encrypted to ensure participant anonymity and confidentiality.

4 | RESULTS

4.1 | Themes

Five themes emerged from the analysis of the data, related to rural health care providers' surgical and obstetrical decision-making processes: (1) clinical factors, (2) physician factors, (3) patient factors, (4) consensus between providers and (5) the availability of local resources. Each of these themes are described in detail below. Excerpts from the interviews are provided in the form of quotations, which illustrate each theme.

4.1.1 | Clinical factors

Health status and comorbidities

In their discussion of the decision-making process, all participants described numerous clinical factors that they consider when determining whether a patient is appropriate for local surgical or obstetrical care. These clinical factors include general health status and comorbidities, Body Mass Index (BMI), extremes of age, maternity specific factors (e.g. vaginal birth after caesarean [VBAC], foetal lie, delivery complications and number of caesareans). In most circumstances, participants expressed a risk-averse decision-making process where they sent out any patients presenting with comorbidities or at extremes of age or weight. As one participant stated: "*I'm cherry*

TABLE 2 Scope of practice and procedural availability

Family physician scope of practice (as stated by interviewees)	• General practice • Anaesthesia • Procedural Obstetrics & Gynaecology • Maternity provider • Surgery • Sports medicine • Emergency • Duty Doctor (Hospitalist care) • Skin Cancer
Local procedures available across sites (as stated by interviewees)	• Lumps & bumps removals • Carpal tunnel • Caesarean section • D&C • IUD insertions & removals • Forceps/Vacuum Deliveries • Perineal tear repairs • Laparoscopic salpingectomies • Colonoscopies • Endoscopies • Gastroscopies • Polypectomies • Haemorrhoid banding • Incision & Drainage • Chest tubes • Central lines • IVAD Insertions • Intubations • ACL & Shoulder repairs

picking [patients]. I'm doing the young, healthy, you know non-smokers, low BMIs."

For maternity patients with comorbidities in particular, the availability of a pre-surgical screening clinic in some communities was expressed as playing an important role in the triage process. Speaking about maternity patients with comorbidities a participant explained:

> So, we have our maternity clinic, which runs from our public health. And so, any case that is high BMI or comorbidities or ladies who've had previous caesarean, anybody who might end up needing caesarean, goes through the PSS [Pre-Surgical Screening] clinic. So then that gives another layer of triaging.

Type of anaesthetic and/or procedure

In addition to comorbidities, participants also expressed that the type of anaesthetic being utilised for the procedure is an important factor to consider when deciding whether or not to keep a patient. In particular, some participants explained that more complex patients might be able to stay local for a procedure if they only require sedation or local anaesthetic. Contrasting circumstances when patients might be kept locally with scenarios where the patient would definitely be sent out, one participant said:

> Sometimes the deciding factor is well 'can you do this under a local or not'? And sometimes we do some very sick people for dental or for simple procedural stuff. And we just do regional anaesthetic, because we can. But we wouldn't do inter abdominal surgeries on somebody who was very much an ASA 3 or higher.

Emergency versus routine presentation

Participants noted that whether the patient presents in an emergency situation, such as an imminent delivery, or has an elective consult is an important deciding factor for treating a patient locally. The participants were more likely to do a complex case locally if it was an emergency. For example, as one participant noted: *"If it had been an elective case, we wouldn't have done it – but because it was an emergency, we just did it*." In such emergency cases, participants weighed the risk of keeping the patient locally with the risk of sending them out of the community: "*In an emergency case you just have to decide 'How comfortable*

am I putting this person to sleep'? And 'How safe is it for them to leave or not?'

Guidelines

When discussing the role of clinical factors in decision making, participants noted common guidelines that they follow including BMI practice guidelines from the College of Physicians and Surgeons of British Columbia (CPSBC) and BMI guidelines in pregnancy from the Journal of Obstetricians and Gynaecologists of Canada (JOGC).[1] GP Anaesthetists follow the American Society of Anaesthesiologists Physical Status Classification (ASA) guidelines as outlined by CPSBC.[2] However, participants emphasised that while guidelines provided a decision-making framework, many patients are "shades of grey," presenting just over or under the cut-off for local treatment according to provincial guidelines.[3] In such cases, participants emphasised that it is necessary to make a patient-specific decision. The most frequently used example of the need for providers to make patient-specific decisions about the applicability of clinical guidelines was in relation to BMI calculations. Participants discussed the need to consider weight distribution in addition to absolute numbers depending on the requirements for a specific procedure. For instance, abdominal weight does not affect an anaesthetist's ability to intubate but it could affect their ability to administer an epidural and increase the difficulty of a caesarean section. Due to ambiguity around the application of certain guidelines against multiple clinical criteria, participants generally were not in favour of overarching guidelines. As one respondent explained:

> Because if you try and have an overarching [guideline], then it would go to the lowest common denominator – which is then a problem because now you're limiting my scope of practise, because as soon as there is a guideline it unfortunately becomes a legal issue. So even though they tell us guidelines are just guidelines, that's not always how it's seen in court.

Overall, participants felt guidelines need to be tailored to each local hospital due to the varying capacities and resources in a given community, a topic that is explored below.

4.1.2 | Physician factors

Skill and comfort level

Participants expressed that the individual clinician's skill and comfort-level (also referred to by participants as how "conservative" they perceived themselves to be) is an important factor when making decisions about whether or not a patient is appropriate for local care. Participants described their comfort level consisting of both their own skills and experience, as well as external factors such as the comfort level of the nurses to support the patient. Participants' reflections on the role of their individual experience highlight the highly contextual nature of the decision-making process. One participant summarised: "*It's [the cases you are able to do locally] tailor made to the physicians and the skill set that you have in your town."*

Considering the consequences of a decision

In regards to considering patient autonomy, participants emphasised that if a procedure or delivery was clearly not within their scope of practice, they would refuse the patient's request. One participant said: *"If I thought I shouldn't do it, I wouldn't do it [...] there'd be a hard line for me there and I'd just have someone else see them."*

In addition to their own comfort level, participants noted that they typically consider the worst-case scenario of an outcome during a local procedure or delivery and whether or not they believe that their colleagues at the referral centre would support their decision to treat that particular patient locally. This thought process was described by one participant, who said:

> If something goes wrong, [regional specialists and local colleagues] are going to tell me, 'What the heck were you doing that person there'? So usually, it's that fear of the peanut gallery evaluating my decision, after a complication that [causes me to consider] 'would this stack up?'

4.1.3 | Consensus between providers

Team decision making

Participant accounts of the decision-making process around location of care emphasised that individual providers never make a decision in isolation. Instead, decisions involve the entire health care provider team (GPAs, FPESS), frequently including advice from regional specialists. Several participants recounted a similar protocol that begins with patient referral to the local pre-surgical screening (PSS) clinic to see a GP anaesthetist and, potentially, a referral to a FPESS. Once these consultations are completed, the surgeon and anaesthetist discuss the case with their colleagues to ensure everyone is comfortable with providing care locally. Participants noted that if any team member is not comfortable with the decision, then the patient will be recommended for care in a regional

centre. Speaking about the team dynamic in decision-making processes one participant said:

> [Patients are] assessed in the office and then the other [providers] are messaged about that assessment. It basically goes down to the lowest common denominator, whoever's the most nervous about it gets to call [it].

Some participants highlighted that GPAs and FPESS have different levels of comfort around particular procedures. In "borderline" cases, most participants stated that they would call a regional specialist to get a second opinion or directly send the patient to a referral centre. This is highlighted by the following quote, which also reinforces the idea that no individual provider makes a decision in isolation:

> For example, we're trying to decide whether to deliver a woman here with a high BMI and other [comorbidities] – like diabetes and hypertension – then usually a couple of us consult (with) each other and then we'll see what anaesthesia has to say and if anybody's uncomfortable then it's like 'okay we'll make other arrangements [referral to regional centre].' If everyone's okay – but if we're still [thinking], this is pushing the limits of what's thought to be acceptable then we'll consult one of our local obstetricians [regional specialist].

Surgical Back-up and collaboration with visiting specialists

Participants described seeking support from their local colleagues to ensure backup is available if complications arise during a procedure. Lack of available backup support was a determining factor for referral for all of the participants in this study.

Participants also stated they would invite regional specialists to do the surgery locally if the case was outside their scope but not too complicated for the facility. Describing the role of visiting specialists in certain cases, a participant explained:

> Sometimes those people we can't do here officially, will still be done here but [Obstetrician] will come during [their] clinic day and do the c-section with us. So those people who are kind of in between, they're kind of higher level for GP caesarean sectionists but not too high for our facility, will still be done here and an OB will come and do the c-section with one of our [local providers].

4.1.4 | Non-clinical patient factors

Social factors

Participants described how they consider non-clinical factors when determining whether to keep a patient locally for a procedure or for delivery. Participants noted that non-clinical factors were most frequently considered for individuals nearing end of life, seeking palliative procedures, and for families expecting a baby. As one participant noted:

> Occasionally we get patients in [rural community] that are in long-term care nearing end of life. They need a procedure done and they either refuse to travel or they cannot travel. And those are the patients that we will actually do here [...]. But we do have that conversation with their family and [...] help them understand what is offered here.

For obstetrical patients, participants emphasised that psychosocial factors are particularly important in the decision-making process. Participants noted that clear communication with obstetrical patients is key to determining the best location for delivery, for both patients and providers. As one participant described:

> I remember this [maternity case] was also a high BMI case [and the patient] said 'I'm not gonna (sic) go'. And once we figured out it was a transport issue, then we actually said 'right, you'll come to the hospital, we'll admit you to the hospital, we'll transfer you in an ambulance. And then you'll get there and you'll get your induction'. So that's how we eventually got around that issue that she was having.

Respecting patient autonomy

For patients that elect to stay in the community against medical advice, participants stressed that they ensured that the patient was made aware of the risks of the procedure/delivery and the limitations of local medical care. Most participants also shared that it is important that patients assume responsibility for any adverse outcomes that occur but differed in their approach around documenting that assumed responsibility. In these instances, participants also described harm reduction strategies, such as finding an alternative anaesthetic (e.g. local vs. regional) or recruiting an extra colleague to assist with the procedure. For example, one participant noted:

> Sometimes we do just try harm reduction strategies. We'll have a conversation with

> the surgeon and we'll say, 'You know this person's really sick, they can't travel or they won't travel. Would you consider doing this with local sedation?' Or maybe they can't have a spinal for some reason and we'll just talk about other options.

Most participants in this study reiterated how uncommon it was for a patient to refuse to be transferred to a regional centre as the majority of patients follow the recommendations of their physician. In addition, participants were clear that they would refuse to do a procedure if uncomfortable or if the procedure was not within their scope of practice. As one participant noted,

> We sedate very, very, very complex high-risk people for endoscopy all the time because of social issues. Would I want to do an anaesthetic for a cholecystectomy in someone who had a BMI of 52? No. Not a chance. And it wouldn't matter if they were destitute, we just don't have the capacity.

4.1.5 | Availability of local resources

Nursing

According to participants, one of the biggest limiting factors to managing patients locally is the availability of local resources. Participants expressed that even if the provider team has the technical skills to treat complex medical conditions and complications, some patients would inevitably have to be transferred due to lack of equipment and lack of availability of trained personnel (both technicians and nursing staff). Indeed, the shortage of nursing staff in rural communities was expressed as a significant resource issue by all participants. In some communities, lack of nurses led to temporary closures or diversion of local operating rooms (ORs) and labour wards, resulting in patient transfer for systems indications. This was described by participants as "unnecessary transfers." In one community, the lack of nursing staff was identified as being the reason for OR closures as frequently as one weekend per month. In this context, women who are good candidates for local delivery are unable to labour and deliver locally due to the absence of OR backup. One provider highlights the significance of this sustainability issue, stating:

> And that's hard for the community too, not being open all the time. The labouring women who don't know whether we're going to be open for when they're in labour and that kind of thing, to stay here or do they have to get transferred.

Several participants noted that a significant contributing factor to the shortage of maternity nurses in rural communities is the lack of training student nurses receive in maternity during their education and their subsequent inability or unwillingness to work in these practice areas.

Intensive care units

Additionally, participants noted that even when the local team has the personnel and technical skills to manage a patients' surgical or obstetrical conditions, they may consider transfer because of the absence of an Intensive Care Unit (ICU), which might be required for the patients' postoperative management. As one participant stated:

> It's not necessarily our capabilities [that is the limiting factor], it's often what we can do for the patient after they've had this surgery. And if we don't have a stepdown unit or an ICU for patients to go to or reasonably good monitoring with good nursing staff, that will often determine whether or not we can do cases here that are more complicated.

Geography and transportation

Finally, transport availability in rural communities was a frequently discussed non-clinical issue that had an impact on participants' decisions to treat a patient locally, particularly in emergency situations. Specifically, long emergency transport wait times to the regional hospital and inclement weather were expressed as key considerations. Providing an example of the impact of winter weather on their decision making, one participant said:

> I can think of one non-obstetric case. Winter time. Snow storm. BMI – I don't know [...] at least 400 pounds. He's got an abscess deep in his gluteal cleft [...] on the edge of sepsis. So, I talked to my surgeon, I talked to my nurse, I talked to an FRCP anaesthetist somewhere else, saying "What can I do?" [...] And I came with advice from the specialist [and] I ended up doing it under a low dose spinal procedure. [It] went remarkably well. Patient discharged. We're not putting the ambulance at risk, or him at risk on the snowy highways in the winter time.

5 | DISCUSSION

The findings from this study illustrate that there is a convergence of influencing factors when providers consider whether or not to keep a patient locally in a rural surgical site for a procedure or for delivery. These

factors are contextually specific to a particular site and include: the availability of local resources (ICU capacity, availability and training of nursing staff), clinical factors (medical complexity, type of procedure/anaesthetic required), patient factors (social factors, patient wishes) and individual care provider factors (such as ability, skill and experience). Contextually specific factors also include the level of consensus between local (GPAs and GPESSs) and regional specialist providers, which in turn determines which procedural and obstetrical cases will be kept locally.

Documentation of the process of rural case selection demonstrates rigorous triage between rural and referral hospitals and can help to formalise discussions that are already happening between providers and allow for feedback to improve rural triage and case selection processes to ensure the highest quality patient outcomes. In turn, the documentation of rural health care providers' decision-making processes has important implications for local clinicians, regional specialists, patients and policy-makers.

Our findings are consistent with studies that found reasons for patient transfers including the protocolisation of care (where there is a documented step-by-step protocol to follow for specific conditions, e.g. stroke), clinical factors (e.g. comorbidities, type of procedure), lack of local resource availability and limited capacity of the referring hospital to deal with the medical condition or its complications.[8–15] Similar to this study, others have found that patients were primarily designated for transfer because the referring hospital did not have the capacity to either treat the patient's medical condition and the patient's clinical complexity or the complications that might arise from treatment.[8–10,16–20] As in our study, existing studies show that lack of capacity was attributed to staffing shortages (surgeons, surgical assistants and medical specialists), facility resources (lack of beds, operative theatre availability, supplies) and/or the physicians' scope of practice, comfort and technical ability.[9–11,14,15]

Previous studies have also found that referral decisions are determined by a complex interaction of both clinical and nonclinical factors, with the most important being patient factors.[20–25] In this study, participants considered both clinical and non-clinical factors, but in contrast to the existing literature, a single factor was not identified as being most important. Non-medical factors identified as influencing referral decision making were patient factors (such as their opinion, preference and socioeconomic status), general practitioner and consultant factors (e.g. GP's ability and comfort, relationship with colleagues and specialists) and other influences (e.g. style of practice, geographical location).[20,22,24,26–28]

In this study, we found that rural FPESS and GPAs are regularly seeking advice and support from regional specialists, particularly when there is concern over patient suitability for local care. Our results highlight that the decision to treat a patient locally is not done by a sole practitioner but by the entire treating team and when required, based on the advice of the regional specialists. For patients and family members, our findings show that patient preferences and social factors influence a clinician's decision-making process, within the overall context of patient safety and quality care. This has been documented in existing literature which shows the importance care providers place on considering patient preferences and social circumstances when deciding whether to refer a patient for regional care.[15,20–22,24–26,29,30] In our study communities, clinicians considered patients' requests for local care, despite existing risk factors, if they felt patients understood the limitations of the local facility and the additional risks they were incurring. However, all participants in this study clearly stated that if the risk is deemed too high or the procedure is not within their scope of practice, clinicians will refuse to treat a patient locally despite patient wishes.

Findings from this study suggests that moves to create standardised triage guidelines for rural surgical sites is impractical and would negate the importance of contextual considerations. Recognising the limitations of generalised policies and protocols, decision makers and regional administrators should take the lead from local community hospitals in developing their own local surgical and obstetrical case selection guidelines, recognising they are dynamic and must respond to a changing environment.

5.1 | Limitations

As a qualitative study, potential limitations include interviewer and coder bias. To minimise interview bias, an interviewer with extensive experience in qualitative research used an interview guide to ensure commonality across participants. Coder bias was minimised by having two coders participate in all phases of the research and coming to consensus on individually developed codebooks in order to prioritise codes and themes. Thematic saturation of concepts was reached with our study sample of 18 participants, despite not being able to interview providers in all RSON communities, due to study restrictions imposed by the COVID-19 pandemic. Of the 18 interviews included in the data set, five were incorporated from previous RSON site visits, in which a different interview guide was used. These transcripts were included in the study due to inclusion of local case selection as a discussion topic and appropriate fit with the codebook; however, since the interview guide was not focused on rural surgical and obstetrical case selection, the amount

of content of the interview included in NVivo analysis is minimal compared to the focused interviews.

6 | CONCLUSIONS

Documenting rural surgical and obstetrical local case selection is essential in demonstrating rural surgical quality as it provides insight into the rigour of case selection to ensure the highest quality outcomes. Participants in this study expressed thematic influences on their triage process, indicating a common-sense approach to ensuring "right patient, right place, right time." However, there was also consensus that rural surgical triage decisions must be made with a high degree of situational awareness, taking care provider factors, availability of local resources and weather-related transport concerns into account. This led to consensus among participants in this study that such decisions must be locally grounded and although informed by guidelines, not directly in response to them. Accounts of regional referral specialists being involved in shared decision making, demonstrates respect for local knowledge.

AUTHOR CONTRIBUTIONS

AMR: data curation; formal analysis; investigation; validation; writing – original draft; writing – review and editing. JK: conceptualization; funding acquisition; investigation; methodology; project administration; resources; supervision.

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CONFLICT OF INTEREST

None to declare.

ETHICAL APPROVAL

The research project was granted approval through the University of British Columbia's Behavioural Research Ethics Board (BREB). Prior to data collection, verbal and written consent was obtained from all interview participants. Transcripts were de-identified, assigned a random name, and password encrypted to ensure participant anonymity and confidentiality.

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APPENDIX A

Interview Guide

Evaluation of Rural Surgical and Obstetrical Networks (RSON) in BC Semi-Structured Focus Group Guide For FPESS

Note: As this is a semi-structured guide, not all questions listed below will be asked during a particular focus group. Questions, including specific probes, will only be asked during a focus group if they are relevant to participants and the topics that are being discussed.

Surgery in the local community

Domain 1: Considerations for patient transfer

1. Can you talk about your experiences of referring patients or triaging patients as a GP surgeon?
2. Can you tell me the story of the last patient with a surgical problem [for whom you considered transfer to a different facility].
   a. How did you decide to [transfer or not transfer] the patient?
   b. What did you think would happen to the patient?
   c. What happened to the patient?
   d. What was the patient and/or family's response to this?
3. What factors affect your decision making when deciding whether to refer patients or keep them as a rural surgical patient?
   a. Clinical factors
   b. Non-Clinical factors, such as:
      (i) Psychological factors
      (ii) Financial factors
      (iii) Likelihood of patient to go to referral centre
      (iv) Social factors (economic)
      (v) Cultural factors
   c. Rank them in order of importance
4. Are there any clinical guidelines you follow when making your decisions? If so, explain.
   a. Context dependent
   b. National Guidelines, Hospital Guidelines, etc.
   c. Personal experience
5. Describe your decision-making process using a non-identifiable example.

Doman 2: Institutional concerns with patient transfer

6. Have you had any experiences of not wanting to do a procedure locally, but having a patient and/or family decline transfer leading to the procedure occurring

locally despite the patient's care needs exceeding the capabilities of the facility? Describe.

a. What were your concerns?
b. Did you express your concerns to patients? What did you say?
c. How did the rest of the operative team feel about looking after that patient?
d. Did you feel supported by your regional referral colleagues?
e. What measures did you take to ensure the patient would receive the best care possible?

Domain 3: Surgery in local community – Consent

7. How do you consent a patient to have surgery in a low resource community?
   a. What does this look like? Provide a non-identifiable example.