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Rural family physician perspectives on communication with urban specialists: A qualitative study

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Title

Rural family physician perspectives on communication with urban specialists: A qualitative study

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ABSTRACT

Objective: Communication is a key competency for medical education and comprehensive patient care. In rural environments, communication between rural family physicians and urban specialists is an essential pathway for clinical decision making. The aim of this study was to explore rural physicians' perspectives on communication with urban specialists during consultations and referrals.

Setting: This study was conducted in rural hospitals in the province of Newfoundland and Labrador, Canada.

Participants: This qualitative study involved semi-structured, one-on-one interviews with rural family physicians (n=11) with varied career stages, geographic regions, and rural community sizes.

Results: Four themes specific to communication in rural practice were identified. The themes included: (1) understanding the contexts of rural care; (2) geographic isolation and patient transfer; and (3) respectful discourse; and (4) overcoming communication challenges in referrals and consultations.

Conclusions: Communication between rural family physicians and urban specialists is a critical task in providing care for rural patients. Rural physicians see value in conveying unique aspects of the rural clinical practice during communication with urban specialists, including context and the complexities of patient transfers.

STRENGTHS AND LIMITATIONS

1. Communication between rural family physicians and urban specialists is a cornerstone of comprehensive care for patients in rural communities.

2. Understanding the resource constraints in rural health systems is necessary for making decisions during consultations and referrals to specialty care.

3. The logistics and complexities of patient transfers from rural to urban settings are key considerations during communication with urban specialists.

4. Rural adaptations to standardized consultation processes and increased access to and integration of telemedicine may help enhance communication between rural and urban physicians.

5. The sample did not include urban specialists or urban family physicians.

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INTRODUCTION

Communication is a key competency for medical education and practice,[1 2] and a foundation of comprehensive patient care. The effectiveness of communication across practice settings and between healthcare providers also plays an important role in the quality and safety of care and on outcomes. In rural environments, clinical consultations and referrals between rural family physicians and urban specialists are essential pathways for sharing information and determining clinical management. Information exchange between rural and urban health systems provides a critical connection for patients transitioning between contexts that are often vastly different.

In Canada, universality and accessibility are core principles of healthcare.[3] Yet, there are significant differences in access and outcomes between rural and urban populations.[4-6] People living in rural communities have higher rates of morbidity and mortality related to chronic disease and injuries compared to urban populations.[5 6] Although Canada is an increasingly urbanized country, 28.3% of the population lives outside of a metropolitan area, and 6 million Canadians live in rural and remote areas.[7] While patients often have access to primary care in rural communities, those who require specialized services that are not provided in their area need input from, and possibly transfer to, tertiary centres in cities, where the majority of specialized care is provided.[8]

Research on communication in healthcare has examined the dynamics and impact of communication on quality, safety, and outcomes in clinical care. This includes studies about communication between different medical specialties, between physicians and allied health professions, and between physicians and patients.[9 10] Communication problems that arise during transitions in patient care from physician to physician and changes in patient location are recognized as high-risk flashpoints for medical error and patient harm.[11-17] Interventions that improve the effectiveness of communication between physicians, such as structured consultation models, have been shown to decrease adverse events and improve patient safety.[18]

The literature on healthcare communication has focused on urban, often tertiary care settings.[9 19] There is comparatively limited evidence about communication experiences across diverse geographic contexts that are part of the same regional health system. Previous studies of rural and urban communication indicated physicians in both settings perceived barriers to effective communication.[20 21] Barriers included time constraints, power differentials, lack of trust, a lack of knowledge about rural contexts, and a lack of information about patients.[20 21] Providing equitable and timely access to care for rural patients requires that systems overcome communication challenges.

The objectives of the present study were to examine rural primary care physicians (PCPs) experiences with communication with urban specialists and to identify the dimensions of the consultation and referral process that are unique to rural practice. To do so, we sought to answer the following questions from the perspectives of rural PCPs: (1) what are the communication experiences of rural PCPs during consultations and referrals to urban specialists? (2) what aspects of rural medicine impact the communication between rural family physicians and urban specialists? and (3) what changes could be made to the consultation and referral process that would improve communication and care for rural patients?

METHODS

We conducted an qualitative study with rural primary care physicians to understand their experiences related to clinical communication with urban specialists in tertiary care settings. The

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project was approved by the provincial research ethics board (#20180082). The results of this study are reported in accordance with the Consolidated Criteria For Reporting Qualitative Research (COREQ; Supplement 1).[22]

Setting

This study was conducted in the province of Newfoundland and Labrador, Canada. The province has a small population (521,542 in 2019) distributed across two geographically separate areas with a combined landmass (370,514 squared kilometers) that is larger than Ireland and the United Kingdom combined. The population density is low (1.4 people per km^2) and aged (20% aged 65 years or older). Healthcare is provincially-funded and delivered through four regional health authorities. Tertiary care is only available in the capital city (St. John's). In rural and remote areas, family physicians have a broad scope of practice that includes primary care, emergency medicine, low-risk obstetrics, palliative care, hospitalist care, and surgical assist. Select specialty services are provided in regional hospitals.

Medical travel by car or plane is common for patients in rural communities, especially those that require access to tertiary care and subspecialty services. Over 60% of the population lives more than an hour by road from a tertiary care centre, and 40% reside more than 4 hours away.[23] For patients from the most remote communities, especially those along the north coast of Labrador, travel to access an urban specialist requires two flights.

Participants

The sample frame for the study included all rural primary care physicians in Newfoundland and Labrador. A practice setting was considered rural if it was outside of the metro area of the capital city. Primary care physicians included all physicians who were licensed to practice family medicine by the medical licensure authority. In 2019, there were 629 licensed practicing family physicians working in an estimated 431 full-time equivalent positions in the province;[24] 56% of these physicians (n=354) practiced in a rural area and were potentially eligible to participate in the study.

We used a purposive sampling approach[25] to include participants from varied career stages (early, mid, late), genders, and health regions. Potential participants were identified through team member professional networks related to clinical care and medical education. The principal investigator emailed n=16 eligible participants and invited them to take part in the study. Eleven rural primary care physicians agreed to participate and provided written informed consent. Participants were not remunerated. Recruitment ended after thematic saturation was reached.

The sample included participants from three out of the four health regions: Labrador-Grenfell (n=6), Western (n=1), and Eastern (n=4). Participants were varied in their gender, years in practice, community and catchment area populations, and setting (Table 1). Four participants were under a fee-for-service billing model; seven were salaried by the respective health authorities. All participants worked in communities that were accessible by road; seven participants also served boat-in/fly-in only communities in their region, some of which were Indigenous communities. Of the five individuals who declined, two did so due to scheduling conflicts, and three did not respond to invitations. Three of five individuals who declined were from the Eastern Health region.

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Table 1: Participant characteristics

Participant	Gender	Years in practice	Scope of practice	Community size	Hospital catchment area population	Acute beds
1	M	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
2	F	6 – 15	FM & EM	5,000 – 10,000	< 20,000	20 – 49
3	M	16 – 20	FM & EM	< 5,000	> 40,000	≥50
4	F	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
5	M	0 – 5	FM & EM	< 5,000	< 20,000	<20
6	F	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
7	M	16 – 20	EM	5,000 – 10,000	20,000 - 40,000	20 – 49
8	M	6 – 15	FM & EM	5,000 – 10,000	< 20,000	20 – 49
9	F	16 – 20	FM & EM	5,000 – 10,000	< 20,000	20 – 49
10	M	6 – 15	FM & EM	< 5,000	> 40,000	≥50
11	F	> 20	FM & EM	5,000 – 10,000	20,000 - 40,000	20 – 49
Declined	F	6 – 15	FM & EM	< 5,000	> 40,000	≥50
Declined	M	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
Declined	F	16 – 20	FM & EM	< 5,000	< 20,000	<20
Declined	M	6 – 15	FM & EM	< 5,000	< 5,000	20 – 49
Declined	M	0 – 5	FM & EM	< 5,000	< 5,000	20 – 49

Notes: F=Female, M=Male; FM=Family Medicine; EM=Emergency Medicine.

Data Collection

We conducted semi-structured interviews with participants either in person at a location of their choice or via telephone between April 2018 and March 2019. In-person interviews occurred at hospitals and clinics, in homes, and at a conference. The interviews were conducted by one of two team members; respectively, they had postgraduate training and experience in rural primary care and emergency medicine, and graduate training in health services research and social work.

The interview questions were adapted based on findings from a previous study on communication between rural and urban physicians[20] and factors that impact communication between primary care physicians and specialists.[26 27] The questions aimed to: explore participant experiences related to clinical communication with urban specialists, identify features of the consultation and referral process that were unique to rural practice, and elicit strategies used by rural physicians to improve communication. All interviews were audio-recorded and transcribed verbatim by a professional transcriptionist. Interview duration ranged from 30 to 90 minutes.

Data Analysis

We used thematic analysis[28] to examine the data. Coding involved both inductive and deductive techniques.[29] The coding framework was informed by a previous study,[20] and a conceptual framework for understanding rural health.[30] New codes were generated through iterative review of the recordings and transcripts. Two team members listened to the audio recordings immediately after the interviews, read the transcripts, and wrote notes to become familiar with the data.[28 29 31] Two other team members reviewed a subsample of the transcripts prior to the development of a final coding framework. Themes were revised and refined through a comparison of interpretive memos and discussion about the relationships between categories. Discrepancies were inspected to ensure the validity of the analysis by consulting specific instances in the transcripts, discussing their relationship to themes, and reaching consensus.

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Public and Patient Involvement
Members of the public and patients were not involved in the design or conduct of this study.

FINDINGS

We identified four themes: (1) understanding the contexts of rural care; (2) geographic isolation and patient transfer; and (3) respectful discourse; and (4) overcoming communication challenges (Figure 1).

(Insert figure 1 here)

Understanding the contexts of rural care

Participants emphasized the necessity of understanding rural contexts as an integral part of communication between rural primary care physicians and urban consultants. They explained that dimensions of place in urban primary care practices differ from those in rural and remote settings in terms of local resources and organization, and social context and overlapping relationships.

Rural resource availability
Participants explained that there are varying levels of scarcity in rural health systems and that it is important to describe these specific limitations during communication with urban consultants. The resources that exist in rural locations tend to be "thinner" than those in cities. A participant explained that rural health systems need "some way of better informing specialists about what resources we have and resources we don't have" in rural communities.

Participants indicated that being knowledgeable about rural contexts, such as the availability of specialized diagnostics and resource constraints, is critical for understanding the logistics and limits of patient care, especially in emergency scenarios (Table 2).

Resource availability in rural settings can also shift over a short time in substantial ways, which in turn has consequences for patient care. Several participants noted that in their community's hospital, there is only one staff person available for diagnostic imaging. Calling in the laboratory technician several nights in a row for an emergency scan would disrupt the entire service in subsequent days (Table 2).

Several participants reported that their hospitals have unpredictable gaps in internist and surgical specialty service, and there is no inherent system redundancy. The result is that the comprehensiveness of care is immediately decreased, and the gap in service access increases the need for patient transfers. Participants consistently stated that these resource constraints are difficult to explain to urban colleagues over the phone.

Patient and family relationships
Rural providers expressed that they incorporated not only the patient's wishes but also the patient's family experience into the consultation process. Participants commented about involving family members in decision making about transfers (Table 2). They explained that specialists may not always appreciate the impact of transfer on rural patients, but that it is important to provide this perspective and choices to families during discussions about clinical management.

Geographic isolation and patient transfers

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The second theme relates to communication about patient transfers between rural sites and tertiary care centres. Participants indicated that the logistics and complexities of patient transfer are key considerations during consultations and referrals. Participants noted that the catchment

Table 2: Themes and Illustrative quotes from participants

THEME	ILLUSTRATIVE QUOTE
Understanding the contexts of rural care	
Rural resource availability	"I think it would give [consultants] a bit more appreciation when I say there's nothing we can do or when I say we can't keep an intubated patient [at our hospital] that we really can't and I'm not saying it to be difficult I'm just saying the reasons why it's not feasible."
	"There's only one (technician) in town, you know, and she's not on 24/7, and no one is paying her for that."
Patient and family relationships	"working in a rural center you know you can have honest conversations with people you know their family, you know where they live, and you can help them make decisions in their care that maximum the benefit to them without necessarily delving into extra testing"
	"in the rural context where you tend to know people a bit more, you see them outside of the hospital and you can tell when things are right and when they're not."
Geographic isolation and patient transfers	
Transfer logistics and safety	"Some (consultants) don't understand the environment that we're in here…so I've had experiences like calling a cardiologist from a [remote] community and them saying like well why is that patient there and I'm saying well because they live here, and them saying well why can't you send them on a medevac to us tonight, and [me saying] because the runway doesn't have lights and we can't fly at night and just having this nonsense back and forth."
	"My answer back (to urban consultants) is do you think at 12:30-1:00 am on a stormy winter night that it is reasonable to put someone on the road…you had to decide well at what point in time is it worth the life and limb of our paramedics to transfer someone given the weather conditions?"
Social costs of medical travel	"If someone were to say 'Well, your choices for your mother are to be intubated and sent to St. John's at the ICU in the Health Sciences Centre, or you know we can keep your mom comfortable and she can stay in [her home community's hospital] knowing that we can't do x, y, or z.' I think patients are more comfortable knowing the extent of travel involved and sort of disruption to the family life and social life and support networks."
Respectful discourse	
Rural expertise and experience	"I think they (consultants) appreciate that we do our very best with what we've got (in our community) and that we really call them because we're stuck…they're very reassuring, and there's always that very open channel of communication."
	"the consultants that were the easiest to call and communicate with were the ones that had been in general practice before they went back to specialize."
	"[F]rom a family doctor side of things…we're the patient's advocate. So if we're calling (a specialist) it's for [the patient] and it's kind of our job to get the most out of this conversation as possible. So sometimes that means some moments of discomfort and feeling like you're asking too many questions or being too persistent. But this is so we can take good care of people and if you keep that in your mind you it can help you overcome some pretty uncomfortable phone calls."
	"[Some specialists] maybe perceive us (rural family physicians) to be no different than an urban nine-to-five office GP, without a great appreciation for again how much we are able to do with what little we have, and that when we say something is beyond us, that it really is."
System Access Challenges	"You know we're all in this crappy system together, and I can't accept your patient sorry, but this is what you should do. We're in a crappy broken system that's too expensive."
	"If you start the conversation by saying that you want advice, not that you're looking to transfer the patient, leaving it open-ended, then [consultants] are very open and in that mindset. Whereas I think if you don't say that upfront then they're kind of waiting for the ball to drop. You know? Just like, 'when are they are going to ask me to take this patient off their hands?'"
	"I'll just let (consultants) vent…I've had (specialists) go on and on and on about their lives and all the things that they're doing and all the patients that they have and then they don't really ask me about all the patients that I have in my life, but I know that at the end of that venting I will eventually hear whether or not this patient is accepted in transfer and how I should manage them in the interim which is why I'm calling."

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areas for their local clinics and hospitals serve smaller outlying communities, some of which are inaccessible by road. They noted that the long distance between communities, regional centres, and tertiary care is a major obstacle, especially for emergency care.

Transfer logistics and safety

The potential need for multiple transfers (community to regional rural hospital to urban tertiary care) adds a layer of complexity to each consultation (Table 2). Participants noted that they consider factors such as the risk of patient's condition deteriorating during long wait and transfer times between sites in addition to transfer logistics that are impacted by weather and infrastructure. Participants noted that transport risks and issues need to be part of the conversation during decision making with consultants, but that these factors are not always readily understood. They also described the cognitive burden that patient transfers add to the consultation process.

Social costs of medical travel

Participants explained that they also weigh the financial and social impacts of transport on patients and families when considering a transfer. Participants noted that travel costs for support persons or return travel for patients can be high and not always covered by government funding programs. They also indicated that for the most remote communities, it could take two days or more of flying to return home from a tertiary care stay in the provincial capital. The added duration of time away can impact employment, family care, and access to social supports, and need to be considered in consults.

Respectful discourse

All participants talked about discursive features of their consultations with urban specialists. Participants indicated that their experiences interacting with urban colleagues were generally "positive" and that the consultations conveyed a sense of "mutual respect" between physicians. Participants identified two dimensions to mutual respect in consultations: (1) a respectful demeanour; and (2) respect for clinical knowledge. They suggested that the presence of these qualities during consultations tended to differ across subspecialties. Colleagues who were described as having a "lovely" and "pleasant" demeanour with "no condescending talk" were regarded by participants as being more helpful and engaged. By contrast, consultants who appeared "difficult" in their demeanour tended to be described as needing to "vent," talk about their time constraints, and being reluctant to accept referrals.

Rural expertise and experience

The aspect of communication that was consistently identified by rural PCPs as creating a positive consultation experience were expressions of respect for clinical expertise. Several participants noted that they only requested consultations when they were "stuck" and want to acknowledge that the consultant is only being asked about patients who "represent a tiny percentage of the patients that are being seen by the rural doc." The more "positive" consultants were respectful of the clinical encounter that had taken place (Table 2).

Participants consistently indicated that rural physicians improved their ability to have efficient and effective consultations with experience. They attributed this to having more confidence in their care, learning to be more direct and clear about what they were asking for in consultations and referrals, and having built professional relationships with specialists over time. Participants noted that specialists who had done visiting clinics or locums in their rural community or who worked as family physicians were "easier" to communicate with during consultations (Table 2).

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Participants also commented on their role as advocates for patients, and that centering this purpose during their conversations can help with communication. Overall, participants explained that communication that demonstrated respect for rural physicians' scope of practice and clinical knowledge promoted collegiality and helped to foster a shared commitment to high-quality patient care.

System access challenges

One of the common sources of negative interactions in consultation processes was attributed to system accessibility issues (Table 2). Participants reported that when the needs of either the referring or accepting physician could not be met, there was more likely to be conflict. This was often related to areas of access blockage in the system, such as pressures for beds. Participants emphasized the importance of seeking advice rather than immediately requesting that patients be transferred to promote collaboration. They also recognized that the increasing clinical demands of work contributed to an adversarial tone in the consultations.

Overcoming challenges in consultations and referrals

Although participants described several challenges related to their experiences communicating with urban consultants, rural PCPs also identified individual and system-level strategies to improve the quality, collegiality, and efficiency of communication with urban colleagues.

Rural adaptations

At the individual level, many participants reflected on their process for consultation and made modifications. They described adapting consultation models from literature such as SBAR (Situation, Background, Assessment, Recommendation)[32] to fit rural practice by explaining possible transfer times and resource limitations. Several participants also talked about using a uniform structure in their consultation (Table 2).

At the systems-level, participants shared concerns that specialists are often not remunerated with medical billing fee codes for consultations, and that specialists may not have dedicated time to cover consultations from rural colleagues (Table 2). Participants recommended that health systems establish mechanisms for protecting urban specialists' time to be involved in consultations.

Enhanced role for telemedicine

One of the common changes proposed by participants was for the improved use of telemedicine. Participants noted that most consultations occur over the phone with no direct patient visuals. They indicated that rural physicians want increased access to communication technologies that can securely share access to photos and video from diagnostic testing and live patient encounters. There was consensus among participants that scaling up telehealth services would improve the effectiveness of consultations and collaborative decision making.

Several participants suggested that differentiating consultations according to urgency could help specialists prioritize and expedite a response to a consultation request. Participants noted that urgent consultations happen by phone, but non-urgent consultations are paper-based and are often delayed in getting to the consultant. There was also a concern that telephone consultations are not recorded except via rural physicians' notes. Participants suggested that a robust platform that allows asynchronous and non-phone based consultation would help overcome gaps related to simple management questions, leaving phone calls for urgent consults.

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DISCUSSION

Communication between rural primary care physicians and urban consultants is a critical dimension in rural patient care. This study identified challenges and facilitators unique to communication between rural family physicians and specialist colleagues in urban tertiary care. Specifically, we reported on themes related to the contexts of rural medicine, the complexity of geography, and the need for respect for clinical knowledge.

Rural health system resources

Rural physicians identified that it was important to include and convey rural context issues in the consultation process. Health services and programs in rural locales are often varied and dependent on local innovation and actors.[30] Resource variability and scarcity were key elements in rural locations that directly impact patient care. Compared with urban locations, rural areas are more likely to adopt a primary health approach.[33] While this approach is suited to rural settings, there are patients who require specialized management.

When resource scarcity is an issue, rural practitioners often have to balance individual patient needs with the broader service requirements of their community. These unique layers of resource limitations are less likely present in urban hospitals. In rural environments, resource "thinness" becomes an issue of health equity. Balancing these interests during a consultation process is important for rural providers, but is not always understood by urban physicians. This may explain why rural providers found consultants who had spent time in rural environments or general practice were perceived as easier to communicate with.

Community relationships in rural medicine

Health in a rural community is sociologically and culturally different from metropolitan areas, as well as internally diverse.[34] While urban practitioners can often maintain a separation between social and professional interactions, rural physicians must balance overlapping roles and social networks in their community.[35]

Rural practitioners often have local knowledge of not only the patient and their history but also how it relates to the history of the family and the community. This knowledge informs the consultation process, although it is not always evident to or communicated with specialists. Communication tools may be implicitly urban-centric and may not account for the depth of knowledge that influences a practitioner with a long history of the community.

Geography

Geography is a major challenge for healthcare delivery in rural places and a key element in the understanding of rural health.[30] When a patient requires transport to a larger center there are many factors that influence the transportation process.[36] Patient transport issues were a unique theme in the rural to urban consultation process. Rural physicians not only weighed the physiologic risks of travel, but also the hidden costs of removing patients from their community of support, as well as a financial burden to the patient. Patients in rural communities often have to make trade-offs between accessing specialty services and incurring out-of-pocket expenses.[37] Rural physicians talk to their patients more about the economic burdens of care more than their urban counterparts.[38] Participants explained that this consideration was often directly discussed in the consultation process and consistently influenced the thought process of rural physicians.

Previous work on consultation processes did not identify patient transport as an important issue, likely because consultation happened in one geographic location, such as transfer from the

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emergency department to ICU or from a clinic within the same city.[39-41] The realities of transport influence not only the patients' and practitioners' decisions but are not formally recognized in any structured teaching about consultation.[18 41 42]

Power relations and the rural-urban divide

Discourse features of the consultation process included structure, tone, and professionalism issues. Demonstrating respect for clinical skills was one of the main predictors of a successful consultation from the perspective of the rural generalists. While mutual respect should be a baseline feature of communication, two hierarchies within medicine often interact to disrupt this goal. The first hierarchy elevates specialists over generalists and has been identified as a key component of the hidden curriculum in medical schools.[43] The second hierarchy is the rural-urban divide. One of the common frames when discussing rural health is a "deficit" model.[44] This underscores the limitations and lack in a rural health system instead of highlighting the capacity for local care and innovation.[35] Both of these hierarchical currents have the potential to sway the consultation discourse.

Participants in our study explained that the tone and professionalism of the consultation encounter were negatively influenced by systematic pressures such as bed availability and access to resources. Access is an ongoing problem in rural health.[45] Both rural and urban specialists have multiple clinical responsibilities competing for their time, and telephone consultation is not included in fee codes in many jurisdictions. In previous studies, specialists have noted a reluctance to take on the increased workload and medico-legal risk for a process for which they are neither supported for reimbursement nor protected technology.[40] In addition, there is often limited explicit guidance for which service should take over patient care, especially in rural to urban connections.[46] As capacity stresses are universal, delineating explicit duties of care can be a source of conflict during consultations.

Rural-specific approaches to care

Although there are substantial challenges for rural clinical care and health systems, rural-focused research needs to move beyond describing problems to identifying and testing solutions.[44] In Canada, physician groups have highlighted the need to develop and apply rural-specific evidence and interventions.[46 47]

Technology and the appropriate use of telemedicine programs have the potential to improve the consultation process.[48] Physicians, educators, and policymakers should have an awareness of the geographical, economic, and staffing capacity of rural environments prior to instituting any telemedicine program.[49] Rural physicians view telemedicine as an enhancement to the current consultation process.

There is a need for inter-professional communication skills in clinical training and continuing education.[13] This study identifies several features of the consultation process that are unique to rural/urban communication. A future direction would be the development of a structured communication tool specific to the rural context.

Limitations

Our study had several limitations. The first was that it was limited to the province of Newfoundland and Labrador. Some of the issues faced by rural physicians in this context will likely be universal, although specific features may vary across provincial and territorial health systems in Canada, and for rural contexts globally. Although participants in this study described

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common challenges in communication, the focus was on the perspectives of those in rural practice. We did not include urban family physicians or specialists. It is possible that some of the aspects of communication with specialists are similar for family physicians in cities. Conversely, perspectives from urban specialists may also provide added depth. Despite this limitation, this study is one of the few to examine the perspectives of rural physicians on communication with urban specialists.

Conclusions

The need to provide patient care in rural areas is a significant part of health service delivery in Canada. Communication between rural primary care providers and urban specialists is vital for patient safety and care. This study examined the experiences of rural practitioners and identified features that were unique in the rural-to-urban consultation process. Conveying the rural context, understanding the challenges related to patient transfers, respecting rural expertise, and identifying opportunities for enhanced use of telehealth may all serve to improve the quality and effectiveness of communication between rural and urban settings.

FUNDING

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ETHICS APPROVAL

The study was received ethics approval from Memorial University's Interdisciplinary Committee on Ethics in Human Research (#20180082).

DATA SHARING

No additional data available

AUTHOR CONTRIBUTIONS

MW, TR, AD, and NP designed the study; TR and AD obtained research ethics approval; MW and NP collected the data; MW, TR, NP, and AJD analyzed the data; all authors interpreted the results, drafted and revised the manuscript, and read and approved the final version.

COMPETING INTERESTS

None declared.

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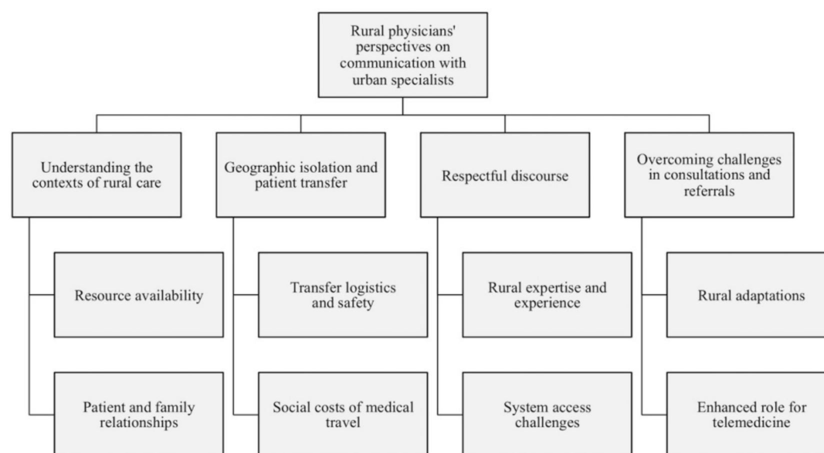

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Supplement 1: COREQ 32-Item Checklist

Rural family physician perspectives on communication with urban specialists: An qualitative study.

No. Item	Guide questions/description	Description or reported on page #
Domain 1: Research team and reflexivity		
1. Interviewer/facilitator	Which author/s conducted the interview?	The first and third authors collected the data and led the analysis.
2. Credentials	What were the researcher's credentials?	MD or PhD for all team members
3. Occupation	What was their occupation at the time of the study?	Team members include clinician-scientists, faculty, post-doctoral fellow, and a research assistant.
4. Gender	Was the researcher male or female?	2 women, 3 men
5. Experience and training	What experience or training did the researcher have?	Two team members with clinical training in family and emergency medicine and health services research; Three team members with doctoral training in health research. (Page 5)
6. Relationship with participants established	Was a relationship established prior to study commencement?	Yes (page 4)
7. Participant knowledge of the interviewer	What did the participants know about the researcher?	All participants knew the lead researcher through clinical/professional practice
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator?	Professional experience and training (page 5)
Domain 2: Study design		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study?	Exploratory qualitative study with thematic analysis
10. Sampling	How were participants selected?	Page 4-5
11. Method of approach	How were participants approached?	Email (page 4-5)
12. Sample size	How many participants were in the study?	11 participants (page 4-5)
13. Non-participation	How many people refused to participate or dropped out? Reasons?	5 declined (page 4-5)
14. Setting of data collection	Where was the data collected?	Various settings (page 5)
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample?	Page 4-5
17. Interview guide	Were questions, prompts, guides provided by the authors?	Research questions stated on page 3
18. Repeat interviews	Were repeat interviews carried out?	No

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19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Audio recorded interviews
20. Field notes	Were field notes made during and/or after the interview?	No
21. Duration	What was the duration of the interviews	30-90 min (page 5)
22. Data saturation	Was data saturation discussed?	Page 4
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: analysis and findings		
24. Number of data coders	How many data coders coded the data?	2 coded, 2 verified/resolved disagreements
25. Description of the coding tree	Did authors provide a description of the coding tree?	Figure 1 (page 6)
26. Derivation of themes	Were themes identified in advance or derived from the data?	Inductive and deductive coding (page 5)
27. Software	What software, if applicable, was used to manage the data?	None
28. Participant checking	Did participants provide feedback on the findings?	No
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified?	Yes. Table 2
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes. Pages 6-9.
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Subthemes reported on pages 6-9

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Rural family physician perspectives on communication with urban specialists: A qualitative study

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Primary Subject Heading:	General practice / Family practice
Secondary Subject Heading:	Communication, Health services research, Qualitative research
Keywords:	PRIMARY CARE, QUALITATIVE RESEARCH, ACCIDENT & EMERGENCY MEDICINE, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, TRAUMA MANAGEMENT

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Title

Rural family physician perspectives on communication with urban specialists: A qualitative study

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Communication; rural health; primary care; General Practioner; health services; emergency medicine; patient transfer.

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ABSTRACT

Objective: Communication is a key competency for medical education and comprehensive patient care. In rural environments, communication between rural family physicians and urban specialists is an essential pathway for clinical decision making. The aim of this study was to explore rural physicians' perspectives on communication with urban specialists during consultations and referrals.

Setting: Newfoundland and Labrador, Canada.

Participants: This qualitative study involved semi-structured, one-on-one interviews with rural family physicians (n=11) with varied career stages, geographic regions, and community sizes.

Results: Four themes specific to communication in rural practice were identified. The themes included: (1) understanding the contexts of rural care; (2) geographic isolation and patient transfer; and (3) respectful discourse; and (4) overcoming communication challenges in referrals and consultations.

Conclusions: Communication between rural family physicians and urban specialists is a critical task in providing care for rural patients. Rural physicians see value in conveying unique aspects of rural clinical practice during communication with urban specialists, including context and the complexities of patient transfers.

STRENGTHS AND LIMITATIONS

1. Communication between rural family physicians and urban specialists is a cornerstone of comprehensive care for patients in rural communities.

2. Understanding the resource constraints in rural health systems is necessary for making patient-centered decisions during consultations and referrals to specialty care.

3. The logistics and complexities of patient transfers from rural to urban settings are key considerations during communication with urban specialists.

4. Rural adaptations to standardized consultation processes and increased access and integration of telemedicine may help enhance communication between rural and urban physicians.

5. The sample did not include urban specialists or urban family physicians.

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INTRODUCTION

Communication is a key competency for medical education and practice,[1,2] and a foundation of comprehensive patient care. The effectiveness of communication across practice settings and between healthcare providers also plays an important role in the quality and safety of care and on outcomes. In rural environments, clinical consultations and referrals between rural family physicians and urban specialists are essential pathways for sharing information and determining clinical management. Information exchange between rural and urban health systems provides a critical connection for patients transitioning between contexts that are often vastly different.

In Canada, universality and accessibility are core principles of healthcare.[3] Yet, there are significant differences in access and outcomes between rural and urban populations.[4-6] People living in rural communities have higher rates of morbidity and mortality related to chronic disease and injuries compared to urban populations.[5,6] Although Canada is an increasingly urbanized country, 28.3% of the population lives outside of a metropolitan area, and 6 million Canadians live in rural and remote areas.[7] While patients often have access to primary care in rural communities, those who require specialized services that are not provided in their area need input from, and possibly transfer to, tertiary centres in cities, where the majority of specialized care is provided.[8]

Research on communication in healthcare has examined the dynamics and impact of communication on quality, safety, and outcomes in clinical care. This includes studies about communication between different medical specialties, between physicians and allied health professions, and between physicians and patients.[9,10] Communication problems that arise during transitions in patient care from physician to physician and changes in patient location are recognized as high-risk flashpoints for medical error and patient harm.[11-17] Interventions that improve the effectiveness of communication between physicians, such as structured consultation models, have been shown to decrease adverse events and improve patient safety.[18]

The literature on healthcare communication has focused on urban, often tertiary care settings.[9,19] There is comparatively limited evidence about communication experiences across diverse geographic contexts that are part of the same regional health system. Previous studies of rural and urban communication indicated physicians in both settings perceived barriers to effective communication.[20,21] Barriers included time constraints, power differentials, lack of trust, a lack of knowledge about rural contexts, and a lack of information about patients.[20,21] Providing equitable and timely access to care for rural patients requires that systems overcome communication challenges.

The objectives of the present study were to examine rural family physician experiences with communication with urban specialists and to identify the dimensions of the consultation and referral process that are unique to rural practice. To do so, we sought to answer the following questions: (1) what are the communication experiences of rural family physicians during consultations and referrals to urban specialists? (2) what aspects of rural medicine impact the communication between rural family physicians and urban specialists? and (3) what changes could be made to the consultation and referral process that would improve communication and care for rural patients?

METHODS

We conducted a qualitative study with rural family physicians to understand their experiences related to clinical communication with urban specialists in tertiary care settings. The project was

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approved by the provincial research ethics board (#20180082). The results of this study are reported in accordance with the Consolidated Criteria For Reporting Qualitative Research (COREQ; Supplement 1).[22]

Setting

This study was conducted in the province of Newfoundland and Labrador, Canada. The province has a small population (521,542 in 2019) distributed across two geographically separate areas with a combined landmass (370,514 km^2) that is larger than Ireland and the United Kingdom combined. The population density is low (1.4 people per km^2) and aged (20% aged 65 years or older). Healthcare is provincially-funded and delivered through four regional health authorities. Tertiary care is available only in the capital city, St. John's, which is located in the eastern-most region of the province. In rural and remote areas, family physicians have a broad scope of practice that includes primary care, emergency medicine, low-risk obstetrics, palliative care, hospitalist care, and surgical assist. Select specialty services are provided in regional hospitals.

Medical travel by car or plane is common for patients in rural communities, especially those that require access to tertiary care and subspecialty services. Over 60% of the population lives more than an hour by road from a tertiary care centre, and 40% reside more than 4 hours away.[23] For patients from the most remote communities, especially those along the north coast of Labrador, travel to access an urban specialist can require two flights with a distance of up to 1,200 km by air. The trip often takes at least 8 hours of travel time, and return flights cost at minimum $1,800 CAD (~£1,000) or more.

Participants

The sample frame for the study included all rural family physicians in Newfoundland and Labrador. A practice setting was considered rural if it was outside of the metro area of the capital city. Family physicians included all physicians who were licensed to practice family medicine by the medical licensure authority. In 2019, there were 629 licensed practicing family physicians working in an estimated 431 full-time equivalent positions in the province;[24] 56% of these physicians (n=354) practiced in a rural area and were potentially eligible to participate in the study.

We used a purposive sampling approach[25] to include participants from varied career stages (early, mid, late), genders, and health regions. Potential participants were identified through team member professional networks related to clinical care and medical education. The principal investigator emailed n=16 eligible participants and invited them to take part in the study. Eleven rural family physicians agreed to participate and provided written informed consent. Participants were not remunerated. Recruitment ended after thematic saturation was reached.

The sample included participants from three out of the four health regions: Labrador-Grenfell (n=6), Western (n=1), and Eastern (n=4). Participants were varied in their gender, years in practice, community and catchment area populations, and setting (Table 1). Four participants were under a fee-for-service billing model; seven were salaried by the respective health authorities. All participants worked in communities that were accessible by road; seven participants also served boat-in/fly-in only communities in their region, some of which were Indigenous communities. Of the five individuals who declined, two did so due to scheduling conflicts, and three did not respond to invitations. Three of five individuals who declined were from the Eastern Health region.

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Table 1: Participant characteristics

Participant	Gender	Years in practice	Scope of practice	Community size	Hospital catchment area population	Acute beds
1	M	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
2	F	6 – 15	FM & EM	5,000 – 10,000	< 20,000	20 – 49
3	M	16 – 20	FM & EM	< 5,000	> 40,000	≥50
4	F	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
5	M	0 – 5	FM & EM	< 5,000	< 20,000	<20
6	F	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
7	M	16 – 20	EM	5,000 – 10,000	20,000 - 40,000	20 – 49
8	M	6 – 15	FM & EM	5,000 – 10,000	< 20,000	20 – 49
9	F	16 – 20	FM & EM	5,000 – 10,000	< 20,000	20 – 49
10	M	6 – 15	FM & EM	< 5,000	> 40,000	≥50
11	F	> 20	FM & EM	5,000 – 10,000	20,000 - 40,000	20 – 49
Declined	F	6 – 15	FM & EM	< 5,000	> 40,000	≥50
Declined	M	0 – 5	FM & EM	5,000 – 10,000	< 20,000	20 – 49
Declined	F	16 – 20	FM & EM	< 5,000	< 20,000	<20
Declined	M	6 – 15	FM & EM	< 5,000	< 5,000	20 – 49
Declined	M	0 – 5	FM & EM	< 5,000	< 5,000	20 – 49

Notes: F=Female, M=Male; FM=Family Medicine; EM=Emergency Medicine.

Data Collection

We conducted semi-structured interviews with participants either in person at a location of their choice or via telephone between April 2018 and March 2019. In-person interviews occurred at hospitals and clinics, in homes, and at a conference. The interviews were conducted by one of two team members; respectively, they had postgraduate training and experience in rural family and emergency medicine, and graduate training in health services research and social work.

The interview questions (Supplement 2) were adapted based on findings from a previous study on communication between rural and urban physicians[20] and factors that impact communication between primary care physicians and specialists.[26 27] The questions aimed to explore participant experiences related to clinical communication with urban specialists, identify features of the consultation and referral process that were unique to rural practice, and elicit strategies used by rural physicians to improve communication. All interviews were audio-recorded and transcribed verbatim by a professional transcriptionist. Interview duration ranged from 30 to 90 minutes.

Data Analysis

We used thematic analysis[28] to examine the data. Coding involved both inductive and deductive techniques.[29] The coding framework was informed by a previous study,[20] and a conceptual framework for understanding rural health.[30] New codes were generated through an iterative review of the recordings and transcripts. Two team members listened to the audio recordings immediately after the interviews, read the transcripts, and wrote notes to become familiar with the data.[28 29 31] Two other team members reviewed a subsample of the transcripts prior to the development of a final coding framework. Themes were revised and refined through a comparison of interpretive memos and discussion about the relationships between categories.

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Discrepancies were inspected to ensure the validity of the analysis by consulting specific instances in the transcripts, discussing their relationship to themes, and reaching consensus.

Public and Patient Involvement

Members of the public and patients were not involved in the design or conduct of this study.

FINDINGS

We identified four themes: (1) understanding the contexts of rural care; (2) geographic isolation and patient transfer; and (3) respectful discourse; and (4) overcoming communication challenges (Figure 1).

(Insert figure 1 here)

Understanding the contexts of rural care

Participants emphasized the need to understand rural contexts as an integral part of communication between rural family physicians and urban consultants. They explained that dimensions of place in urban practices differ from those in rural and remote settings in terms of local resources and the availability of services, and the overlapping and interconnected nature of relationships.

Rural resource availability

Participants explained that there are varying levels of scarcity in rural health systems and that it is important to describe these specific limitations during communication with urban consultants. The resources that exist in rural locations tend to be "thinner" than those in cities. A participant explained that rural health systems need "some way of better informing specialists about what resources we have and resources we don't have" in rural communities.

Participants indicated that being knowledgeable about rural contexts, such as the availability of specialized diagnostics and resource constraints, is critical for understanding the logistics and limits of patient care, especially in emergency scenarios (Table 2).

Resource availability in rural settings can also shift over a short time in substantial ways, which in turn has consequences for patient care. Several participants noted that in their community's hospital, there is only one staff person available for diagnostic imaging. Calling in the laboratory technician several nights in a row for an emergency scan would disrupt the entire service in subsequent days (Table 2).

Several participants reported that their hospitals have unpredictable gaps in internist and surgical specialty service, and there is no inherent system redundancy. The result is that the comprehensiveness of care is immediately decreased, and the gap in service access increases the need for patient transfers. Participants consistently stated that these resource constraints are difficult to explain to urban colleagues over the phone.

Relational complexity in rural contexts

Participants explained that their clinical decisions are often informed by knowledge about patients and the community that comes from experiences outside of healthcare settings. Rural physicians often have multiple roles in a community, beyond being a care provider. Through non-clinical roles, they gain insight into community history and culture, while also developing social relationships with patients and their families.

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Participants indicated that they often know a lot about a patient's social circumstances and family history because they have provided care to other family members, and interact outside of clinical settings. This adds complex dimensions to relationships between patients and providers in terms of social boundaries and professional ethics, but also provides unique insight into patient needs, which may be distinct from urban care. Participants shared that it is often challenging to convey to urban consultants how knowledge about patients from community settings comes to bear on clinical assessment and management (Table 2). Rural providers expressed that they incorporated not only the patient's wishes but also the patient's family experience into the consultation process.

Geographic isolation and patient transfers

The second theme relates to communication about patient transfers between rural sites and tertiary care centres. Participants indicated that the logistics and complexities of patient transfer are key considerations during consultations and referrals. Participants noted that the catchment

Table 2: Themes and Illustrative quotes from participants

THEME	ILLUSTRATIVE QUOTE
Understanding the contexts of rural care	
Rural resource availability	"I think it would give [consultants] a bit more appreciation when I say there's nothing we can do or when I say we can't keep an intubated patient [at our hospital] that we really can't and I'm not saying it to be difficult I'm just saying the reasons why it's not feasible."
	"There's only one (technician) in town, you know, and she's not on 24/7, and no one is paying her for that."
Relational complexity	"working in a rural center you know you can have honest conversations with people you know their family, you know where they live, and you can help them make decisions in their care that maximum the benefit to them without necessarily delving into extra testing"
	"in the rural context where you tend to know people a bit more, you see them outside of the hospital and you can tell when things are right and when they're not."
Geographic isolation and patient transfers	
Transfer logistics and safety	"Some (consultants) don't understand the environment that we're in here…so I've had experiences like calling a cardiologist from a [remote] community and them saying like well why is that patient there and I'm saying well because they live here, and them saying well why can't you send them on a medevac to us tonight, and [me saying] because the runway doesn't have lights and we can't fly at night and just having this nonsense back and forth."
	"My answer back (to urban consultants) is do you think at 12:30-1:00 am on a stormy winter night that it is reasonable to put someone on the road…you had to decide well at what point in time is it worth the life and limb of our paramedics to transfer someone given the weather conditions?"
Social costs of medical travel	"If someone were to say 'Well, your choices for your mother are to be intubated and sent to St. John's at the ICU in the Health Sciences Centre, or you know we can keep your mom comfortable and she can stay in [her home community's hospital] knowing that we can't do x, y, or z.' I think patients are more comfortable knowing the extent of travel involved and sort of disruption to the family life and social life and support networks."
Respectful discourse	
Rural expertise and experience	"I think they (consultants) appreciate that we do our very best with what we've got (in our community) and that we really call them because we're stuck…they're very reassuring, and there's always that very open channel of communication."
	"the consultants that were the easiest to call and communicate with were the ones that had been in general practice before they went back to specialize."
	"[F]rom a family doctor side of things…we're the patient's advocate. So if we're calling (a specialist) it's for [the patient] and it's kind of our job to get the most out of this conversation as possible. So sometimes that means some moments of discomfort and feeling like you're asking too many questions or being too persistent. But this is so we can take good care of people and if you keep that in your mind you it can help you overcome some pretty uncomfortable phone calls."

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	"[Some specialists] maybe perceive us (rural family physicians) to be no different than an urban nine-to-five office GP, without a great appreciation for again how much we are able to do with what little we have, and that when we say something is beyond us, that it really is."
System Access Challenges	"You know we're all in this crappy system together, and I can't accept your patient sorry, but this is what you should do. We're in a crappy broken system that's too expensive."
	"I'll just let (consultants) vent…I've had (specialists) go on and on and on about their lives and all the things that they're doing and all the patients that they have and then they don't really ask me about all the patients that I have in my life, but I know that at the end of that venting I will eventually hear whether or not this patient is accepted in transfer and how I should manage them in the interim which is why I'm calling."
Overcoming challenges in consultations and referrals	
Rural adaptations	"My approach is to try to use a standardized way of opening the conversation with everybody and then just know that some people are going to be more antagonistic than others."
	"If you start the conversation by saying that you want advice, not that you're looking to transfer the patient, leaving it open ended, then [consultants] are very open and in that mindset, whereas I think if you don't say that upfront then they're kind of waiting for the ball to drop. You know? Just like, 'when are they are going to ask me to take this patient off their hands?'"

areas for their local clinics and hospitals serve smaller outlying communities, some of which are inaccessible by road. They noted that the long distance between communities, regional centres, and tertiary care is a major obstacle, especially for emergency care.

Transfer logistics and safety
The potential need for multiple transfers (community to regional rural hospital to urban tertiary care) adds a layer of complexity to each consultation (Table 2). Participants noted that they consider factors such as the risk of patient's condition deteriorating during long wait and transfer times between sites, in addition to transfer logistics that are impacted by weather and infrastructure. Participants noted that transport risks and issues need to be part of the conversation during decision making with consultants, but that these factors are not always readily understood. They also described the cognitive burden that patient transfers add to the consultation process.

Social costs of medical travel
Participants explained that they also weigh the financial and social impacts of transport on patients and families when considering a transfer. Participants noted that travel costs for support persons or return travel for patients can be high and not always covered by government funding programs. They also indicated that for the most remote communities, it could take two days or more of flying to return home from a tertiary care stay in the provincial capital. Decisions to transfer a patient may also be accompanied by less tangible risks that create a sense of dislocation and isolation from the community. The added time away from home can impact employment, family care, and access to social supports. Participants explained that urban specialists may not always be aware of the impact of transfer on patients. Participants recommended that for this reason, patients and families need to have an informed role in transfer decision making to help provide this perspective, where possible (Table 2).

Respectful discourse
All participants talked about discursive features of their consultations with urban specialists. Participants indicated that their experiences interacting with urban colleagues were generally "positive" and that the consultations conveyed a sense of "mutual respect" between physicians. Participants identified two dimensions to mutual respect in consultations: (1) a respectful demeanour; and (2) respect for clinical knowledge. They suggested that the presence of these

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qualities during consultations tended to differ across subspecialties. Colleagues who were described as having a "lovely" and "pleasant" demeanour with "no condescending talk" were regarded by participants as being more helpful and engaged. By contrast, consultants who appeared "difficult" in their demeanour tended to be described as needing to "vent," talk about their time constraints, and being reluctant to accept referrals.

Rural expertise and experience

Rural family physicians explained that expressions of respect for their clinical expertise from urban colleagues helps to create a positive consultation experience and helps to facilitate open communication. Several participants noted that they requested consultations only when they were "stuck." The more "positive" consultants were respectful of the clinical encounter that had taken place (Table 2).

Participants consistently noted that, with experience, rural physicians improved their ability to have efficient and effective consultations. They attributed this to having more confidence in their care, learning to be more candid and clear about what they were asking for in consultations and referrals, and having built professional relationships with specialists over time. Participants noted that specialists who had done visiting clinics or locums in their rural community or who worked as family physicians were "easier" to communicate with during consultations (Table 2). Participants also commented on their role as advocates for patients, and that centering this purpose during their conversations can help with communication. Overall, participants explained that communication that demonstrated respect for rural physicians' scope of practice and clinical knowledge promoted collegiality and helped to foster a shared commitment to high-quality patient care.

System access challenges

One of the common sources of negative interactions in consultation processes was attributed to system accessibility issues (Table 2). Participants reported that when the needs of either the referring or accepting physician could not be met, there was more likely to be conflict. This was often related to areas of access blockage in the system, such as pressures for beds. Participants emphasized the importance of seeking advice, rather than immediately asking that patients be transferred, to promote collaboration. They also recognized that the increasing clinical demands of work contributed to an adversarial tone in the consultations.

Overcoming challenges in consultations and referrals

Although participants described several challenges related to their experiences communicating with urban consultants, rural family physicians also identified individual and system-level strategies to improve the quality, collegiality, and efficiency of communication with urban colleagues.

Rural adaptations

At the individual level, many participants reflected on their process for consultation and made modifications. They described adapting consultation models from literature such as SBAR (Situation, Background, Assessment, Recommendation)[32] to fit rural practice by explaining possible transfer times and resource limitations. Several participants also talked about using a uniform structure in their consultation (Table 2).

At the systems-level, participants shared concerns that specialists are often not remunerated with medical billing fee codes for consultations, and that specialists may not have dedicated time to

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cover consultations from rural colleagues (Table 2). Participants recommended that health systems establish mechanisms for protecting urban specialists' time to be involved in consultations.

Enhanced role for telemedicine

One of the common changes proposed by participants was for the improved use of telemedicine. Participants noted that most consultations occur over the phone with no direct patient visuals. They indicated that rural physicians want increased access to communication technologies that can securely share access to photos and video from diagnostic testing and live patient encounters. There was consensus among participants that scaling up "video conferencing abilities…where we're looking at (colleagues) eye to eye and we have a chance to have a consultant in front of a patient if we wanted to" would improve the effectiveness of consultations and collaborative decision-making.

Several participants suggested that differentiating consultations according to urgency could help specialists prioritize and expedite a response to a consultation request. Participants noted that urgent consultations happen by phone, but non-urgent consultations are paper-based and are often delayed in getting to the consultant. There was also a concern that telephone consultations are not recorded except via rural physicians' notes. Participants suggested that a robust platform that allows asynchronous and non-phone based consultation would help overcome gaps related to simple management questions, leaving phone calls for urgent consults.

DISCUSSION

Communication between rural family physicians and urban consultants is a critical dimension in rural patient care. This study identified challenges and facilitators unique to communication between rural family physicians and specialists in urban tertiary care. Specifically, we reported on themes related to the contexts of rural medicine, the complexity of geography, and the need for respect for clinical knowledge.

Rural health system resources

Rural physicians identified that it was important to include and convey rural context issues in the consultation process. Health services and programs in rural locales are often varied and dependent on local innovation and actors.[30] Resource variability and scarcity were key elements in rural locations that directly impact patient care. Compared with urban locations, rural areas are more likely to adopt a primary health approach.[33] While this approach is suited to rural settings, there are patients who require specialized management.

When resource scarcity is an issue, rural practitioners often balance individual patient needs with the broader service requirements of their community.[34] These unique layers of resource limitations are less likely present in urban hospitals. In rural environments, resource "thinness" becomes an issue of health equity. Weighing these interests during a consultation process is important for rural providers, but is not always understood by urban physicians. This may explain why rural providers found it easier to communicate with consultants who had spent time in rural environments or general practice.

Community relationships in rural medicine

Health in a rural community is sociologically and culturally different from cities, as well as internally diverse.[35] While urban practitioners can often maintain a separation between social and professional interactions, rural physicians must balance overlapping roles and social

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networks in their community.[36] However, this relational complexity may also have an important role in clinical care because it provides rural physicians with place-based knowledge about patients, and an appreciation of clinical presentations situated in a particular family and community context.[34] For example, rural clinicians consider not only clinical indications for patient transfers to urban tertiary care, which might also be mediated by context, but to also pay attention to factors such as the impact of leaving home and social supports on a patient's experience and outcomes.

Rural physicians in our study explained that this awareness can be difficult to convey to an urban specialist over the phone, particularly in an emergency situation. Similarly, participants found it hard to describe precisely how such knowledge influences clinical decision making, in part because it falls outside of standardized communication strategies. This sort of relational knowledge between rural physicians and patient families, and with communities, may be a way that power is shared in rural care.[37]

Geography

Geography is a major challenge for healthcare delivery in rural places and a key element in understanding of rural health.[30] When a patient requires transport to a larger center there are many factors that influence the transportation process.[38 39] Patient transport issues were a unique theme in the rural to urban consultation process. Rural physicians not only weighed the physiologic risks of travel, but also the hidden costs of removing patients from their community of support, as well as a financial burden to the patient. Patients in rural communities often make trade-offs between accessing urban specialty services and incurring out-of-pocket expenses.[40 41] Rural physicians talk to their patients more about the economic burdens of care more than their urban counterparts.[42] Participants explained that this consideration was often directly discussed in the consultation process and consistently influenced the thought process of rural physicians.

Previous work on consultation processes did not identify patient transport as an important issue, likely because consultation happened in one geographic location, such as transfer from the emergency department to ICU or from a clinic within the same city.[43-45] The realities of transport influence not only the patients' and practitioners' decisions but are not formally recognized in any structured teaching about consultation.[18 45 46]

Power relations and the rural-urban divide

Discourse features of the consultation process included structure, tone, and professionalism issues. Demonstrating respect for clinical skills was one of the main predictors of a successful consultation from the perspective of the rural physicians in our study. While mutual respect should be a baseline feature of communication, two hierarchies within medicine often interact to disrupt this goal. The first hierarchy elevates specialists over generalists, and has been identified as a key component of the hidden curriculum in medical schools.[47] The second hierarchy is the rural-urban divide. One of the common frames when discussing rural health is a "deficit" model.[48] This underscores the limitations and lack of resources in a rural health system instead of highlighting the capacity for local care and innovation.[36] Both of these hierarchical currents have the potential to sway the consultation discourse.

Participants in our study explained that the tone and professionalism of the consultation encounter were negatively influenced by systematic pressures such as bed availability and access to resources. Access is an ongoing problem in rural health.[49] Both rural family physicians and urban specialists have multiple clinical responsibilities competing for their time, and

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telephone consultation is not included in billing fee codes in many jurisdictions. In previous studies, specialists have noted a reluctance to take on the increased workload and medico-legal risk for a process for which they are neither supported with reimbursement nor technology.[44] In addition, there is often limited guidance for which service should take over patient care, especially in rural to urban connections.[50] By not funding specialist support of rural colleagues, this support is inherently undervalued. As capacity stresses are universal, explicitly delineating duties of care can be a source of conflict during consultations.

Rural-specific approaches to care

Although there are substantial challenges for rural clinical care and health systems, rural-focused research needs to move beyond describing problems to identifying and testing solutions.[48] In Canada, physician groups have highlighted the need to develop and apply rural-specific evidence and interventions.[50 51]

Technology and the appropriate use of telemedicine programs have the potential to improve the consultation process.[52] Physicians, educators, and policymakers should have an awareness of the geographical, economic, and staffing capacity of rural environments prior to instituting any telemedicine program.[53] Rural physicians in our study viewed telemedicine as tool to enhance to the consultation process.

There is also a need for inter-professional communication skills in clinical training and continuing education.[13] This study identifies several features of the consultation process that are unique to rural/urban communication. A future direction for research would be the development of a structured communication tool specific to the rural context.

Limitations

Our study had several limitations. The first was that it was limited to the province of Newfoundland and Labrador. Some of the issues faced by rural physicians in this context will likely be shared by physicians elsewhere, although specific features may vary across provincial and territorial health systems in Canada, and for rural contexts globally. While participants in this study described common challenges in communication, the focus was on the perspectives of those in rural practice. We did not include urban family physicians or specialists. It is possible that some of the aspects of communication with specialists are similar for family physicians in cities. Conversely, perspectives from urban specialists may also provide added depth. Despite this limitation, this study is one of the few to examine the perspectives of rural physicians on communication with urban specialists.

A factor that may have impacted participant recruitment was that the lead (MW) and senior (TR) authors were both practicing urban physicians who had previous roles as rural practitioners in Newfoundland and Labrador and elsewhere. Since the community of physicians in the province is relatively small, both authors had pre-existing professional relationships with all participants. In one respect, this may have helped facilitate recruitment because research team members had already established trust with many of the potential participants through professional networks or collegial interactions; this may have made rural family physicians more likely to agree to take part in the study. Relatedly, these relationships may have also supported participants to be candid in their comments during the interviews. A possible unintended consequence of the relatively small medical community in the province is that rural physicians who were less familiar with research team members may have chosen not to participate. The absence of relationships between the research team members and physicians in one of the health regions

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(Central Health) may have contributed to the lack of success in recruitment from this area. Overall, this sort of relational complexity in the research process parallels the experiences described by participants in their clinical contexts. Rural physicians have multiple and overlapping roles in both geographically-bound communities and in professional communities. This reality is especially pronounced in relatively small health systems.

Conclusions

The need to provide patient care in rural areas is a significant part of health service delivery in Canada. Communication between rural family physicians and urban specialists is vital for patient safety and care. This study examined the communication experiences of rural family physicians and identified features that were unique in the rural-to-urban consultation process. Conveying the rural context, understanding the challenges related to patient transfers, respecting rural expertise, and identifying opportunities for enhanced use of telehealth may all serve to improve the quality and effectiveness of communication between rural and urban settings.

FUNDING

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ETHICS APPROVAL

The study was received ethics approval from Memorial University's Interdisciplinary Committee on Ethics in Human Research (#20180082).

DATA SHARING

No data are available. The authors do not have permission to share record-level data from participants.

AUTHOR CONTRIBUTIONS

MW, TR, AD, and NP designed the study; TR and AD obtained research ethics approval; MW and NP collected the data; MW, TR, NP, and AJD analyzed the data; all authors interpreted the results, drafted and revised the manuscript, and read and approved the final version.

COMPETING INTERESTS

None declared.

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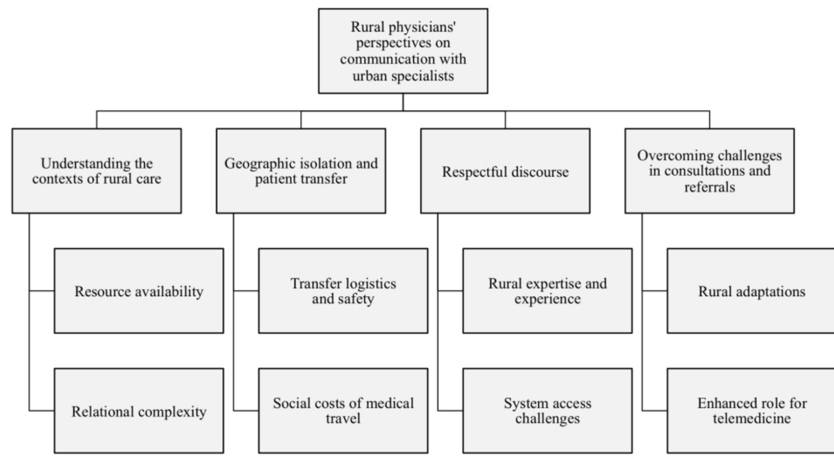

Figure 1

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Supplement 1: COREQ 32-Item Checklist

Rural family physician perspectives on communication with urban specialists: An qualitative study.

No. Item	Guide questions/description	Description or reported on page #
Domain 1: Research team and reflexivity		
1. Interviewer/facilitator	Which author/s conducted the interview?	The first and third authors collected the data and led the analysis.
2. Credentials	What were the researcher's credentials?	MD or PhD for all team members
3. Occupation	What was their occupation at the time of the study?	Team members include clinician-scientists, faculty, post-doctoral fellow, and a research assistant.
4. Gender	Was the researcher male or female?	2 women, 3 men
5. Experience and training	What experience or training did the researcher have?	Two team members with clinical training in family and emergency medicine and health services research; Three team members with doctoral training in health research. (Page 5)
6. Relationship with participants established	Was a relationship established prior to study commencement?	Yes (page 4, 12, 13)
7. Participant knowledge of the interviewer	What did the participants know about the researcher?	All participants knew the lead researcher through clinical/professional practice
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator?	Professional experience and training (page 5)
Domain 2: Study design		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study?	Exploratory qualitative study with thematic analysis
10. Sampling	How were participants selected?	Page 4-5
11. Method of approach	How were participants approached?	Email (page 4-5)
12. Sample size	How many participants were in the study?	11 participants (page 4-5)
13. Non-participation	How many people refused to participate or dropped out? Reasons?	5 declined (page 4-5)
14. Setting of data collection	Where was the data collected?	Various settings (page 5)
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No
16. Description of sample	What are the important characteristics of the sample?	Page 4-5
17. Interview guide	Were questions, prompts, guides provided by the authors?	Research questions stated on page 3 and Supplement 2
18. Repeat interviews	Were repeat interviews carried out?	No

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19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Audio recorded interviews
20. Field notes	Were field notes made during and/or after the interview?	No
21. Duration	What was the duration of the interviews	30-90 min (page 5)
22. Data saturation	Was data saturation discussed?	Page 4
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: analysis and findings		
24. Number of data coders	How many data coders coded the data?	2 coded, 2 verified/resolved disagreements
25. Description of the coding tree	Did authors provide a description of the coding tree?	Figure 1 (page 6)
26. Derivation of themes	Were themes identified in advance or derived from the data?	Inductive and deductive coding (page 5)
27. Software	What software, if applicable, was used to manage the data?	None
28. Participant checking	Did participants provide feedback on the findings?	No
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified?	Yes. Table 2
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes. Pages 6-10.
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Subthemes reported on pages 6-10.

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Supplement 2: Interview Question Guide

1. What is the role of consultation with urban specialists in rural medicine?

2. As a rural physician, what is it like to communicate urban specialists?

   i. Prompts:
      - Facilitating factors
      - Barriers

3. What aspects of rural medicine impact communication between rural family physicians and urban specialists?

   i. Prompts:
      - Relationships
      - Experience
      - Method/technology

4. What do you think consultants want or need to know during a consultation/referral?

5. What information do you like to provide to consultants about rural patients and rural health care?

6. What changes could be made to the consultation and referral process that would improve communication and care for rural patients?

   i. Prompts:
      - Technology
      - Financial
      - Training/Education

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