



Access, Relationships, Quality and Safety (ARQS): a qualitative study to cocreate an Indigenous patient experience tool for virtual primary care

Pamela Roach,^{1,2} Paige Campbell,¹ Meagan Ody ,¹ Melissa Scott ,¹ Cheryl Barnabe,³ Stephanie Montesanti,⁴ Andrea Kennedy,⁵ Adam Murry,⁶ Esther Tailfeathers,⁷ Lynden Crowshoe¹

To cite: Roach P, Campbell P, Ody M, *et al.* Access, Relationships, Quality and Safety (ARQS): a qualitative study to cocreate an Indigenous patient experience tool for virtual primary care. *BMJ Open Quality* 2023;**12**:e002365. doi:10.1136/bmjog-2023-002365

Received 3 April 2023

Accepted 15 November 2023



© Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹Family Medicine, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

²Community Health Sciences, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

³Medicine, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada

⁴School of Public Health, University of Alberta, Edmonton, Alberta, Canada

⁵Mount Royal University, Calgary, Alberta, Canada

⁶Psychology, University of Calgary, Calgary, Alberta, Canada

⁷Alberta Health Services, Calgary, Alberta, Canada

Correspondence to

Dr Pamela Roach;
pamela.roach@ucalgary.ca

ABSTRACT

Background Perspectives from Indigenous peoples and their primary care providers about the quality and impacts of virtual primary care for Indigenous patients are currently limited. This study engaged Indigenous patients and their primary care providers, resulting in four domains being established for an Indigenous patient experience tool for use in virtual primary care. In this paper, we explore the development and finalisation of the Access, Relationships, Quality and Safety (ARQS) tool.

Methods We re-engaged five Indigenous patient participants who had been involved in the semistructured interviews that established the ARQS tool domains. Through cognitive interviews, we tested the tool statements, leading to modifications. To finalise the tool statements, an Indigenous advisory group was consulted.

Results The ARQS tool statements were revised and finalised with twelve statements that reflect the experiences and perspectives of Indigenous patients.

Discussion The ARQS tool statements assess the four domains that reflect high-quality virtual care for Indigenous patients. By centring Indigenous peoples and their lived experience with primary care at every stage in the tool's development, it captures Indigenous-centred understandings of high-quality virtual primary care and has validity for use in virtual primary care settings.

Conclusion The ARQS tool offers a promising way for Indigenous patients to provide feedback and for clinics to measure the quality and safety of virtual primary care practice on the provider and/or clinic level. This is important, as such feedback may help to promote improvements in virtual primary care delivery for Indigenous patients and more widely, may help advance Indigenous health equity.

BACKGROUND

Colonialism, racism and discrimination have impacted the health of Indigenous peoples by producing social, political and economic disparities, widening the existing health inequities between Indigenous and non-Indigenous peoples.^{1–4} Historical trauma⁵ continues to impact Indigenous peoples, considering Canada's colonial history of

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ The ARQS tool was developed through qualitative research with Indigenous patients, healthcare providers that work with Indigenous patients and an Indigenous advisory group. We identified and defined the four main domains for high-quality Indigenous virtual primary care, which are access, relationships, quality and safety.

WHAT THIS STUDY ADDS

⇒ This study builds on the four domains that were identified for high-quality Indigenous virtual care and focuses on the cocreated development of the ARQS tool statements, which meaningfully capture Indigenous-centred understandings of quality virtual primary care.

⇒ Through cognitive interviews and advisory group input, we developed and finalized the ARQS tool statements, which reflect and assess the four domains.

⇒ The ARQS tool has validity for use in virtual primary care settings, where it can gauge and support improvements in the quality of care for Indigenous patients.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The ARQS tool can be implemented to collect data on the patient/provider level and/or the clinic level to improve the quality of care for Indigenous patients. The tool has the potential for practice improvement in virtual primary care settings.

assimilative policies and practices such as residential schools and the Sixties Scoop, which have had devastating health consequences.⁴ Health systems have embedded within them colonial structures that perpetuate existing health inequities and often create a hierarchy between Indigenous and non-Indigenous knowledges and practices, altogether dismissing or minimising the importance of Indigenous peoples' perspectives and healing practices.⁶ These issues are not



new, as underfunding, violations of individual integrity and autonomy, the failure to address Indigenous people's needs and low standards of care have plagued Canada's health services provision for Indigenous peoples.⁷ Significant barriers exist for Indigenous people in accessing healthcare, which include Indigenous-specific racism, stereotyping, discrimination, communication issues, lack of healthcare options, feelings of isolation, lack of privacy, mistrust of the system, not being involved in decision-making and concerns about policies.^{8–10} To address the health inequalities of Indigenous peoples, it is critical that Indigenous perspectives and healing practices be integrated⁷ within primary healthcare and primary care, including in virtual care settings.

Generally, primary healthcare, as per the comprehensive World Health Organization (WHO) definition within the 1978 Declaration of Alma-Ata, is proposed to be the cornerstone of healthcare,¹¹ and a pathway by which Indigenous health equity can be advanced.¹² The Declaration of Alma-Ata put forth that all people have a right to health and that communities should be engaged to participate in the planning, organisation, operation and control of primary healthcare, prioritising self-reliance and self-determination.^{11 13} First Nations, Métis and Inuit peoples have expanded the concept to include culture, language, balance, life control, education, material resources, social resources and environmental connection, otherwise understood as social determinants of health.^{14 15} Primary care, generally recognised as distinctive from primary healthcare both internationally and in the Canadian context, refers to the more specific concept of 'family doctor-type' services that are provided to individuals to address basic, everyday health needs. These services have shifted towards virtual care modalities and in recent years, that shift has been accelerated by the COVID-19 pandemic.

Globally, virtual care is being invested in for health promotion, facilitating self-management and improving access to care. Virtual care, as defined by the Women's College Hospital Institute for Health Systems Solutions and Virtual Care is described as 'any interaction between patients and/or members of their circle of care, occurring remotely, using any forms of communication or information technologies, with the aim of facilitating or maximizing the quality and effectiveness of patient care.'¹⁶ While the provision of health-related services and information using telecommunications-based technologies is one model of care that has received federal investment as a means to address some of the challenges related to accessing primary care for Indigenous peoples,^{17 18} the rapid transition from in-person to remote-based approaches when COVID-19 emerged drew attention to how patients could continue to access and experience care virtually.^{19 20} Barriers to receiving healthcare, and primary care in particular, were exacerbated by COVID-19. A 2021 study showed that across Canada, virtual 'walk-in' clinics have increased nationwide, but that concerns about equitable access and continuity of care remain.²¹

This highlights the importance of reliable virtual primary care for both Indigenous and non-Indigenous patients, particularly in cases where there are pre-existing health inequities, exacerbating geographical and/or systemic barriers to accessing primary care that were present prior to COVID-19. The COVID-19 pandemic has offered a unique opportunity, in that it has tested pre-existing virtual care models and has demonstrated the growing need of virtual care as both a complementary and alternative means of delivering healthcare.²² Furthermore, we suggest that the COVID-19 pandemic highlighted the opportunity to build on the successes of virtual primary care,²¹ support of the expansion of virtual primary care, and most importantly, to address the specific needs of Indigenous peoples in virtual primary care settings.

For Indigenous peoples who live in rural, remote, northern and geographically isolated communities, there are often staffing issues, long wait lists and limited access to physicians and other primary care providers, such as mental health specialists, dieticians, pharmacists and registered nurses, including nurse practitioners.²³ Remote communities often rely on a fly-in, non-resident medical staff²⁴ unless virtual options are in place. The importance and effectiveness of virtual care have been demonstrated in rural and remote communities, particularly for Indigenous peoples.²⁴ Virtual care is not without its barriers and challenges, especially for patients who experience specific barriers to accessing healthcare and can include technical problems and service issues in rural and remote communities.²⁵ Video appointments require that both patients and providers have the required technological equipment, feel comfortable navigating technology, and have the required bandwidth for use of video.²⁶ Overall, it is suggested that high-quality virtual primary care may aid in increasing accessibility, continuity of care, cost-effectiveness, equity and increased user satisfaction, which are important components in the provision of high-quality primary care.²⁷ Perspectives from Indigenous peoples and their primary care providers about the quality and impact of virtual primary care are currently limited. This paucity of information on virtual primary care impacts the understanding of how virtual primary care may increase healthcare access and quality, as well as help to advance health equity for Indigenous peoples. The provision of patient-centred care is most effective when multicomponent interventions that aim to address individual and organisational change are used,²⁰ with an Indigenous patient experience tool having the potential to support the enhancement of culturally safe and quality care at the provider and/or clinic level. By using patient feedback measures and a patient experience tool rather than a basic satisfaction survey, the quality of patient care can be more effectively gauged^{17 27} and implemented to improve the quality of virtual primary care for Indigenous patients.²⁸

This research aims to understand how high-quality virtual and/or remote-based primary care with Indigenous patients can be monitored and measured with an

Indigenous patient experience tool to facilitate continuous improvement in the care of Indigenous patients in virtual primary care practices.²⁸ Previously, using the principles of patient-oriented research grounded in social justice and participatory action research, we established the domains of access, relationships, quality and safety (ARQS) as the key domains of high-quality Indigenous primary care.²⁸ This was done through 13 semistructured interviews with Indigenous patients and Indigenous virtual primary care providers between 5 August 2021 and 25 October 2021.²⁸ The research found that by shifting to virtual primary care, including through the COVID-19 pandemic, the quality of care for Indigenous patients was not compromised.²⁸ Rather, optimal care can be provided in virtual settings for some types of care and appointments, and certain barriers for Indigenous peoples can be reduced or eliminated.²⁸ In this paper, we build on this previous work and focus on the refinement of the ARQS tool²⁸ through re-engagement with Indigenous patient participants to enhance the reliability and validity of the tool, ensuring that it accurately and meaningfully reflects Indigenous patient experiences and perspectives.

METHODS

Framework

Grounded in Indigenous ethics²⁹ and guided by the principles of patient-oriented research,³⁰ this work utilizes Indigenous approaches to social justice and participatory action research.³¹ This approach aligns with the principles of ownership, control, access, and possession (OCAP)³² meaning that Indigenous participants and community members directed the work, had control over the research process, and that analysis was grounded in the lived experience of Indigenous peoples.³² OCAP is a framework for ethical engagement with Indigenous peoples that offers Indigenous-centred guidance on prioritising Indigenous peoples' in research so that Indigenous sovereignty and self-determination is prioritised.³² The research team included Indigenous and non-Indigenous scholars, researchers and medical practitioners, with extensive experience working with Indigenous communities. A non-Indigenous research assistant and an Indigenous research assistant led the interviews and the analysis. The Indigenous senior author of this paper guided the methods, with regular input from the rest of the study team and the advisory group. The initial qualitative data and analysis that led to the establishment of the four tool domains included in-depth semistructured interviews, data transcription and Framework Analysis.³³ At this stage in the research process, qualitative data were collected through use of cognitive interviewing,³⁴ data transcription and Framework Analysis to finalise the tool statements.

Participants

We re-engaged the Indigenous patients who had previously participated in semistructured interviews and who had

agreed to be contacted again at this stage of the research. We also engaged the Indigenous advisory group that was formed before the research began, which included Indigenous community members, an Indigenous Elder, and stakeholder representatives that were local Indigenous-led and non-Indigenous-led health service providers. Eligible patient participants (n=5) self-identified as Indigenous, lived in Alberta and had accessed primary care services through virtual and/or remote-based methods during the COVID-19 pandemic from March 2020–March 2022.²⁸

Recruitment

Purposive sampling was used to re-engage participants with the request to provide in-depth feedback on the tool statements through cognitive interviewing pre-tests,³⁴ which improved member checking via sustained engagement. The study's rigour was enhanced by involving participants who had previously been interviewed by the same research team members to enhance relationality³⁵ and trust. Participants were invited via email to participate in a cognitive interview.

Interview development and interviews

Interview questions and prompts were discussed among the project team before the interviews began to enhance reliability. Building on the work that was previously done to establish the tool's domains and initial statements,²⁸ between 10 January 2022 and 31 January 2022, 5 participants were interviewed using cognitive interview methods. The cognitive interviews offered participants a second opportunity to conceptualise and think critically about the tool domains and statements. Interviews were completed over the telephone and audio recorded on digital voice recorders. Cognitive interviewing is a 'talk aloud' method.³⁴ This method was used to ensure that the statements in the tool²⁸ were understood by the Indigenous patient group and that each of the statements addressed the concepts and domains that they were mapped to.^{28 34 36 37} This method focused on the participant's process of understanding each tool statement, which resulted in more accurate and valid statements³⁸ and assisted with the interpretation of results.³⁹ The question asked for each tool statement was 'describe to me how you would answer this statement,' which then facilitated a discussion about how the question was understood and if there was confusion about the meaning of the question. Where there were conflicts of opinion and/or a wide range of responses from participants about particular statements, these statements were discussed with the Indigenous advisory group for consensus building using an adapted nominal group technique.^{40 41} Data were transcribed verbatim using a secure and ethics-approved transcribing service (Rev.com) and were then anonymised and verified before analysis.

RESULTS

Participant demographics and sample size

Interviews ranged from 30 to 60 minutes in length, with an average interview length of 45.2 minutes (see [table 1](#)).

**Table 1** Cognitive interview results

Statement number	Original statement	Statement suggestion from participants	Final statement
Statements with initial agreement			
1	My virtual care provider is responsive to my needs	I felt that I was heard by the healthcare provider during my appointment	I felt that I was heard by my healthcare provider during my appointment
3	I feel safe expressing my health needs to my virtual care provider	I was involved as much as I wanted to be in decisions about my care and treatment	I feel safe expressing my health needs to my healthcare provider
4	My virtual provider suggests services that are appropriate to my level of technology access		My healthcare provider suggests services that are appropriate to my level of technology access
5	My virtual provider recommends external services that I trust		My healthcare provider recommends external services that I trust
9	The virtual healthcare provider explained things in a way I could understand during my appointment		My healthcare provider explained things in a way I could understand during my appointment
11	The virtual healthcare provider spent enough time with me during my appointment		My healthcare provider spent enough time with me during my appointment
12	The virtual healthcare provider took my cultural needs into account		My healthcare provider was accepting of my cultural needs or traditional healing practices
Statements without initial agreement			
2	I feel accepted for who I am by my virtual care provider	I felt respected by the healthcare provider during my appointment	I felt respected by my healthcare provider during my appointment
6	My virtual provider understands the aspects that make it difficult for me to seek care		My healthcare provider understands what can make it difficult for me to seek care right now
7	I feel like my virtual provider understands my history		I feel like my healthcare provider understands who I am and why I want to talk to them
8a	It is easy for me to get an appointment to see my provider	I was able to get an appointment as soon as I needed it	I was able to get an appointment as soon as I needed it
Additional statement from health services team			
8b			My healthcare provider helped me address the health concern/reason I made the appointment

All interviews were completed via telephone (n=5). Participants included the self-identification of one male and four females, whose ages varied from 27 to 39, with a median age of 36. The patients included four First Nations individuals and one participant who chose not to disclose their Indigenous identity, but accessed Indigenous-specific virtual primary care services. The number of virtual primary care visits participants attended ranged from three to 12, with a median of eight.

Refining the ARQS tool: cognitive interview results

Team members analysed the interview data to determine agreement among the participants, ensuring that each question was understood and that it was not confusing

or difficult to answer. Agreement was defined as 100% of participants conveying that the statement was clear, relevant and represented a domain of their virtual care experience. The cognitive interview results (table 1) revealed that all participants were in 100% agreement on the importance of statements 1, 3, 4, 5, 9, 11 and 12 and expressed a shared understanding of the concepts described by the statements. For statement 1, although a responsive virtual primary care provider was considered important, participants suggested that for providers to be 'responsive,' they first needed to hear what a patient is saying. The final version of statement 1 became 'I felt that I was heard by the healthcare provider during my

appointment.’ For statement 3, patient involvement in decisions about their healthcare was only considered possible if they felt safe, so participants suggested that the statement should emphasise the feeling of safety when patients share their health needs with their healthcare provider. This informed the statement, which was revised to be ‘I feel safe expressing my health needs to my healthcare provider.’ Participants understood statement 4 to describe their provider as having an idea of what technology is physically available to them for their virtual care appointment, along with the level of access or experience a patient has with a specific technology. For this reason, the statement remained ‘my healthcare provider suggests services that are appropriate to my level of technology access.’

Statement 5 was understood to refer to the clinic’s reputation and the clinic’s relationship with patients, including patients’ confidence that they will be referred to trustworthy external services beyond the clinic when necessary. Statement 9 was clear and well understood, and thus no changes were required. Statement 11 was not changed, as participants understood ‘enough time’ in ‘the healthcare provider spent enough time with me during my appointment’ to mean not feeling rushed or that they were wasting their healthcare provider’s time. The original wording of statement 12 was changed to include traditional healing practices, which encompasses participants’ experiences with and understanding of the ‘traditional way of life,’ whole-body healing, access to an Indigenous Elder or traditional Knowledge Keeper, and access to community workers.

We examined all statements that did not have 100% agreement and statements that at least one participant found confusing and/or unclear. Participants identified statements 2, 6, 7, 8a and 9 as having unclear and/or confusing wording, so these were brought forward to the advisory group for further discussion using a modified nominal group technique.⁴² The advisory group discussed statement 2 to determine whether the wording ‘feeling accepted’ or ‘being respected’ was preferable. Originally, statement 2 was worded ‘I feel accepted for who I am by my virtual care provider.’ The overall preference was ‘being respected,’ as the advisory group members suggested that feeling respected encompasses — and thus includes — feeling accepted. Statement 6 was originally ‘my virtual provider understands the aspects that make it difficult for me to seek care,’ which was considered ‘wordy’ by Indigenous patients. Discussions with the advisory group led to this statement being changed to make it more clear that it intends to address systemic and social barriers/facilitators, not just physical barriers to access. To this end, it was modified to become ‘my healthcare provider understands what can make it difficult for me to seek care right now.’

Statement 7 was confusing to participants, as they felt that ‘history’ was unclear and could refer to social/life/family history, medical history, or even the ‘history’ of the previous medical appointment. Therefore, statement 7

was changed to reflect a more relational understanding of the connection between patients and their healthcare provider. While the statement was previously ‘I feel like my virtual provider understands my history,’ it was changed to ‘I feel like my virtual provider understands who I am and why I want to talk to them.’ Statement 8a originally was ‘It is easy for me to get an appointment to see my provider’ and was modified to be based on need rather than ease, as ease was considered related to clinical process and appointment booking. Therefore, the final wording of statement 8a became ‘I was able to get an appointment as soon as I needed it.’ In discussion with the health services team, Statement 8b was added, as it was agreed that it is important for a healthcare provider to know the reason for their patient’s appointment and to actively try to address each patient’s concerns.

The final version of the ARQS tool can be seen in table 2. The tool has 12 statements that provide Indigenous patients with the opportunity to declare the extent to which they identify with the statements, ranging from strongly disagree (1) to strongly agree (5.) There is also an option for patients to indicate if a statement does not apply to them. The tool as presented here is preliminary and the authors recognise that it needs further testing with a larger sample in order to continue to accurately assess its suitability for use in various virtual primary care settings.

INTERPRETATION

The ARQS tool statements represent how Indigenous patients conceptualise and define the constructs of access, relationships, quality and safety in virtual primary care settings. The results from the cognitive interviews verified the accuracy and face validity of the strength-based statements in the tool. The statements were modified as required to develop revised statements that accurately and meaningfully reflect the lived experiences and perspectives of Indigenous patients who use virtual primary care. It was confirmed through this stage of the research process that the qualitative data that were previously collected from Indigenous patients’ lived experiences with virtual primary care is reflected in the tool’s domains and statements. Rigour was enhanced by involving Indigenous participants who had previously been recruited and interviewed by the same researchers to enhance relationality³⁵ and trust between participants and researchers. The perspectives that were shared built on existing rapport and comfort with research team members. The cognitive interviews offered the participants a second opportunity to conceptualise and think critically about the statements, which increased the reliability and validity of the ARQS tool.

Virtual primary care clinics that serve Indigenous patients require an understanding of how the services offered best incorporate relational aspects, quality, access and safety as they are understood by Indigenous peoples, based on Indigenous ways of knowing and being that are

**Table 2** ARQS Indigenous patient experience tool

I felt that I was heard by my healthcare provider during my appointment					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
I felt respected by my healthcare provider during my appointment					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
I feel safe expressing my health needs to my healthcare provider					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider suggests services that are appropriate to my level of technology access					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider recommends external services that I trust					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider understands what can make it difficult for me to seek care right now					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
I feel like my healthcare provider understands who I am and why I want to talk to them					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider helped me address the health concern/reason I made the appointment					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
I was able to get a virtual appointment as soon as I needed it					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider explained things in a way I could understand during my appointment					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider spent enough time with me during my appointment					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
My healthcare provider was accepting of my cultural needs or traditional healing practices					
1—Strongly Disagree	2—Somewhat Disagree	3—Neither Agree nor Disagree	4—Somewhat Agree	5—Strongly Agree	Not Applicable
ARQS Tool, Access, Relationships, Quality and Safety (ARQS) Tool with final statements .					

grounded in Indigenous experiences and perspectives. The ARQS tool provides value to virtual primary care providers, as this tool is grounded in the perspectives of Indigenous participants and healthcare stakeholders that provide services to Indigenous patients. The ARQS tool fills a gap in monitoring and evaluating the quality and safety of primary care for Indigenous peoples, as recommended in the *In Plain Sight* reports.⁷ Indigenous peoples must have access to culturally safe virtual primary care that protects against systemic racism and social exclusion to influence population health.⁴ There is an imperative to embed relationality in all healthcare encounters with Indigenous patients,³⁵ and extra consideration in virtual

contexts is needed to work towards establishing relationality, which includes support for clinician learning and development to better incorporate culturally safe and culturally appropriate care in meaningful ways.¹⁷ The domains and statements of the ARQS tool quantitatively indicate where quality improvements can be made on the patient/provider level and/or the clinic level to improve the quality of care, the quality of patient/provider relationships and culturally safe care for Indigenous patients.

Supporting continuous quality improvement to address safety and access to healthcare for Indigenous communities aligns with the Truth and Reconciliation Commission's Calls to Action, specifically Call 19,⁴³ and

works to address the need to embed and measure meaningful healthcare improvements and cultural safety for Indigenous peoples.⁸ Patient feedback measures such as the ARQS tool are important to assess and address the reasons that Indigenous patients may not receive quality healthcare or may not seek out healthcare, which include not only geographical barriers, but systemic barriers to accessing equitable care. The ongoing impacts and evidence of colonialism in the healthcare system, including anti-Indigenous bias, discrimination and Indigenous-specific racism, have contributed to decreased access to equitable healthcare for Indigenous peoples in Canada and can be systematically addressed through patient feedback tools such as the ARQS tool. Health quality tools, including the ARQS tool, are particularly important for Indigenous-centred clinical quality improvement that may advance health equity through improved access and health outcomes for Indigenous peoples.⁸ More widely, tools such as the ARQS tool are important within public healthcare to disrupt the cycle of discrimination, Indigenous-specific racism and the lack of culturally safe care in the health system. Tools such as the ARQS tool also address patient/provider encounters within primary care that may reflect these systemic issues to improve culturally appropriate and culturally safe care, ultimately promoting high-quality healthcare for Indigenous peoples.

There is a limitation to the transferability of the results to other Indigenous peoples and Nations outside of Alberta in other regions of Canada. Variances in virtual primary care development and delivery may differ based on localised needs, existing healthcare systems and the diversity of Indigenous peoples across Canada. Further work will expand the use of this tool to different communities to assess transferability to other healthcare providers, locations, clinical contexts, settings and specialties. Future directions for research will focus on implementing the ARQS tool into various clinical practices. This will include evaluating the acceptability and utility of the tool with virtual primary care providers and Indigenous patients in clinical settings to assess barriers and facilitators to receiving and accessing high-quality care. After the initial development phase of the ARQS tool, expanded piloting is planned with a larger clinical patient group to further validate this tool. Additionally, we will continue to monitor the success of implementation and support the needs of clinical staff to develop skills across the various domains of ARQS to facilitate improved Indigenous patient experiences. Partnerships with healthcare providers and the research team will ensure a continued collaborative effort, with the ability to develop supportive actions to aid healthcare workers in measuring and improving the quality of care they provide to Indigenous patients, along with their accompanying knowledge and skills.

To conclude, an Indigenous patient experience tool such as the ARQS tool can play a role in addressing both primary healthcare and primary care improvements. The research team sought to understand how high-quality

virtual and/or remote-based primary care with Indigenous patients can be monitored and measured to facilitate continuous quality improvement in virtual primary care practice. The development of the ARQS tool is based on the lived experiences of Indigenous patients and healthcare professionals who provide virtual primary care to Indigenous patients. Thus, the tool offers a promising way for Indigenous patients to provide feedback and for clinics to measure the quality of virtual primary care for Indigenous patients. This may help to advance the access and quality of virtual primary care delivery for Indigenous patients, impacting both primary healthcare and primary care for the benefit of Indigenous peoples.

Twitter Stephanie Montesanti @S_Montesanti

Acknowledgements The authors acknowledge Elder Leonard Bastien, the Indigenous Primary Health Care and Policy Research Network; Alberta Health Services Indigenous Wellness Core; Alberta Indigenous Virtual Care Clinic; Elbow River Healing Lodge; Siksika Health Services; and all stakeholders who contributed to facilitating and guiding this work.

Contributors All authors were involved in project design and methodological planning. Data were collected through in-depth, semistructured interviews by MO and PC. Data analysis was completed by PR, MO and PC and overseen by PR with contributions from CB, LC and SM. Manuscript writing, organisation and editing were done by PR, MS, MO and PC and all authors read and approved the final manuscript. PR acts as the guarantor for the study.

Funding This project is funded by the Indigenous COVID-19 Rapid Research Funding Opportunity through the Canadian Institutes of Health Research (Grant ID: D2-174974).

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval Ethics approval and consent to participate has been approved by the Conjoint Health Research Ethics Board at the University of Calgary (REB21-0446). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as supplementary information.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Meagan Ody <http://orcid.org/0000-0002-7567-5710>

Melissa Scott <http://orcid.org/0000-0003-4215-5281>

REFERENCES

- 1 Papps E, Ramsden I. Cultural safety in nursing: the New Zealand experience. *Int J Qual Health Care* 1996;8:491–7.
- 2 Caffery LJ, Bradford NK, Smith AC, et al. How telehealth facilitates the provision of culturally appropriate healthcare for indigenous Australians. *J Telemed Telecare* 2018;24:676–82.
- 3 Carswell P. Te Whiringa Ora: person-centred and integrated care in the Eastern Bay of plenty, New Zealand. *Int J Integr Care* 2015;15:e014.
- 4 Reading CL, Wein F, et al. Health inequalities and social determinants of aboriginal peoples' health [Nati Collab Cent Aborig Heal]. 2009. Available: http://www.nccah-ccnsa.ca/docs/social_determinates/nccah-loppie-wien_report.pdf



- 5 Gone JP, Hartmann WE, Pomerville A, *et al.* The impact of historical trauma on health outcomes for indigenous populations in the USA and Canada: a systematic review. *Am Psychol* 2019;74:20–35.
- 6 Corso M, DeSouza A, Brunton G, *et al.* Integrating indigenous healing practices within collaborative care models in primary healthcare in Canada: a rapid scoping review. *BMJ Open* 2022;12:e059323.
- 7 Turpel-Lafond ME, Johnson H. In plain sight: addressing indigenous-specific racism and discrimination in BC health care. *BC Studies: The British Columbian Quarterly* 2021;5:7–17.
- 8 Berg K, McLane P, Eshkakogan N, *et al.* Perspectives on indigenous cultural competency and safety in Canadian hospital emergency departments: a scoping review. *Int Emerg Nurs* 2019;43:133–40.
- 9 Boot GR, Lowell A. Acknowledging and promoting indigenous knowledges, paradigms, and practices within health literacy-related policy and practice documents across Australia, Canada, and New Zealand. *Ipij* 2019;10.
- 10 Brooks-Cleator L, Phillipps B, Giles A. Culturally safe health initiatives for indigenous peoples in Canada: a scoping review. *Can J Nurs Res* 2018;50:202–13.
- 11 World Health Organization. *Declaration of Alma-Ata*. World Health Organization, Regional Office for Europe, 1978.
- 12 Henderson R, Montesanti S, Crowshoe L, *et al.* Advancing indigenous primary health care policy in Alberta, Canada. *Health Policy* 2018;122:638–44.
- 13 Young TK, Chatwood S. Delivering more equitable primary health care in northern Canada. *CMAJ* 2017;189:E1377–8.
- 14 Kanatami IT. *Social determinants of Inuit health in Canada*. Inuit Tapiriit Kanatami, 2015.
- 15 Richmond CAM, Ross NA. The determinants of first nation and Inuit health: a critical population health approach. *Health & Place* 2009;15:403–11.
- 16 Jamieson T, Wallace R, Armstrong K, *et al.* *Virtual care: a framework for a patient-centric system*. Toronto: Women's College Hospital Institute for Health Systems Solutions and Virtual Care, 2015: 11.
- 17 Ahmed F, Burt J, Roland M. Measuring patient experience: concepts and methods. *Patient* 2014;7:235–41.
- 18 Lavoie JG, Sommerfield M, Mitchell J, *et al.* *Supporting the development of Telehealth for British Columbia First Nations Living on Reserves: A review of existing evidence*. Prince George, BC: BC Alliance for Telehealth Policy and Research, 2010.
- 19 Howard-Bobiwash HA, Joe JR, Lobo S. Concrete lessons: policies and practices affecting the impact of COVID-19 for urban indigenous communities in the United States and Canada. *Front Sociol* 2021;6.
- 20 FAIM F, Sutton RN, FHIMSS S. How does patient experience fit into the overall healthcare picture. *Patient Exp J* 2014;1:20–7.
- 21 Matthewman S, Spencer S, Lavergne MR, *et al.* An environmental scan of virtual "walk-in" clinics in Canada: comparative study. *J Med Internet Res* 2021;23:e27259.
- 22 Neves AL, Li E, Gupta PP, *et al.* Virtual primary care in high-income countries during the COVID-19 pandemic: policy responses and lessons for the future. *Eur J Gen Pract* 2021;27:241–7.
- 23 Sevean P, Dampier S, Spadoni M, *et al.* Patients and families experiences with video telehealth in rural/remote communities in Northern Canada. *J Clin Nurs* 2009;18:2573–9.
- 24 Starke R, Spenceley S, Caffaro M, *et al.* Rural health services review final report: understanding the concerns and challenges of Albertans who live in rural and remote communities. Alberta Health; 2015.
- 25 Connolly SL, Gifford AL, Miller CJ, *et al.* Provider perceptions of virtual care during the coronavirus disease 2019 pandemic: a multispecialty survey study. *Med Care* 2021;59:646–52.
- 26 Connolly SL, Miller CJ, Lindsay JA, *et al.* A systematic review of providers' attitudes toward telehealth via videoconferencing. *Clin Psychol (New York)* 2020;27.
- 27 Wong E, Mavondo F, Fisher J. Patient feedback to improve quality of patient-centred care in public hospitals: a systematic review of the evidence. *BMC Health Serv Res* 2020;20:530.
- 28 Roach P, Ody M, Campbell P, *et al.* Access, relationships, quality and safety (ARQS): a qualitative study to develop an indigenous-centred understanding of virtual care quality. *BMJ Open Qual* 2022;11:e002028.
- 29 Brant CC. Native ethics and rules of behaviour. *Can J Psychiatry* 1990;35:534–9.
- 30 Canadian Institutes of Health Research. Strategy for patient-oriented research. n.d. Available: <https://cihr-irsc.gc.ca/e/41204.html>
- 31 Mayan MJ. *Essentials of Qualitative Inquiry, vol. 2*. Milton: Routledge, 2009.
- 32 Schnarch B. Ownership, control, access, and possession (OCAP) or self-determination applied to research: a critical analysis of contemporary first nations research and some options for first nations communities. *Int J Indig Health* 2004;1:80–95.
- 33 Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: *Analyzing qualitative data*. Routledge, n.d.: 187–208.
- 34 Beatty PC, Willis GB. Research synthesis: the practice of cognitive interviewing. *Public Opinion Quarterly* 2007;71:287–311.
- 35 Elliott-Groves E, Hardison-Stevens D, Ullrich J. Indigenous relationality is the heartbeat of indigenous existence during COVID-19. *J Indig Soc Dev* 2020;9:158–69.
- 36 Drennan J. Cognitive interviewing: verbal data in the design and pretesting of questionnaires. *J Adv Nurs* 2003;42:57–63.
- 37 Collins D. Pretesting survey instruments: an overview of cognitive methods. *Qual Life Res* 2003;12:229–38.
- 38 Willis GB. *Cognitive interviewing: a tool for improving questionnaire design*. Sage Publications; 2004.
- 39 Adair CE, Holland AC, Patterson ML, *et al.* At home/Chez SOI project team. Cognitive interviewing methods for questionnaire pre-testing in homeless persons with mental disorders. *J Urban Health* 2012;89:36–52.
- 40 Ven AHVD, Delbecq AL. The effectiveness of nominal, Delphi, and interacting group decision making processes. *AMJ* 1974;17:605–21.
- 41 Van de Ven AH, Delbecq AL. The nominal group as a research instrument for exploratory health studies. *Am J Public Health* 1972;62:337–42.
- 42 Harvey N, Holmes CA. Nominal group technique: an effective method for obtaining group consensus. *Int J Nurs Pract* 2012;18:188–94.
- 43 Truth and Reconciliation Commission of Canada. *Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada*. Winnipeg, Canada: Truth and Reconciliation Commission of Canada, 2015.