Training for virtual care: What do the experts think?

Vernon Curran (iD), **Ann Hollett and Emily Peddle**

Abstract

Introduction: Virtual care has expanded during COVID-19 and enabled continued access to healthcare services. As with the introduction of any new technology in healthcare delivery, the preparation of healthcare providers for adopting and using such systems is imperative. The purpose of this qualitative study was to explore experts' ascribed opinions on healthcare providers' continuing professional development (CPD) needs in virtual care.

Methods: Semistructured interviews were conducted with a purposive sample of key informants representing Canadian provincial and national organizations with expertise in virtual care delivery.

Results: Three main areas of knowledge, skills, and abilities that would be most helpful for healthcare providers in preparing to adopt and use virtual care were identified. The use of technology necessitates knowledge of how to integrate technology and virtual care in the practice workflow. This includes knowing how to use the technology and the privacy and security of the technology. Providers need to be able to adapt their clinical skills to virtual care and build rapport through good communication with patients. Virtual care is not appropriate for all visits, therefore providers need to understand when an in-person visit is necessary with respect to the nature of the appointment, as well as contextual factors for individual patients. Finally, providers need to adapt their examination skills to virtual care.

Discussion: Beyond the COVID-19 pandemic, virtual care will have a continuing role in enhancing continuity of care through access that is more convenient. Key informants identified barriers and challenges in adopting and using virtual care effectively, fundamental knowledge, skills and/or abilities required, and important topics and/or educational experiences to guide CPD program development on virtual care for healthcare providers.

Keywords

Virtual care, interviews, key informants, healthcare providers, continuing professional development

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Introduction

Over the past several years, the world has been significantly affected by the spread of a novel pneumonia pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), resulting in coronavirus disease (COVID-19). COVID-19 had a considerable impact on healthcare systems worldwide, including the need to continue providing diagnosis, treatment, monitoring, and follow-ups during the pandemic despite major outbreaks and public health restrictions. Most provincial healthcare systems in Canada responded to COVID-19 through rapid adoption of digital tools and technologies. Virtual care refers to the delivery of healthcare services digitally or at a distance using Information and Communications Technology.[1] During COVID-19 a variety of virtual care types have been employed with the most common

Faculty of Medicine, Memorial University of Newfoundland, St John's, Canada

Corresponding author:
Vernon Curran, Office of Professional & Educational Development, Faculty of Medicine, Memorial University of Newfoundland, Health Sciences Centre, Room H2982, St John's, Newfoundland, A1B 3V6, Canada.
Email: vcurran@mun.ca

involving synchronous and asynchronous appointments between patients and providers. Synchronous virtual care is communication, which occurs live, including telephone and videoconferencing. Asynchronous communication, which does not occur live, includes e-mail, patient portal messages, and e-consults.[2]

Considering the goal of minimizing COVID-19 exposure, virtual care was effective in that it reduced movement of people, which was especially effective for minimizing the risk to providers.[1–4] In addition to protecting providers from exposure, virtual care helped patients stay home who may have otherwise traveled to a hospital and incurred the risk of unnecessary exposure.[2,4] Virtual care was also used for control and triage during COVID-19, self and distance monitoring, treatment, and implementation of online health services. These methods have assisted in reducing morbidity and mortality during the pandemic.[5] Employing virtual care allowed providers to determine which patients were at high risk of deterioration and required emergency referral to in-person care, and which patients could continue at home.[6]

In Canada, Canada Health Infoway and the Canadian Medical Association (CMA) conducted the 2021 National Survey of Canadian Physicians to better understand the use of digital health and information technology among physicians in Canada.[7] Overall, this report supported Canadian physician acceptance of virtual care use during COVID-19. Despite finding that half of patients were still being seen in person, 94% of physicians surveyed offered virtual care in their practice.[7] According to the 2021 National Survey of Canadian Physicians, physicians were satisfied with virtual care options for providing patient care, recognizing the benefit for both parties.[7]

Despite rapid adoption, many physicians, healthcare providers, and patients were not adequately educated on how to utilize these digital services. Subsequently, there have been calls for guidelines and recommendations to educate physicians, healthcare providers, and patients on how they can best use virtual care. In Canada, work has been done by several groups to develop readily available guidelines for physicians and healthcare providers. The CMA and Royal College of Physicians and Surgeons of Canada have developed resources for both physicians and healthcare providers, as well as patients. The "Virtual Care Playbook" provides virtual care guidance for providers, and connects patients to their Virtual Care Guidelines for Patients.[8,9]

Continuing professional development (CPD) encompasses multiple educational and developmental activities physicians and healthcare providers undertake to maintain and enhance their knowledge, skills, performance, and relationships in the provision of healthcare.[10] Participation in CPD is promoted throughout the extensive post-licensure phase of healthcare providers' careers and is a key means for practitioners to stay current and up-to-date with evidence-based practices in their profession. The evidence

around CPD suggests that providers who participate in formal CPD activities are more likely to provide better care than their peers who do not participate.[11]

Designing CPD that is interactive, practice-based, and longitudinal is likely to yield better outcomes.[11] Basing CPD on the needs of the healthcare target audience is a key principle and a standard approach in effective CPD program design. A rigorous "needs assessment" is a crucial step in the educational and training process and can be described as a systematic approach to examine what is needed to be learned by either individuals or a group. A needs assessment-driven approach is more likely to lead to a change in practice, largely as a result of the learning being directly linked to personal and practice needs.[12,13] Needs assessments can involve an examination of both perceived or felt needs, as well as ascribed needs. An ascribed need is one that is perceived by others and examining "ascribed needs" usually involves consulting with persons in positions to make observations of the expected or required performance of the target audience. Often authorities, experts, or significant others define something as being important.

Edirippulige and Armfield[14] conducted a review of the literature up to the year 2014 that described the delivery of education and training in telehealth. They found the published peer-reviewed literature on telehealth education and training was limited, however, they did uncover nine ($n = 9$) studies describing education and training in telehealth that involved both university and CPD-level courses. Five of these studies described the delivery of short CPD courses and content included topics relating to the definition and terminology of telehealth, clinical applications, evidence for clinical practice, design and implementation of telehealth, telehealth national strategies, and technology solutions. CPD courses tended to focus on more practically oriented topics, including the development of hands-on practical skills and exposure to practical telehealth activities. CPD was generally targeted to healthcare providers and online learning was the most common form with the length of CPD courses ranging from one week to six months. Both universities and professional organizations, such as health departments, were mainly responsible for delivering telehealth CPD courses.

The purpose of this article is to describe key informants' views of the "ascribed" knowledge, skill, and ability needs of healthcare providers in adopting and using virtual care effectively, as well as their perspective on approaches to support practitioners in developing such abilities to integrate virtual care effectively into practice.

Methodology

Semistructured interviews, approximately 30 minutes in length, were conducted in February 2022 with a purposive sample of informants representing key Canadian provincial

and national organizations and/or institutions with expertise in virtual care delivery. Key informant interview questions (Appendix A) were reviewed by an interprofessional advisory committee that included specialists and family physicians along with representatives from other health professions also participating in the delivery of virtual care within our jurisdiction. The primary research team and members of the advisory committee identified potential respondents. Letters of invitation to participate in an interview were distributed via email to 11 potential key informants, who were unknown to the investigators, and seven (n = 7) agreed to participate. Consent forms describing the purpose of the study and rationale were provided to respondents prior to interview commencement. Interviews were conducted via videoconferencing and were recorded with the consent of the respondent. Field notes were made during the interviews and summarized upon the completion of all interviews. Qualitative data were analyzed using thematic analysis technique; a common form of analysis in qualitative research that emphasizes pinpointing, analyzing, and recording patterns (or "themes") within data.[15] Interview recordings were reviewed to identify key emerging themes from the responses of the key informant interviewees. Coding was conducted manually, and the emerging themes were compared, contrasted, and combined to formulate final thematic categories. The Newfoundland and Labrador Health Research Ethics Board (HREB) provided approval for this study, Reference # 2021.239. Participants provided informed written consent prior to participating in the study.

Results

Respondents (n = 7) were asked about key barriers and challenges in adopting and using virtual care effectively, what knowledge, skills, and/or abilities would be most helpful, existing educational and informational resources (e.g. education/training, guidelines), and important topics and/or educational experiences and activities in developing CPD programming on virtual care for physicians and healthcare providers (Appendix A). The main themes that emerged reflected the key challenges and barriers identified by the respondents and the knowledge, skills, and/or abilities they felt would be most helpful for physicians and healthcare providers in preparation for adopting and using virtual care effectively in patient care. The main themes included: the use of technology, clinical skills, and examination skills.

Use of technology

All respondents identified technology as a main barrier or challenge, not only for healthcare providers but also for administrative staff in clinics and patients. There are issues troubleshooting technological issues when they

arise. Providers have minimal technical support and up until the COVID-19 pandemic, most issues were solely electronic medical record (EMR) and internet issues and were not related to virtual care. There are many potential challenges for users depending on what platform(s) they are using. Providers may be trying different platforms to find something that works for them, which is the easiest for both themselves and their patients to use.

The respondents also focused on patients' issues with the use of technology as a barrier for providers in adopting and using virtual care effectively. Patients' inability or struggle to use the different types of technology necessary for virtual care will affect, in particular, the uptake of videoconferencing appointments. Patients require instructions and a lot of guidance when trying to use videoconferencing for appointments. One respondent voiced concern of whether or not elderly patients can manage the technological requirements to do a video appointment. Most physicians were using telephone appointments, as it is easier and less awkward. Providers worry about their patients, their access to technology, and their knowledge about how to use the technology effectively.

The uptake of video is pretty terrible. Doctors have found it awkward. They feel patients are less comfortable. The staging of patients for a video, there's a lot going on around that. It hasn't taken hold yet. People have tried it, and they just realized telephone is easier. If using video, there is a lot of shepherding of a patient through a video visit. There is a lot of instruction, handholding, and shepherding that's required. (Respondent 1)

Virtual care is happening largely over the phone, and there aren't many problems with that. However, there are a number of people who say you have to see the patient; you've got to get Webex or whatever. If you are using these platforms, there is a concern about the patient's ability to use the technology, phone versus video. As you age, you need more care. Can an elderly patient manage the technology to participate in a video appointment? Most likely, they are not setting up the platform. Are we going to be able to train the elderly to manage current technology? Or, are we going to be training a personal support worker to come in and set the call up and facilitate it? (Respondent 2)

Respondents felt that healthcare providers need training on the use of the different types of technology and that there needs to be both patient and office staff support. Lack of understanding of how the technology or software works can lead to provider "change fatigue" and the unwillingness to use or adapt to the technology necessary to provide virtual care. One respondent commented that even before the pandemic there was already documented stress related

to the use of electronic systems and technology. Providers need to feel comfortable with the technology. Adopting new technology is a challenge and there needs to be training provided.

> The use of technology, what platform. How do we use this platform? Is this platform secure? How do I turn it on? How do I invite my patients? How do I prevent myself from being IT support for my patients? Providers need to understand the technology being used, which platform may be best to use and how to use it. (Respondent 7)

> They need to feel comfortable with the technology itself. Feel comfortable with the act of providing virtual care versus in-person care. Also worrying about patients' access to technology and stable internet, their knowledge about the technology, the use of technology. (Respondent 6)

Another challenge identified by the respondents is how to integrate the technology needed for virtual care into existing clinic/practice workflows. Many practices may already have computers in the office and they may already be using an EMR; the problem identified by respondents is how do you do virtual care with this equipment? Most providers are using the telephone because their EMR is not set up to do video. The integration of virtual care into clinical practice can also cause the processes and procedures within the practice to change. The process for booking appointments is different, how patients are being triaged is different, and how they are being seen, either in-person or virtually is new for most clinics. As a result, providers need knowledge of how to integrate technology and virtual care into the clinical/practice workflow. The adoption of new virtual care technology introduces a further challenge of integrating the new technology with any existing technology. Providers are familiar with the comfort and rhythm of in-person appointments, so they need to know if that comfort and rhythm can be translated to virtual appointments and if so, how?

> One of the challenges is just the whole booking process whereby patients are calling in wanting to see the doctor and the negotiation on triage and decision making about how they're going to be seen. Part of the challenge is the new kind of appointment type that has to be factored into the decision-making process. (Respondent 1)

> There needs to be learning about new EMR workflow brought on by virtual care and the technology used for virtual visits, how to incorporate virtual care into the clinic workflow. Learning about EMR specific workflow tips, tricks, and best practices that help doctors and nurses with workflow that is very specific to virtual visits. Learn from those who have become efficient with this new

workflow in the context of a virtual visit, other physicians, office staff, etc. (Respondent 3)

Providers also need knowledge and skills related to technology that encompasses the use of wearable devices by the patients and understanding of the information and data transmitted by these devices. Providers need to understand how to work with medical extenders and use virtual tools like an electronic stethoscope. They need to know how to integrate other types of modalities, i.e. secure messaging, secure email into virtual care.

> We are starting to see more wearable devices like your smart watch that tell you what your heart rate is and stuff like that. Practitioners need to acquire more knowledge about the use of these wearable devices. All our Laboratory Medicine people talk about standards setting and calibrating. They need to understand what is acceptable in terms of the data transmitted and always question the results they are receiving. (Respondent 2)

> Providers need to understand the technical aspects of providing care, the use of video etc. They need to understand the technical aspects of providing care with medical extenders. The technical aspects of providing care with virtual tools like electronic stethoscopes and all that kind of stuff. (Respondent 6)

Along with the knowledge of how to use different technology to provide virtual care, providers also need to have knowledge about the privacy and security issues associated with its use. This may also include an understanding of "environmental privacy," that is who else may be present with the patient or the provider. Providers will require an understanding of the ways to collect the patient's consent when using audio and video software and platforms, as well as how to adequately document a virtual care appointment (e.g. pictures, videos, notes).

> It needs to be a seamless system for both physicians and patients. There needs to be knowledge about privacy and security while conducting virtual appointments. They need to have the right computer skills. There is a huge technology learning curve. (Respondent 4)

Clinical skills

Respondents identified being able to adapt clinical skills to virtual care as an important skill or ability. Healthcare providers need to understand how virtual care is similar, but also how it is different. When participating in a video appointment, patients are now inviting their healthcare provider(s) into "their world." This changes the provider-patient relationship. The providers need to be able to

build a new rapport with the patient/client. One respondent commented, "things are different when doing virtual appointments." Providers need to know how to navigate safe clinical spaces virtually. There are a new set of social skills required when providing virtual care. The providers need enhanced skills in empathy, trust, observation, and good communication. This is due in part to the fact that patients/clients may experience challenges communicating and establishing a good rapport with the providers virtually.

> I think it depends on whether or not the doctor or health provider knows the patient or not. They need the skills of building empathy and trust. Good communication skills online are particularly important. I think there may be techniques of gaining trust and establishing rapport that need to be enhanced a bit when providing virtual care. (Respondent 1)

> They need to update their clinical skills, how is virtual care similar, how is it different? Does it increase rapport or decrease it? Things are different when doing virtual appointments. When the patient comes to us in our office, we only see them in our context. When using video, we are now entering the patient's space/home; they are inviting you into their world. That is a new set of social skills that we need to learn, there are new clinical skills involved here. New skills for observation, creating rapport, building relationships. (Respondent 7)

Several respondents also commented on the need for healthcare providers to have the knowledge and ability to determine when virtual care is appropriate. They need to consider many different factors like time and place, patient interactions, and equity when determining if there will be a virtual assessment or an in-person assessment. Consideration of the context and the environment the patient is in during the virtual appointment is also important. Depending on their circumstance, some patients may not be able to have a private, confidential conversation with their healthcare provider from their home. Providers also need to know what situations or contexts are appropriate for virtual care and when to escalate to in-person care. Purely virtual care for all visits is not good care. They need to have the ability to find the right balance.

> Providers need to become literate in virtual care so they are comfortable adjudicating when it is appropriate to use virtual care, much like choosing medications. We have to contextualize our choice of medication or treatment to a given individual's context and virtual care has to be treated the same. (Respondent 5)

> Providers need to figure out how to navigate safe clinical spaces that are confidential for both the physician and the patient. There is the whole issue around being comfortable

with what is appropriate for virtual care, when things are not appropriate, and when to escalate to in-person care. (Respondent 6)

Examination skills

Healthcare providers need to be able to adapt their examination skills for virtual care. Many respondents gave the example of conducting a physical exam during a video appointment. Traditional medical training does not teach physicians how to do this. There may be some options or techniques for doing a physical exam virtually, but they are not well understood. Healthcare providers must develop the ability to address certain types of problems virtually. Which questions to ask if a patient cannot be physically examined. They must gather information from the patient. Patients will become much more involved in the assessment process and may be required to describe symptoms in more detail in the absence of a physical examination. Verbal responses and body language are key to gathering the information needed. Providers need to support the patient during virtual care appointments. They need to work off cues from the patient and increase therapeutic bonding.

> The physical exam. There's some emerging evidence of how you can do some kinds of physical exams usually by video. There is some skills building about physical assessment options online that are described, there are options, but that's not well understood yet. (Respondent 1)

> Need knowledge and skills on how to address certain types of visits virtually. How do you conduct certain types of virtual visits for certain specific types of conditions and cases? This includes mental health as well. What kind of questions do you have to ask if you can't examine them in person. Doctors didn't learn this in medical school. These aspects of training are new. So there is a bit of a knowledge and skills gap there. (Respondent 3)

> Medical skills—how do you examine a joint in a rheumatology patient? How do you do a neurological exam? How to conduct an exam, can you get the patient, or a surrogate to help? How do you gather information from the patient? You are asking questions, and there are verbal answers, but the body language is also key to gathering the information needed. Need to figure out what cues the patient can give us and how do we support our patients to give us those cues. (Respondent 7)

Providers have traditionally been taught one way to do a physical assessment, however, some examinations are more difficult to conduct virtually than others. Providers now need to figure out how to do these virtually. They need to adjust to new methods of conducting appointments and to examine

their patients/clients virtually. The burden of clinical judgment is heightened and they need to feel comfortable with the act of providing virtual care versus in-person care.

Respondents highlighted the importance of change in how we currently train medical students to better prepare them for virtual care, but also the importance of re-training current providers through CPD. The use of simulation-based learning using standardized patients (SPs) emerged as one way to learn and practice delivering virtual care. Coaching sessions with one's peers who have successfully adopted virtual care could also be a useful way to share advice, tips, and best practices for virtual care appointments.

> Medicine has been an apprenticeship model. So we learn through what we see during our training. Doctors learn by what we see. Need to 'see' how to bring virtual care into practice. You need to see the use, and the limitations. Need 'champions', those who have successfully incorporated virtual care into their practice and match them with 'learners' or 'newbies' so they can work with someone and see how they practice using virtual care. (Respondent 4)

Discussion

Several key barriers and challenges for physicians and healthcare providers in adopting and using virtual care effectively in patient care were identified during the key informant interviews. Generally, lack of training specific to virtual care tools and software is a challenge for providers. Lack of understanding and training can contribute to provider unwillingness to use virtual care, subsequently challenging virtual care adoption.[3,16–18] Technology was one of the main barriers or challenges, particularly with respect to internet connectivity and troubleshooting issues. Internet access is crucial for patients using virtual care, other than telephone calls.[2,16,19] Patients in some rural areas, or of lower socioeconomic status, may not have the capability to access good internet connectivity, or technology to access virtual care.[18,20] This has implications for healthcare providers in terms of assessing and determining the appropriateness of different modalities of virtual care depending upon the patients' technological access and capabilities (e.g. video vs. phone, Internet access, and bandwidth).

Respondents also recognized that the level of a patient's comfort with technology, and lack of technology literacy could also be a barrier for physicians and healthcare providers. Patients unfamiliar with virtual care software could be apprehensive about it, leading to resistance to virtual care adoption.[3,19,20] Patients with no previous experience with virtual care could be more likely to believe their specific needs are not appropriate for virtual care appointments.[16] The reality is that many patients experience limited digital literacy and are subsequently unable to use the software adequately.[2] Additionally, patients may experience

challenges facilitating communication and establishing a good provider–patient relationship.[4,18,19] Older patients may experience more compounded challenges with adopting and using technologies for virtual care. It has been suggested that frail older adults may benefit from the support of a caregiver to assist them with set-up and use of technologies during virtual care appointments.[21] Awareness of the issues and challenges that patients, and older patients in particular, may face with using virtual care is important for healthcare providers in triaging patients for virtual care appointments and advising on technical supports.

According to Edirippulige and Armfield,[14] because using telehealth implies a change in practice, it should be supported by appropriate education for current and future practitioners. A likely best way to provide appropriate knowledge and skills to future healthcare professionals would be to incorporate telehealth education as a standard component in the pre-licensure curriculum. At a CPD level, online education may be particularly attractive for busy practitioners who choose to participate in short CPD courses for developing knowledge and skills. However, it also seems that the practice of virtual care requires certain hands-on skills. Practical sessions are helpful in developing such skills, as well as the observation of real-life or simulated virtual care appointments to gain exposure to the modality.[14] Responses from the interviews with key informants echoed this notion of practical, skills-based CPD and the use of authentic training methods like SPs to practice delivering virtual care.

Training and supports are necessary for both healthcare providers and patients. Several areas of knowledge, skills and/or abilities that would be most helpful for physicians and healthcare providers in preparation for adopting and using virtual care effectively in patient care were identified. Respondents' highlighted three main areas. First, the use of technology necessitates knowledge of how to integrate technology and virtual care into the practice workflow. This includes knowing how to use technology and knowledge relating to privacy and security of the technology. There is an increased emphasis for providers to ensure they are meeting the standard of care, adequately obtaining consent, and embracing values of equity and fairness. Next, respondents identified the importance of being able to adapt clinical skills to virtual care, and building a rapport through good communication with patients. Respondents also acknowledged that virtual care is not appropriate for all visits. Providers need to understand when an in-person visit is necessary with respect to the nature of the appointment, as well as contextual factors for individual patients. Finally, providers need to be able to adapt their examination skills for virtual care. Practical challenges are relevant as some examinations are more difficult to conduct virtually than others are.[7,16,19] Traditional education does not teach providers how to conduct physical exams on a videoconference.

Respondents were asked to recommend important topics and/or educational experiences and activities to include in CPD on virtual care for physicians and healthcare providers. Several themes were identified. Performance-based and skills-building education was acknowledged as important, which could include incorporating virtual exams and simulation learning. Utilizing collaborative learning could encourage interprofessional learning through peer discussion. This can be encouraged through sessions with clinical peers who have successfully adopted virtual care. The importance of privacy and security knowledge was recognized, especially for cybersecurity. It was also noted that it is important to understand specific jurisdictional requirements, as well as medico-legal precautions. Healthcare providers should maintain awareness of the contextual situations of each individual patients/clients' needs, including their preference for virtual versus in-person. Educational resources should include principles and best practices in virtual care. The standard of care has not changed, implying that the same standard of care must be maintained despite the appointment delivery mode. Due to the variety of virtual communication methods available, education around the technology was recognized as important.

A number of key themes emerged from the key informant interviews that are helpful in identifying key educational and training topics for CPD for physicians and other healthcare providers. The key recommendation emerging from interviews with experts was that healthcare providers require education and training to help them provide virtual care effectively and efficiently. Similarly, patient education is important and can assist in increasing understanding of virtual care use and the associated health benefits.[1,2,16,22] Patient education strategies are necessary as well and should complement CPD for healthcare providers in virtual care. A limitation of the current study may be the small number of key informants interviewed, however, the key themes which emerged did reflect findings from studies undertaken during the pandemic surrounding adoption and use of virtual care by provider and patients alike. A key area for future research would be around the effectiveness of CPD approaches in fostering greater confidence, comfort, satisfaction, and more effective virtual care appointments for both providers and patients. As Edirippulige and Armfield[14] have highlighted, there is limited research on CPD and virtual care.

Conclusions

Further professional development for healthcare providers will be necessary to ensure approaches and techniques to healthcare service delivery are adapted to take advantage of key aspects as well as limitations of virtual care technologies. Increasing evidence surrounding the effectiveness of virtual care has emerged from the pandemic and these findings are useful in informing CPD for healthcare providers.

The key aspects of knowledge, skills, and abilities that emerged from the current study in preparing for adopting and using virtual care were: how to use virtual care technology and integrate virtual care in the practice workflow while ensuring privacy and security; how to adapt clinical skills to virtual care while maintaining effective patient rapport and communication with patients; and understanding when to use virtual care.

ORCID iD: Vernon Curran https://orcid.org/0000-0002-2432-6633

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