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Ontario Thoracic Reviews

Ontario Thoracic Reviews (OTR) is the official publication of the Ontario Thoracic Society. It is written by and for physicians and researchers in the field of respiratory care. Articles include educational reviews and updates on clinical and scientific topics, written by subject matter specialists working in all fields of respiratory health. The OTR is edited by Dr. Christopher Li and Dr. Mark Soth. The beginning section is a snapshot. Click “Read more” directly linked to the full articles below.



Editorial

Providing Virtual Care in Respiriology – a Pivotal Opportunity to Widen or Narrow the Health Equity Gap

Aman Sidhu, MD MSc FRCPC

Dr. Sidhu is a Respiriologist with the Toronto Lung Transplant Program and the Director of Quality and Innovation for the Ajmera Transplant Centre at the Toronto General Hospital, University Health Network. She holds a cross-appointment in the Respiriology Division, Women’s College Hospital. She is an Assistant Professor in the Division of Respiriology in the Department of Medicine at the University of Toronto.

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Feature Article

Providing Virtual Care in Respiriology

Geneviève C. Digby, MD, FRCPC, MSc(HQ)

Dr. Digby is an Assistant Professor in the in the Division of Respiriology in the Department of Medicine at Queen’s University with a cross-appointment in the Department of Oncology. Her clinical and academic interests include Quality Improvement (QI) in healthcare and patient safety.

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Also see the interview at <https://www.youtube.com/watch?v=o7-Uy6RJWnM>

Better Breathing Conference

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The **38TH annual Better Breathing Conference** took place from January 18 to 22, 2021. The TB Conference was also held as part of Better Breathing this year, with a dedicated stream of sessions taking place on the afternoon of Thursday January 21, 2021. It was the first time either conference was delivered virtually.

Many thanks to Dr. Anju Anand and the planning committee for their help in developing such an excellent program even in the face of the unprecedented difficulties due to the pandemic.

Better Breathing Conference 2021 expanded on the one and a half day format of previous years to feature five full days of accredited programming. Each day focused on a specific lung health issue – asthma, COPD, lung cancer, infectious disease, and smoking/vaping prevention & cessation.

Popular traditional programming returned, including the Respiriology Year in Review, the venerable André Pélouquin clinical case series, and the Resident Case Presentations. **Congratulations to Dr. Nermin Diab for winning the Keith Morgan Award for Excellence in the Resident Case Competition 2021.** Many thanks to the Better Breathing Conference speakers and attendees for the success of the conference. We look forward to seeing you at Better Breathing Conference 2022!

Events and Education

The Lung Health Foundation hosts various continuing medical education programs including 3 annual conferences (Better Breathing, Respiratory Health Forum, and TB) and periodic webinars on a wide range of topics related to respiratory lung health, many of which are Mainpro+ certified. For more information or to set up a workshop for your healthcare team or organization please contact pep@lunghealth.ca.

News of upcoming educational webinars can be found on [our workshops page](#), while recordings of past webinars can be found in [our archives](#).

Publications Arising from Previous Research Awards

Do you have research updates, new publications or achievements to share? Send your news to societies@lunghealth.ca

What is the OTS?

The Ontario Thoracic Society includes academic and community respirologists and researchers who are local and national leaders in their fields. Together, we help support and develop local, provincial and international standards of care in all areas of respiratory disease.

The current Ontario Thoracic Society membership term will expire on March 31, 2021. Although there is **no fee to join** for the April 1, 2021 to March 31, 2022 term, we ask all members to renew to keep their profile information up-to-date.

Join or Renew!

Ontario Thoracic Society membership is open to individuals with a medical degree and scientists holding a PhD or equivalent degree of training. Interns, residents or graduate students in medical science or the health disciplines, and fellows during their period of training are also invited to join.

If you experience any difficulties in signing up or renewing, please email societies@lunghealth.ca and an administrator will get back to you shortly.

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Contact Information

Lung Health Foundation

18 Wynford Drive, Suite 401

Toronto, ON, M3C 0K9

Phone: 416-864-9911 x256 Fax: 416-864-9916

Email: societies@lunghealth.ca

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Providing Virtual Care in Respiriology – a Pivotal Opportunity to Widen or Narrow the Health Equity Gap

Aman Sidhu, MD MSc FRCPC

In this issue of Ontario Thoracic Reviews, Dr. Digby provides a comprehensive and practical review of virtual care (VC) in Respiriology. This is, of course, a timely topic given the COVID-19 pandemic and its acceleration of the use of VC. Although many providers have gone through what feels like a forced implementation of VC, we should delve deeper into understand the role of VC going forward as a tool to provide the right care, for the right patient, in the right setting. Dr. Digby touches on the important issue of equity in VC, which warrants further discussion. The pandemic has forced us to examine inequities in healthcare, as more of us see clearly the impact of systemic racism and social determinants on health outcomes.

Health equity allows people to reach their full health potential and receive high-quality care that is fair and appropriate to them and their needs, no matter where they live, what they have, or who they are¹. Major inequities exist in health care, particularly in racialized, Indigenous, and under-housed and homeless individuals. There is a major risk that digital health tools will widen these gaps further, the so-called “Digital Divide”. We need to have this in the forefront of our minds when designing VC programs for the future, as VC is here to stay. It is important not only to address gaps related to access to technology but go steps further by exploring how we can leverage digital health tools to increase equity.

Lack of access to technology is an important factor in VC equity. There are many benefits in VC to having video visits or more robust remote patient monitoring (RPM) programs. These modalities can allow better assessment of patient appearance, dyspnea, and even biometric data such as measurement of oximetry and spirometry at home. As mentioned in Dr. Digby’s article, 86% of Canadians have access to internet, but this drops to only 41% in rural Canada². US Census data confirms race-based gaps in access³. Only 66% of Canadians own a smartphone⁴, and separate American data has shown that even in those with access to devices and internet, up to 40% are not able to send emails, fill out forms, or find websites⁵.

Socioeconomic factors influence outcomes in lung disease and beyond. People living with chronic obstructive pulmonary disease (COPD) in lower income quintiles are more likely to suffer poor outcomes such as hospitalization and readmission rates^{6,7}. In comparison, many digital health tools aimed at monitoring health are marketed to those who have access and money; it is how companies earn their revenue⁸. Programs of RPM for transitions in care should ensure they are not excluding those who cannot access tools deemed by the design team to be essential for VC provision, such as smart watches. In 2021, we also cannot accept exclusion of people from VC programs or trials on the basis of language, vision, or hearing barriers. Instead we need to use digital tools to eliminate those barriers.

One aspect of VC implementation that may be overlooked is the benefit of co-design of VC programs with underserved communities⁹⁻¹². Using input on lived experiences from patients and caregivers is likely to increase quality of VC delivery. Lack of effectiveness of digital health initiatives in COPD have been linked to lack of end-user input on design¹³. Before we can co-design programs that take into account cultural context and needs, we need to do a better job of understanding where our patients are coming from. How many of us robustly collect data on income, language, cultural and ethnic identity? During the rapid digital health revolution, we need to do better.

There is enormous opportunity to change the course of health care delivery using VC tools. The economic benefits to patients are clear but will be diluted if access is skewed to those in higher income brackets. Access to digital tools increases patient satisfaction, access to care and self-management, but again if provided preferentially to those who have the easiest access, those who are underserved and underrepresented are further left in the dust. It is up to us to decide whether the gaps in equity will be widened or narrowed through our VC delivery models. I have reflected on this greatly in the last year, and I invite you all to do the same in your own practice and beyond.

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Providing Virtual Care in Respiriology

Geneviève C. Digby MD FRCPC MSc(HQ)

Also see the interview at <https://www.youtube.com/watch?v=o7-Uy6RJWnM>

Introduction

The provision of healthcare using virtual technologies is evolving at an unprecedented rate. The COVID-19 pandemic has forced a major shift in healthcare systems, with the Canadian healthcare community witnessing the development of online screening tools, rapid replacement of office visits with telemedicine visits, and new fee codes for provision of virtual care (VC). Healthcare professionals and facilities have since been inundated with guidelines, recommendations, and new regulations around the provision of VC.¹⁻³ Practical guidance for the optimization of virtual visits has been developed and the patient community is increasingly providing feedback around their experiences with this modality of care; yet, the medical community is still digesting the wealth of available information, due to both rapidity of change and the deluge of new COVID-19 related knowledge.

This review attempts to summarize the available literature pertaining to the provision of VC, targeting an audience of respirologists practicing in Ontario, Canada. The review will focus on practical considerations for the provision of respiratory care virtually, strategies to optimize the VC experience for patients and providers, and areas of opportunity that require further attention.

What is Virtual Care?

VC is defined as “any interaction between patients and/or members of their circle of care, occurring remotely, using any form of communication or information technologies, with the aim of facilitating or maximizing the quality and effectiveness of patient care.”⁴ VC includes video visits (“direct-to-patient video visits” with the patient at a chosen location, and “hosted video visits” with the patient at a host site); secure messaging, an asynchronous way of providing back-and-forth communication;³ as well as audio-technologies, such as telephone visits, which are a major component of the current VC landscape.^{1,5} VC also includes provider-to-provider telecommunication strategies such as the Ontario e-Consult system⁶.

Understanding the pros and cons of various VC modalities is critical to ensuring appropriate alignment between the intended purpose of the visit and the chosen modality of care. Dr. Rob Williams, Chief Medical Officer of the Ontario Telemedicine Network (OTN) says that “Virtual care is a tool and it’s not the end point. There’s a learning curve we are in right now... in terms of when it is appropriate to use virtual care.”¹ While VC cannot replace in-person care, it is a strategy that can improve quality of care when thoughtfully implemented in the right clinical setting and is therefore poised to advance the Triple Aim of improving population health, experience of care, and per capita cost of healthcare for years to come.⁷

Recent Advances in the Virtualization of Healthcare in Canada

Even before the COVID-19 pandemic, there was growing interest in digital health strategies, largely due to challenges in providing timely and convenient access to care, rising healthcare costs, and patient demand.¹ There has been a longstanding gap between the available digitally-enabled health services and those desired by Canadians.^{5,8} Between 2014 and 2016, access to consumer digital health services grew, with a doubling in Canadians that had access to online consultations with healthcare providers and e-booking of appointments, and a tripling of Canadians that had online access to medical records and e-requests for prescription renewals.⁵ Despite this, digital health strategies were still only accessible to less than a quarter of Canadians.⁵

Significant strides towards virtualization of healthcare took place in 2019 when the Ontario government announced an aggressive digital strategy to expand VC, including access to online appointment booking, data access for patients, and more connected tools and data integration for providers.⁹ A guidance document for new Ontario health teams included providing patients with access to VC and their personal health information.¹⁰ Even still, as of early 2020, a report of the Virtual Care Task Force led by the Canadian Medical Association, The College of Family Physicians of Canada, and the Royal Colleges of Physicians and Surgeons of Canada, identified 4 key barriers to the provision of VC: 1) digital interoperability and governance, 2) licensure and quality of care, 3) payment models, and 4) medical education.¹ Several principles and recommendations were proposed to address these barriers, many of which are still applicable to the current VC landscape and should be used to guide the long-term integration of VC in Canadian healthcare.

Impact of the COVID-19 Pandemic on Virtualization of Healthcare

The emergence of the COVID-19 pandemic brought a heightened attention to new models of care that could facilitate social distancing, enforce patient isolation, and minimize exposure of patients to healthcare facilities that could be sources of contagion.¹¹ Furthermore, there was major concern that the suspension of non-essential services would disrupt routine care for non-COVID-19 patients.¹² Telemedicine is well suited for pandemics in which infrastructure remains intact and clinicians are available to see patients.¹³ Given recent technological advances, improved access to high-speed internet, and mass uptake of smartphones, the necessary infrastructure was available to quickly deploy teleconsultations to patients' homes.¹² Meanwhile, telemedicine was already at various stages of integration in many countries, and, while program implementation, payment and regulatory structures, and standardization across hospitals were historically unhurried, the pandemic served as a catalyst to scale up VC.¹¹⁻¹³ In fact, during the COVID-19 pandemic, Ontario Health has implemented temporary fee-for-service billing codes for the provision of virtual visits. Considering that lack of compensation is a hindrance to the widespread use of VC tools, significant changes to payment systems will be needed post-pandemic for VC to realize its full potential in Canada.¹

The sudden shift from in-person appointments to telemedicine appointments has led to alterations from normal practice that can be challenging.¹⁴ For VC to be successfully integrated in a standardized approach across healthcare sectors, the advantages and limitations to the various forms of telemedicine need to be recognized.

Advantages and Disadvantages of Virtual Visits

While the literature regarding virtual healthcare is still nascent, several studies have demonstrated advantages to VC across quality of care domains. Canadians with access to digitally-enabled health services report improved convenience, self-management, timeliness of care, communication, and partnership with their care providers.⁸ Studies comparing office visits with telemedicine visits have consistently demonstrated high patient satisfaction,¹⁵⁻¹⁹ improved access to care, more timely communication of tests results, and reductions in patient time, travel, and expenses.¹⁶⁻²¹ Virtual visits have the potential to reduce healthcare costs through shorter visits¹⁸ and reductions in unscheduled visits and phone calls.^{22,23} Virtual visits also have the potential to involve caregivers and family members, who might not have been present in an office visit,²¹ thereby improving family involvement and reducing economic consequences for caregivers from work absenteeism. Some studies have demonstrated increased patient empowerment as telemedicine requires greater patient participation,^{21,24} which can also lead to greater agreement on therapeutic targets and expected outcomes compared with clinic-based care.²⁵

Notably, the majority of the evidence regarding telemedicine pertains to highly selected samples of hospital outpatients, many with chronic, stable conditions, and does not necessarily reflect the patient populations that are currently participating in VC necessitated by the pandemic.¹¹ Vigilance is therefore required to mitigate potential undesired impacts. One issue is the potential for VC to fragment the continuity of care¹, particularly when VC is used for episodic care. VC also has the potential to exacerbate

inequalities in access to care.¹ While almost 86% of Canadians have Internet connection and broadband speeds recommended by the Canadian Radio-television and Telecommunications Commission, only 41% of rural Canadians have such access, paradoxically the same patient group most likely to welcome the convenience of VC.²⁶ Meanwhile, Canadians with lower socioeconomic status are less likely to have a home computer or internet and are more likely to have inequalities in digital health literacy.¹ Patients with visual or hearing impairments may not benefit from VC services to the same extent as other patients.¹ Another potential area of inequity has to do with patient privacy. One study found that patients noted the advantage of not missing work to connect to virtual visits, but those without private offices struggled to find space where coworkers would not overhear.²¹ Finally, some patients have noted loss of the “personal” feel of a face-to-face visit.²¹

From a physician perspective, the lack of in-person contact is frequently raised as a concern; limitations in performing a physical examination may compromise a physicians’ ability to make diagnoses, while lowering confidence in the diagnoses made, and may adversely affect the emotional and psychological relationship between doctors and patients.²⁴ Many clinicians are uncomfortable being on camera, and lack of confidence on the part of the physician may affect patient trust, satisfaction, and adherence to treatment.²⁴ Furthermore, video consultations disrupt long established processes and routines¹¹ and can threaten physician efficiency. Some clinicians express concerns about technical quality, privacy, safety, and accountability.¹¹ Even still, the feedback from patients is overwhelmingly positive, with positive perceptions of confidentiality, efficiency, and overall satisfaction with virtual visits.¹⁹ As such, while lack of physician comfort and concerns about workflow may have traditionally been a barrier to VC, the changes in workflow necessitated by the COVID-19 pandemic have forced many physicians to overcome these hurdles and find strategies to effectively integrate VC into their practices.

Moving forward, physician practice and training can further help to refine these processes and will be critical to the long-term integration of VC. Dedicated training can help medical practitioners project warmth and caring virtually.²⁴ Attention to proven communication strategies and patient involvement can allow care providers to display empathy at a distance.¹⁴ New behavioural norms can develop, such as those where participants adjust to audio delays in video-transmissions by using shorter sentences and waiting before replying.²⁴

While there are several advantages to VC, health professionals must remain cognizant that patients have varying degrees of comfort with, and access to, these technologies because of variability in available resources or infrastructure.¹ Thoughtful integration of VC into different healthcare sectors will be required to achieve equity of access and quality of care.

Considerations for Establishing Suitability of a Virtual Visit

Decisions on which types of interactions may be virtual or face-to-face should be made by physicians in consultation with their patients, taking into account professional duties such as appropriateness, patient privacy, and security.¹ Dr. Rob Williams states that “... virtual care works best in longitudinal relationships between a provider and a patient when there is an understanding and personal knowledge of each other and trust that has been developed.”¹ Meanwhile, for some patients, there is a preference for episodic, stand-alone VC, in which case additional diligence is required to maintaining quality of care, including follow-up instructions if their health deteriorates.¹

Specific to the COVID-19 pandemic, virtual visits may be appropriate for clinicians who are self-isolating but can continue to provide longitudinal patient care and potentially minimize healthcare system burden related to their absence.¹¹ Virtual visits may also help in the assessment of patients with symptoms suggestive of coronavirus, to reduce visits with potentially contagious patients.¹¹ Frail, older, and immunosuppressed patients may benefit from virtual visits, though with a potential trade-off for lack of a full examination.¹¹

The types of patient visits for which a video encounter could avoid an in-person visit include selected primary care visits, chronic disease reviews, counselling or similar verbal therapeutic interactions, administrative appointments (e.g. prescription renewal, sick notes), and triage when telephone is insufficient.^{11, 21} Virtual visits are unlikely to be appropriate for severely ill patients, when a full physical examination or procedure cannot be deferred, or when comorbidities affect the patient's ability to use technology.¹¹

While clinical guidelines suggest that virtual visits are not appropriate for a respiratory assessment,² growing evidence suggest that telemedicine can have a role in the assessment of dyspnea and respiratory distress. One study found that the Roth score (a tool that uses patient counting times to risk stratify dyspnea severity in terms of hypoxia) was a reproducible, low resource-utilization tool amenable to telemedicine.²⁷ Another study found that a telemedicine platform using an electronic stethoscope was a reliable tool to assess the severity of respiratory distress in clinically stable children where diagnoses included asthma exacerbations, bronchiolitis, or pneumonia.²⁸ The OTN developed clinical supports to help assess and treat COVID-19 patients, including a Fact Sheet for Assessing Respiratory Symptoms via Video (available at: https://otn.ca/wp-content/uploads/2020/03/video-to-assess-respiratory_v2.pdf). It states that, using video, the clinician can observe respiratory rate and whether the patient looks unwell, is coughing, is short of breath while speaking and/or is using accessory muscles to breath. Through these observations, the clinician can determine if the patient looks well enough to self-treat at home, or ill enough to warrant an in-person examination. In addition, as the costs of technologies have diminished over time, many patients with chronic respiratory disease have purchased pulse oximeters, pedometers, and heart rate monitors, which can further inform the virtual visit. Ultimately, the evaluation of dyspnea is multifaceted and comprehensive. While best accomplished through a face-to-face assessment, virtual modalities can provide helpful clinical information to guide this assessment.

There is debate as to the suitability of VC when delivering bad news. Physicians are often trained to deliver serious news in person, which can make physicians uncomfortable in doing so virtually.¹⁴ Yet a survey of patient opinions on communication of serious news suggested that patients value content of communication above setting, and that some patients may prefer receiving serious news remotely via video visit for reasons of comfort, social support, and privacy.²¹ As such, telehealth may be a good alternative and, in some cases, preferable to in-person communication.²¹ Strategies to do this effectively are discussed in Table 2.

Ultimately, care should be provided by the modality that best serves the patient. Where safety is a concern, such as at the height of a pandemic or where clinician or patient social isolation is in place, VC can be appropriate for the majority of healthcare encounters that do not deal with severe acute illness or the need for physical examination or a procedure. Where there is the luxury of selecting a modality of care, patients identify convenience, efficiency, communication, privacy, and comfort as important domains to consider.²¹ Where possible, patient preference should be elicited, and decisions about modality of care can be made jointly between physicians and patients. For respirologists, this may include weighing the need for in-person objective testing (e.g. pulmonary function testing, bloodwork, x-rays) and consolidating testing and face-to-face visits in one clinical encounter, versus the ability to assess clinical stability remotely (e.g. peak flow monitoring, home oximetry, symptom diaries).

As patient and provider experience with VC evolve, so will our understanding of the types of care that are able to be provided efficiently and effectively in a virtual format. Similarly, as digital healthcare technologies and platforms evolve, so will the ability for VC to be integrated into various clinical encounters.

Selecting a Digital Tool for Virtual Visits

Ontario Health Quality provides useful advice for the adoption and integration of virtual visits into practice.³ Below is a summary of pros and cons associated with various modalities of VC, adapted from Ontario Health Quality.³

	Advantages	Disadvantages
Video Visit	<ul style="list-style-type: none"> Allows for visual cues including eye contact & body language Facilitates deeper understanding of patient's home or work Allows for limited physical exam (limited auditory and visual examination, may be supplemented with digital tools) Allows family member/caregiver involvement Can use screen-sharing to show radiographic images, use written information tools (e.g. handouts, websites) 	<ul style="list-style-type: none"> Requires reliable internet connection Requires certain amount of digital literacy Requires administrative scheduling Requires that both patient & provider be available at same time Limited physical examination (no tactile or olfactory cues)
Telephone Visit	<ul style="list-style-type: none"> Auditory cues can convey empathy, ensure clear messaging Very limited examination using auditory cues (e.g. can detect respiratory distress, wheezing) More accessible for patients without internet or digital literacy Does not necessarily require administrative scheduling 	<ul style="list-style-type: none"> Lack of physical examination Lack of visual cues for patient assessment & verifying understanding Limited ability to provide education and share resources Requires that both patient and provider be available at same time
Secure Messaging	<ul style="list-style-type: none"> Flexible for patient and provider Useful where patients are hearing impaired Convenient for simple requests or concerns Reduces office phone calls Supports continuity of care 	<ul style="list-style-type: none"> Fewer boundaries around appropriate times for communicating May not be able to verify patient identify Tone of written text can be misunderstood

Although video visits are likely to be more impersonal than face-to-face consultations, they are more personal than consultations that take place entirely by telephone. Video allows for visual cues that helps to create a shared social presence.²⁴ Video visits also allow for eye-contact, facial expressions, and use of body language that can help convey emotion and confirm understanding. The added value of a limited physical examination and understanding of a patient's home environment provide useful information to the provider.²⁴ For respirologists, video visits can allow for assessment of inhaler technique, education regarding supportive devices such as peak flow monitoring and positive expiratory pressure devices, and easier medication review than by telephone. Overall, it is recommended that video visits should supplement, not replace, the telephone, for which there is a considerable evidence of value.¹¹ Meanwhile, there is also a growing role for secure messaging as a modality of asynchronous care for simple concerns and requests, with a recent Canadian study showing that patients and providers in primary care practices preferred secure messaging over video.²⁹

Video visits can be performed either through direct-to-consumer telemedicine platforms, or free solutions, mainly from US-based companies (such as Skype, Facetime), though the latter may not respect health data privacy and security requirements, and while they may be useful to alleviate pressure on healthcare systems during the pandemic, they are largely unintegrated within healthcare systems.¹² While physicians who practice within a health hospital setting may be required to use applications and tools approved or supplied by the institution, physicians should be consulted during the selection and implementation of these applications and tools.¹

Finally, provider-to-provider forms of telecommunication exist for practitioners seeking guidance where an in-person patient consultation may not be required. The Ontario e-Consult system provides such a platform and has been shown to improve access to specialty services through rapid response and reduction in need for in-person consultation and is associated with high patient and provider satisfaction.

For more information:

Ontario MD News (<https://ontariomd.news/>) includes information regarding 20 different platforms for direct-to-patient virtual and digital tools for practice. Regardless of the modality of care selected, there is a need to be able to adequately onboard patients.⁶

Preparing Yourself and the Patient to Optimize the Virtual Visit

Ontario Health Quality proposes a series of helpful strategies for onboarding patients, which are summarized in brief below³, and with further details available at:

https://quorum.hqontario.ca/Portals/0/Users/170/54/10154/Draft%20Clinical%20Guidance_Adopting%20and%20integrating%20virtual%20visits%20into%20care_V1.pdf?ver=2020-03-13-091936-370

1. Start small and go slow - Introduce virtual visits slowly so that your clinic and patients can adapt. Initially target select patient groups (e.g. those who require routine follow-up, younger tech-savvy patients). Use this strategy to transition patients from telephone to video visits.
2. Manage patient expectations proactively – Discuss with patients the types of visits you prefer to conduct in-person (e.g. urgent concerns, physical examination is needed). This can mitigate the risk of unsuitable requests for virtual visits and improve patient satisfaction.
3. Develop a standardized registration process - Email the patient with a registration link and information for using the virtual platform, including information about privacy and consent.
4. Develop education tools for patients - Educational materials can help patients discern what is appropriate for a virtual visit (such as pamphlets, online demo).
5. Identify required technical support - Ensure reasonable technical support services are available to patients (by the vendor or by the clinic or organization).

A summary of Virtual Care Best Practices is included below, adapted from Ontario Health Quality’s Draft Clinical Guidance, the Virtual Care Playbook, and other relevant literature.

Table 2 | Virtual Care Best Practices, Adapted from: ^{3,2, 14}

Before the Visit	<ul style="list-style-type: none"> • Ensure the room supports privacy (window coverings, soundproofing, place computer display such that patient video cannot be seen if door inadvertently opened) • Select a room away from high traffic to minimize possibility of a confidentiality breach • Select a professional/neutral backdrop and ensure good lighting • Place a sign on the door to indicate that video visit is in progress to prevent unauthorized individuals from opening the door • Eliminate all distractions (turn off visible and auditory computer notifications, silence pagers and phones) • When booking the appointment, have the clinic secretary suggest that the patient ensure that their electronic device be fully charged for the visit, consider the use of headphones for privacy or if hard of hearing, ask patients to have medications and self-monitoring devices nearby (e.g. oximeter, peak flow meter, daily weights chart)
During the Visit	<ul style="list-style-type: none"> • Announce everyone who is in the room at the start of the session • Inquire about who may be listening to the discussion on the patient’s side and whether the discussion is being recorded • Establish a back-up plan if there is a technical failure • Position the webcam so that it is directly above the computer window with the patient’s video image to allow you to always be looking directly at the patient and to prevent the visual illusion of looking down at the patient • Anticipate delayed audio transmission by using short sentences and allowing longer-than-usual pauses after statements to give time for patients to ask questions • Make extra effort to engage with the patient at all times and assure them that they have your full attention, including eye contact, body language, and attentiveness • Displaying empathy with telemedicine can be difficult; prolonged silence can take place of offering a tissue
After the Visit	<ul style="list-style-type: none"> • Plan for follow-up by addressing the setting for the next meeting • Deliver handouts through mail or electronic transfer • Create patient education texts and patient care plans and send electronically to patient to summarize visit

Patient privacy and confidentiality of information exchange must be preserved through VC just as it is for in-person care. Ensure the use of secure software and communication infrastructure, prevention of unauthorized access by third parties, and maintenance of a VC record.¹

For more information:

The College of Physicians and Surgeons of Ontario has developed a Policy Document outlining General Expectations for physicians practicing telemedicine, Advice to the Profession, and a Telemedicine Patient Information sheet, available at <https://www.cpso.on.ca/Physicians/Policies-Guidance/Policies/Telemedicine>.

The Canadian Medical Association has developed an information page on “How to set up virtual care in your practice”, available at <https://www.cma.ca/how-set-virtual-care-your-practice>

Training Medical Students and Residents

If the benefits of VC are to be fully realized, VC must be incorporated into the medical curriculum and continuing professional development. Learning environments must ensure that teachers are sufficiently familiar with best practices and the tools used to virtually assess patients.¹ Additional training may be needed to maximize clinical effectiveness with VC – to overcome communication difficulties with telemedicine, to gain confidence with their virtual presence, and to make the most of a video consultation.^{11,24} Medical education systems will need to integrate acquisition of competencies in VC, which span all of the CanMEDS domains. Learners will need to develop new approaches such as “good bedside manner” to provide VC effectively.^{1,2} As stated by Dr. Meskó, “Today’s medical professionals must be masters of different skills that are related to using digital devices or online solutions”.³⁰ In essence, VC is not simply a matter of moving to a new platform; it requires a cultural transformation.³⁰

Future Directions

VC has rapidly become incorporated within the Canadian healthcare system, yet there is still a need to optimize its use and integration. VC is not merely the instillation and use of new technology, but rather represents a major change to a complex system that has the potential to be transformative by shifting care from hospitals and clinics to homes and mobile devices.³¹ To maximize impact, there is a need for technologies to have improved dependability, lower cost, better audiovisual quality, and improved workflow capabilities to make telemedicine consultations an easier and scalable option.¹¹ Optimal integration of VC will require consistency, streamlined workflows, and standardization of applications, technologies, and health information across the system.^{1,32} This, in turn, will require the redefinition of national regulations and funding frameworks for telemedicine, a strategy and operational plan guiding healthcare providers to increase tele-expertise, and communication toolkits to inform and educate the population regarding recommended use of telemedicine.¹² Finally, a scientific evaluation framework and dedicated research funds to describe and assess the impact of telemedicine will ensure that we maximize the lessons learnt.^{11,12} The future VC landscape should provide optimal information technology in a cost effective, efficient and sustainable manner, and has the potential to ultimately improve quality of care for patients.¹

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