

ASSOCIATION
MÉDICALE
CANADIENNE



CANADIAN
MEDICAL
ASSOCIATION

C M A H E A L T H S U M M I T

VIRTUAL CARE IN CANADA:

Discussion paper





The objective of this discussion paper is to review the issues and challenges of making digital health care, and in particular virtual care, a mainstream activity in the delivery of health care in Canada.





QUESTIONS FOR DISCUSSION

This document presents a number of questions for discussion:

1

What approaches can be used to implement virtual care in a manner that complements the patient–physician relationship and continuity of care?

2

What boundaries, if any, should be placed on publicly covered virtual care, either patient to physician or physician to physician?

3

What opportunities are there for virtual care to mitigate inequalities in access to health care in Canada (e.g., rural–urban, Indigenous Peoples, people with low income)?

4

How can the ability to provide medical care across provincial/territorial boundaries be facilitated by the regulatory bodies without compromising their ability to ensure that physicians are practising competently and maintaining their continuing professional development?

5

What are the top priorities to address in terms of the interoperability of electronic medical/health records across the health care system, and what are the barriers that need to be overcome?

6

How can the delivery of virtual care be optimized so that it meets patient demand for timely access to care while fitting in with the physician’s office workflow?

7

What supports can be provided to Canadians so that they can take best advantage of digital health resources and virtual care options?

BACKGROUND

While technologies to deliver health care through means other than face-to-face contact, such as telemedicine/telehealth, have been around for decades, they have yet to be adopted into routine use by health care systems around the industrialized world.

Digital health can be described as the integration of the electronic collection and compilation of health data, decision support tools and analytics with the use of audio, video and other technologies to deliver preventive, diagnostic and treatment services that promote patient and population health.

In the last few years there has been an explosion of interest in pursuing digital health strategies in many places.

There are two key drivers underlying this interest.

1 The first is the ongoing challenge of timely access to health care, which is about to be compounded by aging populations and a global shortage of health care professionals. The World Health Organization (WHO) has projected that there will be a global shortage of some 18 million health workers by 2030.¹ In a recent monograph, Britnell contends that one way to mitigate this shortage is increasing the productivity of the existing health workforce by 20%, and he sets out 10 strategies to accomplish this, several of which involve digital health.²

2 The second driver is or will be consumer/patient demand. A 2018 survey by Ipsos conducted in 27 countries found that while just one in 10 (10%) respondents had used telemedicine, more than four in 10 (44%) would try it if it was available.³

Global approaches

In 2018 the WHO adopted a resolution on digital health at its annual assembly that called on governments to assess their current and potential use of digital technologies for health and on the WHO director-general to develop a global strategy on health.⁴ A draft global strategy for 2020–2024 was released in March 2019⁵ and this was followed by a comprehensive guideline on digital health interventions in April 2019.⁶

Other countries have recently released strategy documents that focus on digital health. England's 2018 long-term plan for the National Health Service (NHS) promises that every patient will have a digital-first primary care option within five years, supported by a comprehensive digital transformation strategy.⁷

In 2018 France launched Ma Santé 2022, a comprehensive strategy with a multipronged *virage numérique* (digital shift) that addresses digital governance, the interoperability of health information systems and the need for a broader range of digital health services, including telemedicine.⁸ Australia released its digital health strategy in 2018. It emphasizes the importance of digital information and technology in improving quality of care through means including preventing adverse drug events, improving vaccination rates and providing greater access for people living in rural and remote areas.⁹

VIRTUAL CARE IN CANADA

Virtual care has been defined 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.¹⁰



Canada was an early pioneer in the development of virtual care through the work of the late Dr. Maxwell House of Memorial University of Newfoundland in the 1970s; he used telephone technology to provide virtual consultations to remote sites throughout the province.¹¹

Canada has since been surpassed by other countries in the uptake of virtual care.

- **14%** of the almost **23 million** general practice appointments in England were conducted by phone and **0.5%** were conducted by video conference. (April 2019)¹²
- In the US, the Kaiser Permanente system - covering **12 million** health plan members - reports that in 2017, approximately one-half of all "touches" between patients and health care teams were virtual. Of the **85.5 million** virtual contacts, the most frequent were phone calls (**50%**), secure messages (**40%**), scheduled phone visits (10%) and video visits (**0.2%**).¹³

Elsewhere in the US, health care systems such as Intermountain and Mercy are creating virtual hospitals through extensive use of telehealth technology.^{14, 15}

By comparison, according to the 2015 Canadian Telehealth Report (the latest available) there were 411,778 telehealth clinical sessions in 2014, representing just 0.15% of the 270.3 million billable services reported by the Canadian Institute for Health Information in 2015–16.¹⁶

Telehomecare, the use of digital technology to monitor things such as blood pressure, is much less prevalent, with an estimate of just 24,000 Canadians enrolled in such programs between 2010 and 2016. It should be noted that the Canadian figures are now higher. The Ontario Telemedicine Network reports that more than 1 million clinical video events took place in 2018-19,¹⁷ but relative to the total volume of service the percentage would not be dramatically greater.

In June 2019 the Newfoundland and Labrador Medical Association (NLMA) hosted a Virtual Care Summit that featured initiatives in that province and elsewhere. The presentations are available on their website: <http://www.nlma.nl.ca/nlma/event/resources/index.htm>.



The global drivers noted above are highly pertinent to Canada.

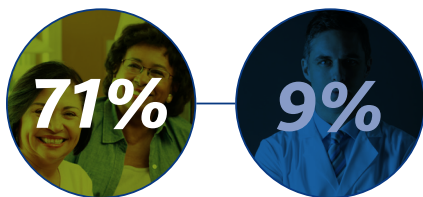
Virtual care has the potential to mitigate some of what is expected to be a huge increase in the demand for home- and facility-based continuing care (both paid and informal unpaid) as the Canadian population ages.

Status quo projections by the Conference Board of Canada indicate that the demand for paid employment in continuing care will more than double to reach 538,000 workers by 2036¹⁸ and that an additional 199,000 long-term care beds will be required by 2015.¹⁹

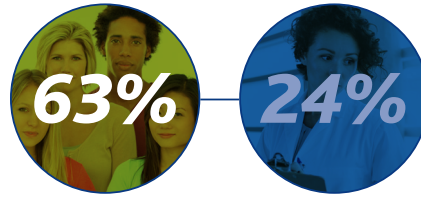
Similarly, there is a gap between consumer/patient demand and availability.

In a 2018 survey in Canada conducted by Ipsos for the Canadian Medical Association, fewer than one in 10 (8%) respondents reported that they had had a virtual visit/consultation. Nonetheless, they expressed considerable interest in virtual visits. Seven in ten (69%) reported that they would take the opportunity to have a virtual visit if available, and almost four in 10 (37%) indicated that they would use this method for either all or more than half of their physician visits.²⁰

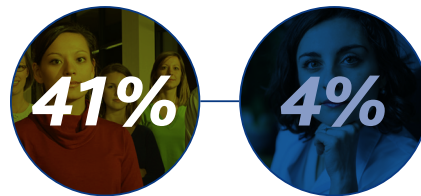
Recent surveys conducted by Canada Health Infoway show a clear gap between the electronic access that patients would like to have and what physicians are currently offering. For example:



71% of Canadians would like to be able to book appointments electronically but just **9%** of family physicians currently offer this option;



63% of Canadians would like to be able to email their health care provider but just **24%** of family physicians offer this service; and



41% of Canadians would like have video visits with their health care provider but just **4%** of family physicians offer this option.^{21, 22}

Virtual care and the private sector

The private sector is moving into virtual care by offering services directly to patients and to employers for a fee.

Getmaple.ca advertises the opportunity to “chat with a doctor in your pyjamas” through online consultations, as well as services including prescriptions and sick notes. The pay-per-visit fee is \$49 on weekdays and \$79 on weekends and holidays. A family membership costs \$50 per month and corporate plans are available also.²³

The private offerings of virtual services are not confined to primary care.

DermaGO is a Quebec-based service started by six dermatologists. Patients can obtain consultations by emailing photographs of their skin problem to DermaGO and receiving a diagnosis and prescription within 72 hours for \$179.99 and within 24 hours for \$249.99.²⁴ In the area of remote monitoring, clouddx.com offers remote monitoring of blood pressure, weight and cardiac functions with access to a clinical care team on a subscription basis.²⁵



Private health insurers are beginning to offer some coverage for virtual care services. In November 2017 Great-West Life announced that it would offer the services of Quebec-based Dialogue.co to employers in Ontario and Quebec.²⁶ In March 2018 Sun Life announced that it is the first Canadian insurer to offer virtual health care services to its clients across the country through the Sun Life mobile app, initially through three companies.²⁷

Internationally, the English NHS has launched GP at Hand, a service that enables patients to book appointments and have video consultations with a physician (GP) on their smartphone as well as obtain prescriptions and referrals.²⁸ The service is powered by Babylon, a digital health company that launched a partnership with Telus Health in March 2019 to provide virtual health services in Canada, starting in British Columbia (BC).²⁹ Babylon extends virtual care in a new dimension through its artificial intelligence (AI)-assisted algorithm that patients use at the front end to assess their symptoms and then decide whether to seek a video consultation or a face-to-face appointment.³⁰ It should be added that primary care is funded on a population (capitation) basis in England.

Expanding virtual care in the publicly funded medicare system

Growing attention is being paid to the prospect of expanding the role of virtual care in Canada's publicly funded medicare system.

Bhatia and Falk have put forward what they call 10 practical steps toward the "virtualization" of health care in Canada, which include suggestions such as making e-health practice part of accountability agreements and a "digital health by design" lens that would apply a "digital first" philosophy across the payment and delivery system.³¹

The Information Technology Association of Canada has issued a white paper on the acceleration of digital health technologies with recommendations that address the public-private interface, procurement practices, privacy and security standards and broadband capacity.³²

At the provincial level, the NLMA has just put forward a comprehensive strategy document for virtual care with a first priority being the initiation of partnerships to codesign a vision and goals for increasing the adoption of virtual care. Other issues to be addressed include gaps in remuneration structures, training and practice supports for physicians and staff and the development of criteria for evaluating virtual care tools and platforms.³³

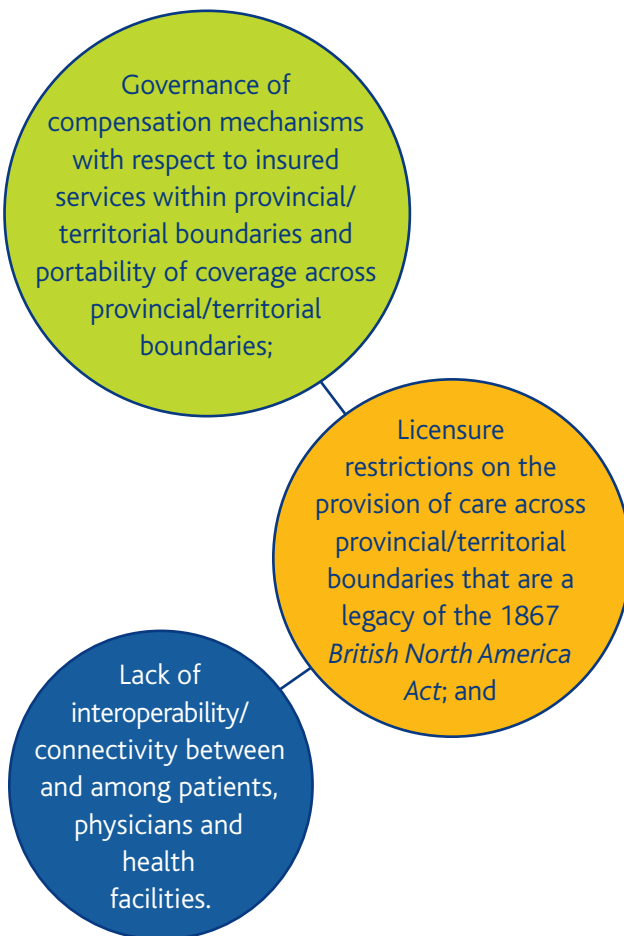
Ontario's plan to implement health teams includes greatly expanded access for patients to virtual care and to their health information. The guidance document for providers wishing to form these health teams includes aggressive targets for the first year of operation:

- 10%–15% of Year 1 patients who receive care from the Ontario Health Team will have digitally accessed their health information; and
- virtual care offerings will have expanded from baseline, and 2%–5% of Year 1 patients who received care from the Ontario Health Team will have had a virtual encounter in Year 1.³⁴

The Ontario Premier's Council on Improving Healthcare and Ending Hallway Medicine has recommended increasing the availability and use of virtual care options through legislation/policy and incentives.³⁵

BARRIERS TO VIRTUAL CARE

THERE ARE THREE MAIN BARRIERS TO THE WIDESPREAD UPTAKE OF VIRTUAL CARE IN CANADA:



Governance of compensation mechanisms

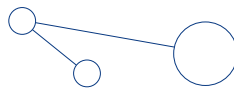
Two challenges need to be addressed with respect to payment for the provision of virtual care: the first challenge is across provincial/territorial boundaries, and the second — larger — one is within individual provinces and territories.

First, the portability criterion of the *Canada Health Act* only covers emergency care for people temporarily outside their home jurisdiction; other care requires prior approval to be publicly insured.

The second challenge is within jurisdictional boundaries.

The current interpretation and application of the billing regulations in provincial/territorial health insurance plans within individual provinces and territories is the largest barrier to the widespread adoption of virtual care between physicians and their patients in routine office-based practice. The preamble to several of the provincial/territorial billing guides specifies that the physician must either personally carry out or have direct supervision over any act or procedure for it to be billable to the provincial/territorial insurance plan.

As a result, provincial/territorial physician payment systems are still based primarily on face-to-face encounters between the patient and physician. Some provinces do provide payment for telemedicine when both the physician and the patient are in a designated telemedicine facility in the same province.



In the 2014 National Physician Survey, fewer than one in 20 physicians reported that they were compensated in any manner for email consultations with patients and just one in 10 indicated that they were compensated for email consultations with other physicians.³⁶ That is starting to change.

A 2015 cross-Canada overview indicates that seven jurisdictions provide for compensation for consulting specialists for electronic consultations, and two provide compensation for the referring physician.³⁷

Compensation for e-consultation between physicians and patients remains limited to fewer provinces. BC has had telemedicine fee codes for services between GPs and patients for more than a decade,³⁸ and Ontario³⁹ (for physicians enrolled with the Ontario Telemedicine Network) and Alberta⁴⁰ have them also.

Most recently, the Nova Scotia government has announced a pilot project to deliver telephone and e-health services. Family physicians who enroll their patients in MyHealthNS, the province's personal health record that enables patients to view test results electronically, will be able to receive up to \$12,000 per year for using technology to communicate with their patients.⁴¹

It should be added that there are limits to the use of e-consultation fee codes. For example, BC limits the use of the GP Email/Text/Telephone Medical Advice Relay Incentive Fee (G14078 \$7.00, for communication between patients and physicians; these tasks can be done on behalf of the physician by a certified allied care provider or medical office assistant) to 200 services per physician per calendar year.³⁸ Alberta limits the use of its Physician to patient secure electronic communication fee code (03.01S \$20) to 14 claims per physician per week.⁴²

Examples of a public–private mix in the delivery of publicly funded virtual care.

- In the fall of 2018 Maple began a six-month pilot project to provide virtual hospital rounds for Prince Edward Island (PEI)'s Western Hospital, a 27-bed hospital that has had physician staffing challenges. The service is being provided by nine physicians from PEI, Nova Scotia and Ontario who are licensed to practise in PEI.⁴³
- In March 2019 Telus Health partnered with Babylon to launch an app that will enable residents of BC to have smartphone video consultations with a physician that will be covered by the Medical Services Plan.
- Telus also plans to integrate the Babylon platform with its electronic medical record (EMR) systems.²⁹

Bhatia and Falk suggest that payment reform will be an essential component of a comprehensive approach to virtual care. They propose two processes in the case of fee-for-service payment: a clinical review that assesses the need for physical contact on an evidence-informed basis, and a pricing review that considers the relative effort and payment for virtual care. They also recommend the use of alternative payment models such as bundled payment and capitation.³¹

Licensure requirements

Section 93 of the Constitution established education as falling within the exclusive purview of the provincial legislatures.⁴⁴ After a number of years, the *Canada Medical Act* was passed in 1912, which created the Medical Council of Canada for the purpose of establishing a national standard for portable eligibility of licensure.⁴⁵ The agreed-upon standard by the licensing bodies and faculties of medicine was articulated in 1992.⁴⁶ The Federation of Medical Regulatory Authorities of Canada (FMRAC) has developed model standards for medical registration in Canada.⁴⁷



All medical regulatory bodies in Canada have some form of standard or policy on licensure requirements for physicians providing telemedicine/telehealth services.

There is variability across Canada.

Eight jurisdictions have some requirement for registration or licensure for out-of-province physicians to provide telemedicine services to patients located within their boundaries. Saskatchewan offers a specific telemedicine licence,⁴⁸ and New Brunswick enables physicians from other jurisdictions to provide telemedicine services to its residents through a Telemedicine Regulation.⁴⁹ Four provinces (BC, Ontario, NS and Newfoundland and Labrador) do not specify that a physician licensed outside the province must be licensed in their jurisdiction to provide telemedicine.

FMRAC has a policy on telemedicine that sets out eight recommended actions for the licensing bodies in respect of the provision of telemedicine within and across boundaries.⁵⁰ The Canadian Medical Protective Association cautions physicians to be aware of the various requirements as this could be a factor in the event of a legal action.⁵¹

Concern about licensure and cross-boundary care for telemedicine in Canada is long predated by the locum tenens issue.

The Society of Rural Physicians of Canada convened an expert panel on portable licensure at its annual meeting in 2001.⁵² More recently the College of Family Physicians of Canada and the Society of Rural

Physicians of Canada set out a “rural road map” that includes as one of its directions the establishment of a workforce of rural family physicians and generalist specialists “ready and able to work across provincial and territorial jurisdictions, enabled by the creation of a special national locum licence designation.”⁵³ Resident Doctors of Canada has developed a collaborative statement on national locum licensure that has been endorsed by several national medical associations.⁵⁴

One group exempted from the requirement that physicians must be licensed in every province where they provide traditional medical care is uniformed physicians serving in the Canadian military. Military clinics are considered to be under federal jurisdiction. Uniformed physicians are required to be licensed in at least one Canadian jurisdiction and then they can practise in any military health facilities in Canada or around the world; they are encouraged to be licensed in the jurisdiction where they live so that they can practise in the civilian sector to maintain their skills as necessary. Civilian physicians practising in military facilities are required to be licensed in the jurisdiction where the facility is situated.⁵⁵

The issue of cross-boundary licensure has arisen in other federated countries.

Australia was able to achieve national registration (licensure) as the result of an agreement by the Council of Australian Governments in 2008 (nine state/territorial governments plus the Commonwealth government) to establish a single national registration and accreditation system for the health professions that were registered in all jurisdictions.



After the agreement was reached all governments had to enact legislation first adopted by Queensland in 2009.⁵⁶

The US has been pursuing an expedited approach to licensure through an Interstate Medical Licensure Compact (IMLC) that now includes 28 states and one territory. The key principle of the IMLC is that the

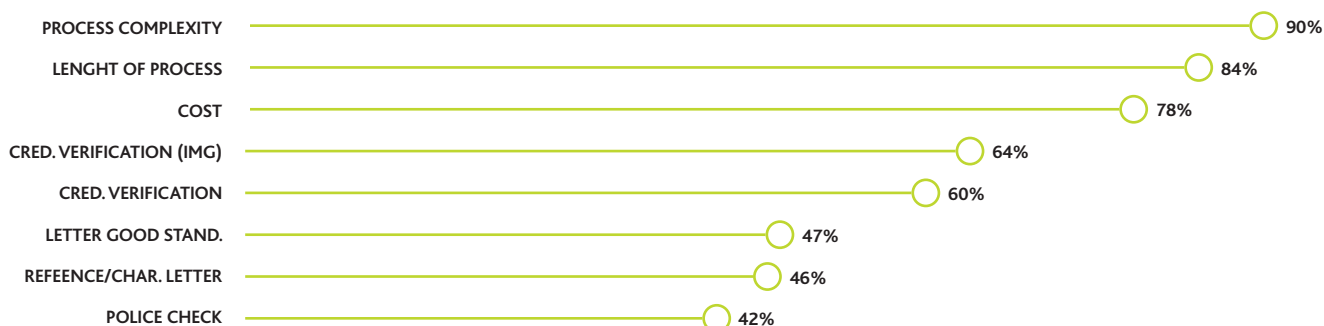
"practice of medicine is defined as taking place where the patient receives care, meaning that the physician must be licensed in that state and under the jurisdiction of the state's medical board."⁵⁷

The issue of a national licence is highly salient for Canadian physicians.

An e-panel survey of CMA members conducted in November 2018 found that while just one in 10 respondents were currently licensed in more than one jurisdiction, almost one-half (49%) had sought licensure in another jurisdiction at some point. While the most frequently cited primary reason for seeking a license in another jurisdiction was to relocate their practice (49%), one-third (32%) of respondents indicated that it was to practise as a locum. A variety of obstacles were reported by the physicians who had sought licensure in another jurisdiction.

OBSTACLES EXPERIENCED BY PHYSICIANS SEEKING LICENSURE IN OTHER JURISDICTIONS

Obstacles that are somewhat or very significant



More than nine out of 10 respondents were somewhat or very supportive of either provincial/territorial licences being recognized across jurisdictions without additional requirements (92%) or of the creation of a national licence permitting practice in all provinces/territories (93%). Fewer than three in 10 (29%) supported the status quo of each province/territory having its own licensure application requirements. Furthermore, almost one in two physicians (48%) indicated that they would probably seek out locum opportunities in other jurisdictions should national licensure be implemented, and one in three (36%) indicated that they would probably provide virtual care to patients in other provinces/territories. These figures were much higher among the resident trainees in the survey (82% and 68%, respectively).⁵⁸

FMRAC is currently working on three initiatives that should greatly facilitate cross-jurisdictional licensure for locum and telemedicine purposes:

- **Telemedicine:** the possibility of supporting telemedicine across all jurisdictions in Canada by allowing duly licensed physicians to use their licence in any province or territory for this purpose
- **Fast-track licences:** the possibility to expedite the issuance of licensure for physicians who hold full registration in another province/territory and

who are considering moving to another part of the country (or obtaining a second licence)

- **Licence for portability:** consideration of a licence portability agreement to enable physicians to work for a maximum number of days in another jurisdiction solely on the basis of licensure in their "home" jurisdiction.⁵⁹

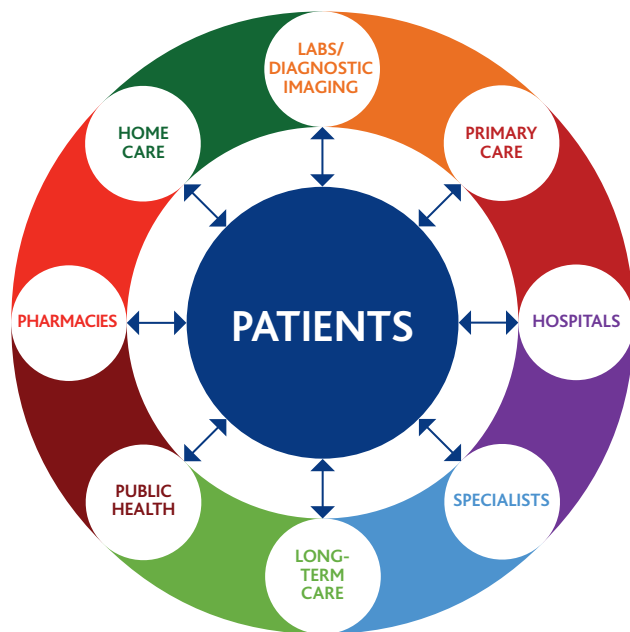
It is expected that these initiatives will take one to two years to come to fruition and further information will be forthcoming in due course.



Lack of interoperability/connectivity

It is essential to have digital interoperability across all points of the health care system to support virtual care.

THE INTEROPERABILITY CHALLENGE IN HEALTH CARE



At present there do not appear to be any comprehensive metrics on the state of interoperability in health care in Canada, but available evidence suggests there is a long way to go.

The most recent data on EMR connectivity are from surveys conducted by Canada Health Infoway among the public and physicians in 2018.

When asked about EMR functionality in the physician survey, family physicians reported the following:

- 59% of respondents indicated that they could send patient referrals to specialists or other providers;
- 29% indicated that they could receive electronic confirmation of appointments for referred patients;
- 25% indicated they could receive electronic messages/clinical notes from a community pharmacy; and
- 16% indicated that they could electronically exchange patient clinical summaries with physicians outside their practice.²²

The 2018 survey of Canadian adults showed low levels of connectivity between patients and physicians:

- 22% of respondents indicated that they could currently access their medical records electronically;
- 17% indicated that they could make an appointment electronically;
- 10% indicated that they could consult with a health provider online; and
- 10% indicated that they could send an electronic message to their doctor or regular place of care.²¹



There does not appear to be any readily available information on how connected all of the other delivery points in the health care system are. Alberta Health Services (AHS) is in the process of developing an integrated clinical information system (Connect Care) for all of its facilities and the clinicians and other staff who work in them that is based on the Epic system. There is no plan as yet for extending this to community-based physicians outside AHS.⁶⁰

*In 2018 Canada's Economic Strategy Tables: Health and Biosciences stressed interoperability in its call for a national digital health strategy, recommending that the strategy provide clear national guidance on privacy, data governance, sharing and security frameworks across federal, provincial and territorial governments to eliminate the barriers to interoperability of health-care digital systems.*⁶¹

The issue of the privacy of personal health information will require fresh attention in the context of sharing across multiple providers and delivery points. Most of the literature is from the previous decade; a 2015 report by the Information and Privacy Commissioner of Ontario addresses the sharing of information in the "circle of care" and underscores the complexity of consent in this context.⁶²

The jurisdiction that has come the closest to achieving interoperability across its health care system is the Northwest Territories with its population of less than 45,000, and it was not easy. Affleck has enumerated the challenges confronted over the 17 years that it took, suggesting that achieving interoperability is more of an issue of culture change than about software and technology.⁶³

In late 2018 Canada Health Infoway launched ACCESS 2022, an initiative that is intended to expand the access of Canadians to their health information. This includes the development of the ACCESS Gateway, a platform that will enable connectivity across electronic medical and health records and the health services that Canadians use.⁶⁴

OTHER CONSIDERATIONS

Although payment models, licensure and interoperability are barriers that must be addressed before virtual care can be deployed on a large scale within and across provincial/territorial boundaries, there are other issues to take into consideration, including the education and training of physicians and other health professionals and the issue of the quality of virtual services.

EDUCATION AND TRAINING FOR VIRTUAL CARE

If the benefits of virtual care are to be fully realized within the health care system, virtual care must be incorporated into the medical curriculum and continuing professional development.

*As futurist Bartalan Meskó has written, virtual care/digital health is not simply a matter of moving to a new platform; it requires a cultural transformation.*⁶⁵





Medical school curriculum

A 2012 survey of e-health in the undergraduate curricula across Canada's 17 medical schools identified a number of challenges. The first of these was the lack of a common language for e-health across the faculties. While one-half of the faculties indicated the use of electronic medical and health records in teaching, there was no consistent approach, and interviewees felt that faculty resources to support e-health were not developed.⁶⁶

An e-health working group for CanMEDS 2015 identified a range of competencies for each of the seven core Roles, including in the Expert Role: adopt a variety of information and communication technologies to deliver patient-centred care and provide expert consultation to diverse populations in a variety of settings.⁶⁷



Recent articles have highlighted the need to develop new approaches such as a “good bedside manner” to provide virtual care effectively.⁶⁸ Sharma and colleagues have proposed core competencies for virtual care that outline the differences between bedside practice and virtual care.⁶⁹ Topol recently concluded a review of how English citizens and workers in the NHS will have to be prepared for digital health and the related dimensions of genomics, robotics and artificial intelligence.⁷⁰ The American Medical Association has published a “playbook” that sets out 12 detailed steps to the implementation of remote patient monitoring.⁷¹

Digital health literacy

Probably even more important in educating health professionals about digital health is the need to promote digital health literacy in the general population.

In 2006, digital health literacy was defined as the ability to seek, find, understand and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem.⁷²

Clearly the issue has become more complex in the intervening years, given the growing array of both information sources and service offerings.

Patients now have the capability to communicate about their health to health care professionals (e.g., e-consults), self-monitor their health (e.g., patient portals) and receive treatment online (e.g., web-based cognitive behavioural therapy).⁷³

Van der Vaart and Drossaert have developed a digital health literacy instrument that assesses these capabilities across seven dimensions: operational skills, navigation skills, information searching, evaluating reliability, determining relevance, adding self-generated and protecting privacy.⁷³ Thus far it has been piloted in the Netherlands.

There are no current Canadian data available on health literacy, let alone digital health literacy. Smith and Magnani have raised the prospect of limited digital health literacy exacerbating health inequalities and have set out 18 “digital universal precautions” to mitigate it.⁷⁴

In light of the anticipated growth of virtual health care it would be desirable to understand and promote digital health literacy across Canada in a manner similar to the way the federal government has addressed financial literacy over the past decade. That approach has included financial capability surveys and the development of a National Strategy for Financial Literacy, which has focused on seniors in its first phase.⁷⁵



QUALITY OF CARE

In 2001 the US Institute of Medicine put forward a six-dimension concept of quality that includes the following elements: safe, effective, patient-centred, timely, efficient and equitable.⁷⁶

One issue that gets raised that cuts across several of these dimensions is the potential for virtual care to fragment the continuity of care. In a report for the Canadian Health Services Research Foundation, Reid and colleagues identified three core concepts of continuity:

- informational continuity (the use of information on prior events and circumstances to inform current care);
- relational continuity (an ongoing relationship between a patient and one or more providers); and
- management continuity (the provision of timely and complementary services in a shared management plan).⁷⁷

The episodic use of virtual care outside an ongoing relationship and with no connection to an electronic health record would undermine the elements listed above.

The 2019 WHO guideline recommends client-to-provider telemedicine under the condition that it complements, rather than replaces, face-to-face delivery of health services.⁶

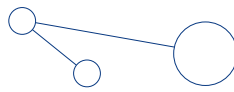
However, this must be weighed against access, which is an ongoing challenge in Canada and many countries.

There is a persistent shortage of family physicians in Canada. In November 2018 there were almost 2,000 advertised positions for family physicians, not including part-time and locum positions.⁷⁸

According to Statistics Canada's Canadian Community Health Survey (CCHS), in 2017 4.7 million Canadians aged 12 years and older reported that they did not have a regular health care provider.⁷⁹ Even those who have a regular provider experience wait time issues. The 2017 CCHS found that just under four in 10 people with a regular provider could get an appointment either the same or next day when they needed one.

A recent US survey of users versus non-users of LiveHealth Online (LHO), a health plan telehealth provider, found that users were less likely to have a usual source of primary care and that nearly half reported that they had chosen LHO for their most recent physician visit because they could not see their doctor that day because of a lack of appointments or closed office.⁸⁰

A recent comprehensive evaluation of GP at Hand in England found some evidence of an impact on the continuity of care provided, although this was not raised as a significant issue by most patients themselves. The majority of them have actively chosen access over continuity of care and are satisfied with the choice they have made.⁸¹



With regard to other elements of quality, in the area of safety/effectiveness the Canadian Agency for Drugs and Technologies and Health has conducted a number of reviews of the evidence for applications of telehealth in several areas including chronic disease, maternal and pediatric care and mental health.⁸² In the area of efficiency the question arises as to whether virtual care replaces face-to-face care or whether it is an add-on.

In terms of the equity dimension, the GP at Hand evaluation found that the Babylon services was not being used by large numbers of older people or people with more complex needs and that people who did not have access to a smartphone or who were not comfortable using one were less likely to use the services.⁸¹ To the degree that there is user pay associated with the use of virtual care that clearly poses a potential equity issue.

A 2018 US study of 35,000 patients in a Massachusetts-based Accountable Care Organization between 2014 and 2017 found that the use of virtual visits reduced face-to-face visits by 33% but increased total visits by 80% over 1.5 years.⁸³

RESOURCES/GUIDELINES

Several resources have been published that set out guidelines for the implementation of virtual care and guidance for the medical profession wishing to engage in it. BC's health authorities have set out comprehensive technical clinical guidelines covering a range of topics.⁸⁴

BC TELEHEALTH CLINICAL GUIDELINES	
Duty of care	Protecting client privacy and confidentiality
Program suitability	Client identity
Ethics	Documentation and client records
Client suitability	Quality measurements
Informed consent	

Source: Province of BC health authorities

Health Standards Organization, the body that develops the standards used by Accreditation Canada, has issued a standard for virtual health. This standard emphasizes the role of the patient and family in the design and operation of virtual health services. It indicates, for instance, that the Virtual Health services is delivered using a patient-centred approach that emphasizes patient engagement, the patient/clinician relationship, and the quality of care.⁸⁵

For physicians, the College of Physicians & Surgeons of Alberta has issued a comprehensive statement of advice to the profession that sets out in detail the expectations surrounding the physician–patient relationship in the context of virtual care.⁸⁶

The aforementioned WHO guideline sets out implementation considerations for each of its recommendations.⁶



CONCLUSION

At the current rate of progress, it is likely to take decades for Canada to achieve the level of virtual care that is currently being delivered by systems such as Kaiser Permanente.

The Canadian Medical Association, the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons of Canada have struck a Virtual Health Care Task Force with the participation of other national medical associations and patients that is charged with developing recommendations to address the issues described above with a view to increasing the adoption of virtual care across Canada.

- ¹ Cometto G, Scheffler R, Bruckner T, et al. Health workforce needs, demand and shortages to 2030. Chapter 1 in: Buchan J, Dhillon I, Campbell J, editors. *Health employment and economic growth: an evidence base*. Geneva: World Health Organization; 2017. Available: www.who.int/hrh/resources/WHO-HLC-Report_web.pdf (accessed 2019 June 23).
- ² Britnell M. *Human: solving the global workforce crisis in healthcare*. Oxford (UK): Oxford University Press; 2019.
- ³ Ipsos. Global views on healthcare 2018. Available: www.ipsos.com/sites/default/files/ct/news/documents/2018-07/global_views_on_healthcare_2018_-_graphic_report_0.pdf (accessed 2019 June 23).
- ⁴ World Health Organization. Digital health [draft resolution]. A71/A/CONF./1. Geneva: World Health Organization; 2018. Available: http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_ACONF1-en.pdf (accessed 2018 Sept 7).
- ⁵ World Health Organization. Global strategy on digital health 2020–2024. Geneva: World Health Organization; 2019. Available: <https://extranet.who.int/dataform/upload/surveys/183439/files/Draft%20Global%20Strategy%20on%20Digital%20Health.pdf> (accessed 2019 June 23).
- ⁶ World Health Organization. *Recommendations on digital interventions for health system strengthening*. Geneva: World Health Organization; 2019. Available: <https://apps.who.int/iris/bitstream/handle/10665/311941/9789241550505-eng.pdf?ua=1> (accessed 2019 June 23).
- ⁷ NHS England. *The NHS long term plan*. NHS; 2019. Available: www.longtermplan.nhs.uk/wp-content/uploads/2019/01/nhs-long-term-plan-june-2019.pdf (accessed 2019 June 23).
- ⁸ France. *Feuille de route. Accélérer le virage numérique*. Paris: Ministère des solidarités et de la santé; 2019. Available: https://solidarites-sante.gouv.fr/IMG/pdf/190425_dossier_presse_masante2022_ok.pdf (accessed 2019 June 23).
- ⁹ Australian Digital Health Agency. *Australia's national digital health strategy: safe, seamless and secure*. Available: https://conversation.digitalhealth.gov.au/sites/default/files/adha-strategy-doc-2ndaug_0_1.pdf (accessed 2019 June 23).
- ¹⁰ Shaw J, Jamieson T, Agarwal P, et al. Virtual care policy recommendations for patient-centred primary care: findings of a consensus policy dialogue using a nominal group technique. *J Telemed Telecare* 2018;24(9):608–15.
- ¹¹ House A, Roberts J. Telemedicine in Canada. *CMAJ* 1977;117(4):386–8.
- ¹² NHS Digital. *Appointments in general practice*, April 2019. Available: <https://digital.nhs.uk/data-and-information/publications/statistical/appointments-in-general-practice/april-2019> (accessed 2019 June 23).
- ¹³ Kaiser Permanente. The future of care delivered today [fact sheet]. https://permanente.org/wp-content/uploads/2018/05/Fact-Sheet_Telehealth_final.pdf (accessed 2019 June 23).
- ¹⁴ Intermountain Healthcare. Intermountain Healthcare opens new hospital — without a building or walls [news release]. Available: <https://intermountainhealthcare.org/news/2018/02/intermountain-healthcare-opens-new-hospital-without-a-building-or-walls/> (accessed 2018 June 6).
- ¹⁵ Mercy Virtual Care Center. World's first facility dedicated to telehealth. Available: www.mercyvirtual.net/worlds-first-virtual-care-center/ (accessed 2018 June 6).
- ¹⁶ Canada's Health Informatics Association. *2015 Canadian telehealth report*. Toronto: The Association; 2015. Available: <https://livecare.ca/sites/default/files/2015%20TeleHealth-Public-eBook-Final-10-9-15-secured.pdf> (accessed 2017 Nov 10).
- ¹⁷ Pakravan P. Telemedicine in Ontario: progress to date and strategic imperatives. Available: www.nlma.nl.ca/nlma/event/resources/pakravan.pdf (accessed 2019 June 23).
- ¹⁸ Conference Board of Canada. *Future care for Canadian seniors: a status quo forecast*. Ottawa: The Board; 2015.
- ¹⁹ Conference Board of Canada. Sizing up the challenge: meeting the demand for long-term care in Canada. Ottawa: The Board; 2017.
- ²⁰ Ipsos. Six in ten Canadians say they are excited about the impact artificial intelligence (AI) will have on health care and a majority believe new technology (75%) and AI (69%) could solve existing issues our health care system. Available: www.ipsos.com/sites/default/files/ct/news/documents/2018-08/cma_health_summit_factum_final_aug_14_2018.pdf (accessed 2019 June 24).
- ²¹ Canada Health Infoway. Connecting patients for better health: 2018. Available: www.infoway-inforoute.ca/en/component/edocman/3564-connecting-patients-for-better-health-2018/view-document?Itemid=0 (accessed 2019 June 24).
- ²² Canada Health Infoway. 2018 Canadian Physician Survey. Available: www.infoway-inforoute.ca/en/component/edocman/3643-2018-canadian-physician-survey/view-document?Itemid=0 (accessed 2019 June 24).
- ²³ Maple. Skip the waiting room. Available: www.getmaple.ca/ (accessed 2019 June 24).
- ²⁴ DermaGO. Available: https://dermago.ca/index_en.html?utm_source=google&utm_medium=cpc&utm_campaign=brand-dermago-en&gclid=EAlalQobChMI1_D7u8rR3wIVBECGCh0e5AVdEAAAYASAAEgLNvD_BwE (accessed 2019 June 24).

- ²⁵ Cloud DX. About Cloud DX. Available: <https://www.clouddx.com/#/about> (accessed 2019 June 24).
- ²⁶ Great-West Life. Great-West Life first national insurer in Canada to offer virtual health care service: Employers in Quebec and Ontario to pilot Dialogue [news release]. 2017 Nov 14. Available: www.greatwestlife.com/common/news/news-releases/great-west-life-first-national-insurer-in-canada-to-offer-virtua.html (accessed 2019 June 24).
- ²⁷ Sun Life Financial. Virtual doctor on demand [announcement]. 2018 Mar 8. Available: www.sunlife.ca/ca/About+us/Newsroom/News+releases/Announcement/Virtual+doctor+on+demand?vgnLocale=en_CA&id=123171 (accessed 2019 June 24).
- ²⁸ GP at Hand. About us. Available: www.gpathand.nhs.uk/about-us (accessed 2019 June 24).
- ²⁹ Telus Health. New app from TELUS Health and Babylon enables Canadians to visit a doctor through their smart-phone [news release]. Available: www.telushealth.co/news/new-app-telus-health-babylon-enables-canadians-visit-doctor-smartphone/ (accessed 2019 June 24).
- ³⁰ Babylon Health. Artificial intelligence. Available: www.babylonhealth.com/ai. (accessed 2019 June 26).
- ³¹ Bhatia RS, Falk W. Modernizing Canada's healthcare system through the virtualization of services [e-brief]. Toronto: C.D. Howe Institute; 2018. Available: www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/E-Brief%20277.pdf (accessed 2019 Jun 24).
- ³² ITAC Health. Accelerating the adoption of digital health technologies in Canada [white paper]. Available: <https://itac.ca/wp-content/uploads/2018/10/Whitepaper-2018.pdf> (accessed 2019 Jun 23).
- ³³ Newfoundland and Labrador Medical Association. Virtual care strategy. St. John's (NL): The Association; 2019. Available www.nlma.nl.ca/FileManager/Position-Papers/docs/NLMA_Virtual_Care_Strategy_-_June_2019.pdf (accessed 2019 Jun 23).
- ³⁴ Ontario Ministry of Health and Long-Term Care. *Ontario Health Teams: guidance for health care providers and organizations*. Toronto: The Ministry; 2019. http://health.gov.on.ca/en/pro/programs/connectedcare/oht/docs/guidance_doc_en.pdf (accessed 2019 Jun 23).
- ³⁵ Premier's Council on Improving Healthcare and Ending Hallway Medicine. *A Healthy Ontario: building a sustainable health care system*. Available: <https://files.ontario.ca/moh-healthy-ontario-building-sustainable-health-care-en-2019-06-25.pdf> (accessed 2019 Jun 26).
- ³⁶ College of Family Physicians of Canada, Canadian Medical Association, Royal College of Physicians and Surgeons of Canada. National Physician Survey, 2014. Q16. Available: <http://nationalphysiciansurvey.ca/wp-content/uploads/2014/08/2014-National-EN-Q16.pdf> (accessed 2019 Jun 24).
- ³⁷ Stanistreet K, Verma J, Kirvan K, et al. Physician remuneration for remote consults: an overview of approaches across Canada. *Healthc Q* 2017;20(3):12–5.
- ³⁸ General Practice Services Committee. GP Services Committee: conferencing and telephone management incentives. Rev Jan 2019. Available: <https://mfiles.doctorsofbc.ca/SharedLinks.aspx?accesskey=e5c8a51b2e09cf774cba26433583278fb26ca7715667c365b58454caba8d4661&VaultGUID=D43316D7-A660-4C25-A7F3-285FB47DAEC5> (accessed 2 Apr 2019).
- ³⁹ Ontario Telemedicine Network. OHIP billing information for telemedicine services. Available: https://support.otn.ca/sites/default/files/ohip_telemedicine_billing_information_manual.pdf (accessed 2019 Jun 24).
- ⁴⁰ Alberta Medical Association. Fee navigator. Health service code 03.01S. Physician to patient secure electronic communication. Available: www.albertadoctors.org/fee-navigator/hsc/03.01S (accessed 2019 Jun 24).
- ⁴¹ Government of Nova Scotia. Premier's Office. Government makes investments in family doctors [news release]. 19 Mar 2018. Available: <https://novascotia.ca/news/release/?id=20180319001> (accessed 2019 Jun 24).
- ⁴² Alberta Medical Association. Billing corner. 2018 Nov. Available: www.albertadoctors.org/billingcorner/nov-1-2018-billing-corner.pdf (accessed 2019 Jun 24).
- ⁴³ Maple. News and press. Available: www.getmaple.ca/press/ (accessed 2019 Jan 3).
- ⁴⁴ Canada. A consolidation of the Constitution Acts 1869 to 1982. Available: http://laws-lois.justice.gc.ca/PDF/CONST_E.pdf (accessed 2019 Jun 24).
- ⁴⁵ Canada. The Revised Statues of Canada 1927. Vol III Chapter 129. An Act to provide for the establishment of a Medical Council in Canada.
- ⁴⁶ Federation of Medical Licensing authorities of Canada, Association of Canadian Medical Colleges, Medical Council of Canada. Licensure, postgraduate training and the qualifying examination. *CMAJ* 1992;146(3):345.
- ⁴⁷ Federation of Medical Regulatory Authorities of Canada. Model standards for medical registration in Canada. Available: <http://fmrac.ca/wp-content/uploads/2018/04/Model-Standards-for-Medical-Registration-in-Canada-updated-February-2018.pdf> (accessed 2019 Jun 24).

- ⁴⁸ College of Physicians and Surgeons of Saskatchewan. Telemedicine licensure. Available: <https://www.cps.sk.ca/iMIS/Documents/Registration/Licensure/Licence%20types/5.1-Telemedicine%20Licensure.pdf> (accessed 2019 Jun 24).
- ⁴⁹ College of Physicians and Surgeons of New Brunswick. Regulation #13: telemedicine regulation. Available: <http://cpsnb.org/en/medical-act-regulations-and-guidelines/regulations/419-regulation-13-telemedicine-regulation> (accessed 2019 Jun 24).
- ⁵⁰ Federation of Medical Regulatory Authorities of Canada. FMRAC framework on telemedicine 2019. Available: <http://fmrac.ca/wp-content/uploads/2019/04/Framework-on-Telemedicine-Final.pdf>
- ⁵¹ Canadian Medical Protective Association. Telemedicine — opportunities, challenges and obligations. Available: www.cmpa-acpm.ca/en/advice-publications/browse-articles/2013/telemedicine-challenges-and-obligations (accessed 2019 Jun 24).
- ⁵² Kingsmill S. Portable licensure: on the distant horizon? *Can J Rural Med* 2001;6(3):215–6.
- ⁵³ Canadian Collaborative Taskforce. *The rural road map for action: directions*. Mississauga (ON): The Taskforce; 2017. Available: www.cfpc.ca/uploadedFiles/Directories/Committees_List/Rural%20Road%20Map%20Directions%20ENG.pdf (accessed 2019 Jun 24).
- ⁵⁴ Resident Doctors of Canada. Collaborative statement on Canadian portable locum licensure. Available: <https://residentdoctors.ca/wp-content/uploads/2018/10/Infosheet-Portablelocumlicensureinitiative-EN-R2.pdf>. (accessed 2019 Jun 24).
- ⁵⁵ Downes A. Personal email communication, 14 Dec 2018.
- ⁵⁶ Breen K. National registration scheme at 5 years: not what it promised. *Aust Health Rev* 2016;50:674–8.
- ⁵⁷ Interstate Medical Licensure Compact. The IMLC. Available: <https://imlcc.org> (accessed 2019 Jun 24).
- ⁵⁸ Osler G. National licensure: final results of a CMA Member e-panel survey. Presentation to the Canadian Medical Forum, 3 Dec 2018.
- ⁵⁹ College of Physicians and Surgeons of British Columbia. Registrar's message: telemedicine and licence portability-the future of medical regulation in Canada. Available: www.cpsbc.ca/for-physicians/college-connector/2019-V07-02/01 (accessed 2019 Jun 24).
- ⁶⁰ Alberta Health Services. Connect Care – health professionals. Available: www.albertahealthservices.ca/info/Page15449.aspx. (accessed 2019 Jun 24).
- ⁶¹ Canada's Economic Strategy Tables: Health and Biosciences. *The Innovation and Competitiveness Imperative: Seizing Opportunities for Growth*. Available: [www.ic.gc.ca/eic/site/098.nsf/vwapj/ISEDHealthBioscience.pdf/\\$file/ISEDHealthBioscience.pdf](http://www.ic.gc.ca/eic/site/098.nsf/vwapj/ISEDHealthBioscience.pdf/$file/ISEDHealthBioscience.pdf) (accessed 2019 Jun 24).
- ⁶² Information and Privacy Commissioner of Ontario. *Circle of care: sharing personal information for health-care purposes*. Toronto: The Commissioner; 2015. Available: www.ipc.on.ca/wp-content/uploads/resources/circle-of-care.pdf (accessed 2019 Jun 24).
- ⁶³ Affleck E. Interoperability of electronic medical records requires more than just technical understanding. *CMAJ* 2019;191(19):E541.
- ⁶⁴ Canada Health Infoway. Summary corporate plan 2019–2020. Available: www.infoway-inforoute.ca/en/component/edocman/resources/i-infoway-i-corporate/business-plans/3654-summary-corporate-plan-2019-2020 (accessed 2019 Jun 24).
- ⁶⁵ Mesko B, Drobin A, Bényei E, et al. Digital health is a cultural transformation of traditional healthcare. *mHealth* 2017;3:38.
- ⁶⁶ Association of Faculties of Medicine of Canada, Canada Health Infoway. *Environmental scan of e-health in Canadian undergraduate medical curriculum*. Ottawa; The Association; 2012.
- ⁶⁷ Ho, K. *The CanMEDS 2015 eHealth expert working group report*. Ottawa: Royal College of Physicians and Surgeons of Canada; 2014. Available: www.royalcollege.ca/rcsite/documents/canmeds/ehealth-ewg-report-e.pdf (accessed 2019 Jun 24).
- ⁶⁸ Teichert E. Training docs on 'websites manner' for virtual visits. *Modern Healthcare*. 27 Aug 2016.
- ⁶⁹ Sharma R, Nachum S, Davidson K, et al. It's not just FaceTime: core competencies for the medical virtualist. *Int J Emerg Med* 2019;12(8). doi:10.1186/s12245-019-0226-y.
- ⁷⁰ Health Education England. *The Topol review. Preparing the healthcare workforce to deliver the digital future*. Available: <https://topol.hee.nhs.uk/wp-content/uploads/HEE-Topol-Review-2019.pdf> (accessed 2019 Jun 24).
- ⁷¹ American Medical Association. Digital health implementation playbook. Chicago: The Association; 2018. Available: www.ama-assn.org/system/files/2018-12/digital-health-implementation-playbook.pdf (accessed 2019 Jun 24).

- ⁷² Norman C, Skinner H. eHealth literacy: essential skills for consumer health in a networked world. *J Med Internet Res* 2006;8(2):e9. doi:10.2196/jmir.8.2.e9.
- ⁷³ Van der Vaart R, Drossaert C. Development of the digital health literacy instrument: measuring a broad spectrum of health 1.0 and health 2.0 skills. *J Med Internet Res* 2017;19(1):e27. doi:10.2196/jmir.6709.
- ⁷⁴ Smith B, Magnani J. New technologies, new disparities: the intersection of electronic health and digital health literacy. *Int J Cardiol* 2019 May 28. doi: 10.1016/j.ijcard.2019.05.066.
- ⁷⁵ Financial Consumer Agency of Canada. *National strategy for financial literacy. Phase 1: strengthening seniors' financial literacy*. Ottawa: The Agency; 2014. Available: www.canada.ca/content/dam/canada/financial-consumer-agency/migration/eng/financialliteracy/financialliteracycanada/documents/seniorsstrategyen.pdf (accessed 2019 Jun 24).
- ⁷⁶ Institute of Medicine. *Crossing the quality chasm: a new health system for the 21st century*. Washington (DC): National Academies Press; 2001.
- ⁷⁷ Reid R, Haggerty J, McKendry R. *Defusing the confusion: concepts and measures of continuity of healthcare*. Ottawa: Canadian Health Services Research Foundation; 2002. Available: www.cfhi-fcass.ca/Migrated/PDF/ResearchReports/CommissionedResearch/cr_contcare_e.pdf (accessed 2019 Jun 24).
- ⁷⁸ Canadian Medical Association. Physician opportunities by province/territory and specialty. Ottawa: The Association; 2018 Nov.
- ⁷⁹ Statistics Canada. *Primary health care providers, 2017*. Ottawa: Statistics Canada; 2019. Available: www150.statcan.gc.ca/n1/en/pub/82-625-x/2019001/article/00001-eng.pdf?st=NGPiUkM5 (accessed 2019 Jun 24).
- ⁸⁰ Liaw W, Jetty A, Coffman M, Petterson S, et al. Disconnected: a survey of users and nonusers of telehealth and their use of primary care. *J Am Med Inform Assoc* 2019;26(5):420–8.
- ⁸¹ Ipsos Mori. *Evaluation of Babylon GP at hand: final evaluation report*. Available: www.hammersmithfulhamccg.nhs.uk/media/156123/Evaluation-of-Babylon-GP-at-Hand-Final-Report.pdf (accessed 2019 Jun 24).
- ⁸² Canadian Agency for Drugs and Technologies in Health. Ottawa: The Agency; 2016. *Telehealth: summary of evidence*. Available: https://cadth.ca/sites/default/files/pdf/telehealth_bundle.pdf (accessed 2019 Jun 24).
- ⁸³ Shah S, Schwamm L, Cohen A, et al. Virtual visits partially replaces in-person visits in an ACO-based medical specialty practice. *Health Aff* 2018;37(12):2045–51.
- ⁸⁴ Province of BC Health Authorities. *Telehealth clinical guidelines*. Available: www.phsa.ca/Documents/Telehealth/TH_Clinical_Guidelines_Sept2015.pdf (accessed 2019 Jun 24).
- ⁸⁵ Health Standards Organization. HSO 83001:2018 — virtual health. Available: <https://healthstandards.org/standard/virtual-health/> (accessed 2019 Jun 24).
- ⁸⁶ College of Physicians & Surgeons of Alberta. Advice to the profession: telemedicine. Available: www.cpsa.ca/wp-content/uploads/2018/10/AP_Telemedicine.pdf (ac

ASSOCIATION
MÉDICALE
CANADIENNE



CANADIAN
MEDICAL
ASSOCIATION

August 2019