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**HEALTH CARE ENTREPRENEURSHIP
HOW TO ENCOURAGE THE DEPLOYMENT
OF TELEMEDICINE IN CANADA**

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of Telemedicine in Canada**

Montreal Economic Institute

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HIGHLIGHTS

While today's technology has made it entirely feasible, the use of telemedicine remains limited in Canada and elsewhere, although it is growing, driven mainly by the entrepreneurial sector. Yet the gains that we could reap from greater reliance on remote care are substantial, given the difficulties Canadians have accessing care. Why does the use of virtual consultations remain so marginal today, and how can this be addressed?

Chapter 1 – Where Things Stand

- While all provinces provide certain remote medical services, British Columbia is the only one where video consultations with family doctors are paid for by the government just like any other medical consultation.
- Of the 270 million billable services tallied by the Canadian Institute for Health Information in 2014, only 412,000, or 0.15%, were remote consultations.
- In 2018, only 4% of Canadian family doctors offered their patients the option of a virtual consultation, and only 9% of medical specialists did so. Only 1% of the Canadian population uses telemedicine services.
- A 2016 comparison between ten rich countries found that Canadian doctors were the least likely (16%) to offer their patients the option of contacting them by email, versus 86% in Switzerland and 64% in the United States.
- Yet patients appear willing to use technology to access health care. Three-quarters of Canadians say they are interested in using an online portal to access their medical file and consult their doctor, and four in ten are ready to pay for such a service.
- Despite a recent expansion in service provision, the use of virtual consultations also remains limited in Europe, with virtual consultations making up around 2% of primary care visits in Sweden in 2017, for example.
- In the United States, between 2015 and 2018, the proportion of large companies (200+ employees) whose primary group insurance plans covered the use of telemedicine went from slightly more than one-quarter to nearly three-quarters.
- Although the number of virtual visits to doctors by Americans insured under a group plan had risen

nearly 20-fold between 2010 and 2016, fewer than 1% of the insured had used that option.

Chapter 2 – Improving Access to Health Care while Reducing Costs

- In a comparison of the health care systems of eleven rich countries, Canada comes in dead last in terms of getting an appointment with a health care professional the same day or the next, in waiting times to see a medical specialist, and in waiting times for elective surgery.
- Canada is also (and by far) the country where people are most likely to spend long hours in a hospital emergency room before getting the treatment they need.
- More than two out of three Canadians (68%) say they have given up on a medical consultation due to various obstacles, such as long waiting times or the inability to see a doctor outside normal office hours.
- The government regards patients as a net expense; it therefore seeks to limit such expenses, notably by restricting and rationing the supply of care. For companies operating in the health care field, patients represent potential income, and they therefore want more of them.
- More than four in ten Canadians thought their latest visit to an ER was for a condition that could have been treated in a clinic; meanwhile, telemedicine companies say that from 50% to 70% of common primary care problems can be dealt with during a virtual visit.
- A number of studies have shown that virtual consultations could lead to cost savings for care providers compared to in-person consultations.
- For employers, offering virtual consultations to their employees could also result in significant savings, as a 2013 study estimated the cost of absenteeism to Canadian employers at close to \$17 billion, or 2.4% of the total wage bill.
- There is ample scientific evidence that low-cost telemedicine interventions in primary care are feasible and acceptable to both patients and physicians, and typically result in improved quality of care and cost savings.

Chapter 3 – Obstacles to the Deployment of Telemedicine

- Since the use of telemedicine helps reduce the costs of some treatments, and avoid others altogether, it should in principle lead to efficiency gains for health systems.
- However, if telemedicine allowed the public systems to meet Canadians' unmet demand for care, this could in theory lead to an increase in government health care spending. At the least, the potential savings could be wiped out by additional demand for care, which would at long last be met.
- Entrepreneurial efforts, which are also being developed outside the public system, may provide a solution by increasing the overall supply of care, all while reducing the pressure on government spending.
- Access to technology is sometimes presented as an obstacle to the development of telemedicine, yet numerous solutions exist and are available on devices that the vast majority of patients and caregivers use every day.
- Regulatory barriers, however, do constitute a real obstacle, as under current rules, a doctor wishing to offer telemedicine consultations in every province will need to possess and renew six or seven provincial licences.
- Relaxing regulations on professional licensing through the mutual recognition of provincial licences, which an overwhelming majority (92%) of doctors favour, could help boost the supply of care and increase access.
- The American example shows that regulatory easing is possible. In early 2019, 24 states had adopted a policy favouring the accelerated issuing of doctors' licences, while the principle of recognizing nurses' licences from another state had been adopted by 31 states.
- In addition to licensing-related barriers, most of Canada's public health care systems limit access to telemedicine by imposing all sorts of conditions that do not exist in the case of entrepreneurial telemedicine.
- Most provincial health care systems restrict the use of telemedicine to patients living in remote areas, or at least give them much higher priority, and require

that patients receive care in a place designated or approved for this purpose.

- In several provinces, doctors also have to seek permission or register with the public authorities before they can provide telemedicine-based consultations within the public system.

Chapter 4 – Case Studies: Entrepreneurial Telemedicine and the Ontario Telemedicine Network

- In entrepreneurial telemedicine, patients select their care providers and the times when they receive care. If they are not happy with the services they are getting, they can turn to another provider.
- Companies operating in the entrepreneurial telemedicine sector offer consultations on demand for common health problems by text message, voice, or video, using phones, tablets, or personal computers, at the time and place that suits the patient.
- The definition of "consultation on demand" varies from company to company, with some offering daytime consultations by appointment, others guaranteeing a consultation with a nurse practitioner or a doctor in a matter of minutes, 24 hours a day, seven days a week.
- Most companies providing virtual care focus on common health problems (fever, flu, minor infections, allergies, sexual health, prescription renewals, etc.), which are just the types of ailments for which Canadians go to emergency rooms more often than people in comparable countries.
- The largest of Canada's provincial telemedicine programs is the Ontario Telemedicine Network (OTN), whose primary service is virtual consultations for patients living in remote areas.
- During the 2017-2018 fiscal year, the OTN facilitated nearly 900,000 remote consultations, which remains a small fraction of the approximately 100 million clinical services delivered each year in the province.
- Still, there is no doubt that the OTN provides substantial benefits for patients and for the public health care system: The programs for virtual consultations between primary care providers and specialists, for instance, have eliminated the need for in-person patient visits in nearly 80% of cases.

- The slow spread of telemedicine within the Ontario public health care system again illustrates the difficulty that bureaucratic systems have in incorporating innovation.

centrate their action on bringing down the barriers that still remain.

Conclusion – Recommendations for Policy-Makers

- The general objective of provincial policy-makers should be to lower the barriers that slow down the development and expansion of telemedicine, which does not entail in itself any additional government spending.
- **1) Mutual Recognition of Licences to Practise:** The need for doctors to hold licences in several provinces is probably the biggest obstacle to the expansion of companies active in the field of telemedicine. It also prevents a better allocation of medical resources in the public systems.
- **2) Eliminate Professional Barriers:** The scope of practice of nurses, nurse practitioners, and pharmacists should be broadened as much as possible; the less that facilities and companies offering telemedicine services will depend on doctors, who are a scarce resource, the more they will be able to expand their services and improve access for patients.
- **3) Review the Remuneration of Doctors:** Canadian doctors receive nearly three-quarters of their remuneration in the form of fee-for-service payments, which does not favour innovation in the practise of medicine.
- **4) Authorize Mixed Medical Practice:** In several European countries, studies have shown that doctors who adopt a mixed practice increase the overall number of hours spent treating patients, without reducing the time devoted to the public system.
- **5) See the Private Sector as a Partner:** Health care systems drawing on the contribution of private companies within universal systems are the norm across the OECD, with impressive results from the perspective of patients and public finances alike. In Canada, companies active in the field of telemedicine have shown that they could provide support to public facilities.
- **6) Resisting the Temptation to Regulate:** The benefits of telemedicine for patients have been amply demonstrated, and its professionals are already governed by codes of ethics and professional orders. Legislators should take a step to the side, and con-

INTRODUCTION

The day started badly, like yesterday. Still the same symptoms, but you don't feel much like spending the morning at a clinic, and an emergency room even less. You open an application on your phone. In a matter of clicks, a doctor's face appears. After a brief consultation, you are given a prescription, which is delivered to you a little later that day. Without thinking about it too much, you are already back to your daily activities.

Such a scenario was science fiction just a few years ago. Today's technology has made it feasible, but the use of telemedicine remains limited in Canada, depriving Canadian patients of its benefits. Why is this? And what can be done to remedy the situation? These are the questions that will be addressed in these pages.

What, exactly, is telemedicine? In the broadest sense, it could be defined as the use of any technology that helps health care providers collaborate and deliver remote care to patients.¹

This can go from a simple doctor-patient phone call to videoconferencing using sophisticated technology, and includes instant messaging and the use of video applications on mobile devices for an exam or a follow-up. This broad definition can also include the telemonitoring of patients with chronic conditions, remote consultations, and the transmission of results or images between health professionals.²

This research paper will focus mainly on consultations between patients and caregivers. The latter generally include medical doctors and nurses, although other health professionals can also be involved (psychologists, nutritionists, etc.). There will be discussion of telemedicine, virtual medicine, telehealth, telepractice, telemonitoring, teleassistance, or virtual consultations, depending on the context or the sources, or simply to vary the vocabulary, regardless of which professional is providing care.

The practice of telemedicine, its evolution, and its growth will be examined both within the public health systems and in an entrepreneurial context, the point being to look at what favours its expansion, what slows

it, and ultimately, identifying ways of making it accessible to as many patients as possible.

Chapter 1 will sketch a general picture of the adoption of telemedicine and its accessibility in Canada, and provide a brief overview of the situation in comparable countries like Sweden, France, the United Kingdom, and the United States. It will show, among other things, that Canadian doctors are reluctant to adopt new technologies in their practices, even though a large proportion of patients are in favour of them. It will examine how, here and elsewhere, the use of virtual consultations remains marginal, although it is growing, driven mainly by the entrepreneurial sector.

What, exactly, is telemedicine? In the broadest sense, the use of any technology that helps health care providers collaborate and deliver remote care to patients.

Chapter 2 will describe the gains that Canada could reap from greater reliance on remote medicine. It will first give an overview of the difficulties Canadians have accessing care compared to patients in other industrialized countries. It will survey the benefits for patients in terms of access and reduced waits, and for governments in terms of savings and efficiency. Finally, it will show how the contribution of employers can help make these gains a reality, from the perspective of patients and of the government.

Chapter 3 will look specifically at the main obstacles to the deployment of telemedicine in Canada. It will explain why certain impediments, notably financial and technological issues, are more illustrations of the limits of public systems than actual obstacles to the expansion of telemedicine. It will also show how regulatory barriers, in particular the territorial regulation of professional practice, are a very real obstacle from the perspective of telemedicine companies, but also from the perspective of Canada's public health care systems, and how to remove this obstacle. Finally, it will note how the rationing of care by government, which imposes all sorts of conditions on providing or receiving remote care, also hinders the deployment of telemedicine.

Chapter 4 will present case studies of different solutions that are offered to patients, in an entrepreneurial context and within the public system. Without carrying out a

1. Kerry Waddel, Eilish M. Scallan and Michael G. Wilson, "Understanding the Use and Compensation for Virtual-care Services in Primary Care," McMaster Health Forum, McMaster University, July 27, 2018, p. 4.

2. World Health Organization, *Telemedicine: Opportunities and developments in Member States – Report on the second global survey on eHealth*, Global Observatory for eHealth series, Vol. 2, 2010, p. 9; Collège des médecins, *Le médecin, la télémédecine et les technologies de l'information et de la communication: Guide d'exercice*, February 2015, p. 9.

direct comparison, it will provide an overview of the operations and the services offered by different telemedicine companies to individuals, and even to certain public facilities. It will also give a brief glimpse of the telemedicine of the future. It will then look at the case of the Ontario Telemedicine Network, a publicly funded non-profit organization that generated the most developed network in the country, by examining its benefits for patients, as well as the limits of this model.

In this paper's conclusion will be found concrete recommendations for our public decision-makers, the common denominator being the abolition of all obstacles to the deployment of telemedicine. These recommendations, whose implementation requires no additional spending by governments, will facilitate the expansion of remote care and favour their wider dissemination by the public health care systems and by companies offering virtual consultations. In the end, they will have the effect of increasing the supply of care and providing better access to patients. They will also have benefits not just for the telemedicine sector, but for Canadian health care as a whole.

CHAPTER 1

Where Things Stand

The idea of a doctor treating patients who are not physically present is not new. As far back as 1905, a Dutch doctor transmitted heartbeats by telephone, taking the first step in telemedicine using modern technologies. In Norway, Italy, and France, medical clinics provided consultations by radio communication during the 1920s, 1930s, and 1940s. In the United States, remote viewing of X-rays began in the 1950s, and in Canada, a short time later.³

Canadians have long been accustomed to communicating visually and orally with their loved ones, whether nearby or a world away, by sitting in front of a computer or simply touching a portable screen. A vast democratization of telemedicine could have been expected, facilitated by the widespread dissemination of telecommunications and audio-visual technologies, and the advent of computing and smartphones. Yet this still has not taken place.

Telemedicine in Canada

In Canada, the development of telemedicine in the public health care network varies from one province to another, as health care remains an area of provincial jurisdiction under the Constitution. Each province thus has its own health care system. Although these systems share various aspects, due in particular to their common origins, with government funding and a framework set by the *Canada Health Act*,⁴ they are nevertheless distinct in certain respects. This is true of telemedicine.

All provinces provide certain remote medical services through their public systems.⁵ These services are generally intended for patients living in outlying areas or for the monitoring of chronic diseases.⁶ British Columbia is the only province where video consultations with family doctors are paid for by the government just like any other consultation.⁷

In Canada's public health care systems, telemedicine is a marginal phenomenon. In 2014, of the 270 million billable services tallied by the Canadian Institute for Health Information, only 412,000, or 0.15%, were remote consultations.⁸

Though this proportion has undoubtedly risen since then, due in particular to strong growth in consultations in British Columbia,⁹ access to telemedicine remains limited for the country as a whole. A survey conducted in 2018 by Canada Health Infoway showed that only 4% of Canadian family doctors offered their patients the option of a virtual consultation. This proportion is somewhat higher among medical specialists, but at 9% it remains low.¹⁰

In Canada, the development of telemedicine in the public health care network varies from one province to another.

Unsurprisingly, very few patients say they can get a virtual consultation. Another survey conducted by Canada Health Infoway in 2018 found that only 6% of patients said they had this option.¹¹ The actual number of users is likely much lower. A market study conducted for the European Commission in 2018 estimated that telemedicine users represented about 1% of the Canadian population.¹² A poll carried out in 2019 on behalf of the Canadian Medical Association had similar findings.¹³

In general, the use of technology for communications between Canadian doctors and their patients remains limited (see Figure 1-1). Only 10% of Canadians say they can contact one of their health care providers online, for example by email. The same proportion can send a text

3. Seewon Ryu, "Book Review: History of Telemedicine: Evolution, Context, and Transformation," *Healthcare Informatics Research*, Vol. 16, No. 1, 2010, pp. 65-66.

4. Government of Canada, *Canada Health Act*, R.S.C. (1985), Chapter C-6.

5. Ontario has the most highly developed network, which we will examine in greater detail in Chapter 4.

6. Kerry Waddel et al., "Understanding the Use and Compensation for Virtual-care Services in Primary Care," *McMaster Health Forum*, McMaster University, July 27, 2018, p. 4.

7. Doctors of BC, "Virtual care in private practice: Billing & Incentives for GPs e-Communication with Patients," revised March 27, 2019.

8. Canadian Medical Association, *The Future of Technology in Health and Health Care: A Primer*, Health Summit Background, CMA, 2018, p. 3.

9. Pamela Fayerman, "Telus to offer app for 24/7 tele-conference visits to doctors," *Vancouver Sun*, September 7, 2018.

10. Canada Health Infoway, *2018 Canadian Physician Survey – Physicians' Use of Digital Health and Information Technologies in Practice*, December 2018, pp. 19 and 21.

11. Canada Health Infoway, *Connecting Patients for Better Health: 2018*, August 2018, p. 18.

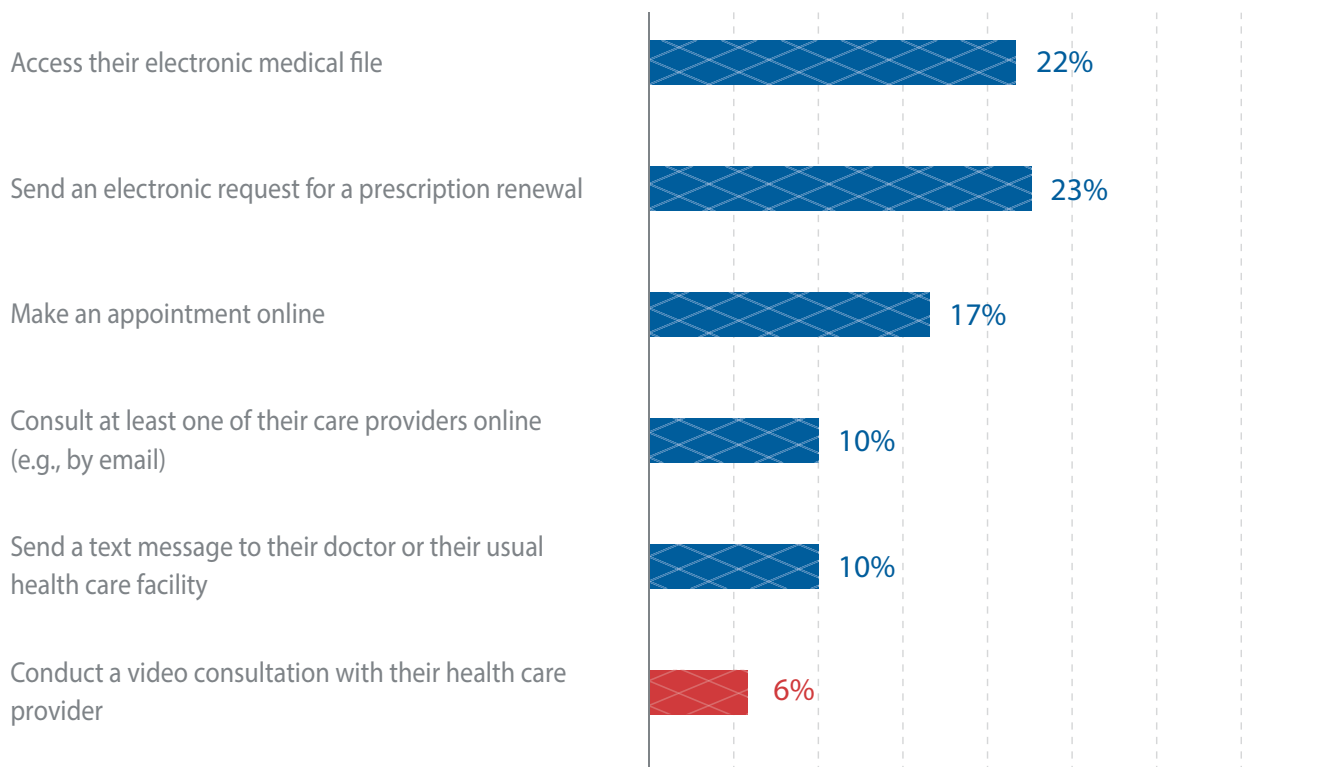
12. European Commission, *Market study on telemedicine*, Third EU Health Programme, pwc, October 2018, p. 56.

13. Canadian Medical Association and IPSOS, "The Future of Connected Health Care: Reporting Canadians' Perspective on the Health Care System," August 2019, p. 11.

Figure 1-1

Use of digital tools and means of communication by Canadian patients, 2018

PROPORTION OF PATIENTS WHO SAY THEY CAN...



Source: Canada Health Infoway, *Connecting Patients for Better Health: 2018*, August 2018, pp. 14, 17, 18, and 19.

message to their doctor or their usual health care facility.¹⁴ A 2016 comparison between ten rich countries found that Canadian doctors were the least likely to offer their patients the option of contacting them by email. The proportion was 86% in Switzerland and 64% in the United States, but only 16% in Canada (see Figure 1-2).

Yet patients appear willing to use technology to access health care. A majority of those unable to contact a health care provider by email or text message wish they could do so. The same applies to 41% of those without access to video consultations.¹⁵ In general, in 2019, three-quarters of Canadians say they are interested in using an online portal to access their medical file and consult their doctor, and four in ten are ready to pay for

such a service.¹⁶ As we shall see in this paper, entrepreneurs have spotted an opportunity and have answered the call where government is unable to adequately meet the demand for treatment.

Telemedicine Elsewhere

How far has telemedicine spread in countries that are comparable to Canada? A comprehensive review would go well beyond the scope of this paper, but a few examples may help set some benchmarks to put the Canadian situation in context.

A Few European Examples

In Sweden, regional authorities conducted some video consultation trials, but the results were inconclusive due to services not being very user-friendly. It is the arrival of

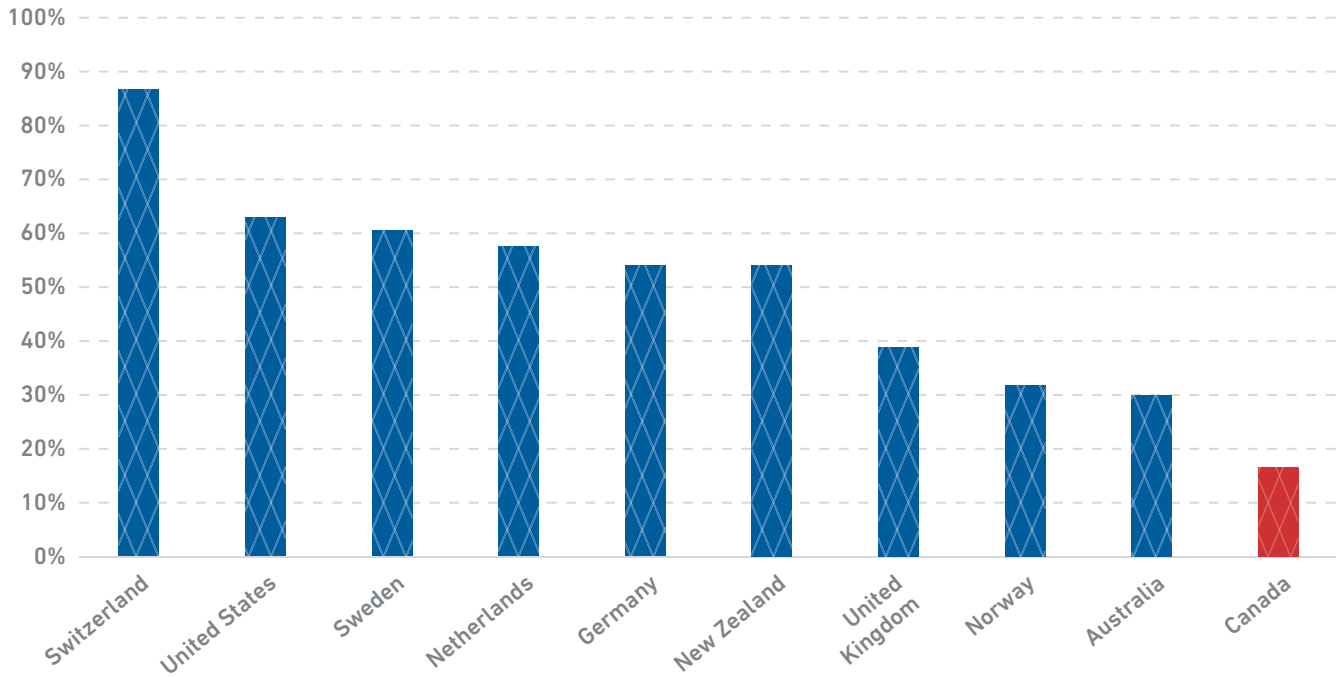
14. Canada Health Infoway, *op. cit.*, footnote 10.

15. *Idem.*

16. Canadian Medical Association and IPSOS, *op. cit.*, footnote 13.

Figure 1-2

Proportion of doctors whose practice gives patients the option of sending an email regarding a question or concern, 2015



Source: Canadian Institute for Health Information, "Results for Canada: The Commonwealth Fund 2015 International Health Policy Survey of Primary Care Physicians – data tables," 2016, tab 28.1.

entrepreneurs on the scene in 2016, notably start-up companies Kry and Min Doktor, which led to the development of more practical services, delivered via smartphone. These entrepreneurs relied on Sweden’s *Act on Freedom of Choice in the Public Sector*, which gives private sector players the right to set up their services throughout Sweden, as long as they comply with regulatory requirements. This law provided a framework for setting up telemedicine services, although lawmakers had likely not foreseen this outcome. In late 2017, nearly 2% of primary care visits in Sweden were virtual consultations, paid for by the government despite being facilitated by private suppliers.¹⁷

In France, remote consultations have existed since 2015, through a service provided by Axa, an insurance company, at no cost to the insured. Axa also offers video

In 2014, of the 270 million billable services tallied by the Canadian Institute for Health Information, only 412,000, or 0.15%, were remote consultations.

consultation through its Qare platform. Previously, patients had to pay for services, but costs are now paid by the French social security system, which has covered video consultations since the fall of 2018, for the same fee as in-person visits.¹⁸ Apart from emergencies and a few other exceptions, doctors are required to have already met each patient who receives a virtual consultation. The choice of equipment and the means of communication are left up to the doctor and may include video platforms such as Facetime and Skype,

17. Mårten Blix and Johanna Jeansson, "Telemedicine and the Welfare State: The Swedish Experience," Research Institute of Industrial Economics, IFN Working Paper No. 1238, 2018; Jonas Sjögreen, "Online doctor - a business concept that creates problems," *Läkartidningen*, Vol. 114, No. EF6Y, January 24, 2017.

18. Axa, Protection des salariés, Téléconsultation médicale, page consulted on July 22, 2019; Axa, "Comment la télémédecine aide AXA à relever le défi de la santé," Newsroom, May 23, 2019; Qare, Tarifs et remboursement, page consulted on July 22, 2019.

although requirements are stricter for sending documents.¹⁹ Other companies have entered the market since the coverage of video consultations took effect, notably Doctolib and Livi, the latter being a subsidiary of the Swedish company Kry.²⁰

In the United Kingdom, the origins of telemedicine date back to the 1990s, but development was slow in the following years, mostly involving pilot projects.²¹ In 2015, 318 primary care managers and doctors were surveyed on the use of technology in their practices. No medical practice offered video consultations, and 86% of them had no intention of offering them. The results were similar for doctors taken individually.²²

A 2016 comparison between ten rich countries found that Canadian doctors were the least likely to offer their patients the option of contacting them by email.

Since then, various telemedicine companies, including Babylon, Push Doctor, and Now Healthcare, have entered the market and provide consultations on demand for a fee, in response to growing waiting times for treatment,²³ which are nevertheless far shorter than what Canadians are accustomed to.²⁴ Telemedicine companies also provide services to the public system. In 2017, for example, the National Health Service (NHS), in partnership with Babylon, launched a service called GP at Hand, which aims to offer virtual consultations to patients within two hours through the public system.²⁵ The NHS also set out on a major technological shift early in 2019 and seeks to offer “digital first” health care access

to its patients within ten years.²⁶ This public body has thus launched its own application for portable devices for making appointments, renewing prescriptions, and accessing one’s medical file.²⁷ Virtual consultations are supposed to be made available by the fall of 2019.²⁸

In short, despite a recent expansion in service provision which will no doubt pick up speed, the use of virtual consultations in Europe remains limited. A report prepared for the European Commission and released in 2018 considers the United States to be “the pioneer country worldwide in telemedicine.” This statement is more an indication of Europe’s slow pace than of any real telemedicine craze in the United States, since according to this same report, only about 2% of Americans receive virtual care. Nevertheless, this proportion is twice as high as in Canada or in most European countries.²⁹ The greater role of employers in health care coverage in the United States has likely contributed to speeding the spread of telemedicine in that country.

The Role of Employers in the United States

The American context is different from that of other developed countries, given its absence of universal health care coverage. The government provides targeted financial support through various public programs, in particular for the elderly (Medicare), low-income households (Medicaid) and military veterans (VHA). Despite recent reforms aimed at increasing the number of people insured,³⁰ some 27 million Americans still had no medical coverage in 2017.³¹

Overall, slightly more than two-thirds of the adult American population get their insurance coverage from employment-based plans.³² Employers appear to see

19. Sécurité sociale, L'Assurance Maladie, “Généralisation de la téléconsultation le 15 septembre 2018,” press document, September 12, 2018.

20. Valérie de Senneville and Deborah Loye, “La révolution de la télémédecine : la santé au bout du clic,” *Les Échos*, January 8, 2019.

21. Debasish Debnath, “Activity analysis of telemedicine in the UK,” *Postgraduate Medical Journal*, Vol. 80, No. 944, June 10, 2004, pp. 335-338.

22. Heather Brant et al., “Using alternatives to face-to-face consultations: a survey of prevalence and attitudes in general practice,” *British Journal of General Practice*, Vol. 66, No. 648, July 2016, pp. 460-466.

23. Bharadwaj V. Chada, “Virtual consultations in general practice: embracing innovation, carefully,” *British Journal of General Practice*, Vol. 67, No. 659, p. 264.

24. Eric C. Schneider et al., *Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care*, The Commonwealth Fund, July 2017, p. 21.

25. Babylon, Our pricing plans.

26. NHS England, Online version of the NHS Long Term Plan, Chapter 5: Digitally-enabled care will go mainstream across the NHS, page consulted on July 22, 2019.

27. NHS England, “NHS App begins public rollout,” news release, January 23, 2019.

28. NHS England, Systems and services, NHS App, Features of the NHS App; NHS England, Systems and services, NHS App, Future developments for the NHS App.

29. European Commission, *op. cit.*, footnote 12, p. 58.

30. Benjamin D. Sommers et al., “Changes in Self-reported Insurance Coverage, Access to Care, and Health Under the Affordable Care Act,” *Journal of the American Medical Association*, Vol. 314, No. 4, July 28, 2015, pp. 366-374; Jonathan T. Kolstad and Amanda E. Kowalski, “Mandate-Based Health Reform and the Labor Market: Evidence from the Massachusetts Reform,” *Journal of Health Economics*, Vol. 47, May 2016, pp. 81-106.

31. Kaiser Family Foundation, Key Facts about the Uninsured Population, December 7, 2018.

32. National Center for Health Statistics, *Health, United States 2017: With Special Feature on Mortality*, U.S. Department of Health and Human Services, 2018, p. 49.



In the United Kingdom, various telemedicine companies have entered the market and provide consultations on demand for a fee in response to growing waiting times, which are nevertheless far shorter than what Canadians are accustomed to.

advantages for themselves and their employees in the use of telemedicine (see the next chapter), and the number of group plans that cover such services is increasing rapidly.

Between 2015 and 2018, the proportion of large companies (200 or more employees) whose primary group insurance plans covered the use of telemedicine went from slightly more than one-quarter to nearly three-quarters (see Figure 1-3). Among companies with 50 to 200 employees, this proportion has reached 65%.³³ Moreover, more than one-quarter of all companies with at least 50 employees offer their employees financial incentives to encourage them to use virtual rather than in-person consultations.³⁴ In Canada, by way of comparison, a survey conducted among employers in 2018 on behalf of Medisys, a company operating in the telemedicine

Despite a recent expansion in service provision which will no doubt pick up speed, the use of virtual consultations in Europe remains limited.

sector, found that only 9% of them provided coverage for virtual care through their group plans.³⁵

Employees still seem hesitant to make use of these services, though. An examination of a sample of claims made by people insured under a group plan found that, although the number of virtual visits to doctors had risen nearly 20-fold in the United States between 2010 and 2016, fewer than 1% of the insured had used that option. The authors note, however, that their analysis does

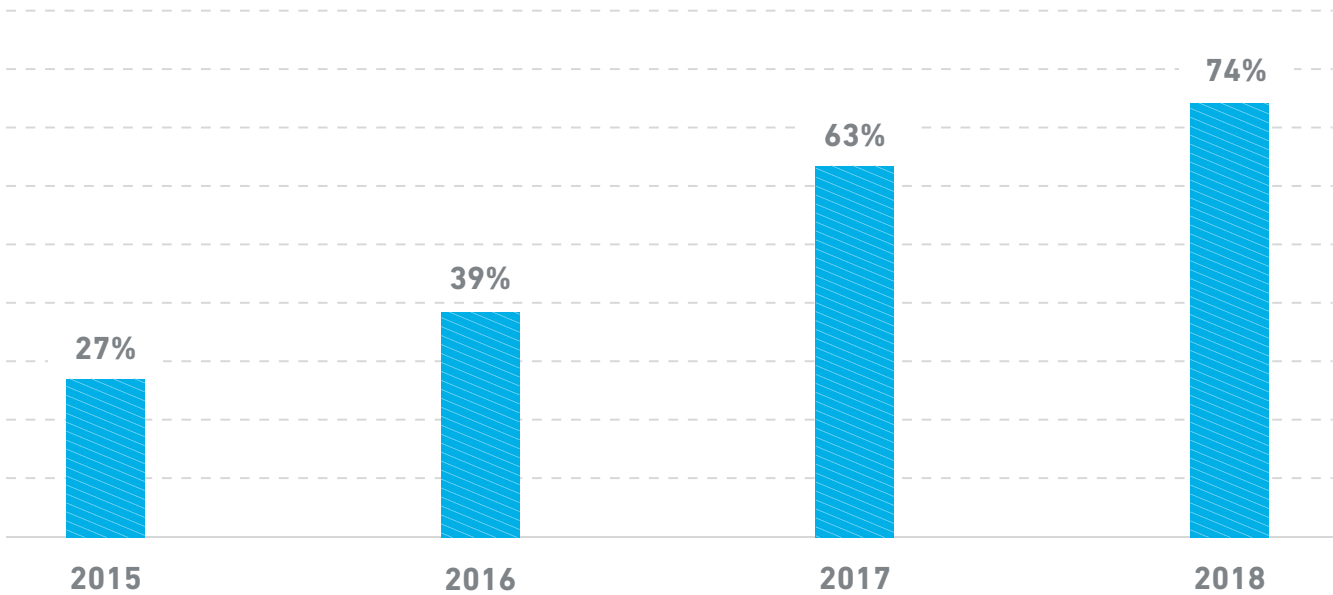
33. Gary Claxton et al., *Employer Health Benefits – 2018 Annual Survey*, The Kaiser Family Foundation, October 3, 2018, pp. 219-220.

34. Matthew Rae and Cynthia Fox, “More employers are paying for telemedicine, but enrollee take-up has been relatively low,” Kaiser Family Foundation, Peterson-Kaiser Health System Tracker, October 3, 2018.

35. Medisys Health Group Inc., “New study shows Canadian employees demanding virtual healthcare to bypass barriers to traditional care,” news release, December 4, 2018.

Figure 1-3

Companies with 200 or more employees whose primary group insurance plans cover telemedicine services, United States, 2015-2018



Note: The definition of telemedicine here includes video consultations and telemonitoring.

Source: Gary Claxton et al., *Employer Health Benefits – 2018 Annual Survey*, The Kaiser Family Foundation, October 3, 2018, p. 220.

not take account of services provided by hospitals or nurses, nor of a possible increase in 2017 and 2018.³⁶

In short, although the American context is favourable to the development of telemedicine on demand due to the involvement of companies, the effects of this development have yet to materialize.

American Public Systems

In U.S. public systems, telemedicine is subject to more restrictions than in the private sector. Until recently, the Medicare program, which provides medical coverage to 50 million elderly people, limited certain telemedicine services to patients living in rural areas and required

36. *Idem*. This picture contrasts with a claim often made in the media and in medical circles that more than half of interactions between patients and doctors at Kaiser Permanente—one of the biggest integrated health care systems in the United States—have occurred by virtual means since 2015. These figures present a highly idealized perspective of the situation in the U.S. In fact, these “interactions” are defined to include all sorts of communications, among them sending messages and making appointments with the use of an application. See Arundhati Parmar, “Telehealth CEO calls into question virtual care claims made by Kaiser CEO,” *MedCityNews*, December 2, 2016; Advisory Board, “A milestone: Kaiser now interacts more with patients,” October 13, 2016.

Between 2015 and 2018, the proportion of large companies whose insurance plans covered telemedicine went from slightly more than one-quarter to nearly three-quarters.

them to visit a health care facility to receive treatment. These restrictions were lifted in April 2019.³⁷

Meanwhile, under Medicaid, which provides health insurance to 70 million low-income Americans, restrictions are imposed not by the federal government but by individual states, which may set conditions limiting access to telemedicine.³⁸ Most states, for example, exclude

37. United States Government Accountability Office, *Health Care – Telehealth and Remote Patient Monitoring Use in Medicare and Selected Federal Programs*, Report to Congressional Committees, April 2017, p. 8; Centers for Medicare & Medicaid Services, “CMS finalizes policies to bring innovative telehealth benefit to Medicare Advantage,” April 5, 2019.

38. United States Government Accountability Office, *ibid.*, p. 9.

telemedicine services delivered at the patient's home, and some of them require a licensed professional to be with the patient at the site of the consultation, even when this is in the home.³⁹

The health care systems of the U.S. Department of Defense and Veterans Affairs (VHA) are the most permissive. Among other things, they set no restrictions on the type of service or the place where consultations may be received. The VHA even allows professionals to provide virtual consultations from their own homes.⁴⁰

To Sum Up

Despite the decades-old existence of the concept, its promising nature, and recent technological developments, telemedicine is still not used much in Canada, and remains almost inaccessible within the public health care system. (We will look into the barriers to its spread in Chapter 3.) For nearly all Canadians, access to primary care still involves an in-person visit to a medical clinic or emergency room. The situation is basically the same in Europe, although a major expansion is under way.

In a comparison of the health care systems of eleven rich countries, Canada comes in dead last in terms of waiting times to see a medical specialist.

In the United States as well, virtual consultations remain a marginal phenomenon, although a higher proportion of patients have access. This is notably due to increased availability through the insurance plans offered by companies, which see advantages both for themselves and for their employees.

As we shall see in the next chapter, major gains can also be achieved in the Canadian context, for employers and governments alike, and obviously first and foremost for patients.

39. Center for Connected Health Policy, *State Telehealth Law & Reimbursement Policies*, spring 2019, p. 9.

40. United States Government Accountability Office, *op. cit.*, footnote 37, pp. 10-12.

CHAPTER 2

Improving Access to Health Care while Reducing Costs

Getting Treatment in Canada

Canada is one of the world's richest countries, and its population enjoys a high standard of living. Worldwide rankings comparing quality of life⁴¹ and social mobility⁴² in various countries regularly place Canada near the top.

However, this enviable position is not reflected in the performance of its health care system. Although Canadians are generally healthy, and their life expectancy is among the highest in the world,⁴³ they often find it difficult to get timely care when they need it.

These problems are known, and well-documented. In a comparison of the health care systems of eleven rich countries conducted in 2016 by the Commonwealth Fund, Canada comes in dead last in terms of the proportion of patients who manage to get an appointment with a health care professional the same day or the next, in waiting times to see a medical specialist, and in waiting times for elective surgery.⁴⁴ Canada is also (and by far) the country where people are most likely to spend long hours in a hospital emergency room before getting the treatment they need (see Figure 2-1).⁴⁵

This perception of a system in which patients have to “be patient” longer than anywhere else is confirmed by the opinions of doctors. A survey conducted in 2015 comparing the same countries found Canadian doctors most likely to judge that their patients often had to wait a long time before they could see a specialist, and among the least likely to think that they could offer most of their patients an appointment on the same day or the

day after, placing Canada next to last in this regard in the international ranking.⁴⁶

Compared to their colleagues in other countries, Canadian doctors are also last in terms of home visits as part of their practice and next to last when it comes to contacting their patients between two visits to follow up on their condition. They are also less likely to answer patients' questions the same day (see Figure 2-2).⁴⁷

In a comparison of the health care systems of eleven rich countries, Canada comes in dead last in terms of waiting times to see a medical specialist.

All these factors, which complicate patients' access to the care they need, can discourage them and lead them to give up on consulting a health care professional. According to an IPSOS survey conducted in 2017 on behalf of Maple, a company involved in the field of telemedicine, 42% of Canadians have, at some point, decided not to seek a consultation when they were ill due to long waiting times at walk-in clinics; 37% of Canadians have also given up on consulting a doctor because they could not get an appointment in a timely manner. All told, more than two out of three Canadians (68%) say they have given up on a medical consultation due to various obstacles, such as long waiting times or the inability to see a doctor outside normal office hours.⁴⁸

All of these data converge in the same direction, and lead to a single conclusion, which is the reality experienced by many Canadians: Getting access to needed treatment in the public health system too often involves fighting for it. Greater use of technology in general and of telemedicine in particular will not solve all the ills that afflict our provincial health care systems, but it can provide valuable services to patients.

41. United Nations Development Programme, Human Development Reports, 2018 Statistical Update; U.S. News & World Report, Overall Best Countries Rankings, 2019 Rankings.

42. Organisation for Economic Co-operation and Development, *A Broken Social Elevator? How to Promote Social Mobility*, OECD Publications, Paris, May 4, 2019; Maclean's, “Canada is one of the most socially mobile countries in the world. Here's why,” August 14, 2018.

43. The World Bank, Data, Life expectancy at birth, total (years).

44. Germany, Australia, Canada, United States, France, Norway, New Zealand, Netherlands, United Kingdom, Sweden, and Switzerland. Canadian Institute for Health Information, “How Canada Compares: Results for the Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries – chartbook,” February 2017, tabs 5, 8, 10, 11, and 12.

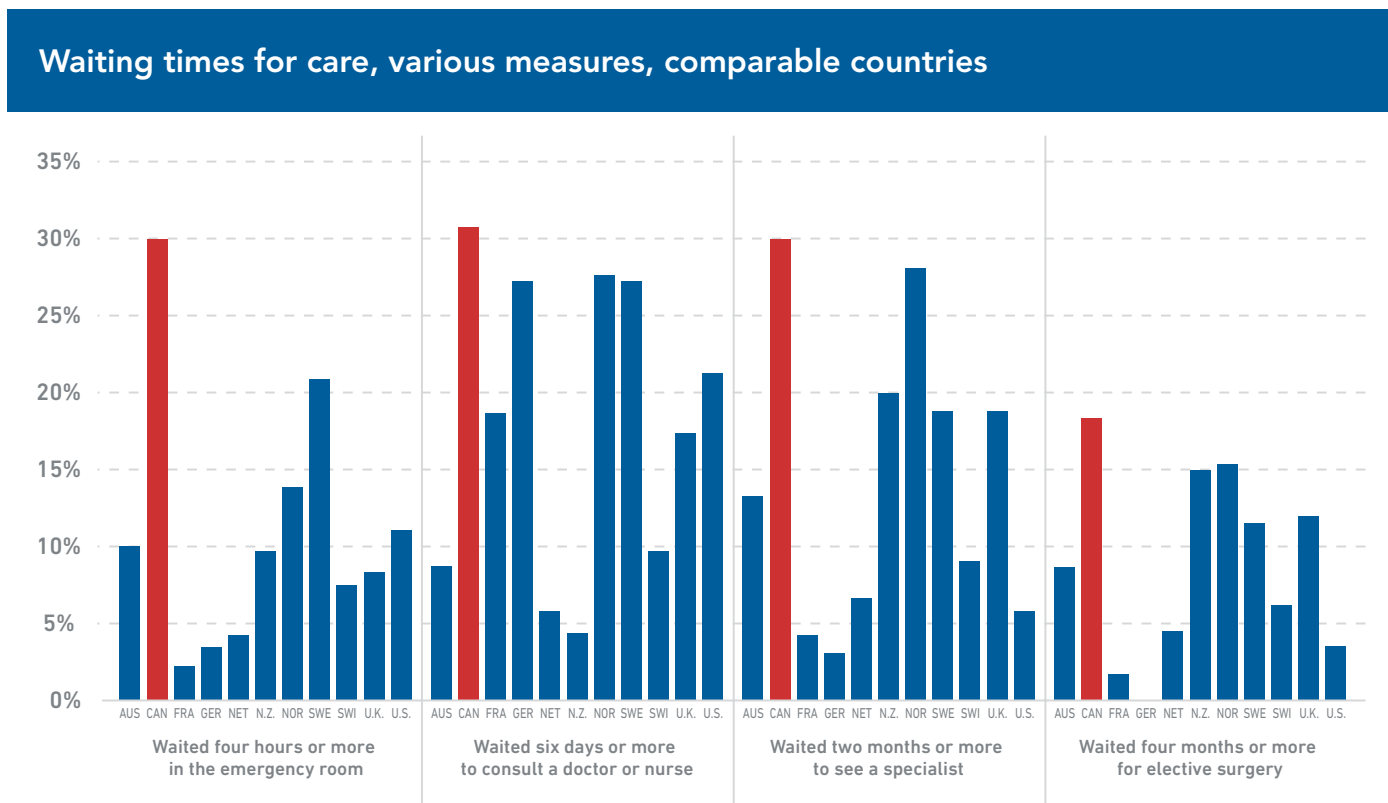
45. *Idem*.

46. Canadian Institute for Health Information, “How Canada Compares: Results from the Commonwealth Fund 2015 International Health Policy Survey of Primary Care Physicians,” Report, January 2016, pp. 14 and 19.

47. *Ibid.*, tabs q9.1 and q9.3; Canadian Institute for Health Information, *op. cit.*, footnote 44, tab 6.

48. Ipsos, *Seven in Ten Canadians (68%) Have Skipped Seeing a Doctor Due to Long Wait Times, Timeliness or Other Barriers*, January 30, 2017.

Figure 2-1



Source: Canadian Institute for Health Information, “How Canada Compares: Results from the Commonwealth Fund’s 2016 International Health Policy Survey of Adults in 11 Countries – Chartbook,” February 2017.

Virtual Care on Demand Thanks to Entrepreneurship

The advent of virtual consultations upon demand could have a substantial impact on patients and, by extension, on the country’s health care systems.

A major distinction has to be drawn here between telemedicine provided within Canada’s public health care systems and entrepreneurial telemedicine. The former is subject to all sorts of constraints that limit its availability to the general public, as we shall see in the next chapter. Concretely, for the great majority of Canadians, the possibility of contacting a health professional at their usual clinic or at a walk-in clinic and getting a consultation quickly through a smartphone, tablet, or computer is still in the realm of science fiction. In short, access to the public system usually requires patients to use their legs or their car.

Even supposing that use of Canadian-style public telemedicine were not limited to a small sliver of a province’s population, it would not solve all access problems

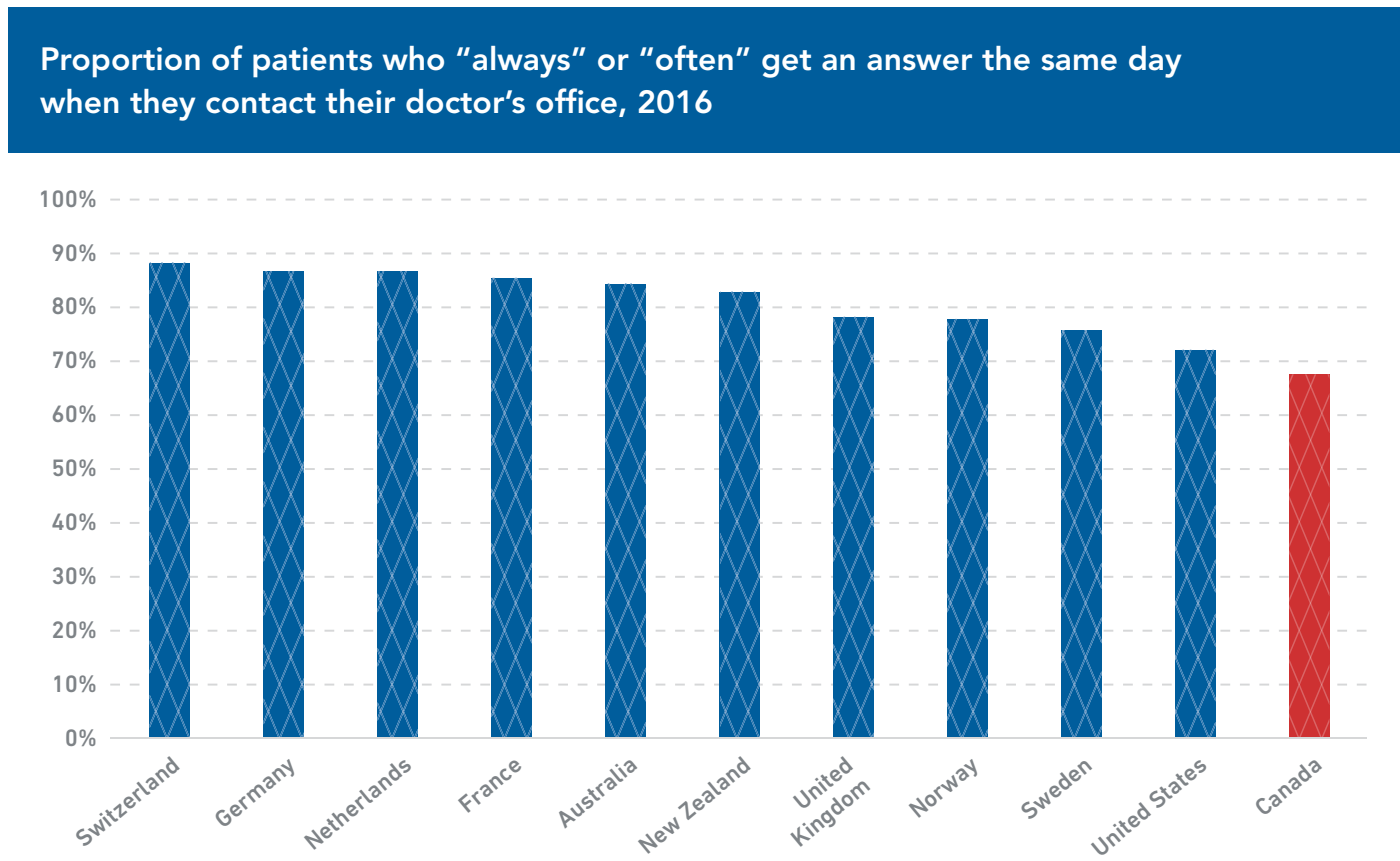
42% of Canadians have, at some point, decided not to seek a consultation when they were ill due to long waiting times at walk-in clinics.

overnight. Indeed, although a virtual consultation allows a patient to avoid a trip—not a negligible benefit—waiting times for consultations will not necessarily be shorter.

For example, only 43% of Canadians are able to get a non-emergency consultation the same day or the next, putting their country in last place in the Commonwealth Fund comparison cited above.⁴⁹ Under current conditions, this statistic will not change much in the short term, regardless of whether the consultation is in-person or remote, although gains can eventually be achieved,

49. Eric C. Schneider et al., *Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care*, The Commonwealth Fund, July 2017, p. 21.

Figure 2-2



Note: Among those who attempted to contact their doctor.
Source: Author's calculations. Canadian Institute for Health Information, "How Canada Compares: Results from the Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries – Chartbook," February 2017, tab 6.

especially for consultations involving specialists (see the following section).

The enhanced offering from companies that provide virtual care relies on a completely different dynamic, foreign to that of Canada's public systems based on the rationing of health care. The government regards patients as a net expense; in Canada, our governments therefore seek to limit such expenses, notably by restricting the supply of care and by rationing it through making people wait in line. For companies operating in the health care field, on the other hand, patients represent potential income; they therefore want more of them.

In Canada, several telemedicine companies are already competing to increase the supply of health care, including Akira, Dialogue, EQ Care, Maple, and Wello, while others, such as Babylon and Teladoc, are just setting up here. Once these companies' applications are activated, whether on a mobile device or a computer, they are

The government regards patients as a net expense; in Canada, our governments therefore seek to limit such expenses, notably by restricting the supply of care.

ready to receive a description of a patient's symptoms in order to evaluate his or her condition.

Terms vary, but some go so far as to guarantee a consultation with a doctor by text message or video within minutes or even seconds, 24 hours a day, seven days a week,⁵⁰ to diagnose common health problems and to prescribe drugs as required (for acne, allergies, bronchitis, conjunctivitis, aches, diarrhea, erectile dysfunction, fever, flu, urinary tract infections, insomnia,

50. Websites of Akira, Babylon, Maple, and Teladoc. Pages consulted on July 3, 2019.

migraines, ear infections, insect bites, mental or sexual health problems, and prescription renewals, among others).

Patients who have access to these consultations not only avoid having to go to the clinic or hospital, but in many cases they get their problem resolved in less time than they would have needed just to go to a medical facility, and they can do so without having to leave home or take time off from work.

According to health data compiled by the Canadian Institute for Health Information in 2016, more than four in ten Canadians thought their latest visit to an emergency room was for a condition that could have been treated at their usual clinic.⁵¹ Meanwhile, companies operating in this sector say that from 50% to 70% of common primary care problems can be dealt with during a virtual visit.⁵² Even if these estimates ended up being overly optimistic, there can be little doubt that greater access to virtual consultations on demand could save hundreds of thousands or even millions of Canadians from unproductive waits at walk-in clinics or emergency rooms for minor health problems.

Alleviating Pressure on Public Finances

Greater use of telemedicine could reduce the growing pressure on public finances from health care spending. For one thing, virtual care could end up costing public systems less than traditional visits. In addition, a portion of the financial burden could be shifted from government to business.

Lower Costs for the System and for Patients

A number of studies have shown that virtual consultations could lead to cost savings for care providers compared to in-person consultations.

For example, a study conducted at a medical group practice in 2010 of just under 800 patients divided into two cohorts compared the costs of in-person consultations at a clinic to the costs of consultations held on a portal operated by the same clinic. The virtual consultations were found to cost the care provider substantially less than the in-person consultations (\$161, versus \$219 for visits to the clinic).⁵³

The study's signatories, nearly all of them doctors, viewed virtual care as "an attractive alternative to adding extra patient capacity through traditional means," since this helps avoid costs associated with physical structures and additional staff. They also said the potential savings for patients "are obvious," especially when it comes to indirect expenses related to in-person visits (absence from work, child care, travel costs, and parking, for example).⁵⁴

Another study, conducted by Mercer, concluded that the cost of the average virtual visit was considerably lower than an in-person consultation (less than \$50 compared to about \$125).⁵⁵ Although these studies were conducted in the U.S. context, where entrepreneurial telemedicine is more highly developed and where incentives and modes of payment are not the same, they nonetheless point to the gains that greater use of virtual care can help achieve in Canada.

Consultations Avoided and Less Waiting Time for Specialists

A review of studies dealing with the efficiency of electronic consultations found that 34% to 92% of in-person visits could be avoided for specialties as varied as cardiology, haematology, rheumatology, obstetrics and gynaecology, psychiatry, gastroenterology, nephrology, and pulmonology, among others.⁵⁶

Companies operating in this sector say that from 50% to 70% of common primary care problems can be dealt with during a virtual visit.

The same study found that, in dermatology and otolaryngology, triage through digital transmission of images had been twice as effective as the traditional triage method in reducing the use of in-person consultations.⁵⁷ Moreover, efficiency gains led to a substantial reduction in the time needed to get an ophthalmology or otolaryngology consultation.⁵⁸ This is consistent with the experience in Ontario, where waiting times for

51. Canadian Institute for Health Information, *op. cit.*, footnote 44, tab 9.

52. 50% according to Akira, more than 60% according to Dialogue, and 70% according to OnCall, a company offering technological solutions to care providers. Pages consulted on July 3, 2019.

53. James E. Rohrer *et al.*, "Impact of Online Primary Care Visits on Standard Costs: A Pilot Study," *Population Health Management*, Vol. 13, No. 2, 2010.

54. *Idem.*

55. Mercer, *Mercer National Survey of Employer-Sponsored Health Plans*, November 2, 2017.

56. Liam J. Caffery *et al.*, "Telehealth interventions for reducing waiting lists and waiting times for specialist outpatient services: A scoping review," *Journal of Telemedicine and Telecare*, Vol. 22, No. 8.

57. *Ibid.*, p. 5.

58. *Ibid.*, pp. 5 and 7.



dermatology consultations in smaller centres went from several months to just a few days, thanks to the publicly funded Ontario Telemedicine Network (OTN).⁵⁹

In addition to gains for patients in terms of waiting time, avoiding consultations can lead to substantial savings. A study conducted by doctors in Europe showed that use of online consultations by nurses and doctors seeking advice for patients with chronic kidney diseases helped save almost 500 euros for each avoided in-person consultation with a nephrologist.⁶⁰

A pilot project led by Ontario doctors in 2010 and 2011 reached similar conclusions. Online consultations between primary care providers and specialists helped avoid patient referrals to medical specialists in the great majority of cases, representing significant potential savings. Electronic transmission of patients' information

Online consultations between primary care providers and specialists helped avoid patient referrals in the great majority of cases, representing significant savings.

also helped make consultations shorter and more efficient. According to the report's authors, a virtual consultation between professionals can be paid at a lower rate than an in-person consultation, the latter requiring a full examination.⁶¹

The authors also noted that, at the time, more than 50,000 patients were referred to specialists *each day* in Ontario alone. Even supposing that only 10% of these referrals could be avoided, the study estimated that this would result in savings of \$400,000 a day just for the province of Ontario. Canada-wide, this conservative

59. Edward M. Brown, "The Ontario Telemedicine Network: A Case Report," *Telemedicine and e-Health*, Vol. 19, No. 5, April 2013, p. 375.

60. Nynke D. Scherpbier-de Haan et al., "Consultation Process for Patients with Chronic Kidney Disease," *Annals of Family Medicine*, Vol. 11, No. 2, February 2013.

61. Clare Liddy et al., "Building Access to Specialist Care through e-Consultation," *Open Med.*, Vol. 7, No. 1, January 8, 2013, p. 5.

assessment points to savings of hundreds of millions of dollars each year, not to mention increased access for patients.⁶²

Obviously, achieving these savings within the country's public health care systems presupposes that the methods of remuneration for doctors takes into account the productivity gains that telemedicine can provide. At present, certain provinces, particularly Ontario, Quebec, Alberta, and Saskatchewan, pay more for virtual consultations.⁶³

Finally, even researchers who express doubt as to the chances that telemedicine can produce savings agree that it helps improve access to health care. And they do not dispute the lower unit cost of virtual visits. The concern is rather that easier access to health care and to follow-ups could lead to higher total spending.⁶⁴ As noted by a Swedish study dealing with the same issue, "it is the remuneration systems and supervision that should be reformed, not the patients' demand for more and better health care."⁶⁵ Employer contributions could also be beneficial.

Employer Contributions and Gains

In addition to the savings from lower consultation-related costs, the growth in entrepreneurial telemedicine could in itself have an impact on the finances of the country's governments by shifting part of the financial burden to employers. For the latter, offering virtual consultations to their employees could also result in significant savings.

Indeed, although some telemedicine companies offer virtual care directly to individuals, most of them also target group insurance plans or employers, emphasizing the substantial savings that employers could secure by reducing or avoiding absenteeism for medical reasons.

A Conference Board study released in 2013 estimated the total cost of absenteeism to Canadian employers at close to \$17 billion, or 2.4% of the total wage bill.⁶⁶ In the United States, another study, published in 2003, evaluated the cost of health-related productivity losses at nearly \$1,700 per employee per year. Nearly one-third of this cost was related to work absences.⁶⁷

More specifically, a survey conducted on behalf of Wello, a virtual care provider, found that nearly 40% of Canadian workers said they had been away from work for two days or more to go to a clinic in-person, which can amount to several hundreds of dollars a year per employee.⁶⁸ On its website, Wello offers virtual care packages at \$11 or \$15 a month per employee. Dialogue, another company in this field, says it offers packages at similar prices.⁶⁹

A study released in 2013 estimated the total cost of absenteeism to Canadian employers at close to \$17 billion, or 2.4% of the total wage bill.

The business plans of companies providing virtual consultations therefore involve persuading employers that these can not only help avoid losses, but can even produce significant savings. Based on an average of 7.5 medical visits per year, and supposing that half of employees with access to virtual care take advantage of it, Medysis, another company active in the sector, estimates that a 50-employee business could achieve savings of \$43,000 a year, and these savings could amount to \$673,000 a year for a business with 750 employees.⁷⁰ Seen in this light, giving employees access to virtual care is not an expense for employers, but an investment that will allow them to reduce costs related to absenteeism or even to "presenteeism."

Of course, these last figures come from companies offering virtual care packages. They are above all sales

62. *Ibid.*, p. 7.

63. Kerry Waddel, Eilish M. Scallan, and Michael G. Wilson, "Understanding the Use and Compensation for Virtual-care Services in Primary Care," McMaster Health Forum, McMaster University, July 27, 2018, p. 5; Government of Quebec, Régie de l'assurance-maladie, Médecins spécialistes, Manuel et guide de facturation, Manuel des médecins spécialistes, Brochure no. 1, Protocole d'accord concernant la télémédecine, pp. 61-63; Government of Saskatchewan, *Payment Schedule for Insured Services Provided by a Physician*, April 1st, 2019, revised May 7, 2019, p. 89.

64. J. Scott Ashwood et al., "Direct-to-Consumer Telehealth May Increase Access to Care but Does Not Decrease Spending," *Health Affairs*, Vol. 36, No. 3, March 2017.

65. Mårten Blix and Johanna Jeansson, "Telemedicine and the Welfare State: The Swedish Experience," Research Institute of Industrial Economics, IFN Working Paper No. 1238, 2018, p. 21.

66. Nicole Stewart, "Missing in Action: Absenteeism Trends in Canadian Organizations," Conference Board of Canada, September 23, 2013, p. 9.

67. Walter F. Stewart et al., "Lost Productive Work Time Costs from Health Conditions in the United States: Results from the American Productivity Audit," *Journal of Occupational and Environmental Medicine*, Vol. 45, No. 12, p. 1243.

68. Wello, "Wello National Survey Findings," September 17, 2018.

69. Wello, Business plans, page consulted on July 3, 2019; Radio-Canada, "Voir un médecin en quelques minutes grâce à une application montréalaise," July 7, 2017.

70. Medysis Health Group, "Virtual Care in Canada: The solution at your Fingertips – A 2019 Virtual Healthcare Industry Report," p. 10.

arguments and cannot be regarded as precise and final evaluations that will apply to each company's realities. That said, various Canadian companies and insurers, after doing their own evaluations, have decided to include virtual care packages in the baskets of services offered to their employees and policy holders.⁷¹

From the perspective of governments, greater employer provision of teleconsultation on demand may eventually lead to millions fewer consultations in public health care systems, thus enabling them to offer quicker access to patients who are poorly served at the moment. Some will see this as a "privatization" of health care. In reality, Canada's health care systems will continue to depend heavily on public funds, both for primary and specialized care, but they will just have a bit more room to breathe in fulfilling their mission.

Toward Better Care?

Will the savings enabled by telemedicine be achieved on the backs of patients? All signs point to no. A review of nearly one hundred studies conducted in 2015 by a group of academic researchers in collaboration with the independent organization Cochrane, found no noticeable difference in patients' clinical outcomes for a range of conditions: mortality after heart failure, mental health and addiction problems, and dermatological care, among others. Results varied when it came to number of hospitalizations, leading sometimes to more hospitalizations and sometimes to fewer.⁷²

On the other hand, improvements were found in the quality of life of patients who suffered from heart problems, in the control of glucose levels in diabetic patients, in levels of bad cholesterol, in blood pressure levels, and among certain patients suffering from chronic respiratory conditions.⁷³

Another review published in 2016, covering 86 scientific articles, was even more positive, stating that "there is ample evidence from rigorous scientific research that low-cost telemedicine interventions in primary care are feasible and acceptable to both patients and physicians,

typically resulting in improved quality and cost savings."⁷⁴

To Sum Up

Access to care in Canada's public health systems involves fighting for it. The advent of entrepreneurial telemedicine could make this access easier and reduce waiting times for millions of Canadian patients seeking to treat common health problems. Greater use of telemedicine could also reduce pressure on public finances by reducing the number and cost of consultations, or by avoiding them. Finally, an expansion of telemedicine services through companies, in addition to being a source of savings for them, could reduce the demand for care within the public health systems, benefiting patients who are poorly served at present.

"There is ample evidence from rigorous scientific research that low-cost telemedicine interventions in primary care are feasible and acceptable to both patients and physicians."

For this potential to be fully realized, certain barriers to the development of telemedicine will have to be lifted, as we shall see in the following chapter.

71. Notably National Bank, Cirque du Soleil, and Stingray among companies, and Sun Life and SSQ Insurance among insurers. See Caisse de dépôt et placement du Québec, Dialogue concludes a \$40-million round of financing," News release, June 17, 2019; Alain Thériault, "Sun Life offrira la télémédecine à ses clients," *Journal de l'assurance*, March 12, 2018; *Journal de l'assurance*, "SSQ Assurance ajoute la télémédecine à son offre en collectif," January 29, 2018.

72. Gerd Flodgren et al., *Interactive telemedicine: effects on professional practice and health care outcomes*, Cochrane Database of Systematic Reviews, 2016.

73. *Idem*.

74. Rashid L. Bashshur et al., *The Empirical Foundations of Telemedicine Interventions in Primary Care*, *Telemedicine Journal and E-Health*, Vol. 22, No. 5, May 1st, 2016.

CHAPTER 3

Obstacles to the Deployment of Telemedicine

With telemedicine having existed in various forms for more than twenty years, and with the many advantages it offers, there is reason to wonder why it has not become more accessible to Canadian patients. Among the different obstacles commonly mentioned are a lack of financial resources, access to technology, and regulatory barriers.

The first two of these have more to do with the limits of Canada's public health care systems than with any real obstacles to the development of telemedicine. Regulatory barriers, however, do constitute a real obstacle, which must be eliminated. Rationing of telemedicine by the various public systems is another structural barrier, from the patient's point of view.

Financial Obstacles

The cost of adopting new technologies is often mentioned as an obstacle to the development of telemedicine.⁷⁵ Indeed, Canada's public health care systems are under considerable pressure if we look at the increase in spending in recent decades, which the aging of the population and the growing demand for care will only exacerbate.⁷⁶

This argument does not stand up to scrutiny if we look at cases of treatment individually, as we have just seen. Since the use of telemedicine helps reduce the costs of some of these treatments, and avoid others altogether, it should in principle lead to efficiency gains for health systems.

The financial argument may nevertheless make more sense if we accept the premise that, under Canada's public health care systems, access to care is provided on the basis of rationing, as illustrated by waiting times for treatment, among other things. From this perspective, if the public systems managed to meet Canadians' demand for care, this could in theory, under current conditions, lead to an increase in government health care spending. At the very least, the potential savings could

75. Clemens Scott Kruse et al., "Evaluating barriers to adopting telemedicine worldwide: A systematic review," *Journal of Telemedicine and Telecare*, Vol. 24, No. 1, pp. 4-12, October 16, 2016.

76. For an overview of this issue, see Bacchus Barua et al., *The Sustainability of Health Care Spending in Canada 2017*, Fraser Institute, March 24, 2017.

be wiped out by additional demand for care, which would at long last be met.

The entrepreneurial response may provide a solution. First, entrepreneurship can provide productivity gains even within the public system, when it is called upon;⁷⁷ and second, these entrepreneurial solutions, which are also being developed outside the public system, increase the overall supply of care, all while reducing the pressure on government spending. Employers are also part of the solution, as we saw in the previous chapter.

Technological Obstacles

Access to technology is sometimes presented as an obstacle to the development of telemedicine.⁷⁸ Yet more than seven out of ten adults in Canada had smartphones in 2017 according to a Pew Research Center study, a level comparable to Germany and the United Kingdom, just below the United States, and higher than France.

These entrepreneurial solutions increase the overall supply of care, all while reducing the pressure on government spending.

Canadians are also among the world's biggest Internet users, including 91% of the adult population.⁷⁹ Moreover, a CRTC report shows that 98% of Canadians have access to a high-speed Internet connection at home, and that LTE cell networks cover 99% of the population. Finally, most Canadian households (84%) have home computers.⁸⁰

Again, although some patients who are vulnerable or who live in remote areas lack access to the full range of communications technologies, and although home devices may not be suited to all situations, it is more a

77. See in particular Patrick Déry and Jasmin Guénette, "Saint-Göran: A Competitive Hospital in a Universal System," Economic Note, MEI, October 17, 2017; Patrick Déry, "Relying on Entrepreneurs to House and Care for Our Seniors," Viewpoint, MEI, April 26, 2018; Patrick Déry, "Quebec Hospitals Require Entrepreneurship," Viewpoint, MEI, July 12, 2018.

78. Canadian Medical Association, *The Future of Technology in Health and Health Care: A Primer*, Health Summit Background, 2018, p. 5.

79. Author's calculations. See Government of Canada, "The Internet and Digital Technology," Statistics Canada, November 14, 2017.

80. Canadian Radio-Television and Telecommunications Commission, *Communications Monitoring Report 2018*, Government of Canada, February 27, 2019.

question of problems involving the rigidity of the public systems and of bureaucratic standards rather than a true lack of access to technology.

A study released in 2016 reviewed some thirty articles dealing with barriers to the adoption of telemedicine. It concluded that lack of familiarity with the new technologies and resistance to change were the two main obstacles.⁸¹ Recent developments have basically settled the first issue. Numerous solutions exist and are available on devices that the vast majority of patients and caregivers use every day. It's just a matter of deciding to use them.

In France and the United Kingdom, for example, it is left up to the doctor to decide whether a mass-market application (like Skype or Facetime) may be suitable for a virtual consultation.⁸² It is not necessary to await the perfect solution before acting, if patients' welfare is the top consideration.

Of course, this does not prevent the development of specific applications devoted to telemedicine and including other features, such as access to a patient's medical file, for example. Indeed, many players in the entrepreneurial sector are directing considerable resources to developing this kind of product, as we shall see in the next chapter.

Regulations: Licences to Practise Medicine

In Canada, a doctor practising conventional medicine in an office or health care facility in a given province or territory must be licensed there. This means that a doctor wishing to practise all across the country will need a licence from each of the thirteen provinces and territories.⁸³

Obtaining a licence will require meeting eligibility criteria, providing documentation, and paying fees that may total thousands of dollars. Even though the application process is similar from one province to another, it will have to be repeated in full for each province and each territory where the doctor wishes to practise, along with the payment of fees. To this will be added, the following year, the payment of annual dues, again multiplied by the number of places of practice.

This regulatory burden led one doctor to call Canada's licensing system a "bureaucratic quagmire" and another doctor, originally from Australia but based in B.C., to state that it was "easier for him to practice medicine in Tasmania" than elsewhere in Canada.⁸⁴ Indeed, in Australia, as in many other parts of the world, a single licence is all that's needed to practise medicine throughout the country.⁸⁵

The Canadian setup is even more cumbersome when compared with that of the European Union (EU), a mosaic of 28 national states,⁸⁶ each with its own language, culture, legal system, and medical training, with a total population of more than half a billion people. Seen from Canada, where a doctor in Gatineau is not authorized to practise in a nearby hospital in Ottawa, such obstacles might appear insurmountable.

Numerous solutions exist and are available on devices that the vast majority of patients and caregivers use every day.

Yet despite European governance sometimes being referred to as "Kafkaesque" or a "bureaucratic monster,"⁸⁷ it has been almost 20 years since the EU acted to allow doctors authorized to practise in one member country to provide telemedicine services in all the others, without needing to acquire an additional licence.⁸⁸ Compared to this, Canada is far behind.

Licensing and Telemedicine

The requirements set by the provincial colleges of physicians and surgeons for the practice of telemedicine are similar to those for the practice of conventional medicine. As a general rule, a doctor wishing to practise

84. Michael Gorman, "Doctors want provincial barriers broken, call for national licensing system," CBC, August 23, 2018; André Picard, "Why isn't there a single medical licence for all doctors in Canada?" *The Globe and Mail*, January 4, 2019.

85. Medical Board of Australia, Registration, page revised on February 28, 2019.

86. At the time of writing, the United Kingdom is still part of the European Union.

87. Philippe Ricard, "La gouvernance européenne, ce 'monstre bureaucratique'," *Le Monde*, May 29, 2013; Hans Bull, "'Kafka à la sauce bruxelloise': observations d'un praticien désabusé," *Revue française d'administration publique*, Vol. 1, No. 13, pp. 99-104, May 18, 2010.

88. Soohyun Laura Chang et al., "How the European Union Is Embracing Cross-border Telemedicine and What the U.S. State Medical Boards Can Learn from It," George Washington University, School of Medicine and Health Sciences, presentation, spring 2018.

81. Clemens Scott Kruse et al., *op. cit.*, footnote 75.

82. Sécurité sociale (France), L'Assurance Maladie, "Généralisation de la téléconsultation le 15 septembre 2018," press kit, September 12, 2018; Marc Schmid et al., "Telemedicine in the UK – It's Starting to Happen," SMGroup, November 2016.

83. Resident Doctors of Canada, "Collaborative Statement on Canadian Portable Locum Licensure," page consulted on June 12, 2019.

Table 3-1

Licence required to provide virtual care, by province										
	BC	AB	SK	MB	ON	QC	NB	NS	PEI	NL
DOCTORS										
Licence from the province where the doctor practises	✓	—	—	—	✓	—	—	✓	—	✓
License from the province where the patient receives care	—	✓ ₁	—	✓	—	✓	✓ ₂	—	✓	—
License always required if either the doctor or the patient is located in the province	—	—	✓	—	—	—	—	—	—	—
NURSES										
Licence from the province where the nurse practises	✓	—	—	✓	✓	✓	✓	✓	✓	✓
License from the province where the patient receives care	—	✓	✓	—	—	—	—	—	—	—

Notes: 1. A doctor who is not licensed in Alberta may use telemedicine to conduct a maximum of five consultations per year or in case of emergency. 2. In New Brunswick, the practice of telemedicine without a licence is subject to restrictions, in particular with regard to the nature and frequency of consultations. A licence from the province is required to avoid these restrictions.

Sources: *Licences for physicians:* College of Physicians and Surgeons of British Columbia, "Practice Standards," November 2013, revised June 24, 2019; College of Physicians and Surgeons of Alberta, "Telemedicine," August 6, 2014; College of Physicians and Surgeons of Saskatchewan, "Policy: The practice of telemedicine," page consulted on July 4, 2019; College of Physicians and Surgeons of Saskatchewan, "Telemedicine Licensure," February 2019; College of Physicians and Surgeons of Manitoba, *Standards of Practice of Medicine*, January 2019, pp. 86-87; College of Physicians and Surgeons of Ontario, "Telemedicine," April 2007, revised December 2014; Collège des Médecins du Québec, *The Physician, Telemedicine and Information and Telecommunications Technologies: Practice Guidelines*, November 2015, pp. 10-11; College of Physicians and Surgeons of New Brunswick, "Regulation #13: Telemedicine Regulation," September 2008; College of Physicians and Surgeons of Nova Scotia, "Professional Standards Regarding the Provision of Telemedicine Services," February 2001, revised December 14, 2018; College of Physicians and Surgeons of Prince Edward Island, "Telemedicine," January 16, 2017; College of Physicians and Surgeons of Newfoundland and Labrador, "Standard of Practice: Telemedicine," March 22, 2017.

Licences for nurses: British Columbia College of Nursing Professionals, "Practice Standards for Registered Nurses and Nurses Practitioners: Telehealth"; College and Association of Registered Nurses of Alberta, *Telehealth Nursing Practice, Requirements*; College of Registered Nurses of Manitoba, "Telepractice," May 2018; College of Nurses of Ontario, "Practice Guideline: Telepractice," June 2009, revised February 2017; verifications carried out with colleges and associations of nurses in Saskatchewan, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island in June and July 2019.

telemedicine in several provinces has to obtain several licences. Two main trends can be observed (see Table 3-1).

The first trend involves the place where care is received. According to this logic, the patient's location is what determines the province where doctors need to be licensed, regardless of where they are when they provide consultations. This is the approach taken by Alberta, Manitoba, Quebec, New Brunswick, and Prince Edward Island.⁸⁹

The second trend is based on the doctor's location. According to this logic, the college of physicians in a given province oversees only the doctors who practise in that province, regardless of where patients receive care. This is the approach taken by British Columbia, Ontario, Nova Scotia, and Newfoundland.

The remaining province, Saskatchewan, has chosen a third approach, combining the first two. Doctors must be licensed there regardless of whether it is the doctor or the patient who is located in the province.

The Patient's Location

The patient-based approach means, for example, that a patient in Quebec can receive telemedicine care only from a doctor licensed to practise in Quebec. If Ontario-based or Alberta-based doctors want to provide care to Quebec patients through telemedicine, they each need to hold a licence issued by the Collège des médecins du Québec.

The disadvantage of this approach is that doctors who wish to practise in more than one province need to make various licence applications and to spend time and money on extra paperwork, initial fees and annual dues, as in the case of conventional practice.

Although it may be a major irritant for some doctors plying their trade in a conventional framework and may make them less inclined to extend their practice or do substitute work in another province, the patient-based approach will not cause problems for most of them. A practice based in a private office or in an institution is, by definition, in a fixed place, located on the territory of a single province (although this is not true for all doctors, as we shall soon see).

The advent of telemedicine is a game-changer, especially when it occurs in an entrepreneurial framework that

knows no boundaries. For a doctor seeking to develop a more extensive practice, or for a company wishing to offer its services to the entire Canadian population, the obligation to be licensed in a patient's province may constitute a significant administrative and financial obstacle.

Under current rules, a doctor wishing to offer telemedicine consultations in every province will need to possess and renew six or seven provincial licences depending on the location of the practice, namely a licence for each of the provinces that sets this requirement and another for the province where the doctor practises, in the case of British Columbia, Ontario, Nova Scotia, and Newfoundland.⁹⁰ In addition to the administrative burden, this could involve annual dues in the range of \$10,000 to \$12,000.⁹¹ A doctor—or a company operating in the field of telemedicine—can choose to limit the number of provinces in which to practise telemedicine so as to limit costs. But this additional hurdle will thereby limit the supply of care providers for patients, who will lose out.

The Doctor's Location

The advantage of the second approach, based on the doctor's location, is that the doctor in theory needs to hold only a single licence in order to practise telemedicine. However, for this to apply in practice, every province has to follow the same approach.

The EU acted to allow doctors authorized to practise in one member country to provide telemedicine services in all the others, without needing to acquire an additional licence.

Thus, a doctor located in Quebec and who wishes to provide telemedicine services in Quebec, British Columbia, Ontario, Nova Scotia, and Newfoundland needs only a single licence, the Quebec licence, since the colleges of the four other provinces are concerned with the doctor's location. Any other province would require getting another licence, though, since they base their approach on the patient's location. To a degree, such restrictions have certainly influenced the speed at which

89. At the time of writing, the College of Physicians and Surgeons of Manitoba was in the process of revising its telemedicine framework.

90. The number varies, since British Columbia, Ontario, and Nova Scotia do not impose this requirement, but a doctor practising from one of these provinces still has to be licensed there.

91. Author's calculation based on the amounts of annual dues in the different provinces.



telemedicine has developed in Canada. The perception many doctors have of these rules provides an overview of this, as we shall see a little further.

A significant corollary of the criterion of the doctor's location is that patients are free to consult the doctor of their choice. In theory, consulting doctors could even be located outside the country.⁹²

Mutual Recognition of Licences

From the patient's perspective, relaxing regulations on professional licensing, for example through the mutual recognition of provincial licences, could help boost the supply of care and increase access. A major obstacle to the development of entrepreneurial telemedicine would be lifted, but there would also be potential gains for the provinces' public systems. Indeed, the mutual recognition of licences would allow greater flexibility and favour better resource allocation. Such efficiency gains would

92. Vanessa Mui et al., "Telemedicine: Making Delivery of Health Care Services across Borders More Accessible to Canadians," Fasken Martineau, Health Law Bulletin, 2017, consulted on July 2, 2019.

Under current rules, a doctor wishing to offer telemedicine consultations in every province will need to possess and renew six or seven provincial licences.

thus be of great value, given the shortage of doctors in many parts of the country.⁹³

The American example shows that this is entirely feasible here. In the United States, in early 2019, 24 states had adopted a policy favouring the accelerated issuing of doctors' licences. American nurses have gone even further. The principle of an enhanced licence, enabling a nurse licensed in one state to practice in another state without having to apply for a new licence, had already been accepted by 31 states as of January 2019.⁹⁴

93. Steve Bartlett and Stu Neatby, "Doctor shortage – connecting the dots and seeking solutions for Atlantic Canada," *The Chronicle Herald*, February 14, 2019.

94. Center for Connected Health Policy, "Telehealth Policy Barriers," Fact Sheet, February 2019, p. 2.

Moreover, as shown in Table 3-1, Canadian nurses are moving toward better regulatory practices than their physician colleagues, as they are leaning more toward the approach based on the caregiver's location. A nurse licensed in just one province can thus practise in all the other provinces except for Alberta and Saskatchewan.

The Very Real Effect of Regulatory Barriers

A recent survey by Resident Doctors of Canada gives an idea of the effect of regulatory barriers in the current Canadian framework. Nearly one in five (18.5%) resident doctors say they plan to do "locum" work (i.e., temporary substitute work) outside the province where they expect to have their primary medical practice, once their training is completed. This proportion rises to more than half (52%) if no additional license applications were required.⁹⁵

Relaxing regulations on professional licensing through the mutual recognition of provincial licences could help boost the supply of care and increase access.

Another survey, conducted by the Canadian Medical Association, shows how the bureaucratic burden affects the flexibility and availability of medical staff. In a Web panel, 10% of respondents said they have at least two professional licences in Canada. Of those who said they had only a single licence, more than half (53 %) said they had applied for a licence in a second province or territory.⁹⁶ Of the key obstacles mentioned by respondents to obtaining a licence in a new province or territory, the one most often repeated is the complexity of the licence application process (90%), following by the length of the process (84%) and the associated costs (79%).

Even assuming that the respondents did not form a representative sample (since by definition they were doctors interested in practising in several places), this constitutes a potential pool of thousands of doctors who would be willing to extend their practice. Their contribution could be significant when their motivations are taken into account, even strictly from the point of view of public systems.

Indeed, when these same doctors were asked what they might do if a national licence were implemented, a substantial proportion said it was "likely or very likely" that they would do locum work in another province or territory (48%), that they would go to practise temporarily in a rural or remote region in another province (47%), or that they would practise in several provinces or territories on a regular basis (31%). More than a third (36%) said they are interested in practising telemedicine.

Finally, in the same survey, an overwhelming majority of doctors (93%) said they favoured the establishment of a national licensing system, or the recognition of their province's licence throughout Canada (92%). It should be noted that this survey was conducted in reference to conventional medical practice. Telemedicine was not even an issue!

Rationing in Public Health Care Systems

In addition to licensing-related barriers, most of Canada's public health care systems limit access to telemedicine by imposing all sorts of conditions that do not exist in the context of entrepreneurial telemedicine. Telemedicine within the public system is therefore not currently an option for the great majority of Canadians, other than residents of British Columbia. And even in that province, the government will only pay for a maximum of four virtual consultations per year.⁹⁷ Elsewhere in the country, provincial governments use various means to ration access to telemedicine in their public systems.

Eligibility of Patients

Most provincial health care systems restrict the use of telemedicine to patients living in remote areas, or at least give them much higher priority. This is notably the case for Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and New Brunswick. In nearly all these provinces, the main eligibility criterion for telemedicine is remoteness. In Ontario, eligibility criteria have also been developed on the basis of patients' needs, but most of those served live in remote areas.⁹⁸

95. Resident Doctors of Canada, 2018 national survey of residents, p. 47.

96. Canadian Medical Association, "E-Panel Survey Summary: National Licensure," November 2018.

97. Doctors of BC, "Virtual Care in Private Practice: Billing & Incentives for GP's e-Communication with Patients," revised March 27, 2019.

98. Kerry Waddel, Eilish M. Scallan, and Michael G. Wilson, "Understanding the Use and Compensation for Virtual-care Services in Primary Care," McMaster Health Forum, McMaster University, July 27, 2018, p. 5; Edward M. Brown, "The Ontario Telemedicine Network: A Case Report," *Telemedicine and e-Health*, Vol. 19, No. 5, April 19, 2013.



Eligibility of Places

In addition to having to meet the criteria set out by the government of their province, patients eligible for telemedicine usually have to receive care in a place designated or approved for this purpose. This is the case, for example, in Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, and Newfoundland.⁹⁹ Apart from cases dictated by a patient's condition, or where the use of highly specialized equipment would be necessary, this kind of requirement indicates a conception of telemedicine that dates back to an earlier era, before the advent of smartphones and tablets.

In comparison, the U.S. government-funded Veterans Health Administration, with more than 1,200 health care facilities across the United States, imposes no require-

ment regarding where care is provided or received, nor regarding the types of care that may be offered.¹⁰⁰

Eligibility of Doctors

Patients are not alone in having to comply with bureaucratic requirements to get the benefits of telemedicine within the public health care system. In several provinces, doctors also have to seek permission from the government or register with the public authorities before they can provide telemedicine-based consultations within the public system, even if they are licensed to practise in that same province. This requirement exists in provinces including Alberta, Saskatchewan, Ontario, New Brunswick, and Newfoundland and Labrador.¹⁰¹

99. Kerry Waddel, Eilish M. Scallan, and Michael G. Wilson, *ibid*, pp. 6-9; Alberta Health Services, Programs & Services, Telehealth; eHealth Saskatchewan, Telehealth; Doctors Manitoba, Compensation & Advocacy, Billing, General Schedule, Telemedicine Services; Newfoundland & Labrador Centre for Health Information, *Provincial Telehealth Program Manuel*, revised July 2017, p. 11.

100. United States Government Accountability Office, *Telehealth and Remote Patient Monitoring Use in Medicare and Selected Federal Programs*, Report to Congressional Committees, April 2017, p. 13.

101. Kerry Waddel, Eilish M. Scallan, and Michael G. Wilson, *op. cit.*, footnote 98, pp. 6-10; Newfoundland & Labrador Centre for Health Information, *op. cit.*, footnote 99, p. 12.

Remuneration of Doctors

Although remuneration criteria for doctors in the public systems are linked to precedents, they represent a barrier in themselves to the expansion of telemedicine in Canada, in the view of nearly half the country's doctors.¹⁰² Indeed, with the exception of British Columbia, doctors are paid only if they provide virtual care to patients who have met the eligibility conditions set out by the governments of their provinces and only in the places approved by them. Nevertheless, some doctors offer consultations by telephone, email, or text message, on a case-by-case basis, without being remunerated.¹⁰³

To Sum Up

Various obstacles are often cited to explain the slow growth of telemedicine in Canada and patients' very limited access to it. Financial and technological considerations are more symptoms of the rigidity of public systems and of their resistance to innovation than true barriers, since telemedicine can lead to substantial gains in efficiency, on the one hand, and the technologies they rely upon are widely available and proven, on the other. In both cases, entrepreneurship can provide solutions, which governments may then choose to adopt.

An overwhelming majority of doctors (93%) said they favoured the establishment of a national licensing system, or the recognition of their province's licence (92%).

As for regulatory barriers, they have a very real effect, since they limit the allocation of the key resource, namely medical staff. They are also obstacles to innovation by individuals and businesses, both within and outside the public systems. Government rationing of the health care supply in general and telemedicine in particular is yet another impediment to accessing care. All of these barriers can be removed, but as we shall see, it is unrealistic to think that the solutions will come from government alone.

102. 50% of general practitioners and 43% of specialists, according to a survey. See Canada Health Infoway, 2018 Canadian Physician Survey – Physicians' Use of Digital Health and Information Technologies in Practice, December 2018, pp. 20 and 22.

103. Kerry Waddel, Eilish M. Scallan, and Michael G. Wilson, *op. cit.*, footnote 98.

CHAPTER 4

Case Studies: Entrepreneurial Telemedicine and the Ontario Telemedicine Network

The preceding chapters have given us an idea of where telemedicine stands in Canada and where it is headed, along with the gains it enables and the obstacles to its spread.

In this chapter, we will examine more specifically the various solutions provided by companies working in entrepreneurial telemedicine in Canada in terms of access to care and patient services, and then briefly examine the telemedicine of the future. We will also look at the Ontario Telemedicine Network (OTN), the most highly developed of the provincial networks.

Entrepreneurial Telemedicine in Canada

There are basically two kinds of companies working in the Canadian telemedicine market. Those in the first group provide technological platforms for the delivery of virtual medicine to various care providers (clinics, hospitals), somewhat like the OTN. They are privately financed, though, and they sell their services across the country, and even beyond. This applies notably to Medeo and OnCall.

Companies in the second group focus on delivering virtual consultations to patients, in return for payment from patients, employers, or insurers (under group plans).¹⁰⁴ This is the case for, among others, Akira, Dialogue, EQ Virtual, Maple, Medisys, VirtualMED, and Wello. These latter companies are the ones we will examine here, in keeping with the theme of this research paper. The aim is not to draw a detailed or comprehensive picture, nor to pass judgment on their business model or assess the quality of their services, but rather to show the overall scope of the opportunities they offer.

Responding to Patients' Needs

Companies providing virtual consultations view overcrowding in Canada's public health care systems as an opportunity to woo patients and employers, directly or through group insurance plans. For the former, lack of access to care and long waiting times may be not only a

source of suffering or anxiety, but also a significant opportunity cost, since this reduces their active participation in the workforce; for the latter, absenteeism is a deadweight loss that must be reduced.

The dynamic is thus the opposite of what we see in public telemedicine. In entrepreneurial telemedicine, patients select their care providers and the times when they receive care. If they are not happy with the services they are getting, they can turn to another provider. The prosperity, growth, and sustainability of telemedicine companies are related to how they meet the needs of patients and clients, and to the value these place in their services, as is the case for companies operating in a wide range of competitive sectors.

This notion of patients' choice, generally foreign to the Canadian health care system, is well integrated in most developed countries with universal health care systems. The OECD also considers this one of the most effective measures for improving access to care.¹⁰⁵

In entrepreneurial telemedicine, patients select their care providers and if they are not happy with the services they are getting, they can turn to another provider.

One common feature of all companies operating in the entrepreneurial telemedicine sector is that they offer consultations on demand for common health problems by text message, voice, or video, using phones, tablets, or personal computers, at the time and place that suits the patient. This business model, again, is very different from public telemedicine, which is generally centred on health care facilities and most often requires patients to travel to a government-approved spot to receive virtual care.

The care and services provided by companies, and the way they are delivered, vary greatly, as might be expected from a competitive market.¹⁰⁶ Their common denominator is that, in most cases, they are inaccessible through the kind of telemedicine provided by Canada's public health care systems.

104. The services of EQ Virtual are free for patients living in British Columbia, where video consultations are paid for by the government. In the rest of Canada, patients must pay for these consultations. EQ Virtual, How we care for you, Frequently Asked Questions.

105. Yanick Labrie, *For a Universal and Efficient Health Care System: Six Reform Proposals*, Research Paper, MEI, March 13, 2014.

106. Information on this topic discussed in this section comes from the companies' websites or from conversations with their representatives.

Availability

The definition of “consultation on demand” varies from one company to another. Some, such as Virtual MED, offer daytime consultations, by appointment. Others, including Akira and Maple, guarantee a consultation with a nurse practitioner or a doctor in a matter of minutes, 24 hours a day, seven days a week. In between are intermediate plans (Dialogue, EQ Virtual, Wello) in which a patient can speak promptly with a care coordinator or a nurse and then make an appointment with a nurse practitioner or a doctor, if necessary, the same day or on subsequent days.

Care

Most companies providing virtual care focus on common health problems (fever, flu, minor infections, allergies, sexual health, prescription renewals, etc.). These are just the types of ailments that require Canadians to go to emergency rooms more often than people in comparable countries to deal with problems that could have been handled by a family doctor, if the doctor had been available.¹⁰⁷

Some companies also provide consultations with medical specialists, notably surgeons, dermatologists, psychiatrists, and urologists. Others include paramedical services, including those of naturopaths, nutritionists, and psychologists.

Services

A referral to a specialist may be provided following a virtual consultation if the company is not able to offer the service itself. Renewals and prescriptions of new drugs, sent to the patient’s pharmacy, are normally provided, along with delivery. Some companies can also provide medical absence notes or requests for laboratory tests. A patient’s consultation history or medical file is accessible within the application used for consultations.

By way of comparison, in 2018, fewer than one-quarter of Canadians said they could renew their drug prescriptions or get access to their medical files electronically.¹⁰⁸

Prices

Prices of consultations vary greatly. Some offer one-time consultations, while others offer annual packages or let

their customers choose between the two. The price of a consultation generally starts at \$50 (EQ Virtual, Maple, Wello) but may be higher outside of normal office hours (Maple). Annual packages cost around \$240 to \$400 for individuals and between \$480 and \$800 for families (Akira, Maple, Virtual MED, Wello).¹⁰⁹

These prices are not directly comparable since the availability of consultations (on demand, by appointment) varies, as does the scope of services. Since the market for consultations on demand is expanding, they nonetheless give a sense of what Canadian patients are prepared to pay to avoid trips and waiting time before appointments or on site, and for generally improved access to care.

Companies operating in the entrepreneurial telemedicine sector offer consultations on demand for common health problems by text message, voice, or video.

Packages for employers are also offered by most companies, with some of them focusing exclusively on this market (Dialogue). The pooling of risk enables them to provide these services at prices below individual or family rates. The interest for employers is to reduce costs related to medical absences (see Chapter 2).

One Foot in the Public Systems

Some of these companies also have one foot in Canada’s public systems, like companies that provide technological platforms to health care facilities. Akira, for example, is involved in a project with Baycrest Hospital, in the Toronto area, to facilitate virtual consultations with elderly patients who live at home.¹¹⁰

In Prince Edward Island, Western Hospital, in Alberton, has set up a pilot project in collaboration with Maple to conduct virtual “tele-rounds” to cope with the province’s doctor shortage. Nine doctors are involved in the project, six of whom are outside the province but hold licences there.¹¹¹

107. Eric C. Schneider et al., *Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care*, The Commonwealth Fund, July 2017, p. 22.

108. Canada Health Infoway, “Connecting Patients for Better Health: 2018,” August 2018, pp. 14 and 17.

109. According to the websites of the companies concerned. Pages consulted on July 16, 2019.

110. Centre for Aging + Brain Health Innovation, Projects, Telemedicine as a supporting technology to outpatient care.

111. Kevin Bisset, “P.E.I. hospital turns to tele-conferencing doctors on carts rolled by nurses,” *The Canadian Press*, December 2, 2018.



In Prince Edward Island, Western Hospital has set up a pilot project to conduct virtual “tele-rounds” to cope with the province’s doctor shortage.

This type of entrepreneurial collaboration within the public systems may again seem surprising, or even shocking, from a Canadian viewpoint. Yet this phenomenon is once again widespread in the health care systems of industrialized countries, which are all universal apart from that of the United States, and which for the most part provide far greater access than what Canadians experience.¹¹² But even in Canada, other effects of entrepreneurship within the public health care systems have been documented. In Quebec, for example, the case of “private funded” long-term care facilities (CHSLDs), which are fully integrated within the public

system, shows that the pursuit of profit has led entrepreneurs to be more efficient in managing their resources while providing higher-quality care than in government-managed facilities.¹¹³

The Health Care of the Future

Telemedicine has certainly not reached its final form. Israeli telehealth firm TytoCare recently put its home medical test kit on the market in the United States. For US\$300, you can get a device that includes a stethoscope, a thermometer, an otoscope and a tongue depressor and that can be linked to the company’s application for sending information to a professional conducting a virtual consultation. American retailer Best Buy, which distributes the device, has shown an interest

112. Yanick Labrie, *op. cit.*, footnote 105.

113. Patrick Déry, “Relying on Entrepreneurs to House and Care for Our Seniors,” Viewpoint, MEI, April 26, 2018.

in telehealth by acquiring a provider of remote care solutions for the elderly.¹¹⁴

Other companies, which were not originally involved in providing care, have spotted opportunities in the current market. In Canada, telecommunications company Telus now has a network of some thirty medical clinics, following its acquisition of Medisys. It also has its own application in Canada, in collaboration with the British firm Babylon, in addition to being active in electronic medical files.¹¹⁵

In the United States, technology giants such as Apple and Amazon, whose large-scale disruptive capacity is well established, have also indicated that they intend to use their devices and applications in a medical context. Apple has shown that its smart watch can detect certain cardiac problems as part of a large-scale study, while Amazon has reached an agreement with the National Health Service in the United Kingdom to provide medical advice on certain common health problems using artificial intelligence and its personal assistant, Alexa.¹¹⁶

Dialogue, meanwhile, is using artificial intelligence in its application's triage tool. It has installed this technology at the Centre hospitalier de l'Université de Montréal as part of a pilot project, and expects to deploy it soon in Germany.¹¹⁷ The Telus application also includes an artificial intelligence-based symptom checker that a patient may use without having to seek a consultation.¹¹⁸ After health care without hospitals, will we see health care without doctors?

These recent developments, along with several others not mentioned in these pages, go far beyond the scope of telemedicine. They all point in the same direction, that of the entrepreneurial and technological wave that is about to change, completely and sometimes unpredictably, the way we will receive care.

114. Zoë LaRock, "Best Buy's exclusive telehealth launch sets it on collision course with Amazon," *Business Insider*, April 18, 2019; Eric Wicklund, "Best Buy Targets Senior Telehealth Market with GreatCall Deal," *mHealthIntelligence*, August 16, 2018.

115. Pamela Fayerman, "Telus jumps into business of health clinics, buys national chain," *Vancouver Sun*, August 3, 2018; Eric Rankin, "Filling the medical care gap or causing cracks? Telus launches health app," *CBC News*, March 18, 2019.

116. Stanford Medicine News Center, "Apple Heart Study demonstrates ability of wearable technology to detect atrial fibrillation," March 16, 2019; Shilpa Mete, "Amazon's Alexa Focuses on Healthcare: How are Others Placed?" *Yahoo! Finance*, July 11, 2019.

117. Jacob Serebrin, "Montreal company brings artificial intelligence to medical system," *Montreal Gazette*, November 23, 2018; Caisse de dépôt et placement du Québec, "Dialogue concludes a \$40-million round of financing," *Press release*, June 17, 2019.

118. Eric Rankin, *op. cit.*, footnote 115.

The Ontario Telemedicine Network

The governments of most Canadian provinces have set up telemedicine programs or networks going back two decades already, primarily to improve access to specialized care for patients living in remote areas and requiring follow-ups for particular or chronic conditions. The largest of these is the Ontario Telemedicine Network (OTN), which the province's Ministry of Health describes as "one of the biggest telemedicine networks in the world."¹¹⁹

The entrepreneurial and technological wave is about to change, completely and sometimes unpredictably, the way we will receive care.

Although the OTN took its current form in 2006, the origins of this mostly government-financed non-profit organization date back to the mid-1990s. The OTN was established due primarily to the initiative and the long-term work of Dr. Ed Brown, the current CEO. Dr. Brown, who may be described as a "social entrepreneur," patiently built the case for telemedicine in Ontario among health care institutions, the provincial government, and other parties.¹²⁰

The OTN does not provide care. It provides technological solutions to health care institutions to make remote care accessible to medical personnel and patients. In reality, the OTN is an extension of the province's public system and its sole supplier of virtual consultations.

All of the province's hospitals are linked to the OTN, along with many community health centres, doctors' and nurses' clinics, educational institutions, long-term care facilities, rehabilitation centres, and detention facilities, for example.¹²¹

The main service provided to patients by the OTN is virtual consultations (eVisits). These enable patients to go to a facility served by the OTN to receive a video consultation with a medical specialist located in another

119. Government of Ontario, Ministry of Health – Ministry of Long-Term Care, *Excellent Care for All, Telemedicine – Improving access to care through technology*, page consulted on June 28, 2019.

120. Morgan Holmes and Anton Hart, "Profile: Ed Brown and the Development of the Ontario Telemedicine Network," *Healthcare Quarterly*, Vol. 12, No. 4, September 2009; Edward M. Brown, "The Ontario Telemedicine Network: A Case Report," *Telemedicine and e-Health*, Vol. 19, No. 5, Mary Ann Liebert, Inc., April 19, 2013.

121. Edward M. Brown, *ibid.*, p. 374.

facility. This saves patients the trouble of having to travel long distances, thereby improving their access to care. Indeed, it is this conception of telemedicine—that of a service intended primarily for patients living in remote areas—that lies at the origin of the service’s spread across the province.¹²²

In addition to eVisits for patients, a specialist consultation service (eConsults) is also provided to primary caregivers (doctors and nurse practitioners), as well as between specialists. The OTN also has programs that include teledermatology, teleophthalmology for diabetic patients, telehomecare for patients with chronic diseases, and virtual visits for indigenous communities, among others.¹²³

In each case, despite the trips saved, we are still far from the consultations on demand that telemedicine companies currently offer to their patients. The OTN, however, began offering virtual visits for in-home primary care in the fall of 2017 as part of a pilot project aiming to provide “same or next day care.”¹²⁴

All services delivered through the OTN are provided within the Ontario public health system. During the 2017-2018 fiscal year, the organization facilitated nearly 900,000 remote consultations.¹²⁵ While this number may seem impressive, it is modest for a province with more than 14 million inhabitants,¹²⁶ nearly 37,000 active doctors, and more than 100,000 nurses,¹²⁷ and in which around 100 million clinical services are delivered each year.¹²⁸

In addition, nearly all the consultations facilitated by the OTN are delivered physically in health care institutions, notably for billing purposes.¹²⁹ Only 21,500 virtual consultations took place in patients’ homes in 2017-2018. By way of comparison, the OTN’s Professional Develop-

ment and Learning component enabled 13,476 “learning events” and 35,939 administrative meetings to be held during the same period.¹³⁰

Clear Benefits, Slow Progress

There is no doubt that OTN services provide substantial benefits for the patients who can make use of them and for the province’s public health care system. The programs for virtual consultations between primary care providers and specialists have eliminated the need for in-person patient visits with specialists in nearly 80% of cases.¹³¹ The telehomecare program led to a decrease of 60% to 80% in hospitalizations and emergency room visits for the patients concerned.¹³²

The programs for virtual consultations between primary care providers and specialists have eliminated the need for in-person patient visits with specialists in nearly 80% of cases.

Remote consultations and avoided hospital stays also generated savings. The OTN estimates among other things that these allowed the Ontario government to save \$72 million in subsidies not paid out for travel by patients living in remote areas, an amount greater than the organization’s total budget.¹³³ It also calculated that the teleophthalmology program, for example, which makes it possible to detect problems before they get worse, enables patients to be treated at one-twentieth the cost of delayed treatments.¹³⁴ This is not including the obvious benefits for patients.

The benefits of telemedicine—both from the perspective of patients and from that of payers—have been known for a long time, and the foundations of the OTN were laid more than 20 years ago. Why, then, does the Ontario public health care system still offer remote consultations only to a fraction of its citizens, depriving patients and the system of the benefits they could reap if these services were available on a large scale?

122. *Ibid.*, p. 373.

123. Ontario Telemedicine Network, *OTN Annual Report 2017/18*.

124. Ontario Telemedicine Network, *Virtual Care for Providers, eVisit Primary Care*, page consulted on July 16, 2019.

125. Ontario Telemedicine Network, *op. cit.*, footnote 123, p. 6.

126. Ontario, Ministry of Finance, *Ontario Fact Sheet*, revised May 2019.

127. The College of Physicians and Surgeons of Ontario, “Annual Report 2018,” p. 2; College of Nurses of Ontario, *Nursing Statistics, Membership Totals at a Glance*, revised July 2, 2019.

128. Author’s calculations. According to the Canadian Institute for Health Information, 270 million clinical services were delivered across Canada in 2015-2016. Ontario accounts for slightly under 40% of the Canadian population.

129. Doctors practising in the public system cannot bill for at-home virtual visits with patients. Only visits with patients in a “health care setting” are billable. OTNhub, *eVisit (Videoconference) Help, Getting Started, FAQ General*; David Paddon, “New wave of telemedicine uses mobile phone video to link patients, doctors,” *The Canadian Press*, April 7, 2019.

130. Ontario Telemedicine Network, *op. cit.*, footnote 123, pp. 6 and 26.

131. *Ibid.*, pp. 9 and 10.

132. *Ibid.*, pp. 12 and 13.

133. Ontario Telemedicine Network, *Financial Statements*, Ernst & Young, March 31, 2018, p. 5.

134. *Ibid.*, pp. 6 and 16.



The main service provided by the OTN is virtual consultations (eVisits) between patients located in a health care facility and medical specialists located in another facility. Photo By Deborah Baic, The Canadian Press archives.

The slow spread of telemedicine within the Ontario public health care system again illustrates the difficulty that bureaucratic systems have in incorporating innovation, even when it comes from within, and even despite the best intentions. A number of years ago, Dr. Brown predicted that one-quarter of all health care, or even more, would be delivered virtually in 2020.¹³⁵ With this date just a few months away, it is all too clear that this optimistic prediction was well off the mark.

The current Ontario government's perception of the province's health care system is revealing. After noting early in 2019 that "on any given day in the province, there are at least 1,000 patients receiving health care in the hallways of our hospitals,"¹³⁶ the Premier's Council on Improving Healthcare issued its final report in June. One of its recommendations aims at "increasing the availability and use of a variety of virtual care options,"

135. Tristan Bronca, "Virtual visits: The new frontier of telemedicine," *The Medical Post*, September 9, 2014.

136. Government of Ontario, *Hallway Health Care: A System Under Strain – 1st Interim Report from the Premier's Council on Improving Healthcare and Ending Hallway Medicine*, January 2019, p. 2.

Telemedicine companies compete in terms of care, services offered, and prices, and more generally through their ability to innovate and create value for their patients.

including "telephone calls, secure e-mail and texting, video visits."¹³⁷ One cannot help but wonder why, in 2019, it is still necessary to reiterate something so obvious.

To Sum Up

Telemedicine in the provincial health care systems continues to provide valuable services to patients, especially those living far from the major centres or suffering from chronic conditions. However, public plans are slow

137. Government of Ontario, *A Healthy Ontario: Building a Sustainable Health Care System – 2nd Report from the Premier's Council on Improving Healthcare and Ending Hallway Medicine*, June 2019, p. 24.

to integrate the benefits of telemedicine, to deploy them on a large scale, and to let more people enjoy them. The case of the OTN, despite its successes, and the very low proportion of Canadians using virtual care, are evidence of this.

Provincial public systems would do well to introduce more innovations from entrepreneurs. These people have put forward various models of telemedicine and compete in terms of care, services offered, and prices, and more generally through their ability to innovate and create value for their patients. As in any competitive market, this rivalry benefits customers and will continue to generate innovation in the way we receive care.

CONCLUSION

Recommendations for Policy-Makers

With the year 2020 just around the corner, being forced to wait in a doctor's office or emergency room for a minor health problem should be as anachronistic as standing in line at the post office to send a letter, or depositing a paycheck in person with a bank teller. Yet for the majority of Canadians, visits to a clinic or hospital look a lot like they did twenty, thirty, or forty years ago, as if our health care systems had been frozen in amber.

As has long been the case for many medical services, and is now the case for telemedicine, the fact that a number of entrepreneurs see business opportunities and try to alleviate current problems accessing care—in a country where this care is supposed to be universal and free—says a lot about the state of Canada's public health care systems.

There is no question that governmental systems will continue to play an important role and provide the majority of treatments. But it is just as clear that for the foreseeable future, they will remain unable to fully meet the growing demand for accessible, quality care. From this perspective, excluding entrepreneurs from helping to increase the supply of care would amount to preventing patients from being treated in a timely manner.

This is also true for telemedicine. The provision of remote care in the public system will continue to grow slowly for patients suffering from particular conditions or living in places where certain treatments are unavailable. This will be expanded little by little for the provision of primary care more broadly. It is nonetheless unrealistic to hope that medicine on demand, such as certain entrepreneurs envision and more and more patients want, will become a reality in the near future due to the contribution of public systems alone, either in Canada or elsewhere.

The contribution of entrepreneurs represents a rare win-win opportunity for many of the interested parties: patients, who will have improved access to care; employers, who will see savings thanks to reduced absenteeism, all while improving the health of their employees; and finally, public systems, whose burden will be lighter, which will give them a bit of breathing room to tackle the challenges to come, notably in terms of demographics.

The Principle: Abolishing All Barriers

The general objective of provincial policy-makers, who are ultimately the architects of our health care systems, should be to lower all the barriers that slow down the development and expansion of telemedicine. This should apply regardless of whether virtual consultations are provided by private entrepreneurs or by actors in the public systems, because it is the former, more naturally inclined to innovate, who will pave the way for the latter. Several measures in particular should be undertaken. The most important of these follow. It should be noted that none of them entail in themselves additional government spending.

1. Mutual Recognition of Licences to Practise

The need for doctors (and to a lesser degree, nurses) to hold multiple licences is probably the biggest obstacle to the expansion of companies active in the field of telemedicine, since it complicates recruitment or makes it much more expensive. Greater mobility of the health care workforce could also lead to significant efficiency gains within public systems, as we saw in Chapter 3.

The general objective of provincial policy-makers should be to lower all the barriers that slow down the development and expansion of telemedicine.

If a doctor or a nurse holds a valid licence to practise from a professional order of one province, the colleges in the other provinces should consider this licence to be equally valid on its territory. This is currently the case for nearly all the provinces when it comes to nurses practising telemedicine, but only for four provinces in the case of doctors. Canada is dragging its feet on this matter compared to Europe and the United States.

The mutual recognition of licences among provinces should apply not just for telemedicine, but for all types of practice, and for all health professionals. The anatomy of an Albertan, an Ontarian, a Quebecer, or a New Brunswicker not being fundamentally different, there is no good reason to deprive ourselves of the benefits we would get from greater flexibility in the allocation of health resources.

Mutual recognition is preferable to the creation of a national permit, which runs the risk of adding another layer of bureaucracy or leading to disputes between a hypothetical federal authority and the provincial authorities. A national permit might be the way to go if one had to recreate the licencing system today. However, the system already exists and local authorities are in place, which is not a bad thing in a large country like Canada.

2. Eliminate Professional Barriers

The obstacles that limit the supply of care and prevent the optimal allocation of resources are not only geographic. Canada is, among industrialized countries, one of the ones with the fewest doctors per capita, which contributes to the problems patients have accessing treatment.¹³⁸ Thankfully, other qualified professionals can carry out some of the tasks that are still sometimes reserved to doctors. The scope of practice of nurses, nurse practitioners, and pharmacists, notably, should be broadened as much as possible in order to correspond to their professional capacity, when the intervention of a doctor is not essential. The less that facilities and companies offering telemedicine services will depend on doctors, who remain a scarce resource, the more they will be able to expand their services and improve access for patients.

The principle that should guide such reforms is the best interest of the patient, and not that of one professional group or another. The differences that subsist between provinces when it comes to the professional capacity of a given group to perform certain medical acts or not suggest that there are still gains to be had.¹³⁹ The provinces should therefore favour the maximum possible expansion of the professional capacity of their nurses and pharmacists, among others, by basing themselves on the rules that prevail in the province where this capacity is the greatest. A survey of best practices abroad, leading to their adoption by each of the provinces, should also be carried out. Such reforms would have spillover benefits not just for the spread of telemedicine, but for the entire health system.

Each province can take action in this regard without waiting for the others, and unilaterally if necessary. The lifting of barriers will only be to the advantage of the province that has the fewest, since it will benefit from a

larger number of professionals able to work on its territory.

3. Review the Remuneration of Doctors

In Canada, doctors receive nearly three-quarters of their remuneration in the form of fee-for-service payments.¹⁴⁰ This method of remuneration requires each potential medical act to be defined, indexed, and eventually invoiced.

The mutual recognition of licences among provinces should apply not just for telemedicine, but for all types of practice.

There are different ways to remunerate doctors, each with its own advantages and disadvantages.¹⁴¹ The aspect of fee-for-service payment that concerns us here is that this method of remuneration does not encourage the performance of actions for which there will be no payment. This is not the kind of thing that favours innovation in the practise of medicine, technological or otherwise. The very limited use of information technology by Canadian doctors in their interactions with patients—like simply communicating by email, or even by phone—is an illustration of this (see Chapter 1). Indeed, Canada is among a minority of OECD countries where fee-for-service payment is still the predominant method of remuneration.¹⁴²

The adoption of alternative methods of remuneration would avoid having to define piecemeal each new treatment or each new way of providing treatment. Without going into detail, the general principle would be to favour types of remuneration that emphasize either the total care provided to patients or the population of patients in a doctor's care, accounting for performance indicators, rather than on each individual interaction

138. Patrick Déry, "It's Time to End Med School Quotas," Viewpoint, MEI, March 15, 2018.

139. Canadian Pharmacists Association, Pharmacy in Canada, Pharmacists' Expanded Scope of Practice; Patrick Déry, "Should Super Nurses Be Allowed to Make Diagnoses?" Viewpoint, MEI, February 28, 2019.

140. Canadian Institute for Health Information, *Physicians in Canada, 2017 – Summary report*, February 2019, pp. 8 and 25.

141. For a brief overview of the different methods of remuneration and their effects, see Marie-Pascale Pomey et al., "Les modes de rémunération des médecins pour accroître la performance : quelles leçons pour le Québec," *Le Point en santé et services sociaux*, Vol. 11, No. 4, Winter 2015-2016, pp. 37-42. See also Rose Anne Devlin and Sisira Sarma, "Do physician remuneration schemes matter? The case of Canadian family physicians," *Journal of Health Economics*, Vol. 27, No. 5, September 2008, pp. 1168-1181; Jean-Louis Denis et al., *Rémunération médicale et gouvernance clinique performante : une analyse comparative*, Rapport de recherche, Fonds de recherche Société et Culture, February 2017.

142. Valerie Paris et al., *OECD Health Working Papers No. 50 – Health Systems Institutional Characteristics: A Survey of 29 OECD Countries*, OECD, April 28, 2010, pp. 33-35.



with a doctor.¹⁴³ In addition to promoting innovation, this would also encourage delegation to other professionals, like nurses and pharmacists, since this delegation would no longer be associated with a loss of revenue for the doctor.

Here, too, the advantages of such a policy change would be felt far beyond the telemedicine context alone.

4. Authorize Mixed Medical Practice

Canada also stands out in another way among industrialized countries since, in most provinces, a doctor cannot practise in both the public and private sectors.¹⁴⁴ Yet it has already been demonstrated in the past that there is a “reserve labour supply” among medical specialists. In Quebec, for example, many of them have said

The scope of practice of nurses, nurse practitioners, and pharmacists should be broadened as much as possible.

they were ready to work extra hours on top of what they already do in the public system.¹⁴⁵

A predictable objection to this proposal is that the adoption of mixed practice by doctors would entail a reduction in their number of hours worked in the public system. This concern could be addressed by requiring doctors to work a minimum number of hours in the public system, as is done elsewhere. In England, Australia, Denmark, and Norway, notably, studies have shown that doctors who adopt a mixed practice increase the overall

143. Tristan Bronca, “Virtual visits: The new frontier of telemedicine,” *The Medical Post*, September 9, 2014.

144. Yanick Labrie, *For a Universal and Efficient Health Care System: Six Reform Proposals*, Research Paper, MEI, March 13, 2014, pp. 31-35.

145. Marcel Boyer and Julie Frappier, “Medical specialists in Quebec: How to unlock the reserve supply,” *Economic Note*, MEI, April 22, 2009.

number of hours spent treating patients, without reducing the time devoted to the public system.¹⁴⁶

Currently, as virtual consultations are generally not considered an insured service from the government's point of view, many doctors employed by telemedicine companies also work within one of the country's public health care systems, without thereby violating the laws governing public health insurance.¹⁴⁷ Since this question will probably be raised in the coming years, however, an explicit authorization of mixed practice, accompanied by a minimal number of hours to be worked in the public system, would dissipate in advance any doubt in this regard. As with the preceding examples, abolishing this barrier, which would allow for a better allocation of medical resources in general, should not be limited to telemedicine, since it would benefit the country's health care systems overall.

5. See the Private Sector as a Partner

Once again, Canada stands out from most industrialized countries in the space it allows entrepreneurship within its public health care systems. While drawing on the contribution of private companies—within universal systems—is the norm in almost all OECD countries, Canada is the odd man out with a hospital system entirely monopolized by the government. In most European countries, non-profit organizations and even for-profit private companies manage a significant proportion of hospitals. Universal coverage is preserved, with impressive results from the perspective of patients and public finances alike.¹⁴⁸

The same spirit of openness should prevail for telemedicine. As we saw in Chapter 4, even here, in Canada, there are examples of entrepreneurial success within the public health care systems. Companies active in the field of telemedicine have also shown that they could provide support to public facilities.

The public systems are like enormous ocean liners that do not change direction on a dime. In a certain way, even the successes recorded by public bodies—or by organizations that depend on government funding, like the OTN—are an illustration of their limits, whether political or financial. Public bodies and entrepreneurs both have their role to play. The collaboration of the latter with the public sector, their complementarity, and even their competition should be greeted with enthusiasm by policy-makers.

The adoption of alternative methods of remuneration would avoid having to define piecemeal each new treatment or each new way of providing treatment.

6. Resisting the Temptation to Regulate

The final recommendation may be the most difficult one to apply from the legislators' point of view, since it is in conflict with their role: It consists of abstaining from intervening more and erecting new obstacles to the deployment of telemedicine, whether in terms of the kind of treatment received, the professionals who deliver the treatment, the place where and from where it is delivered, or the technology used. The benefits of telemedicine for patients have been amply demonstrated. It is not so much a new professional field, but rather a new way of making proven treatments available, provided by experienced professionals who are already governed by codes of ethics and professional orders. Legislators should take a step to the side, and concentrate their action on bringing down the barriers that still remain.

A Question of Choice

Behind all of these obstacles to be removed, there is a common thread: a political culture in which innovation must frequently be planned, controlled, and centralized.

Too often, existing institutions—governments and lobby groups, for instance—take steps that are more likely to slow entrepreneurial initiatives than encourage them. The people in the best position to implement innovative solutions, for their part, generally have little decision-making autonomy and have to deal with a rigid regulatory framework and practices over which they have little influence. The gap between innovation and its growth in the entrepreneurial sector and in the public sector, as described in these pages, testifies to this.

146. Karen Bloor *et al.*, "Variation in activity rates of consultant surgeons and the influence of reward structures in the English NHS," *Journal of Health Services Research and Policy*, Vol. 9, No. 2, 2004, p. 82; Terence Chai Cheng, Catherine M. Joyce, and Anthony Scott, "An Empirical Analysis of Public and Private Medical Practice in Australia," *Health Policy*, Vol. 111, No. 1, 2013, pp. 43-51; Karolina Socha and Mickael Bech, "Dual practitioners are as engaged in their primary job as their senior colleagues," *Danish Medical Journal*, Vol. 59, No. 2, 2012; Linda Midttun, "Private or public? An empirical analysis of the importance of work values for work sector choice among Norwegian medical specialists," *Social Science & Medicine*, Vol. 64, 2007, pp. 1267-1268; Linda Midttun, "Medical specialists' allocation of working time," *Health Policy*, Vol. 83, 2007, p. 119. Another way to address the concern regarding the health care workforce could be to reduce or even abolish medical school quotas in Canada. See Patrick Déry, *op. cit.*, footnote 138.

147. Government of Canada, Canada Health Act - Frequently Asked Questions. See also Philippe H. Trudel *et al.*, "Health Care Reforms: Just How Far Can We Go?" Economic Note, MEI, April 2003.

148. Yanick Labrie, *op. cit.*, footnote 144.

Moreover, in a system where demand greatly exceeds supply, few actors need to innovate in order to maintain their activities and their incomes. Indeed, this resistance to change is documented in many countries when it comes to telemedicine.¹⁴⁹ One part of this innovation deficit is also due to a very present mistrust of entrepreneurs working in the field of health care, something which remains particularly acute in Canada.¹⁵⁰

Different models of the evolution of our health care systems can be imagined, and such a discussion goes far beyond the scope of a paper on telemedicine. Yet this virtual medicine could be the start of a revolution in treatment methods, if only we let it take flight. In the past, many stakeholders—doctors, civil servants, politicians—have decided when, where, and how patients could access care.¹⁵¹ In the future, it is inevitable that this choice will end up belonging to patients. We should do everything we can to encourage this to happen as soon as possible.

149. Clemens Scott Kruse *et al.*, “Evaluating Barriers to Adopting Telemedicine Worldwide: A Systematic Review,” *Journal of Telemedicine and Telecare*, Vol. 24, No. 1, 2018.

150. Health Canada, *Unleashing Innovation: Excellent Healthcare for Canada*, Report of the Advisory Panel on Healthcare Innovation, July 2015, p. 97.

151. This passage is inspired by a recent declaration of Dr. Rob Williams, chief medical officer of the OTN, quoted in André Picard, “Bureaucratic, technological barriers impeding public’s desire for digital health innovations, conference told,” *The Globe and Mail*, August 13, 2019.

ANNEX

Why the Road to Innovation Is Paved with Entrepreneurship

In Canada, even with its government-financed health insurance and its public monopoly in hospital care, the health sector remains highly conducive to entrepreneurship. The private sector, and entrepreneurs in a broader sense, play an important role.

After all, even when you are operated on in a public hospital, by a doctor operating in the public system, it is private companies that have produced the medical equipment and supplies. The same is true of the drugs that are prescribed to you. A wide array of technologies are also put to use, including behind the scenes, when management tasks are handled using software developed by private companies, or when your appointment with your doctor is made using a website created by an entrepreneur, whether the site is operated by a company or by the government.

To understand why and how entrepreneurship holds an important place in the health care system, and why it remains its key engine of innovation, we need to look at the very essence of what entrepreneurship is.

What Is Entrepreneurship?

The purpose of entrepreneurship is basically to solve problems and meet society's needs. This is true of any type of entrepreneurship, in any field. Being an entrepreneur involves identifying an unresolved problem and acting to provide a solution. It also involves being on the lookout for unrealized profit opportunities. Entrepreneurship is therefore a form of arbitrage in which an entrepreneur identifies a problem as well as an undervalued resource that can be used to make a profit.¹⁵²

This sometimes results in a major technical innovation. In some cases, it may simply amount to purchasing a resource where it is cheap and selling it where it can command a higher price. The entrepreneur thereby resolves a simple problem, that of more efficiently allocating a resource or service that is scarcer at a given place (or time) than at another.¹⁵³

152. Israel Kirzner, "Entrepreneurial discovery and the competitive market process: an Austrian Approach," *Journal of Economic Literature*, Vol. 35, No. 1, 1997, pp. 69-71.

153. Raymond J. March, Adam G. Martin, and Audrey Redford, "The Substance of Entrepreneurship and the Entrepreneurship of Substances," *Journal of Entrepreneurship and Public Policy*, Vol. 5, No. 2, 2016, pp. 206-211.

The health care field is riddled with problems—and as many possibilities for arbitrage—that an astute entrepreneur can turn into profit opportunities. This is the case in Canada, as well as in the health care systems of other countries, where entrepreneurs identify problems and offer tangible solutions to those problems. (Entrepreneurship is far more highly developed in the universal health care systems of European countries than it is here in Canada.)¹⁵⁴

The contribution of health care entrepreneurs may sometimes seem unremarkable. A doctor who founds a clinic, for example, provides a service to the community and to his or her patients. In this instance, however, innovation is marginal to non-existent, and will not inspire a great revolution in the world of medicine. But in other instances, entrepreneurship may be synonymous with major innovation.

Even when you are operated on in a public hospital, by a doctor operating in the public system, it is private companies that have produced the medical equipment and supplies.

Indeed, some entrepreneurial initiatives are broader in scope, require more funding, and have the potential to affect many more people. This is the case when major innovations require great research effort. A new drug, such as those for treating cancer or diabetes, for example, requires R&D investments averaging more than US\$3 billion.¹⁵⁵

The type of innovation that is the subject of this paper, namely the delivery of health care remotely rather than in person, clearly provides a significant example of entrepreneurship and innovation. In this particular case, entrepreneurs recognized that these technologies could resolve problems of access and waiting times, and save needless trips. They may have judged that such benefits could result in major efficiency gains in the delivery of

154. Yanick Labrie, "The Positive Role of Profit in the Field of Health Care," Economic Note, MEI, November 6, 2014; Yanick Labrie, *For a Universal and Efficient Health Care System: Six Reform Proposals*, Research Paper, MEI, March 13, 2014.

155. Conversion to 2019 dollars calculated by the author. Joseph A. DiMasi, Henry G. Grabowski, and Ronald W. Hansen, "Innovation in the pharmaceutical industry: New estimates of R&D costs," *Journal of Health Economics*, Vol. 47, May 2016, pp. 20-33.

health care. They may also have concluded that these gains could produce substantial savings for individuals or businesses (employers and insurers, for example).

Whether an innovation is run-of-the-mill or applies cutting-edge technology, the entrepreneurial dynamic is the same. In either case, an entrepreneur who puts new solutions on the market based on these innovations has realized that they had significant value and that a profit could be made from their dissemination, whether by reducing costs, by improving services, or by leading to the creation of previously non-existent products.

Entrepreneurship is not merely *one of* the driving forces behind innovation; it is *the* main driving force behind innovation. Of course, government may occasionally innovate, but that is an exception to the rule.

Why Does Government Struggle to Innovate?

When new technologies allowed transportation needs to be met more effectively, an army of entrepreneurs got to work designing, building, and marketing trains, cars, and airplanes. The advent of diverse means of communication, from the telegraph to mobile phones, not to mention radio and television, was also the result of numerous trials, errors, failures and, eventually, successes of entrepreneurs who either developed the technology themselves or found an innovative way to use it.

The case of the smartphone, now a ubiquitous item, is a compelling example of this. The cellphone has been transformed in countless ways since it was invented over forty years ago.¹⁵⁶ It went from being a heavy and cumbersome device, aimed at a handful of users, to a product whose “phone” function has actually become secondary. For many users, it is primarily a portable internet-connected screen that lets users take photos and listen to music (and, thanks to entrepreneurs, get real-time access to a nurse or doctor in just a few clicks).

Obviously, not all of these innovations emerged from a single company. Rather, they resulted from competing forces and more or less random (often unsuccessful) attempts to find a product that would meet people’s needs. Successes are less frequent than failures. They are even less commonly the result of government intervention, which only rarely leads to economically viable innovations. Why? Simply because heavy, bureaucratic, rigid, centralized structures that discourage risk-taking

are not conducive to innovation. And when it does occur in such a context, in spite of everything, the true initiator of innovation will often be a patient and determined individual, as in one of the case studies we saw in Chapter 4.

The reason innovation arises mostly from entrepreneurs has to do with the context in which they operate. This context steers them toward innovation, and indeed forces them to innovate if they want their businesses to come into existence or survive. For there to be entrepreneurship, this environment needs to present the three P’s (property, prices and profit / loss) and the three corresponding I’s (incentives, information and innovation), illustrated in Figure A-1.

Heavy, bureaucratic, rigid, centralized structures that discourage risk-taking are not conducive to innovation.

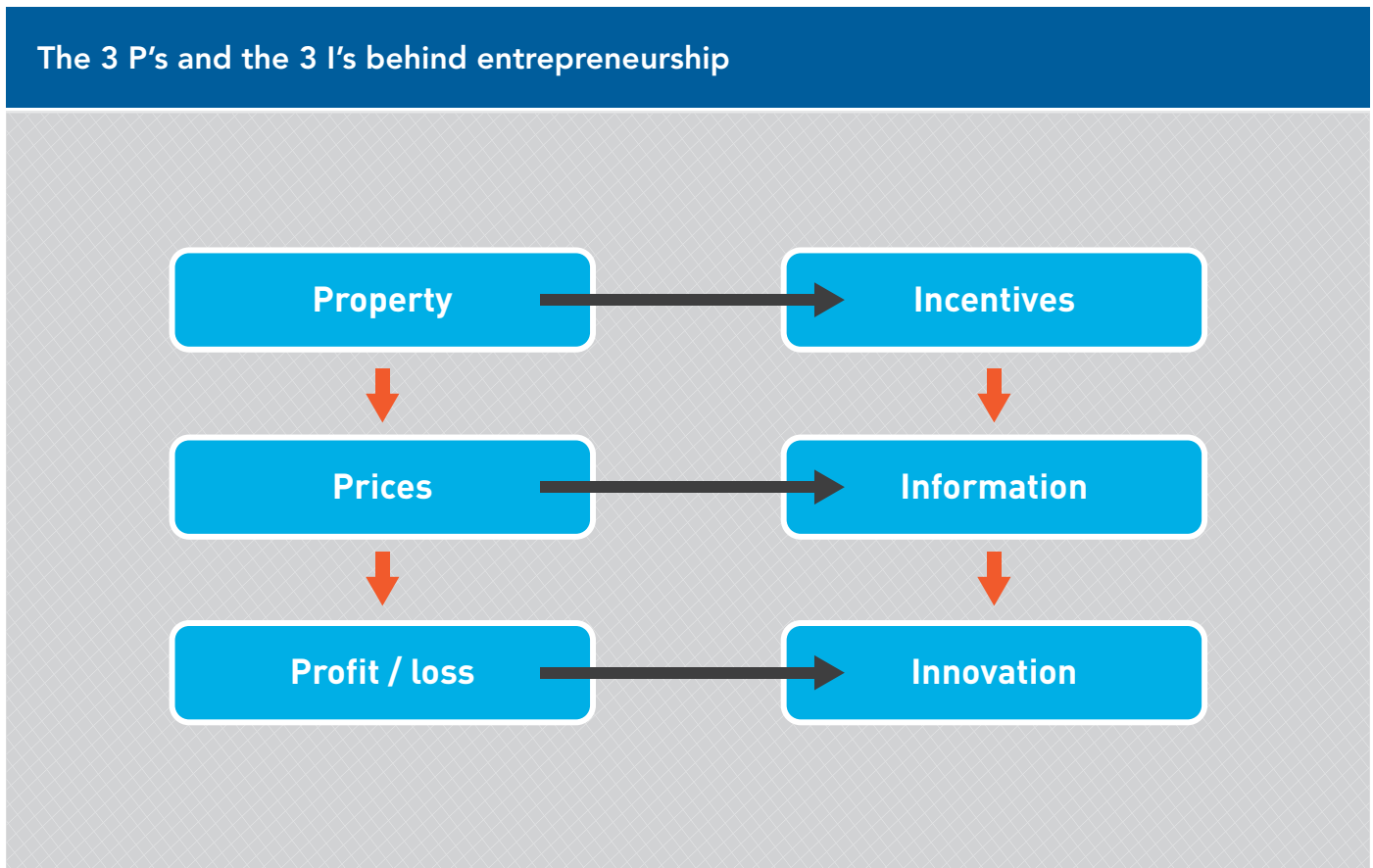
Property rights provide the incentives for economic actors to make decisions about their time, efforts, and material resources. The prices that emerge from market transactions (made possible by property rights) provide the information that economic actors need with respect to the terms of exchange and the relative scarcity of goods and services available on the market. Finally, the lure of profit, and the penalty of loss, ensures that market participants will constantly be on the lookout for creative innovations that cut production costs, deliver goods and service to market with greater ease, or introduce new products to satisfy the varied and constantly evolving tastes of consumers.

Without the constant prodding of the incentives provided by private ownership, the information signals contained in prices, and the feedback from the market discipline of loss and the market reward of profit, economic systems would be unable to allocate resources efficiently or continually discover new and innovative ways of producing and delivering products and services to satisfy consumer wants. This is precisely the case for government activities, which operate in a different context and are focused on other types of objectives.

This explains in part why Canada’s public health care systems, despite having provided telemedicine services for more than twenty years, have seen start-up companies catch up to them in a few years, and even outpace them. It also explains why European hospitals, lifted up by entrepreneurship, have seen their performance

156. Motorola, “Motorola Demonstrates Portable Telephone to Be Available for Public Use by 1976,” news release, April 3, 1973.

Figure A-1



Source: Peter J. Boettke and Mathieu Bédard, *How to Foster Entrepreneurship in Canada: The Teachings of the Austrian School of Economics*, MEI, Research Paper, September 19, 2017, p. 27.

improve significantly,¹⁵⁷ while the main innovation at Canadian hospitals has been the advent of hallway medicine.

In the governmental context, there is no private ownership, since those who initiate projects have no rights over them. They therefore cannot yield these rights to other parties or enjoy the “fruits” of their projects. Nor are there prices: There are many costs, used in public accounting, but these are not market prices resulting from supply and demand.

In addition, the gains do not accrue to the person responsible for implementing a project, nor is this person held responsible if a project runs deficits. Democracy seeks to mitigate this problem at the ballot box, by providing the chance to replace politicians and governments at regular intervals. However, this mechanism does not compare to that of the market, since it is in-

European hospitals, lifted up by entrepreneurship, have seen their performance improve significantly, while the main innovation at Canadian hospitals has been the advent of hallway medicine.

direct and does not ensure that money-losing projects will be abandoned.

Sometimes, it is just the opposite: Projects that have failed are “rewarded” with a higher budget, on the pretext that failure may be due to lack of resources. The way health care spending has risen almost automatically in Canada over the past forty years,¹⁵⁸ without any questioning of the ways of doing things that keep producing

157. Yanick Labrie, *op. cit.*, footnote 154.

158. Canadian Institute for Health Information, *National Health Expenditure Trends, 1975 to 2018*, November 2018.

the same disappointing results (especially in terms of access), is a striking illustration of this.

All of these mechanisms that hinder innovation in a governmental context—or, expressed differently, the absence of mechanisms that encourage it—also operate in public health care systems. The dream of getting access to a health care professional located dozens or even hundreds of kilometres away without having to make a long trip has been around for a long time, but it is slow to become a reality in our public systems, as we saw in this paper.

Indeed, public medical assistance lines have existed for many years. These include the Quebec government's Info-Santé 811 telephone service, and other provincial services of the same kind. Launched in 2006, Info-Santé 811 remains limited to advice, with no possibility of getting a prescription.¹⁵⁹ The website provides only the phone number and information on how calls are handled; it does not even offer a chat service, which seems almost inconceivable nowadays.

Even though many telemedicine companies have sprung up, and later evolved and introduced new technologies to provide new services, this has not been the case for Info-Santé, which remains stuck in the parameters of another era, prior to internet democratization and the advent of mobile devices.¹⁶⁰

Even when it comes to imitating the innovations of entrepreneurs, governments run into problems. Again in Quebec, when an entrepreneur responded to the glaring need for connecting doctors and patients in an overloaded health care system incapable of meeting demand, the government's reaction was to create its own medical appointment system, five years late, and then to engage in prolonged legal wrangling with the entrepreneur in question.¹⁶¹ In a supreme irony, the government solution is plagued with significant shortcomings, so much so that many doctors are reluctant to use it.¹⁶²

The Government's Share, the Private Sector's Share

Though we willingly acknowledge that part of what governments provide and organize is useful (for example, roads, bridges, and other public goods), this does not mean that government plays a particularly important role in innovation. We mentioned the internet a little earlier. Supporters of government intervention are fond of saying that the internet was created by government.

This is partly true. The underlying technology was created for military purposes, and the private organizations that took part in the process were so heavily subsidized that they may as well have been government-run.¹⁶³ However, this is only part of the story. If the internet had remained what it was at that time, it would never have affected the lives of households as it does today, simply because the internet was not very useful then for ordinary people. The development of internet technology, and what led it to become the societal phenomenon it is today, is entirely due to the private sector.

When an entrepreneur responded to the glaring need for connecting doctors and patients, the Quebec government's reaction was to engage in prolonged legal wrangling with the entrepreneur.

When we think of the internet in 2019, we think of Google, Amazon, Facebook, YouTube, Netflix, and Twitter, to name only a few among the dozens and even hundreds of companies that have changed our perception and use of this global network. All of these companies use the internet, just as Walmart makes use of the road network every day to transport merchandise. But to say that Walmart's success relies on government because it was government that built the roads would make little sense; the added value did not come from a highway but from the use that was made of it. Similarly, government provided the technology for the internet, but it is private-sector entrepreneurs who are responsible for the innovations that are found there and that define the 21st century.

Indeed, the public sector frequently conducts basic research and develops certain infrastructure, but it is often

159. Radio-Canada, "Des réponses plus rapides au 8-1-1," February 29, 2012. Since August 2019, Info-Santé nurses can check if appointments are available on the Québec Medical Appointment Scheduler.

160. Patrick Déry, "Quebec Hospitals Require Entrepreneurship," Viewpoint, MEI, July 12, 2018.

161. Mathieu Bédard and Kevin Brookes, "Entrepreneurship and Fiscal Policy – How Taxes Affect Entrepreneurial Activity," Research Paper, MEI, September 13, 2018, pp. 18-19.

162. Nicolas Lachance, "Des médecins torpillent Rendez-vous santé Québec," *Le Journal de Montréal*, April 2, 2019.

163. L. Gordon Crovitz, "Who Really Invented the Internet?" *The Wall Street Journal*, July 22, 2012; Michael Moyer, "Yes, Government Researchers Really Did Invent the Internet," *Scientific American*, July 23, 2012.

the private sector that uses it to meet consumer needs. The pharmaceutical industry is another example of this. The public sector conducts a huge amount of basic research, but once again it is the private sector that is responsible for the very large majority of new drugs. For example, between 1990 and 2007, only 9% of the new drugs approved in the United States were discovered by public sector research institutions. Private laboratories also fund nearly all clinical trials.¹⁶⁴

There is a parallel to be drawn between innovation in the health care field and the internet. Public research institutes conduct the great bulk of basic research on diseases. However, without diminishing the importance of this contribution, it is the private sector that ultimately uses this knowledge to develop treatments. This, ultimately, is where life-saving innovations come from.

Entrepreneurship as a Vector of Social Change

It is hard to imagine major commercial opportunities that do not bring about social transformation or institutional change. Indeed, the commercial, institutional, and social dimensions are inextricably linked. Entrepreneurs can succeed only if they are attentive to what people want and if they meet a demand or a need of their customers.

As noted in the famous quote from Adam Smith, “It is not from the benevolence of the butcher, the brewer or the baker that we expect our dinner but from their regard to their own self-interest. We address ourselves not to their humanity but to their own self-love.”¹⁶⁵ Or as stated by Benjamin Franklin, an innovator and entrepreneur long before he became a statesman, “Doing well by doing good.”¹⁶⁶

Unlike governments, competing entrepreneurs cannot impose their solutions. Their success will depend on voluntary support from the greatest number. And it is hard today to deny that the large-scale adoption of innovations such as printing, automobiles, and smartphones has had substantial social impacts.

The use of innovations like telemedicine is also likely to transform health care systems. But for these changes to happen, the state has to refrain from throwing a spanner

in the works. Governments intervene in many ways in entrepreneurship,¹⁶⁷ but what most of these interventions have in common is that they raise costs for entrepreneurs and discourage innovation, sometimes even making it impossible—or, when it does happen, making its benefits less accessible.

This is precisely what is happening, for example, when regulatory barriers prevent a doctor in Ontario from providing a virtual consultation to a patient in Saskatchewan or Prince Edward Island, or when government restricts the use of remote care to a particular category of patients, as we saw in this paper.

The primary role of government is to refrain from impeding the appearance of new solutions that can help patients get better and faster care.

In short, the primary role of government is to refrain from impeding the appearance of new solutions that can help patients get better and faster care, and that it can later itself adopt.

To Sum Up

Entrepreneurship is the primary source of innovation. Even when government innovates, as with the internet, most of the benefits we now derive from it come from private actors. Canada’s public health care systems also benefit from the many innovations that come from private companies in the form of equipment, supplies, and software, as well as new treatments. Entrepreneurial innovation can have a considerable social impact, and this remains true in health care. However, government must take care not to hinder entrepreneurs, so that the benefits of their innovations can reach the greatest number.

164. Yanick Labrie, *What Role Do the Public and Private Sectors Play in Pharmaceutical Innovation?* Economic Note, MEI, September 3, 2014.

165. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, University of Chicago Press, 1976 [1776], p. 18.

166. Walter Isaacson, *Benjamin Franklin: An American Life*, Simon & Schuster, June 2004.

167. Peter J. Boettke and Mathieu Bédard, *How to Foster Entrepreneurship in Canada: The Teachings of the Austrian School of Economics*, Research Paper, MEI, September 19, 2017, pp. 37-50.

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