

# TELEMEDICINE: IMPROVING THE HEALTH CARE SYSTEM THROUGH INNOVATION

The Quebec health care system has long been a target of criticism. Since the mid-1970s, newspapers have been reporting on staff shortages, emergency room overcrowding, challenges in finding family doctors, waiting lists that keep getting longer, and so on. Optimal use of resources is vital if we wish to reduce waiting times and provide better and faster service to patients. Technological innovations, including telemedicine, are a way of improving the efficiency of the health care system and increasing the choices offered to patients. Sadly, the current government monopoly in the health care sector eliminates most natural incentives to innovate and make optimal use of resources.



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## Current state of affairs

Governments, aiming to find solutions to problems of overcrowding, have periodically looked into the operation of the health care system, with study groups and commissions proliferating. These have included the Rochon Commission (1988), the Clair Commission (2000), the Romanow Commission (2002) and the Castonguay Commission (2008), not to mention the studies produced by Quebec's Department of Health and Social Services. Most discussions on potential reforms, and the changes enacted, have taken for granted that the system must be overhauled from the top down, using a bureaucratic approach.

Some of the proposed recommendations have been instituted. Quebec created its network of local community service centres (CLSCs), gave greater priority to outpatient care, established family medicine groups, increased financing of the health care system, emphasized integration of services, reformed frontline care, and so on.

The health and social services system currently employs more than 280,000

workers,<sup>1</sup> amounting to 6.7% of Quebec's labour force, and it has a budget of \$28 billion, or 44.7% of Quebec government program spending.<sup>2</sup> From 1993 to 2009, Quebec health care spending recorded real growth of 62.5%,<sup>3</sup> well above real GDP growth of 44.5%.<sup>4</sup> Real per-capita health care spending rose by 49.3%<sup>5</sup> over the same period.

Despite the higher budgets allocated to the health care system and the adjustments made in how it operates, little improvement has been seen. According to emergency room rankings in the newspaper *La Presse*, waiting times in Quebec emergency rooms have kept rising and averaged 17.6 hours in 2009-2010, up 2.2 hours compared to the situation five years earlier.<sup>6</sup>

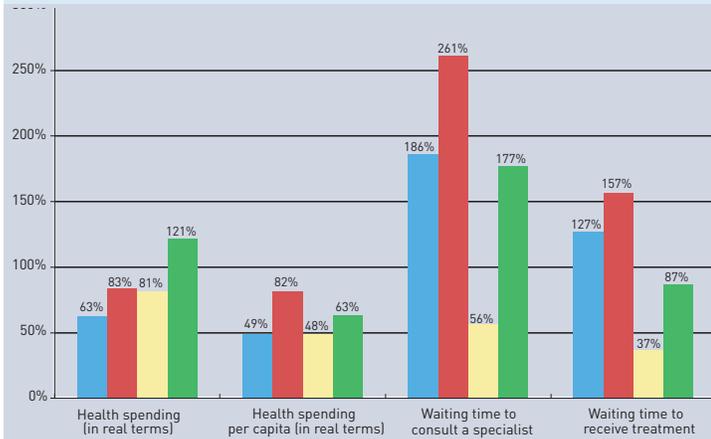


Long waits are not limited to emergency rooms. In Quebec, median waiting times between a general practitioner's recommendation and treatment stood at 7.3 weeks in 1993 but rose to 16.6 weeks in 2009, an increase of 127%.<sup>7</sup> Having to wait for treatment is costly, because a person who is ill often has lower productivity and may sometimes suffer a decline in health during that period.

1. Observatoire de l'administration publique, *L'effectif du réseau de la santé et des services sociaux*, Winter 2010, p. 2 (the most recent data go back to 2008); Statistics Canada, CANSIM Table 282-0002.
2. Quebec Department of Finance, *2010-2011 Budget Plan*, p. C25.
3. Canadian Institute for Health Information, *National Health Expenditure Trends, 1975 to 2009*, 2009, p. 140, and calculations by the authors.
4. Institut de la statistique du Québec, *Comptes économiques des revenus et dépenses du Québec*, 2009 edition, p. 24.
5. Canadian Institute for Health Information, *op. cit.*, footnote 3, p. 141, and calculations by the authors.
6. Sara Champagne, "Attente aux urgences : Québec s'éloigne de son objectif," *La Presse*, May 27, 2010.
7. Nadeem Esmail, *Waiting Your Turn: Hospital Waiting Lists in Canada – 2009 Report*, Fraser Institute, October 2009, p. 57.

FIGURE 1

Health care spending and health care system results for selected Canadian provinces (1993-2009)



Source: Nadeem Esmail, *Waiting Your Turn: Hospital Waiting Lists in Canada – 2009 Report*, Fraser Institute, October 2009; Canadian Institute for Health Information, *National Health Expenditure Trends, 1975 to 2009*; calculations by the authors.

It has often been said that injecting more money into the health care system would suffice to correct the situation. The experience of other provinces suggest the contrary (see Figure 1). Saskatchewan saw its waiting times climb more quickly than in Quebec despite higher proportionate increases in health care spending. Meanwhile, Ontario, with per-capita spending growth similar to that in Quebec, got much better results. It is thus hard to discern a significant relationship between health care spending and the system's effectiveness, just as it is not realistic to hope for lower costs as long as the way care is provided is not revised.

The Canadian health care system shows mediocre results when compared to other countries' systems. In a recent study providing comparisons with European countries, Canada ranked 25<sup>th</sup> out of 34.<sup>8</sup> The World Health Organization (WHO), in a study published in 2000, ranked the Canadian system 30<sup>th</sup> in the world, behind Morocco, Greece, Israel and Spain, despite Canada's 10<sup>th</sup>-place world ranking in per-capita health care spending.<sup>9</sup> Canada and Quebec are far behind in terms of advanced medical devices<sup>10</sup> and, generally speaking, in terms of innovation.

According to the WHO, government bureaucracies have some serious shortcomings when it comes to the provision of health services. They are often not as effective in downsizing or reorienting priorities as they are in expanding capacity and adding services. Over time, many have become excessively rigid, with inefficient processes producing low-quality care that is unresponsive to the needs and expectations of the populations and individuals that they serve.<sup>11</sup>

It is vital to establish an environment in which innovation in all its forms is not only encouraged but is seen as essential. Many international experiments (and a few in Canada) cast light on the potential provided by organizational innovations in the health care field, including telemedicine, which we have chosen as an example of innovation. We will show briefly how it can help improve the operation of health care systems, greatly benefiting users.

## Telemedicine

New technologies have dramatically changed production processes and can also be a factor of change in the provision of health care. With sophisticated means of communication, telemedicine, or "practising medicine remotely using means of communication,"<sup>12</sup> has become possible.

When Quebec lawmakers adopted changes to the *Act respecting health services and social services*<sup>13</sup> in November 2005, they were among the first in Canada to institute a legal framework dealing with telehealth and to recognize that telemedicine was an appropriate way to dispense health care services in Quebec. Since 2000, the Quebec College of Physicians has stated its position on a number of major points concerning this new way of practising medicine, in particular the delicate issue of the place where a procedure is undertaken.<sup>14</sup>

*The current government monopoly in the health care sector eliminates most natural incentives to innovate and make optimal use of resources.*

8. Ben Eisen and Arne Björnberg, *Euro-Canada Health Consumer Index*, Health Consumer Powerhouse and Frontier Centre for Public Policy, May 2010.

9. World Health Organization, *The World Health Report*, 2000, p. 152.

10. Brett J. Skinner, *Canadian Health Policy Failures*, Fraser Institute, September 2009, Chapter 3.

11. World Health Organization, *op. cit.*, footnote 9, pp. 62-63.

12. Collège des médecins du Québec – Direction de l'amélioration de l'exercice, *La télé-médecine*, May 2000, p. 2.

13. *Act respecting health services and social services*, R.S.Q., ch. S-4.2, art. 108.1 et seq.

14. Collège des médecins du Québec, *op. cit.*, footnote 12, p. 3.

Today, two observations stand out: (1) after an encouraging start, Quebec has lost considerable ground in telehealth;<sup>15</sup> (2) initiatives seem to have favoured the use of information technology for clinical purposes and interprofessional collaboration, but very few have covered the provision of patient care.

In the area of health care, telephone consultations, virtual clinics and telehomecare are three highly promising applications of telemedicine.

### 1. Telephone consultations

Quebecers are familiar with the Info-Santé service offering around-the-clock telephone contact with nurses. Nurses answer common health questions or direct callers to the appropriate services.

Texas-based TelaDoc Medical Services has created a concept similar to Info-Santé but has pushed it further. TelaDoc offers telephone medical consultations not with nurses but with doctors who are able to provide diagnoses and write prescriptions. The company has each patient's medical records, giving doctors all the information they need during consultations. TelaDoc does not claim to replace visits to a doctor's office but, like virtual clinics, this type of service is particularly effective at diagnosing minor problems and avoiding unnecessary trips to the emergency room.<sup>16</sup> Some 91% of members said the doctors contacted through TelaDoc had resolved their problems.<sup>17</sup> Also worth noting is that 97% of patients questioned said they were satisfied with the company's service,<sup>18</sup> which explains its exponential growth. Founded in 2002, TelaDoc already has more than 1.6 million members.

### 2. Virtual clinics

The first virtual clinic was put on line in Hawaii in early 2009 by Blue Cross Blue Shield Association in collaboration with American Well, the company that originated the concept. In the spring of 2009, a second virtual clinic opened in Minnesota.

These clinics enable patients to consult doctors in real time through a computer with Internet access and a webcam. The doctors can provide diagnoses, prescribe the appropriate medication and suggest a medical follow-up protocol.

Patients do not need to make appointments or travel to an office. This is of particular interest when patient and doctor are geographically far apart, when a patient has mobility problems or is away on a trip, when care is required for a chronic illness, or when immediate assistance is required for a minor problem. This is also an effective tool for identifying cases where a visit to the emergency room is necessary. American Well says this concept not only facilitates access to care but helps limit growth in spending, with a virtual consultation costing half as much as a visit to the doctor's office.<sup>19</sup>

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Despite their appeal, virtual clinics remain non-existent in Quebec. In 2000, the College of Physicians stated clearly that it does not encourage patients to teleconsult, in particular through a website, but that it does not reject telemedicine when this involves a medical follow-up with prior agreement on terms of care between the patient and the attending physician.<sup>20</sup>

In 2008, the *Santé sans file* (a play on words meaning both "wireless health" and "health without line-ups") project launched by Quebec City-based Myca Santé Inc. set out to offer patients an online medical teleconsultation service with doctors, promising waits of three hours or less. As soon as the news became public in February 2008, the Minister of Health asked the Quebec Health Insurance Board to investigate the legality of this formula. Eight months later, the board declined to take a position on the legal aspects of services provided by videoconference until it had heard the position of the College of Physicians on the nature and legality of this new approach.<sup>21</sup> The College then stated that the service provided by Myca does not respect the clinical approach because there is no physical examination. No formal position has been made public since then.

15. See Jean-Paul Fortin, "La télésanté au Québec : beaucoup de retard à rattraper," *Le Spécialiste*, Vol. 11, No. 2, June 2009, pp. 18-24.

16. Lindsey Getz, "Telemedicine: Miles Don't Matter," *For The Record*, Vol. 21, No. 5, p. 20.

17. TelaDoc Medical Services, *TelaDoc Benefits*, <http://www.teladoc.com/what-is-teladoc/teladoc-benefits>.

18. Sheila Fifer, *Telemedicine MD consultations: satisfaction rates and use patterns among working-age adults*, Mercer Health & Benefits, 2008, p. 4.

19. Eric Wahlgren, "The Doctor will see you now... online: American Well powers virtual visits," *Daily Finance*, October 8, 2009.

20. Collège des médecins du Québec, *op. cit.*, footnote 12, p. 2.

21. Régie de l'assurance maladie du Québec, *Rapport d'enquête – Myca Santé inc*, September 2008.

### 3. Telehomecare

Telehomecare consists of sending physiological information to a remote location for control and follow-up purposes. Telehomecare is especially useful for patients suffering from chronic illnesses. Their homes are equipped with devices they are taught to use. These devices send information on the patient's state of health to specialized nurses, who can intervene immediately if a problem arises.

Many experiments have been conducted over the last 15 years, in Canada and elsewhere. A review of these experiments is presented in an Appendix on the website of the Montreal Economic Institute. We note that the studies show clearly that telehomecare enables more patients to be treated per nurse while providing care of the same quality. Telehomecare thus lowers the cost of care substantially once the equipment is amortized. In general terms, cost reductions seem to be greater when undertaken in the private sector rather than in the public sector. When the private sector is involved in health care, it is much quicker to perceive the potential for improving services while limiting use of the necessary resources. Because of its particular characteristics, the private sector is generally much more energetic in seeking ways to achieve more with less. Something as simple as making appointments illustrates this reality: in the

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United States, firms such as ZocDoc allow online searches of general practitioners and medical specialists as well as making appointments, often the same day. Also, the U.S. private sector was quick to spot the advantages of telemedicine, and many companies have long been practising it, whereas Canada's public health sector is still taking its first timid steps in this area.

### Conclusion

Having to wait for health care produces many extra costs: loss of productivity, deterioration in the patient's state of health, higher mortality, and so on. Many attempts have been made to improve the Quebec health care system, to make it more efficient and to enhance access. However, the adjustments made to the current model are not providing the hoped-for results. The approach to offering care must be rethought continuously, and telemedicine presents some interesting prospects. New technologies have led to significant increases in productivity in many areas and can also be put to use in providing health care.

Public health care systems often lack incentives to innovate. However, in a context of rising costs, poor access to family doctors and overcrowding in emergency rooms, the opportunities provided by telephone consultations, virtual clinics and telehomecare deserve to be taken into consideration.



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