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## Policy Innovation is Needed to Match Health Care Delivery Reform: The Story of the Champlain BASE eConsult Service

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### A Commentary

Commentaries are reflection pieces prompted by a HRA or CHRA, and either provide background information or respond in some way to conclusions reached in a HRA or CHRA.

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## 1 INTRODUCTION

Canada faces an urgent need for innovation and reform of health services delivery (McGinley 2012). In this commentary, we argue that a lack of policy responsiveness can hinder the development and expansion of innovations aiming to improve the quality of patient care. To illustrate these challenges and demonstrate how they can be overcome, we use the case of an innovative electronic consultation service that has grown from a small proof-of-concept to a fully implemented regional service, and is currently exploring potential expansion across multiple provinces. We present background information on the service before examining roadblocks it has faced throughout its implementation, and policy changes that would facilitate the creation and expansion of similar services across Canada. As electronic innovations to health care face a unique set of challenges and opportunities, our proposed changes pertain principally to eConsult services and other programs that facilitate electronic communication between providers.

## 2 BACKGROUND FACTS

### 2.1 The challenge to be addressed

Of the many challenges facing Canada's health system, one of the largest is providing prompt access to care. Indeed, Canada has been singled out among wealthy nations as facing particular challenges in providing timely access to specialty services. The 2013 Commonwealth Survey, for example, placed Canada in last place among 11 countries surveyed in terms of wait times for specialist care (Schoen *et al.* 2013). Reduced access to specialist care has been associated with a number of problems, such as lower health status, poor patient outcomes (Canadian Institute for Health Information 2012), and increased anxiety and stress (Berthelot and Sanmartin 2006). This problem is especially acute in rural or remote areas where many patients face costly and time-consuming trips of many hours to the nearest specialty clinic (Curran, Rourke, Snow 2010). Individuals living in these areas often lack access to the transportation or funds necessary to support travel expenses, and consequently must go without adequate health care (Hay, Varga-Toth, Hines 2006).

### 2.2 Champlain BASE eConsult Service—an innovation to improve access to care

Since 2008, a team led by clinician researchers and an information technology expert in Ottawa have been tackling the problem of long wait times by developing and implementing an innovative service to improve access to care. The Champlain BASE (Building Access to Specialists through eConsultation) eConsult service is a form of asynchronous communication whereby primary care providers (PCPs) and specialists can communicate directly through a secure web-based application. PCPs submit a patient question to a specialty ser-

vice via a web-based portal, using a four-field template that requires minimal demographic information (confirmation of patient consent, date of birth, and gender). They can attach any additional information (e.g., test results, images, EMR-generated letters) as a simple portable document file (PDF). The case is assigned to a specialist based on availability, who provides an answer within one week (the average response time is two days). Specialists can reply to the question, request additional information, or recommend a referral. In the latter case, specialists can advise PCPs on other matters to complete before the appointment (e.g., medication changes, additional tests), allowing the PCP to more effectively manage the patient's care in the interim, and often leading to a more effective visit. At the conclusion of the eConsult, PCPs complete a brief closeout survey and upload the information into their EMR or patient chart. The service was enhanced and expanded in 2011 based on the success of the proof of concept and pilot phase (Keely, Liddy, Afkham 2013; Liddy *et al.* 2013) and is now available to all PCPs (both family doctors and nurse practitioners) in a large health region of 1.2 million people in Eastern Ontario, which includes Ottawa and the surrounding region. Participating PCPs can access 81 different specialty groups, representing the largest number of specialty services available from any eConsultation system in the world.

In order to situate our service in a broader context, we conducted an environmental scan of electronic consultation and referral systems in Canada. Only three services were identified by the scan: the Bridging General and Specialist Care Project in Manitoba, the Ambulatory Referral Management system in Toronto's Sick Kids hospital, and our own eConsult service (Liddy *et al.* 2015a). Despite the acknowledged need to improve the referral system and increase government spending on health information technology, eConsultation and eReferral systems remain scarce in Canada.

The implementation of the Champlain BASE eConsult service has now enabled rapid access to specialist advice for over 11,000 patients in our health region, of whom only 29% needed a face-to-face referral. The service has been highly successful on a number of key measures, including improved access, satisfaction, and cost effectiveness. PCPs who use the eConsult service receive a specialist response in an average of two days, with 75% of cases being answered in less than three days (as opposed to months or years in the traditional referral model) (Keely, Liddy, Afkham 2013). PCPs have ranked the service as having extremely high value for their patients and themselves (Liddy *et al.* 2015b). Specialists have likewise expressed high levels of satisfaction and improved communication between themselves and PCPs. They have also noted the educational opportunities afforded by the eConsults, such as case based teaching and using common eConsult questions as a needs assessment for formal teaching sessions (Keely *et al.* 2015). An economic analysis of the service found that the program saves traditional, costly face-to-face referrals and breaks even once 8,000 eConsults have been processed (Liddy *et al.* 2015c).

This innovative service was initially launched within the confines of a research project, and as such was subject to some policies pertaining to a full scale health care intervention (e.g., patient privacy) but not others (e.g., the Ontario Health Insurance Payment Act and

traditional definitions of specialists). During Champlain BASE’s development from a small proof-of-concept and pilot into a scaled-up, sustainable service, we have identified three key areas wherein current policy—or lack thereof—have affected the potential impact of this health care innovation: privacy, financing, and delivery of services.

Policy and innovation must align in order to facilitate meaningful change in health service delivery. Without compatibility between these two groups, any attempts to improve patient care are doomed to failure. Policymakers and innovators must work together to pursue mutually agreeable avenues of care improvement. This commentary discusses the policy-based barriers that innovators face when attempting to implement innovations such as the Champlain BASE eConsult service. We provide suggestions for reasonable changes in policy that would help foster eConsult and other electronic health care solutions. In addition to reducing wait times for specialist appointments, the Champlain BASE eConsult service has the potential to address these issues and serve as a template for future innovations seeking to improve the equity and accessibility of care.

### **3 POLICY CHALLENGES: PRIVACY, FINANCING, AND DELIVERY OF SERVICES**

#### **3.1 Privacy**

*Issue: Concerns over privacy remain a barrier to the adoption of electronic platforms or innovations among health care providers.*

When sending patient information between providers, Canadian physicians continue to rely on paper documents and fax machines, which have been largely replaced in other industries by online communications (Muzyka, Hodgson, Prada 2012). Electronic and online applications make information far easier to share and reproduce, which brings the potential for greater efficiency and quality of care (Buntin *et al.* 2011) as well as greater risks of data leakage or other security breaches. The Personal Health Information Protection Act (PHIPA) has established clear and stringent guidelines in how providers can communicate patient-specific health data. In Ontario, privacy officers located regionally or in individual institutions ensure adherence to PHIPA legislation (Government of Ontario 2004).

Unlike other methods of electronic communication such as email (which does not meet the privacy requirements outlined in PHIPA), the Champlain BASE eConsult service relies on a secure platform to transmit patient information between providers. The existing infrastructure and system development is based on Microsoft SharePoint, which is a standard off-the-shelf platform widely deployed among many health care organizations in Ontario. The Champlain BASE platform adheres to all PHIPA legislation, proving that technologies harnessing online communication can offer greater access without sacrificing privacy. Despite this, efforts to scale up beyond our region are often met with concerns and anxiety over the use of electronic media to transmit patient data. Canada’s provinces have either

created their own privacy legislation or have adapted policies such as PHIPA, yet these policies are not widely understood. Clearer guidelines on how new technologies can fit into existing privacy policies would help innovators develop and implement secure programs.

### 3.2 Financing

*Issue: Standard payment models may not be applicable to eConsult.*

Physician compensation is complex, involving multiple factors. Each province is responsible for setting rates and policies for physician remuneration. In Ontario, physician payment is outlined by the Schedule of Benefits under the Health Insurance Act (last amended 1 May 2015), which details specific payment principles for referrals and consultations. In most cases, specialists are paid on a fee-for-service basis, receiving a flat fee for each service rendered (e.g., consultation, surgical procedure). However, a subset of Ontario physicians may also be compensated through an Alternative Funding Plan (AFP), wherein specialists receive more stable payments blending a base salary, incentive/premium payments, and additional fee-for-service payments (HealthForceOntario 2015).

Currently, specialists participating in the Champlain BASE eConsult service are paid \$200 per hour pro-rated to the length of self-reported time it takes them to complete an eConsult. This payment model was introduced initially as part of the research program and subsequently retained when the service was fully launched in the health region due to the paucity of other payment options available within the existing fee-code structures at that time (i.e., in 2011). The majority of specialists who use the Champlain BASE eConsult service support this remuneration model. In a recent survey, 88% of specialists stated that the payment model currently used by the Champlain BASE service is best, 85% agreed that payments were made at a reasonable frequency, and 67% felt that the level of compensation they received was fair (Keely *et al.* 2015). Support for the service still comes from special project funding through the Champlain Local Health Integration Network, pilot funding from the Ministry of Health and Long-Term Care, and research grants awarded to the eConsult team. Reliance on these funding sources limits eConsult's long-term sustainability, despite evidence of its economic feasibility compared to the traditional referral-consultation model (Liddy *et al.* 2015c). The team has been involved in several years of discussions related to fee-codes. However, amending the Health Insurance Act to allow pro-rated payments to specialists is a complex process, involving negotiated agreements between government and health care provider associations on a number of issues such as differential payment schedules for specialists, payment for PCPs, "double dipping" (i.e., receiving two forms of payment for treating the same patient), and payment for non-physician specialists. Furthermore, any changes made to introduce or augment individual fee codes can have unintended effects on the fee schedule as a whole, resulting in inconsistent payments or reduced efficiency. The potential impact of any changes must therefore be explored in detail, and the complexity of these negotiations often causes significant delays in policy amendment, which can greatly impact the future sustainability of innovations such as ours.

### 3.3 Delivery of services

*Issue: Ambiguities in the specialist's role could create challenges in the service's expansion.*

During the implementation of the Champlain BASE eConsult service, several issues arose pertaining to the selection of specialist users. These included defining who constitutes a specialist, choosing which specialists should participate, providing quality assurance for specialist responses, and identifying challenges associated with interprovincial eConsults.

*Defining "specialist".* Traditionally, medical specialists are trained medical doctors with specialist credentials from the Royal College of Physicians and Surgeons of Canada (RCPSC). However, specialized services can also be provided by family physicians who have received additional training in a specific field (e.g., sports medicine) and by non-physicians such as pharmacists, psychologists, social workers, and chiropractors. PCPs benefit from the expertise of all of these providers, especially when looking after individuals and families with chronic, complex diseases.

*Choosing which specialists participate.* Our service began as a small proof-of-concept that provided participating PCPs with access to four specialty groups. We have since continuously added different specialty groups to the service, guided primarily by PCPs' requests for access to particular specialty services. The Champlain BASE eConsult service currently offers PCPs access to advice from 81 specialty groups. The selection of individual specialists within a specialty group was based on a number of factors, including the potential specialist's interest in health service innovation, commitment to providing timely responses, and interest in collaborating with and educating PCPs to improve care for patients in the community. We did not feel compelled to have a formal application process nor an "open door" policy allowing all interested specialists to join.

*Providing quality assurance.* Assessing the quality of the referral process is a novel concept. To date, few approaches have been described to assess the quality of a traditional referral, let alone an eConsult. Specialists who participate in an eConsult case undertake a duty of care for that patient in much the same way they would when providing advice over the telephone or engaging in a "hallway consultation" (i.e., an informal discussion with a PCP regarding a patient's care). In our service, PCPs are explicitly told that eConsults are for non-urgent cases only and participating specialists are expected to reply to all eConsults directed to them within seven days. This expectation is clearly communicated to specialists, and any specialist who does not provide a response within five days receives an email reminder. In cases where there are ongoing issues of timeliness within a specialty group, additional specialists are sought to meet demand. Additionally, mandatory surveys completed by PCPs at the closure of each case allow us to monitor overall quality and identify any issues with response times. Fortunately, specialists have received outstanding feedback from PCPs and no changes in specialists have been made based on poor quality, though such measures could be taken if needed.

*Identifying challenges associated with interjurisdictional eConsults.* Although RCPSC certification is federally recognized, each province is responsible for licensing physicians.

In Ontario, the College of Physicians and Surgeons of Ontario (CPSO) is the provincial licensing body for all primary care physicians and specialists (College of Physicians and Surgeons of Ontario 2015a). No physician may practice medicine in Ontario without being certified by the CPSO. In order to maintain quality standards, CPSO members are randomly selected for peer assessments to appraise the quality of their medical record-keeping and suggest areas for improvement (College of Physicians and Surgeons of Ontario 2015b). CPSO certification adheres to the standards for licensure established by the Federation of Medical Regulatory Authorities of Canada in response to the Agreement on Internal Trade (Bill 175), which facilitates professional mobility between provinces (Government of Ontario 2009). Physicians are able to provide services to out-of-province patients if the patient travels to the province where the physician holds a valid license, though Ontario's Health Insurance Act limits the Ontario Health Insurance Plan's (OHIP's) capacity to remunerate physicians for providing treatment when either they or their patient do not reside in Ontario (Government of Ontario 1990). In contrast, physicians cannot provide services within another province without first being licensed in that province. However, these policies are less clear when applied to eConsults, which make it easy for specialists to provide advice to PCPs practicing in different provinces without necessitating patient travel. For instance, it is standard practice for many communities in Canada's territories to be linked to a larger centre in a neighbouring province for both formal and informal consultations. However, these exceptions are not universal, and current policies place numerous restrictions on interprovincial consultation, virtual or otherwise. These restrictions inhibit our service's ability to reach remote regions outside of Ontario, many of which face substantial challenges in accessing specialist care (Hay, Varga-Toth, Hines 2006; Canadian Medical Association 2014). Current strategies to reach these communities involve trips of hundreds or even thousands of kilometers for patients/providers, entailing great expense and inconvenience. A policy more amenable to interjurisdictional eConsults could greatly alleviate this burden by reducing the number of face-to-face visits patients require.

## 4 DISCUSSION

eHealth innovations such as eConsultation show great promise in improving access to specialist care. However, the Champlain BASE eConsult service is the only multispecialty asynchronous service of its kind currently operating in Canada. Worldwide, there are four other multi-specialty asynchronous services reported in the literature, which are located in the following institutions: San Francisco General Hospital (Kim-Hwang *et al.* 2010), the Mayo clinic in Minnesota (North and Tulledge-Scheitel 2014), The Kaiser Permanente Hospital in Colorado (Palen *et al.* 2012), and the Peijas hospital in Finland (Harno *et al.* 2000). Similar to our findings, early results also suggest that these services improve access to specialist care, reduce wait times, and improve communication between PCPs and specialists (Straus *et al.* 2011; Callahan *et al.* 2005; Wootton, Menzies, Ferguson 2009).

Canada continues to face increasing wait times for specialist care (Wait Time Alliance 2014). Much work remains to be done to ensure that Canadians receive the same level of timely access to specialist advice as citizens of other developed countries (Luigi, Michael, Valerie 2013) and to support greater equity of care access across Canada's remote regions. The time is ripe for scale-up of this innovation. To achieve this goal, policymakers, clinicians, health service researchers, and other stakeholders need to work together to develop effective and supportive policy that protects health care users, patients, and providers while fostering innovations that lead to improvements in quality and equity of care. However, creating or updating policy in a timely way can be challenging, as multiple factors must be addressed in order to provide the impetus necessary for governments to make needed changes. We have identified three policy areas—privacy, financing, and delivery of services—that influence health care innovations such as the Champlain BASE eConsult service. New legislation in these three areas would allow these innovations to better support providers in delivering the best possible care to patients.

Privacy is undeniably an important element of high quality health care, and legislation such as PHIPA is key to safeguarding patients' personal information; however, stringent privacy regulation that does not adapt to changing technologies can impede innovation. The Conference Board of Canada notes that debates over privacy issues have dominated discussions on adopting information technology in health care at the expense of progress (Muzyka, Hodgson, Prada 2012).

When we began developing Champlain BASE, PHIPA provided a helpful guide in identifying potential areas of concern and ensuring that our service met the highest possible standards for privacy. However, much anxiety persists regarding patient privacy despite the overall quality of privacy legislation in effect. As a consequence, many health regions and providers may hesitate to adopt or utilize new health care technologies due to uncertainty over privacy requirements or concern that they may inadvertently violate privacy legislation. Initially, in the case of the Champlain BASE service, PCPs were instructed to obtain consent from patients in order to transfer their information to a specialist. However, a recent policy statement from the Canadian Medical Protective Association confirmed that eConsults remain within the patient's existing circle of care, and as such consent for transferring patient information is implied. This type of policy statement from a national liability association is very helpful. While the current privacy legislation is itself effective, greater efforts must be made to involve and inform patients about existing policies and ways in which their privacy is being protected. Greater understanding of privacy issues at a patient and provider level will help protect patients' personal information without stifling innovation.

Whereas existing privacy legislation is effective and simply needs improved communication or endorsement by governing professional bodies, policies pertaining to physician payment and provider type are in many cases outdated, having been established to support care delivery in a very different health care environment. Fee-for-service remuneration models may not be suitable for electronic consultation, and policies on issues of provider

type are either poorly defined (e.g., selecting specialists) or negatively impact the service’s potential for expansion (e.g., interprovincial payment restrictions). Amendments to the Health Insurance Act allowing for pro-rated payments and remuneration for interjurisdictional eConsults would help a service such as Champlain BASE improve its sustainability and reach a broader range of patients. Similar changes have already been seen elsewhere in the health care field, including the widespread transition among PCPs to models of team-based care such as Family Health Teams and Community Health Centres, which rely on capitation and salaried models of remuneration, respectively (HealthForceOntario 2015). Likewise, a recent amendment to the Health Insurance Act makes it easier for nurse practitioners to refer patients directly to specialists. Previously, specialists collected a smaller consultation fee from referrals sent by nurse practitioners than from referrals sent by doctors (Ministry of Health and Long-Term Care 2015). This created a disincentive for specialists to accept nurse practitioners’ referrals, thereby limiting their ability to provide a full scope of care. These changes provide good examples of policies adapting to new health care strategies.

Finally, as eConsult services grow and mature, it will be important to establish a selection and credentialing process for both physician and non-physician specialists in addition to ensuring the quality of the service. We suggest the creation of a “virtual care neighbourhood model” whereby interested specialists must apply to obtain “privileges” to be a service provider for eConsultation. This would support the managed care model which we have created in our region, that remains responsive to primary care and patient needs, system demands, ensures quality of service through monitoring of response times, and provides continuous quality feedback to specialist providers.

## 5 CONCLUSION

Policy will inevitably have a major impact on health care innovations, and innovators must consider existing policies when designing and implementing new services or programs. However, in order to foster an innovative health care environment, policymakers must also consider the needs of innovators. Policymakers should remain open to sensible and timely changes to existing policies, in order to take advantage of the constantly evolving technological landscape. We need to consider new models of care where specialists work collaboratively to serve their referring physicians, address their community’s needs, and make the best possible use of limited resources. Given the success of the Champlain BASE eConsult service, we are optimistic that eConsult services will continue to develop in communities across Canada, and ultimately transform the way in which specialty care is delivered.

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