Faster Access, Better Care:

A Guide to Establishing an eConsult Service

Champlain BASE™

eConsult

Clare Liddy MD, MSc, CCFP, FCFP
Amir Afkham BEng
Erin Keely MD, FRCPC

Preface

Authors

Clare Liddy, MD, MSc, CCFP, FCFP, Primary Care Lead, The Champlain BASE™ eConsult Service

Amir Afkham, BEng, Engagement and Implementation Lead, The Champlain BASE™ eConsult Service

Erin Keely, MD, FRCPC, Specialist Lead, The Champlain BASE™ eConsult Service

Editor and eBook Project Manager

Emma J. Stodel, PhD, Principal, Learning 4 Excellence

Project Coordinator

Justin Joschko, Research Assistant, Bruyère Research Institute

eBook Producer

Rebecca J. Hogue, RJ Hogue

Graphic Design

Shawn Phillips, Shift 180

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Contact Information

Clare Liddy   cliddy@bruyere.org   613-562-6262, Ext. 2928

Erin Keely   ekeely@toh.on.ca   613-738-8400, Ext. 81941

Amir Afkham   Amir.Afkham@lhins.on.ca   613-747-3235

Bruyère Research Institute
85 Primrose Avenue
Ottawa

Ontario K1R 6M1
Canada

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About this Book

The increasing wait times we are witnessing in North America for access to specialist care are jeopardizing patients' mental and physical health, as well as impacting patient and provider satisfaction. As a family physician (Clare Liddy) and specialist (Erin Keely) we recognized we could do something about this.

Video (touch to play): Dr. Liddy discusses how the eConsult project came about. Available from: https://www.youtube.com/watch?v=_SA4LbZAXGI&feature=youtu.be&t=3s

Dr. Clare Liddy
Associate Professor, Department of Family Medicine, University of Ottawa
Clinical Scientist, C.T. Lamont Primary Health Care Research Centre of the Bruyère Research Institute
Clinical Investigator, Clinical Epidemiology, The Ottawa Hospital

In 2008, we, along with an information technology expert (Amir Afkham), embarked on an initiative to improve access to specialist knowledge for patients in our Local Health Integration Network (LHIN). The result was the Champlain BASE™ (Building Access to Specialists through eConsultation) eConsult service. The service was rolled out as a proof-of-concept in 2010, enhanced and expanded in 2011, and has continued to grow and evolve ever since; spanning a larger geographic area, adapting to specific user groups, and growing in user base.

The Champlain BASE™ eConsult service facilitates timely communication between primary care providers (PCPs; e.g., physicians, nurse practitioners) and specialists. What started as a relatively small project with 14 PCPs and 11 specialists, five years later is available to all PCPs in the Champlain LHIN and has an adoption rate of 75%, with 84 specialty areas available on the service. Since inception, over 11,000 eConsults have been made with the number growing exponentially. In over two-thirds of cases, the eConsult service prevented the need for specialist referral and allowed the PCP to take timely action on next steps of patient care.

In this eBook, we share our experiences and lessons learned during the development and implementation of the Champlain BASE™ eConsult service and outline the key considerations that go into the implementation of a successful eConsult service. While our recommendations should apply to services implemented in any jurisdiction, local policies and context should always be considered.

Video (touch to play): An overview of the eConsult project. Available from: https://www.youtube.com/watch?v=xRu1RGDJt74

The eBook is organized into the following six chapters:

1. Identifying the Problem
2. Engaging Key Stakeholders
3. Designing the Platform
4. Establishing Policies
5. Growing and Sustaining the Service
6. Going Beyond

Together, these six areas provide a complete toolkit to eConsult service development and implementation. The eBook format allows you to highlight interesting sections for easy retrieval at a later date, as well as a note taking tool to jot down ideas as you go through the eBook. For information on how to use these tools, go to: http://ipad-fm.ca/using-ibooks.

About the Authors

Clare Liddy

Dr. Clare Liddy is a Clinical Investigator at the C.T. Lamont Primary Health Care Research Centre of the Bruyère Research Institute and an Associate Professor in the University of Ottawa's Department of Family Medicine with a cross-appointment to the Department of Epidemiology and Community Medicine. She continues to practice family medicine within The Ottawa Hospital Academic Family Health Team. Her current research program focuses on accessibility to specialist care and improving chronic disease prevention and management, as well as health services. Her achievements in research and program implementation have been recognized by a number of awards, including the Michel Bilodeau Centre of Excellence Award from Bruyère Continuing Care (2014), the Ontario Ministry of Health and Long-Term Care Minister's Medal Honouring Excellence in Health Quality and Safety Honour Roll (2014), and the Ontario Ministry of Health and Long-Term Care's Career Scientist Award (2007).

Erin Keely

Dr. Erin Keely is Chief, Division of Endocrinology and Metabolism at The Ottawa Hospital and Professor in the Departments of Medicine and Obstetrics and Gynecology at the University of Ottawa. Her current research interests are primarily in obstetric medicine with a focus on the postpartum management of women with gestational diabetes and in health service delivery, specifically the implementation and evaluation of a regional eConsultation service. Her other area of academic interest is medical education with a focus on communication between health care professionals. She has received grants from the Canadian Diabetes Association, the Canadian Institutes of Health Research (CIHR), the Royal College of Physicians and Surgeons of Canada, and Health Canada.

Amir Afkham

Amir Afkham is the Engagement and Implementation Lead for the Champlain BASE™ eConsult service and a Senior Project Manager, Enabling Technologies, at the Champlain LHIN in Ottawa, Ontario. His primary focus is on eHealth initiatives and applying new technologies to improve efficiency and effectiveness of processes, as well as overall collaboration amongst health care providers across the Champlain region. Prior to joining the LHIN, Amir spent over 20 years in the telecommunications sector with leadership roles in product and solutions management. Amir holds a Bachelor of Electrical Engineering (Hons) with Minors in Computer Science and Business Administration from McGill University.

Overview of eConsult Services

In this chapter, you will learn what an eConsult service is and what eConsult and eReferral systems are in existence, both in Canada and worldwide. Then, we will go on to describe our Champlain BASE™ eConsult service, highlighting the key features of a successful system and the documented benefits of our service.

What is an eConsult service?

Excessive wait times pose a significant barrier to care (Viberg, Forsberg, Borowitz, & Molin, 2014). In Canada and the United States, wait times are increasing, with many patients waiting months for specialist appointments (Barua & Esmail, 2013). This often causes patients anxiety, delays in diagnosis, and potential further deterioration of their conditions (Canadian Intitute for Health Information, 2012). Further, this can lead to higher costs and reduced satisfaction for patients and providers.

Many technological solutions have been proposed and implemented in order to address the issue of excessive wait times. Two such examples include electronic consultation (eConsult) and electronic referral (eReferral). An eConsult service links PCPs and specialists via a secure online platform, allowing for an exchange of patient information between providers. eReferral refers to a number of services wherein part or all of the referral system is automated (Tuot et al., 2015). For example, an eReferral service may automatically schedule a specialist appointment without the patient or PCP having to call to arrange one. eReferral services may include eConsult services.

Unlike telehealth services, which link clinicians, patients, and/or specialists through telecommunication networks (e.g., over the telephone, via videoconferencing, online) so they can speak in real-time, eConsult services use an asynchronous "store-and-forward" model of care delivery. This removes the considerable barrier of needing to schedule time for PCPs and specialists to meet, both of whom typically have extremely busy schedules and struggle with the logistics of scheduled virtual meetings. A store-and-forward model allows the PCP to send a question about a patient to a specialist during or immediately after the patient visit and the specialist to answer at a convenient moment between other tasks.

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An example of an eConsult case

A 90-year-old resident of a nursing home is concerned about a new dark spot on her lip that is increasing in size. Her PCP examines her and considers a referral to dermatology. The current wait time for dermatology is 3-6 months. Instead, the PCP initiates an eConsult to dermatology.

Day 1: The PCP logs onto his eConsult homepage, attaches photographs of the lesion, and types, "90-year-old with a new lip lesions x6 months and increasing in size. Approx. 3-4 mm, smooth. Non-tender. Your thoughts on differential and urgency of biopsy are appreciated".

Day 2: The specialist responds, "The most likely diagnosis for this blue-black papule on the left upper lip is venous lake. I do not have the benefit of palpating the lesions. A venous lake is soft, cystic, and has no enduration… [specialist continues with detailed teaching on examination of lesions and characteristics]".

Day 10 @ 21:36: PCP logs back into eConsult service and asks an additional question: "After re-examination the lesion is quite soft. The patient would like it removed for cosmetic reasons. Would you recommend referral to dermatology or plastic surgery given location?"

Day 10 @ 22:00: Specialist responds, "Venous lakes are best treated by laser therapy. I suggest Dr. X at XX clinic as she has the appropriate laser for this. Of course, there is a fee since not covered by public funds".

Day 11: PCP accepts recommendation, completes closeout survey about their experience, and the eConsult is closed.

eConsult services in Canada and worldwide

In order to situate our service in a broader context, in 2013 we conducted an environmental scan of electronic consultation and referral systems in Canada. Few papers had been published at that time exploring these services in a Canadian context. Only three eConsult/eReferral services were identified:

- The Bridging General and Specialist Care (BGSC) Project in Manitoba
- The Ambulatory Referral Management (ARM) system in Toronto's Sick Kids hospital
- The Champlain BASE™ eConsult Service (Liddy, Hogel, Blazhko, & Keely, 2015)

There has been some progress since the review was conducted and new services have begun to emerge in Canada. For instance, the Ontario Telemedicine Network (OTN) is working with our team to develop a provincially available eConsult platform and a team in Newfoundland has received funding to launch a provincial eConsult pilot in 2016, also supported by our team.

The international literature on the impact of eConsult is mostly limited to single speciality access, commonly dermatology. These services were introduced as extensions of telemedicine visits that allowed images to be stored and reviewed at a later time by the specialist (Deshpande et al., 2009; Eminovic, de Keizer, Bindels, & Hasman, 2007; McFarland, Raugi, & Reiber, 2013; Whited et al., 2013).

Apart from the Champlain BASE™ eConsult service, there are five multispecialty asynchronous services reported in the world literature:

- San Francisco General Hospital in California (Kim-Hwang et al., 2010)
- The Mayo Clinic in Minnesota (North, Uthke, & Tulledge-Scheitel, 2014)
- Kaiser Permanente in Colorado (Palen, Price, Shetterly, & Wallace, 2012)
- Veterans Affairs Pittsburgh Healthcare System in Pennsylvania (Rodriguez et al., 2015)
- Peijas Hospital in Finland (Harno, Paavola, Carlson, & Viikinkoski, 2000)

Additional services exist in the United States that have not yet published their findings, including programs in the Los Angeles Department of Health Services, Northern California Kaiser Permanente, the University of California San Francisco, and Veterans Affairs clinics in other cities (e.g., San Francisco, Boston).

Early results suggest that these services can improve access to specialist care, reduce wait times, and improve communication between PCPs and specialists (Callahan, Malone, Estroff, & Person, 2005; Straus, Chen, Yee Jr., Kushel, & Bell, 2011; Wootton, Menzies, & Ferguson, 2009), leading to better diagnostic accuracy/concordance for skin lesions (Shapiro et al., 2004) and greater potential of avoiding dermatology referrals (van der Heijden, de Keizer, Bos, Spuls, & Witkamp, 2011). Heightened provider and patient satisfaction have also been reported (Angstman, Adamson, Furst, Houston, & Rohrer, 2009; Collins, Walters, & Bowns, 2004). For instance, McFarland et al. (2013) reported 71% of PCPs were satisfied with the overall service,

Whited et al. (2004) noted 92% satisfaction, and 63% of providers in Weinstock, Nguyen, and Risica's (2002) study rated the system as excellent or good. Two studies have evaluated the eReferral system at the San Francisco General Hospital and found high satisfaction ratings (Straus, Chen, Yee, Jr., Kushel, & Bell, 2011; Kim, Chen, Keith, Yee Jr, & Kushel, 2009).

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The BASE™ eConsult model of care

The Champlain BASE™ eConsult service is a form of asynchronous communication whereby PCPs and specialists can communicate directly through a secure web-based application. The process is as follows:

1. PCPs submit a patient question to a specialty service (usually for a patient who would otherwise have been referred) via a web-based portal, using a four-field template that requires minimal demographic information (i.e., confirmation of patient consent, date of birth, and gender). PCPs can attach additional information (e.g., test results, images, electronic medical record [EMR]-generated letter) as needed in PDF format.

2. Next, the case is assigned to a specialist based on availability. The specialist receives an email notification prompting him/her to access the case via the secure site. Specialists are expected to provide an answer within one week. They may reply to the question, request additional information, recommend a referral, and/or advise the PCP on other matters such as medication changes, additional tests, and/or other critical actions to be completed before the referral.

3. The PCP can choose to ask for or submit additional information and continue the dialogue. Alternatively, the PCP can choose to close the case and upload the information into their EMR or patient chart.

The Champlain BASE™ eConsult service was first rolled out as a proof-of-concept in 2010 with a small number of users and specialties to validate the approach and gather user feedback. Following a positive response, the service was enhanced and expanded in 2011. The Champlain BASE™ eConsult service is now available to all PCPs in our health region of over one million people (Champlain LHIN), which includes Ottawa, Ontario, Canada and the surrounding areas. At the time of this eBook's publication, over three-quarters of all PCPs in the Champlain LHIN have signed up to use the eConsult service (see Figure 1.1) and over 11,000 eConsults have been made with the number growing exponentially (see Figure 1.2).

We attribute the success of the service to our model of care, which provides a framework for the design and implementation of eConsult in a variety of settings. We have evaluated and refined this model over the course of the project, building evidence through rigorous data collection and soliciting feedback from patients and providers. The resulting model of care is described in detail throughout this eBook.

Key attributes

In brief, the BASE™ eConsult model of care has the following attributes:

- The service addresses the issue of poor access to specialist care.
- Specific needs are determined by patients and their primary care providers.
- The solution is based on facilitating improvements in intraprofessional communication between providers.

- The eConsult form is generic and designed from the primary care perspective and applicable to all specialty services accessed.
- The technology used is simple, low cost, user-friendly, responsive, and flexible—a "customer service" approach is adopted.
- A private network is used that has security features that meet patient privacy legislation.
- The service is region-specific and builds on existing infrastructure to ensure adherence to policies.
- Specialty groups have two or more specialists available to answer eConsults.
- The registration and training process is quick and simple (45 minutes total).
- Participating clinicians include physicians and non-physicians in order to provide a greater breadth of knowledge.
- Specialists are remunerated for answering eConsult cases.
- The service includes a method to easily collect data for continuous quality monitoring to help ensure that responses meet standards of timeliness and quality.
- An educational component supports capacity building.
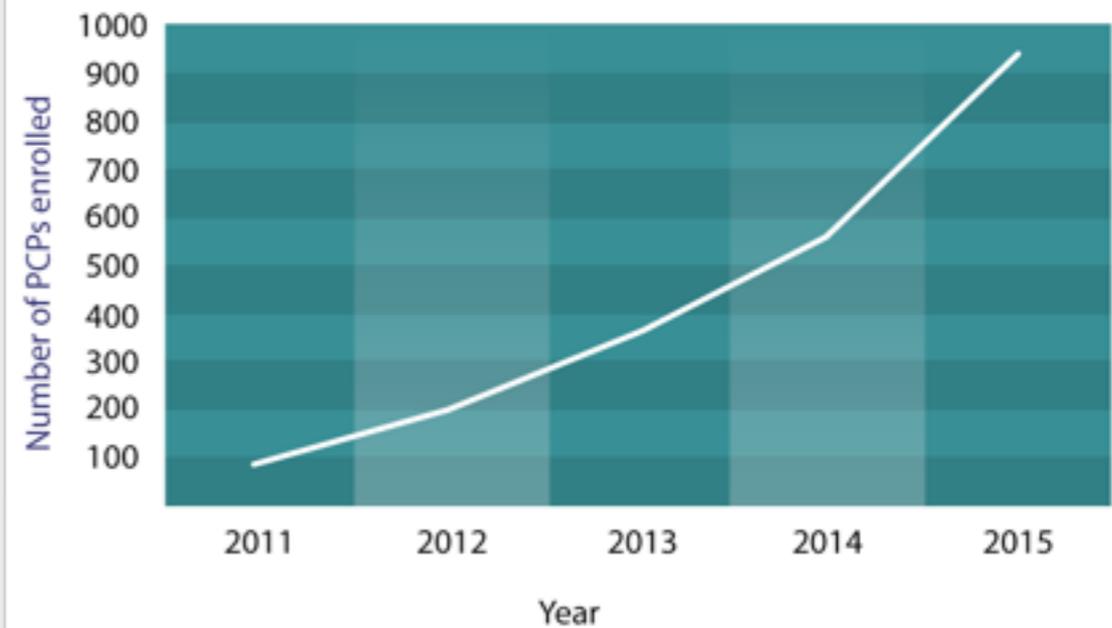
FIGURE 1.1 *Number of Primary Care Providers (PCPs) Enrolled with eConsult Over time*
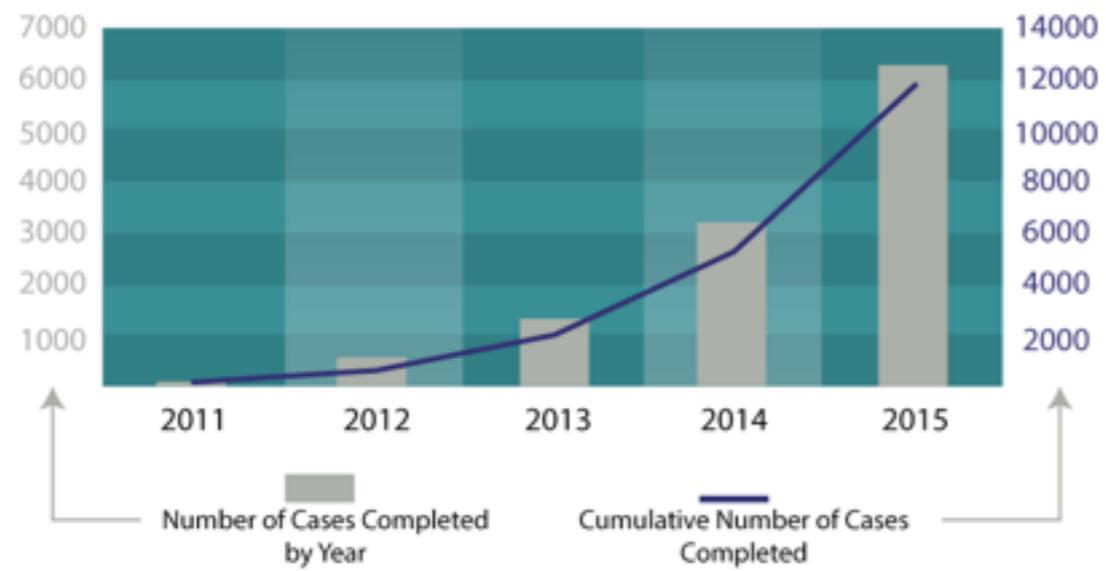
FIGURE 1.2 *Number of eConsult Cases Completed*

What are the benefits of the eConsult service?

The eConsult service has exhibited a number of advantages for providers, patients, and the health care system:

- By connecting PCPs and specialists via a fast, secure web-based platform, the Champlain BASE™ eConsult service offers patients more timely access to specialist advice, enabling the right care, at the right place, and at the right time.
- The service is highly acceptable to patients, who comment on the value of quick treatment planning about a medical concern and the avoidance of travel for medical visits and out-of-pocket expenses.
- eConsult offers better coordination of care through direct intraprofessional communication between PCPs and specialists and access to shared records, as well as better continuity of care as a result of direct access to multiple providers (e.g., integrated pharmacist, mental health care, palliative care, home care) supporting a shared care plan. The service also allows specialists to confidently transition patients back to the PCP community, which promotes continuity of care and follows best practices.
- eConsult reduces wait times for specialist care and avoids unnecessary referrals. The average response time for an eConsult case is two days and all PCPs receive a response within one week. Of nearly 11,000 cases completed, two-thirds did not require a face-to-face specialist visit (see Figure 1.3).

- The eConsult service can have a large impact on cost savings through efficient care and avoidable visits. Our recent cost analysis revealed that patients save, on average, $83.49 each time they avoid a face-to-face specialist visit in terms of lost wages and travel/associated costs. For patients in rural areas, the average savings were $254.30. The average cost per eConsult is $45.72.
- In a waiting room survey conducted by our team, patients reported that wait times significantly exceeded what they considered acceptable, expressed worry about serious disease, and spoke of having symptoms that affected their daily quality of life and caused them to miss work or school (Keely, Traczyk, & Liddy, 2015). Many agreed that eConsult provided a viable alternative to traditional consultation. A patient reported that she had been expecting to wait a year for a cardiologist visit and instead received an answer within a few days: "I think it's a great service. Why waste a cardiologist's time for a case like this?"
- PCPs rate the service as having high/very high value for their patients and themselves (see Figure 1.4). A thematic analysis of PCP comments revealed appreciation for the service's speed, quality of responses, and educational value (Liddy, Afkham, Drosinis, Joschko, & Keely, 2015). Specialists have also responded positively; 94% of specialists consider eConsult a feasible way to improve access to specialist care (Keely, Drosinis, Afkham, & Liddy, 2015).

FIGURE 1.3 *Outcomes of eConsult Cases*

40%	Referral was originally contemplated but now avoided at this stage
25%	Referral was originally contemplated and is still needed - this eConsult likely leads to a more effective visit
27%	Referral was not originally contemplated and is still not needed - this eConsult provided useful feedback/instruction
3%	Referral was not originally contemplated, but eConsult process resulted in a referral being initiated
2%	There was no particular benefit to using eConsult in this case
3%	Other

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Avoiding Unnecessary Referrals	**11,461**	The number of eConsult cases that have been completed.
	4,584	The number of patients who received specialist advice and avoided an unnecessary trip to a specialist office, thereby also reducing the number of patients added to waitlists.
	40%	The percentage of unnecessary specialist referrals that have been avoided as a result of eConsult. In fact, only 28% of all eConsult cases led to a referral.
Service Experience	**2 days**	The average response time from the moment the eConsult is sent to the time the first specialist response is given. The fastest response time was 2 minutes!
	84	The number of specialty groups available for providing advice to primary care providers. This represents the largest number of specialty groups available through an eConsult service in the world.
	937	The number of family physicians (784) and nurse practitioners (153) using eConsult, primarily in one region (the Champlain Local Health Integration Network), representing 50% of all primary care providers.
	93%	The proportion of cases rated by the primary care provider as providing very good or excellent value for their patient.
	57%	The percentage of cases for which the primary care provider received good advice for a new or additional course of action they had not considered.
Improving Specialist Visits	**28%**	The percentage of patients who needed to see a specialist in person but that specialist visit was likely more effective due to the eConsult advice.

TABLE 1.1 *eConsult By the Numbers*

Statistics as of December 31, 2015
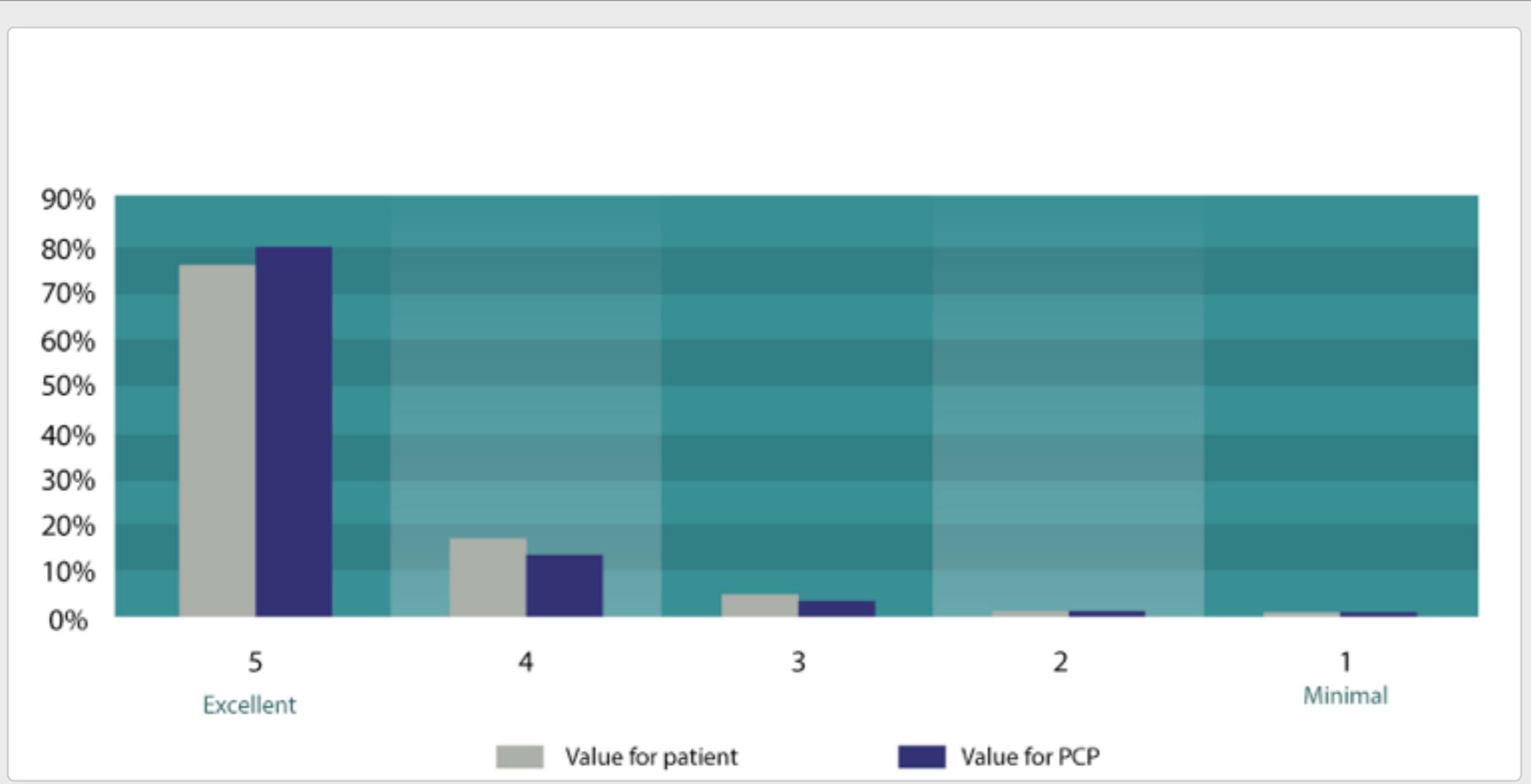
FIGURE 1.4 *Primary Care Providers' (PCP) Perceived Value of the eConsult Service for their Patients and Themselves*

Identifying the Problem

The first step in developing an eConsult service is identifying the problem in need of solving. This chapter outlines the need for innovative technologies to improve access to specialist care and offers information on identifying specific areas of concern within a community.
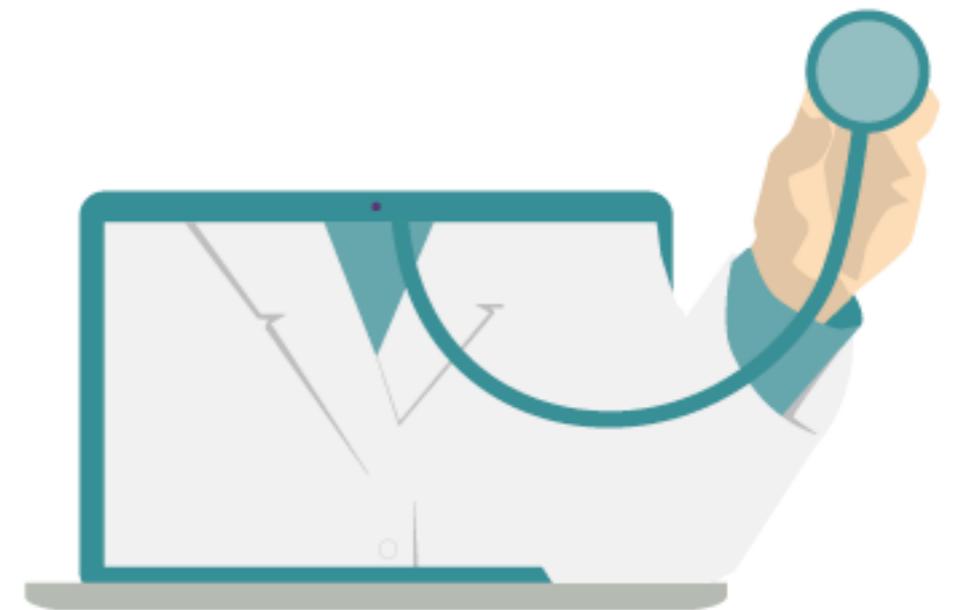
The problem of long wait times

Depending on the specialty area and the urgency of the condition, wait times in Ontario often exceed 13 weeks (Barua & Esmail, 2013). In the last 10 years, Canadians in all provinces have had to wait significantly longer for their specialty appointments, with reported increases of wait time greater than 50% across all specialty areas (Barua & Esmail, 2013; Jaakkimainen et al., 2014). A recent survey from the Foustanellas Endocrine and Diabetes Centre showed wait times in excess of 90 days (Foustanellas Endocrine and Diabetes Centre, 2010). People with chronic pain face even longer waits, with access estimated to take six months to three years. These lengthy delays often affect patients' daily activities and can cause increased worry, pain, and a general deterioration in overall health (Canadian Intitute for Health Information, 2012). Delayed access to specialist care can result in delayed diagnoses, duplication of services, and dissatisfaction among providers (Barua & Esmail, 2013).

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Build based on patient need

Truly effective innovations are grounded, first and foremost, on a specific need. At the beginning of the development process, ask yourself, "What is the problem I'm trying to solve?" The answer to this question should drive the innovation and the technology selected should be able to address the need. While eConsult services facilitate communication between primary care providers and specialists, the strategies used and specialty groups offered can vary and should be chosen to best benefit the population being served.

Technology as the vehicle, not the driver

Often, technology-based health care initiatives are driven by experts in eHealth rather than experts in patient care. As a result, technology decisions may be driven by existing technology in the organization and/or technical limitations or challenges rather than by patient need. The freedom to be able to select and adapt the platform based on need is important to success of the program. Rather than being the driver of change, technology should serve as the vehicle, allowing the service to reach its goal in the most effective way possible.

Connect with the community

The best way to understand what problems a community faces is to speak with members of that community. Partnership with regional providers and stakeholders are vital to understanding the problem you are trying to solve and developing solutions. The importance of building these relationships is explored in more detail in the next chapter.

Example: Champlain BASE™ eConsult service

The Champlain BASE™ eConsult service was created by physicians in order to address a specific problem. As a primary care physician (Dr. Clare Liddy) and endocrinologist (Dr. Erin Keely), we witnessed firsthand the excessive wait times that patients experienced between approaching their family doctors with a problem and receiving a consultation with a specialist. Delays could stretch for months and even years, during which many patients dealt with symptoms, faced anxiety and frustration, and in some cases experienced deterioration in their health.

The Champlain BASE™ eConsult service began small with 14 PCPs and 11 specialists from four specialty areas: endocrinology, nephrology, neurology, and rheumatology. Clinicians were recruited through provider engagement, using established connections with regional organizations. Within this group, we developed the eConsult system in an iterative, localized manner. An initial group of PCP users met with the Champlain BASE™ eConsult team monthly to discuss the service and provide suggestions and feedback. This approach enabled us to develop the system based on PCPs' needs, test several different versions of the eConsult form, assess workflows, and identify and address any concerns users raised regarding privacy, liability, and remuneration.

Other communication tools, such as newsletters and office visits, were also used to connect with PCPs. Over time, new specialties were added to the service based on PCP demand. These requests led to the inclusion of specialties such as dermatology, cardiology, internal medicine, thrombosis, otolaryngology, general pediatrics, and obstetrics and gynecology. The Champlain BASE™ eConsult service currently provides participating PCPs with access to over 84 different specialty areas (see Figure 2.1).

In summary, the BASE™ eConsult service identified a problem and met that need; in that the service:

- Was designed by clinicians in response to patient needs (excessive wait times).
- Takes a population perspective adaptable to local needs and requests ("Can do" approach).
- Is driven by patient need rather than a pre-chosen technology.
- Is easy to use.
- Provides reliable service at a low cost.
- Has a high adoption rate by health care providers.
- Contains embedded continuous evaluation and feedback, including ongoing research studies examining cost, impact on referral rates, patient perspectives of virtual consults, and educational value.
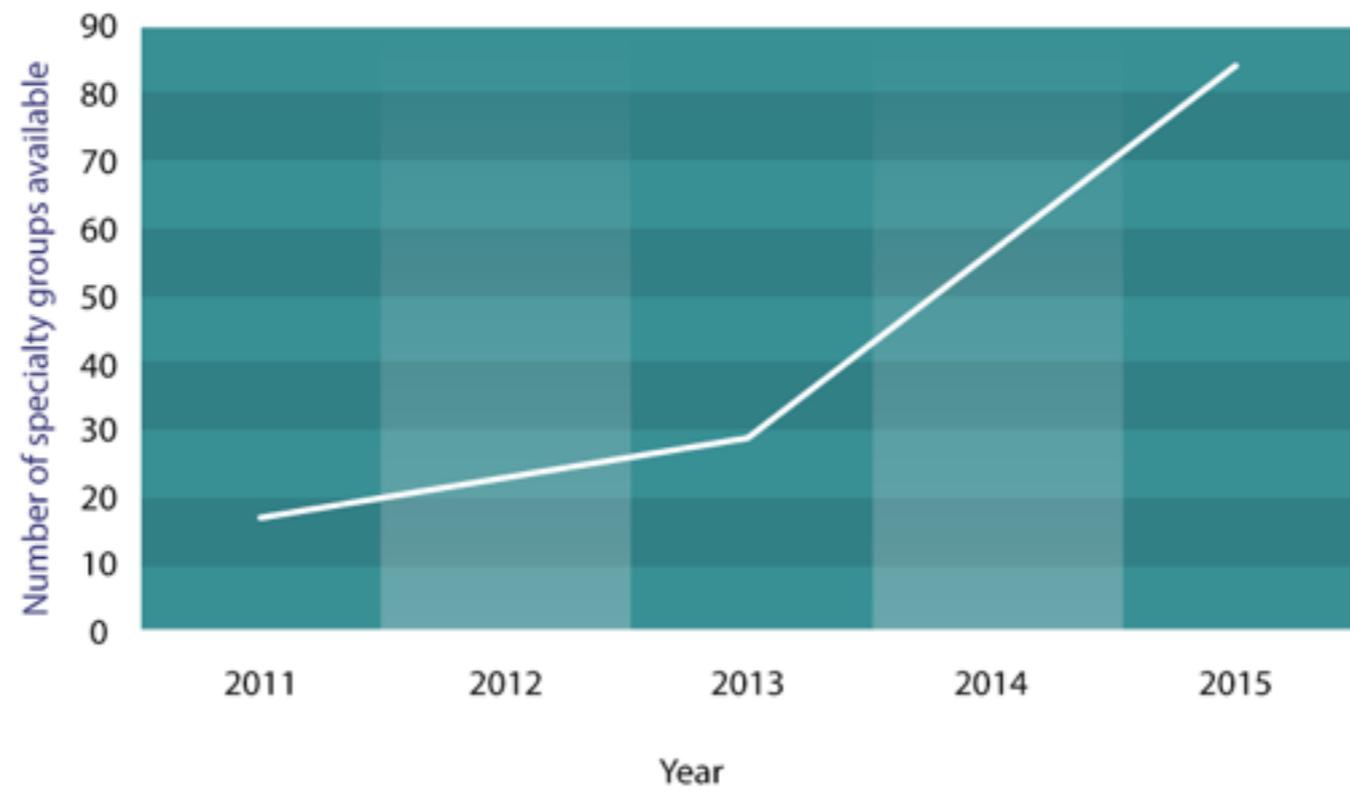
FIGURE 2.1 *Number of speciality groups available through eConsult over time*

Engaging Key Stakeholders

Engaging partners is a key step in the development and implementation of an eConsult service. It is important to establish key working partnerships with individuals in key roles. These include clinicians (both PCPs and specialists) who use the service, local experts with technical expertise, operational support, and policymakers who can provide approval and funding for the service. This chapter provides guidelines for establishing partnerships with key stakeholder groups, as well as the approach taken to establish the Champlain BASE™ eConsult service.
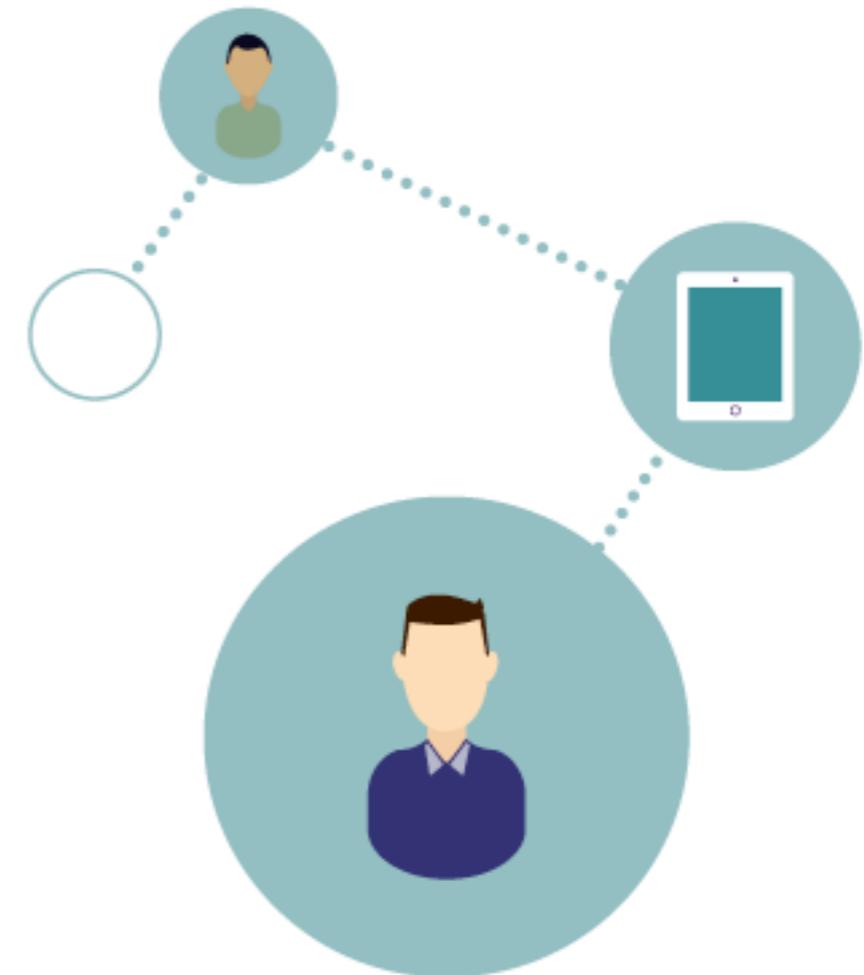
Recruit clinical leaders

Clinician participation is paramount to an eConsult service's success. Without clinicians, the service can have no impact. However, recruiting clinicians to participate in new technologies or studies is often a difficult process. To be successful, the first—and arguably most important—step is to solidify partnerships with individual clinicians who are excited about the service and willing to champion it among their peers. These individuals have the connections and credibility necessary to promote a new service among other clinicians and act as a vital inroad to new users. Enthusiasm is a core quality for early adopters. Focus on recruiting those who support and feel passionate about the project and be attentive and responsive to their feedback, which is based on firsthand experience with the service.

Key components for clinician engagement include:

1. Developing strong partnerships with the champions within primary and specialty care communities to validate the approach and engage their wider communities.
2. Having a simple process to get new users on board so they can try out the service.
3. Ensuring the service and support are excellent so that those trying the new service continue to use it and refer it to their colleagues.
4. Sharing success stories.
5. Listening attentively to user feedback and acting on it as appropriate.

Primary care providers

As the end users of an eConsult service, PCPs are key to its success. PCP recruitment should be ongoing and can be achieved through a number of different methods. Word of mouth is a key clinician recruitment tactic but it is by no means the only strategy available. A successful eConsult service should diversify its advertising platform to include leaflets, booths at continuing medical education events, presentations at conferences and/or forums, and articles in traditional media and peer-reviewed journals. Presentations at conferences and Grand Rounds can also raise awareness of the service and help recruit users. Taking a wide approach offers more opportunities to reach interested clinicians and can help establish connections with other stakeholders.

Specialists

When recruiting specialists, we favour a targeted recruitment strategy based on specialists' engagement. In order for any health care service to be successful, the users must be enthusiastic about the service; committed to improving access, health care, and wait times; and have sufficient time to contribute to supporting its continued growth. Not all specialists will meet these criteria. However, limitations on participation must be considered carefully so as to avoid causing contention among excluded specialists. Issues of credentialing for eConsult services are currently handled by the same bodies as traditional referrals. As eConsult services become more widespread, special policies may arise guiding the enrollment of specialists to eConsult services. However, at present, these issues are in the hands of those developing and implementing individual eConsult services.

Partner with local organizations

Partnering with other organizations will help reduce the financial and technical burdens associated with planning, launching, and maintaining an eConsult platform. Consider partnerships with local hospitals and/or local or regional health networks who can host the eConsult platform, leverage existing infrastructure, provide technical support, train users, and assist in the recruitment of users. These partnerships could reduce implementation costs and allow the available funds, as well as the project leads, to be more focused on innovation and continued development of the service.

Support users

While the service should be simple and user-friendly, an efficient and responsive support service is nevertheless vital to assist users when they run into problems. The support service does not need to be large but should be able to respond promptly to questions, particularly during business hours. As well, those providing support should have an in-depth knowledge of the system and how it works. Most users' questions will likely be solvable through simple troubleshooting (e.g., forgotten passwords, instructions for uploading documents, correcting the specialty they allocated the case to) and will not require a great deal of technical expertise. However, a basic grasp of information technology is ideal to help support users when they face more technologically demanding issues (e.g., problems with connectivity). Websites, forums, and Frequently Asked Questions pages can provide some assistance in this regard. However, users should be able to receive technical support directly via a central hub accessible by email and/or telephone.

Engage policymakers

Successful eConsult services require support at a policy level. As such, policymakers are vital partners for an eConsult service to succeed. Engage with government agencies through conferences and meetings. Keep an eye out for funding opportunities through provincial and/or national bodies. In addition to providing financial support, grants raise the profile of services and help foster partnerships with other groups.

Involve patients

Patients are becoming increasingly frustrated with their health care system, citing long wait times and poor access to services as major roadblocks to better care. Part of this frustration may stem from recent technological advancements, which have led patients to expect better and more timely answers from their health care providers.

Patient acceptance is vital to the success of any health care innovation and patients' perspectives on new and innovative services must therefore be sought. Patient feedback can be solicited through patient surveys conducted in waiting rooms and discussing patient needs with their PCP.

Example: Champlain BASE™ eConsult service

Once the need for the eConsult service was established, we approached Winchester District Memorial Hospital, a regional hospital, and the Champlain LHIN to become partners. These partnerships were key to the project's success from both a financial and technical standpoint. The partners provide the technical infrastructure and support to maintain the service, allowing the clinicians to focus on further development of the service and patient care.

During the pilot phase of the service, a survey was conducted in the waiting room of a local endocrinology office soliciting patients' opinions on wait times and the potential for electronic consultation to replace traditional referrals in some cases. The response from patients was mixed, with roughly half of the patients seeing eConsult as a viable alternative to face-to-face specialist visits (Keely, Traczyk, & Liddy, 2015). Patients who supported the eConsult model cited reduced travel time and quicker responses as advantages, while patients who did not support the model indicated they would feel more confident talking to a specialist in person.

We continue to engage patients and strive to improve their experiences of care, both by discussing patients' needs with their PCPs—who are in a unique position to understand and advocate for their patients—and by connecting directly with patients through survey projects. This outreach is important to ensure the eConsult service is delivering adequate care.

Reference

Keely, E., Traczyk, L., & Liddy, C. (2015). Patients' perspectives on wait times and the referral-consultation process while attending a tertiary diabetes and endocrinology centre: Is eConsultation an acceptable option? *Canadian Journal of Diabetes, 39*, 325-329.

Designing the Platform

Selecting a delivery platform for your service is a critical decision. Platforms should be selected based on patient need, integrated with existing infrastructure, and user-friendly. This chapter outlines considerations when choosing your eConsult platform and describes the platform used in the Champlain BASE™ eConsult service.

Select the platform

Health care innovations must be scalable and sustainable in order to survive long-term and be adaptable to various clinical environments. Start-up costs are often significant and only recouped over an extended period. Therefore, it is important to have a long-term vision and create a system that will meet the users' needs and maximize adoption. An ideal platform should have the following attributes:

- A secure, robust, and scalable environment.
- An easy-to-use yet advanced array of collaboration tools, including document repositories and discussion boards.
- Customizable individual workspaces for teams.
- Differing permission levels to enable partitioning of the system for multiple user types.
- The ability to create a broad set of tools (e.g., electronic forms, workflows) to automate a wide range of processes.
- Delivery of automated emails and notifications.
- A database and the ability to generate reports.
- Comprehensive and secure email (e.g., integrated with existing email systems used by the province for health care providers) (Liddy, Maranger, Afkham, & Keely, 2013).

Reference

Liddy, C., Maranger, J., Afkham, A., & Keely, E. (2013). Ten steps to establishing an e-consultation service to improve access to specialist care. *Telemedicine Journal and e-Health, 19*, 982-990.

Keep the service accessible, adaptable, and user-friendly

As is the case with any technology, usability is the cornerstone of success. Clinicians are extremely busy professionals and, as such, typically cannot dedicate much time to learn new technology. Furthermore, some PCPs will use eConsult services infrequently and may go weeks or months without using the service. PCPs may experience frustration or anxiety throughout the adoption process; resistance to new technologies among health care providers is well-documented (Bhattacherjee & Hikmet, 2007; Bhattacherjee & Hikmet, 2008). An eConsult service must therefore be user-friendly, simple, and easy to learn and re-learn. Experiences and frustrations of users must be listened to and the system adapted when possible.

References

Bhattacherjee, A. & Hikmet, N. (2007). Physicians' resistance toward healthcare information technology: A theoretical model and empirical test. *European Journal of Information Systems, 16*, 725-737.

Bhattacherjee, A. & Hikmet, N. (2008). *Enabelers and inhibitors of healthcare information technology adoption: Toward a dual-factor model*. Proceedings of the Fourteenth Americas Conference on Information Systems (AMCIS), Toronto, Ontario.

Integrate with existing infrastructure

When creating an eConsult platform, one option is to integrate the service with existing infrastructure. This option allows clinicians to adopt the service within a familiar setting and avoid the frustration with memorizing a new set of credentials (i.e., username, password). However, integration with existing services is not a prerequisite for success and integrated services must still be developed on an open platform and designed with regional access in mind (e.g., available to users outside the host organization).

Incorporate the service into PCPs' workflow

A successful eConsult service must fit seamlessly into the user's workflow. If using the service demands too much adjustment on the part of the health care provider, many users will abandon it or choose not to participate in the first place. The process for requesting and responding to a consult should be simple, self-evident, and quick. Ideally, PCPs should be able to create and submit an eConsult case in less than 10 minutes. The best way to ensure this is the case is to test the service early in the development process. Engaging clinician partners is essential in order to achieve this goal. As the individuals who will be interacting most directly with the service, clinicians can provide helpful insight into the clinician workflow, allowing the service to more effectively meet their needs.

Allow for delegates

In some cases, PCPs may not be the ones completing the eConsults directly. Instead, they may choose to delegate this responsibility to an assistant or office administrator, who will generate the eConsult based on EMR data or the clinician's notes. To accommodate these PCPs, eConsult services should be adaptable to allow providers to appoint delegates, who can login and manage eConsults on the provider's behalf. While allowing for delegates runs the risk of diluting the direct provider-to-provider communication facilitated by eConsult, we feel the greater flexibility this option offers outweighs any potential disadvantages.

Design the eConsult form

The eConsult form is the backbone of the service. As such, it must be simple and easy to understand in order to guide the user intuitively through the process. There are a number of key considerations when designing the form, including how it will be distributed to and accessed by users and what steps users must take to complete it. While other options exist (e.g., fillable PDFs, fax-based systems), an online form is the most practical solution as it can be accessed by users anywhere they have Internet access and it allows for flow and processing of discrete data submitted by the user at each stage. By hosting the form online, PCPs and specialists are not restricted to a particular device when submitting or answering questions that arise from eConsult cases. Instead, they can access the service using a laptop, tablet, or even a Smartphone. This flexibility allows health care providers to fit eConsults more easily into their schedules, making for quick turnaround and shorter wait times. The use of simple forms that enable data to be sent securely over the Internet asynchronously suits the busy schedules of both the PCPs and the specialists using the service. Both free text and directed answers (e.g., check boxes, dropdown menus) should be incorporated to streamline the submission process while allowing for flexibility.

Example: Champlain BASE™ eConsult service

PCPs log on to the Champlain BASE™ eConsult service website using their unique username and password. They submit a question using the form, which includes the date of request, the specialty needed for consultation, the patient's demographic information, and the question. They can attach additional information (e.g., test results, images, EMR-generated letter) in PDF format. A dedicated project coordinator called an "assigner" receives an email notification that a new case needs to be assigned (NB: the email does not contain any protected health information, simply the name of the requestor and the specialty). The assigner accesses the case and selects a relevant specialist based on availability and/or rotation.

The specialist receives an email notification indicating a new case has been assigned to them; again, the email contains no protected health information. It prompts the specialist to access the eConsult case via the secure site. Specialists are expected to provide an answer within one week, although the average response time has consistently hovered around two days. Specialists can reply to the question, request additional information, and/or recommend a referral. They can advise the PCP on other matters such as medication changes, additional tests, and/or other critical actions to be completed before the referral. Once the PCP receives the response, he/she can choose to ask for or submit additional information and continue the dialogue or close the eConsult case and file the information into the patient chart— EMR or paper.

Video (touch to play): eConsult submission. Available from: https://www.youtube.com/watch?v=B4WFn0qLzHA

Train users

Even the simplest of electronic services has a learning curve and not all clinicians are technically proficient. Educational resources are thus an important element of the recruitment process.

Training has two key components:

1. **Process**: Understanding the details of how the process works and the specific steps involved in follow-up, closure, etc.
2. **Technology**: Ensuring actual access/navigation is trouble-free and understanding the potential for minor variations in system behaviour depending of which of the many supported devices and browsers is being used.

Establishing a mandatory orientation for new users ensures that both these areas are covered at the outset.

In addition to instructional documents, one-on-one training allows clinicians of different skill levels the opportunity to ask questions and learn to use the service with the direct support of an expert. Classroom or in-person learning allows for the best connection but telephone-based training has the advantage of flexibility as clinicians and training staff do not have to travel for training. Video tutorials can also be useful, as they can be accessed by users at any time. Providing opportunities for user training and troubleshooting can help make users feel more comfortable with the system and prevent those facing difficulties from quitting in frustration.

Examples of Training Videos from San Francisco General Hospital and Center for Innovation in Access and Quality:

- eReferral Referring Provider
- eReferral Specialist Reviewer
- eReferral Scheduler

Example: Champlain BASE™ eConsult service

We have refined our training procedure to make it fast, simple, and effective for clinicians. The total training process takes only 60 minutes to complete. PCPs who wish to join the eConsult service complete a brief registration through which their credentials are established by the appropriate organization (e.g., the College of Physicians and Surgeons of Ontario for family physicians, the Nurse Practitioners' Association of Ontario for nurse practitioners). Next, PCPs review a participant consent document and confirm their agreement to join the service. Finally, PCPs complete a 30-minute training session delivered by telephone, where an experienced trainer orients them to the service. Face-to-face training can be organized for those who prefer. Written training documents are available outlining the steps required to initiate and complete an eConsult case.

- Training manual for PCPs
- Training manual for specialists

We encourage all new users of the eConsult service to complete their first eConsult case within one week of their training in order to solidify their understanding of the process and identify any issues. A number of supports are available to optimize the user experience, including email and telephone support 7 days a week. The main eConsult site also houses a discussion board where PCPs can pose questions pertaining to the service.

Establishing Policies

In addition to a network of engaged users and an effective, secure platform, a successful eConsult service requires effective policies to guide its implementation. In this chapter, we discuss the policy elements that must be considered when planning an eConsult service. These include:

- Privacy
- Payment
- Liability
- Duty of care
- Circle of care
- Provision of interprovincial eConsults
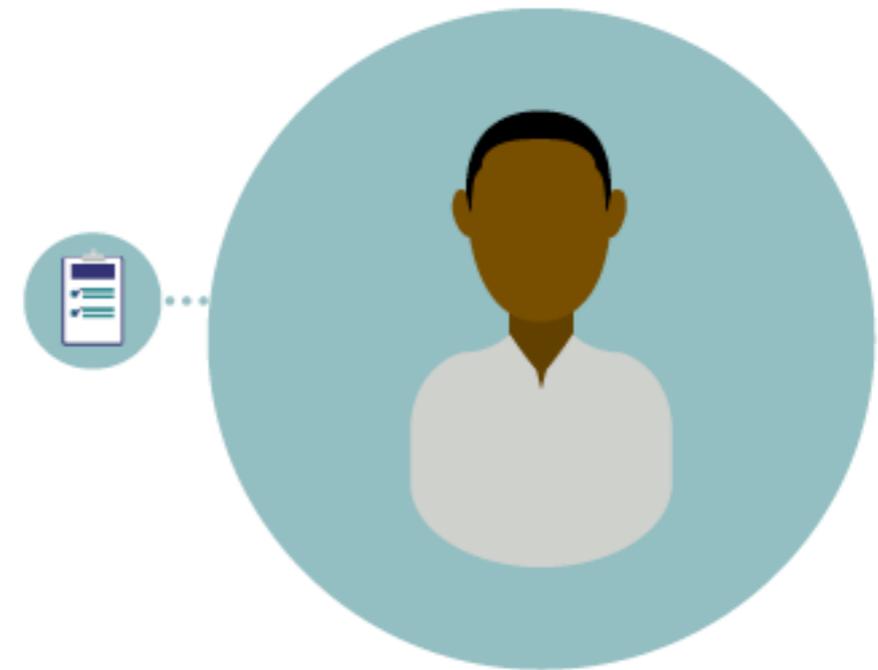
Ensure privacy and security

Health care remains one of the last industries to rely on paper documents and fax-based communications, which have been supplanted in most other fields by wholly electronic media (Muzyka, Hodgson, & Prada, 2012). Digital communication provides a speed and flexibility of information sharing that more traditional paper-based means cannot match. However, while electronic communication allows for improved efficiency and quality of care (Buntin, Burke, Hoaglin, & Blumenthal, 2011), the reproducibility of digital files means greater risks of data leakage or other security breaches. These concerns have left health care services comparatively removed from the digital age, as fax-based communications are perceived as a more secure method for sharing sensitive patient information between providers.

Certainly, electronic communication can jeopardize a patient's right to privacy if the proper precautions are not taken (Conn, 2011; Li, Zou, Liu, & Chen, 2011; Rashbaum, 2011). However, the shift to online communication is inevitable. With proper precautions, electronic consultation can be just as safe as—or even safer than—paper-based methods.

During the development process of your eConsult service, conduct privacy impact and risk assessments in accordance with applicable policies in your jurisdiction. This can be a significant undertaking and ample time should be budgeted for its completion. Most health regions and health care organizations have a privacy officer on staff who can assist in completing a privacy assessment. Risk assessments, however, are typically completed by third parties.

References

Buntin, M.B., Burke, M.F., Hoaglin, M.C., & Blumenthal, D. (2011). The benefits of health information technology: A review of the recent literature shows predominantly positive results. *Health Affairs, 30*, 464-471.

Conn, J. (2011). Still at ground level. Security concerns hinder move into cloud services. *Modern Healthcare, 41*, 32-33.

Li, F., Zou, X., Liu, P., & Chen, J.Y. (2011). New threats to health data privacy. *BMC Bioinformatics, Suppl 12*, S7.

Muzyka, D., Hodgson, G., & Prada, G. (2012). *The inconvenient truths about Canadian health care*. Ottawa, ON: The Conference Board of Canada.

Rashbaum, K.N. (2011). EHR security: Confluence of law, patient protection, benefit to physicians. *Medical Economics, 88*, 77-78.

Decide on a payment model

An important step in creating an eConsult service is determining how clinicians will get paid. In Canada, each province is responsible for establishing the policies that govern clinician remuneration (see below). In Ontario, where the Champlain BASE™ eConsult service was established, clinician payment is described by the Schedule of Benefits under the Health Insurance Act (last amended May 1, 2015). The Act details payment principles for referrals to and consultations with different specialists. Rates for services may vary between specialties due to the complexity of the procedure or other mitigating factors. The majority of specialists are paid on a fee-for-service basis, in which they receive a flat fee for each service rendered (e.g., consultation, surgical procedure). However, a subset of Ontario clinicians are compensated via an Alternative Funding Plan, wherein a base salary, incentive/premium payments, and additional fee-for-service payments are blended into a total payment (HealthForceOntario, 2013).

Physician Payment Schedules in Each Province/Territory
- BC: Medical Services Commission Payment Schedule
- AB: Schedule of Medical Benefits
- SK: Payment Schedule
- MB: Physician's Manual
- ON: Schedule of Benefits
- QC: Manuel de Facturation
  - General practitioners
  - Specialist practitioners
- NB: Physician's Manual
- NS: Medical Service Insurance Physician's Manual
- PEI: Master Agreement
- NL: Payment Schedule
- YK: Payment Schedule
- NT: Insured Services Tariff
- NU: Fee Schedule of Insured Benefits

In the traditional referral-consultation model, PCPs do not receive payment for making a referral to a specialist or other health care provider. Some non-traditional models do allow for PCP reimbursement. Likewise, eConsult services vary in whether or not they provide remuneration to participating PCPs. Regardless of which option you choose, the model and amount of payment for participating clinicians should be clearly stated as early as possible in the recruitment process. This will ensure good relationships with participants, allow you to develop the tools to collect the necessary data, and help you identify whether the chosen payment model impedes utilization or user uptake.

Reference
HealthForceOntario. (2013). Family practice models.

Example: Champlain BASE™ eConsult service

The majority of specialists who use the Champlain <u>BASE™</u> eConsult service are paid $200 per hour prorated to the length of time it takes them to complete an eConsult. Our service allows this rate to be adjusted for certain providers (e.g., non-physician specialists remunerated at a lower rate, salaried specialists who do not receive additional remuneration).

After answering the eConsult question received, specialists are asked to complete a field on the eConsult form identifying how long they spent composing their response. If they took longer than 20 minutes, specialists are asked to provide an explanation as to why the case was especially complex. Based on our current data, it takes specialists an average of 11.7 minutes to complete an eConsult case.

Though initially considered a temporary measure, this payment strategy was ultimately retained when the service was fully launched in the health region. This was due in part to the lack of other options available at the time and in part to the positive feedback received from specialists, the majority of whom support this remuneration model. In a recent survey, 88% of specialists stated that the payment model currently used by the Champlain <u>BASE™</u> eConsult 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).

Reference

Keely, E., Drosinis, P., Afkham, A., & Liddy, C. (2015). Perspectives of Champlain BASE™ Specialist Clinicians: Their motivation, experiences and recommendations for providing eConsultations to primary care providers. *Studies in health technology and informatics, 209*, 38-45.

Liability

While eConsult services have the capacity to improve patient safety through quicker access to specialist advice, their novelty nevertheless introduces new questions of liability. A thorough privacy and threat assessment, as well as a discussion with malpractice insurers, should be conducted early in the implementation stage in order to identify any liability issues arising in your jurisdiction.

Duty of care

Despite occurring in a virtual medium, eConsults are a form of consultation and thus carry with them a duty of care. This is the same for all forms of advice whether in the hallway, by telephone, or through eConsult. The advantage of eConsult is that there is a record of the encounter and the advice sought and provided.

It is important that the specialist is able to decline answering the question via eConsult if more information or a face-to-face visit is required to provide a reasonable opinion. It is important that clinicians on both sides of the service are aware of the exact nature of their responsibilities, which may vary slightly depending on the location in which the eConsult service is located. Consult with a regional or national body in your area that can provide guidance on liability issues in order to establish clear-cut guidelines (e.g., Canadian Medical Protective Association).

Circle of care

The term "circle of care" refers to the group of health information custodians (e.g., health care providers, pharmacies, long-term care homes) for whom a patient's consent to share health information is implied. Custodians operating within a circle of care can discuss a patient they have in common without needing direct consent from the patient beforehand, in order to facilitate more efficient and effective care.

In a traditional referral-consultation model, patients are invariably aware of the referral by the simple fact that they must attend a specialist appointment. In a virtual system, patient information can technically be shared between providers without the patient's knowledge. This raises questions of patient privacy and requirements related to transparency, which vary across different jurisdictions. In Ontario, where our service is located, patient consent is not explicitly needed to conduct an eConsult. However, other jurisdictions require verbal consent from patients prior to initiating any kind of consultation. Review local policy to confirm what level of patient consent is needed.

Example: Champlain BASE™ eConsult service

In the case of the Champlain BASE™ eConsult service, it was determined that specialists who complete an eConsult are within the patient's circle of care. As such, patient consent to share information is implied and need not be expressly sought, as per the College of Physicians and Surgeons of Ontario's (CPSO) Confidentiality of Personal Health Information policy. However, it is advisable to review the privacy policies enacted in your jurisdiction to ensure express consent is not required.

Personal Health Information Protection Acts

- BC: Personal Information Protection Act
- AB: Personal Information Protection Act
- SK: The Freedom of Information and Protection of Privacy Act
- MB: Personal Information Protection Act
- ON: Personal Health Information Protection Act
- QC: An Act Respecting the Protection of Personal Information in the Private Sector
- NB: Personal Health Information Privacy and Access Act
- NS: Personal Health Information Act
- PEI: Freedom of Information and Protection of Privacy Act
- NL: Personal Health Information Act
- YK: Access to Information and Protection of Privacy Act
- NT: Access to Information and Protection of Privacy Act
- NU: Access to Information and Protection of Privacy Act

Upon reviewing the eConsult process, the Canadian Medical Protective Association (CMPA) confirmed that in regards to duty of care, eConsult acts as the electronic equivalent of telephone consultations and/or hallway consultations in which clinicians working in a hospital setting discuss patient cases with specialists. Litigation risks are therefore seen as no greater than in the traditional referral-consultation model, provided that specialists are given enough information to make their recommendation. To ensure this is the case, we amended our submission form to allow specialists to request more information or decline to provide a recommendation. As in the traditional referral model, the ultimate decision to refer—and the responsibility this entails—lies with the PCP.

Provision of interprovincial eConsults

Across Canada, medical specialists must be credentialed by the Royal College of Physicians and Surgeons of Canada (RCPSC) in order to identify themselves as specialists. In addition, the provinces each have their own College, which establish their own credentialing guidelines and rules for licensure. In Ontario, the College of Physicians and Surgeons of Ontario (CPSO) acts as the provincial licensing body for all PCPs and specialists. Depending on the jurisdiction in which an eConsult service is based, participating clinicians may face restrictions regarding submitting or answering consultations from outside their home province. In many provinces, clinicians can provide care for out-of-province patients who travel to their clinic but they are not permitted to themselves travel to a different province to treat patients.

Licensing Bodies Operating in Each Province/Territory
- BC: College of Physicians and Surgeons of British Columbia
- AB: College of Physicians and Surgeons of Alberta
- SK: College of Physicians and Surgeons of Saskatchewan
- MB: College of Physicians and Surgeons of Manitoba
- ON: College of Physicians and Surgeons of Ontario
- QC: Collège des médecins du Québec
- NB: College of Physicians and Surgeons of New Brunswick
- NS: College of Physicians and Surgeons of Nova Scotia
- PEI: College of Physicians and Surgeons of Prince Edward Island
- NL: College of Physicians and Surgeons of Newfoundland and Labrador
- YK: Yukon Medical Council
- NT: Northwest Territories Health and Social Services
- NU: Medical Registration Committee of Nunavut

These regulations are unclear when applied to eConsult services. As the service facilitates communication between clinicians regardless of geographic distance, the chances of interjurisdictional consultation increase. This is already true of many communities in Canada's territories where remote regions are linked to larger centres in neighbouring provinces that provide formal and informal consultation services. These exceptions, though notable, are not universal and a number of barriers remain preventing cross-provincial consultation. These limitations come at the expense of rural or remote communities, which often face substantial barriers to accessing specialist care (Canadian Medical Association, 2014; Hay, Varga-Toth, & Hines, 2006).

It is our hope that new policies will eventually come into effect to promote interjurisdictional consultations without requiring licensure in all jurisdictions. However, at present it is advisable to explore the rules in your jurisdiction before providing services to those outside your province.

References

Canadian Medical Association. (2014). *Rural and urban practices - Where they differ and where they don't*. Ottawa, ON: Canadian Medical Association.

Hay, D.I., Varga-Toth, J., & Hines, E. (2006). *Frontline health care in Canada: Innovations in delivering services to vulnerable populations*. Ottawa, ON: Canadian Policy Research Networks.

Growing and Sustaining the Service

When developing an eConsult service, the best approach is to start small, evaluate, refine, and further build and expand. This chapter outlines key steps for conducting a pilot and outlines how the Champlain BASE™ eConsult service started small and grew over time.

Identify obstacles

Unfortunately, health care innovations will inevitably face obstacles throughout implementation. These obstacles must be identified early in order to establish solutions to overcome them. While not all obstacles can be foreseen, it is good practice to review national and provincial policies in your jurisdiction to highlight areas such as privacy requirements, sources and levels of payment for users of the service, and rules regarding interjurisdictional collaboration, that could potentially impact the service's ability to support the provision of care.

TABLE 6.1 *Potential Obstacles to Implementing an eConsult Service*

Type of Obstacle	Example	Possible Solutions
Technology	Providers find service difficult to use	• Develop service based on provider input • Conduct focus groups/interviews with users to identify problems and solicit proposed solutions • Use closeout surveys to acquire real-time feedback
Provider Engagement	Providers exhibit little interest in enrolling in the service	• Enlist champions among local clinicians • Establish partnerships with organizations supporting clinicians • Attend conferences frequented by providers
Provider Usage	Providers who adopt the service use it infrequently or sign up but never submit a consult	• Incorporate training and orientation to the service into the enrollment process • Encourage providers to complete their first case within four weeks of enrollment • Ensure training is simple and fast; the entire process should take no more than one hour • Offer technical support 24/7 or as close to this as is feasible
Policy	Providers express concern over privacy or liability issues, which prevents them from using the service	• Conduct a privacy assessment • Establish clear policies on privacy, liability etc. as part of your model of care • Engage with licensing bodies in your region to clarify any areas where policy might be an issue

Evaluate the pilot service

The best way to identify obstacles to using the service is to speak with individuals who use the service. Qualitative evaluations conducted via focus groups or interviews are a great way to understand the service through the users' eyes and establish which elements are working effectively and which are acting as barriers. Qualitative research does not require a large number of participants to gain useful insights, making it a useful approach during the pilot stage where key decisions can shape how the service develops and ultimately determine its success.

Grow by adding new specialties

As the eConsult service's user base grows, PCPs will likely begin requesting access to a wider range of specialty groups. Recruitment of specialists is thus an important consideration when establishing an eConsult service. Key decisions include what specialty groups to recruit, how many specialists from each group are needed, and how participating specialists will be selected. The needs of the PCP and patient populations being served should guide these decisions. As such, start small and add new specialties based on PCP demand.

For a new specialty, it is possible to begin with a single specialist who is committed to general availability in order to respond to requests within the pre-established targets. However, the ideal situation would be to start with two to maximize coverage and availability. Numbers can grow beyond that as determined by supply and demand.

Maintain benefits of service

Sustainability of an eConsult service comes not just from obtaining a reliable source of funding but also from maintaining a consistently high level of service. PCPs and specialists will only continue to use an eConsult service as long as they feel it is beneficial for themselves and their patients. If the user base abandons the service, the amount of funding it has becomes irrelevant. As such, it is important to ensure that the service provides ongoing benefit to users (e.g., addition of new specialties, provision of feedback to specialists, training specialists).

Build in continuous quality improvement

It is important to build in a continuous quality improvement (CQI) approach to an eConsult service. As with any technology, the best way to assess an eConsult service's effectiveness is by listening to users. Data can be collected directly from the users or through the system itself. A mandatory survey at the end of each eConsult can provide a wealth of data on outcomes and user satisfaction. Inclusion of an optional free-text field will allow users to offer suggestions and share concerns. These surveys should be brief and simple, taking no more than a minute or two to complete. More onerous requirements could dissuade users from continuing to use the service.

Not all data need be solicited from PCPs directly. As electronic systems, eConsult services can easily be designed to collect usage data automatically. Potential data points include response time, the specialty referred to, the length of time it took specialists to complete their response, and patient demographic data (e.g., age, gender). By assigning PCP and specialist users unique identification numbers, these data can be linked to individual providers to identify referral patterns. Exploration of these data can provide fascinating insight into the service and help guide improvements in implementation.

Provide feedback to users

Collecting and analyzing data can help guide future development of an eConsult service. However, users can also benefit from this information as it can provide an objective assessment of their performance and point out strengths and areas for improvement. Make sure to provide a channel for interested clinicians to receive feedback on their performance. This will greatly increase the value of the service for users and potentially improve the care they provide to patients.

Example: Champlain BASE™ eConsult service

In the Champlain BASE™ eConsult service, PCPs are required to answer a short closeout survey consisting of four multiple-choice questions and one optional free-text field in order to close an eConsult case. The survey collects information regarding the eConsult's outcome and its perceived value for the patient and the clinician. In the free-text field, PCPs are invited to leave any additional comments they wish to share.

The closeout survey has allowed us to continuously gauge users' attitudes towards the service, providing vital insight into the users' experience and alerting us to any issues that may arise in real time. Interestingly, we have found that survey responses have remained quite stable over time. In approximately 40% of cases, PCPs indicated that they had originally considered a referral but were able to avoid it through the advice they received from an eConsult. Less than one third of eConsults result in a referral. In 4% of cases, responses from specialists through the eConsult service led PCPs to refer patients whom they had not originally thought required a specialist consultation. Feedback on the service's quality has also been constant, with over 90% of PCPs consistently ranking the service as having high or very high value for their patients and themselves.

Providing space for free-text comments has allowed us to collect qualitative data. Analysis of these data has yielded fascinating insight into PCPs' attitudes towards the eConsult service. We conducted a constant comparison thematic analysis on 2052 open-text responses. Three major themes emerged from the data: PCP appreciation of the eConsult service; perceived benefits for the quality of patient care; and positive attitudes towards using a new health technology (Liddy, Drosinis, Joschko, Crowe, & Keely, 2015). PCPs expressed a great deal of satisfaction with the service, noting particularly its quick response times, the helpfulness of specialists' responses, and the reassurance they felt at being able to receive prompt advice from specialists (Liddy et al.). Most PCPs felt the eConsult service had a positive impact on patient care by providing reassurance to patients, reducing burden of time and travel, and offering educational opportunities to PCPs applicable to future cases (Liddy et al.).

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Develop a sustainability plan

Pilot projects are an important step in the development process. They allow innovations to be tested on a small scale, provide opportunities for feedback, and allow improvements to be made while the service is still malleable. However, the pilot is only a first step. A successful service must be sustainable over a long period. Begin planning for the transition from pilot to a sustainable program as early as possible to avoid any interruption of service resulting from lack of funding, abrupt operational changes, or other "growing pains".

Establish funding infrastructure

Funding is perhaps the most vital element of program sustainability. Many pilot projects are supported by grants, which provide a short-term infusion of capital necessary to cover start-up costs and support the program through the pilot. However, ongoing support is required in order to sustain the program beyond the initial funding window. We recommend examining multiple strategies in order to safeguard against shortfalls, which could cause service interruption and negatively impact the service's long-term existence.

Obtain human resource support

Apart from paying providers, the major ongoing costs for an eConsult service are technical and human resources support. Ensure that sufficient funds are available for project coordination, information technology (including system updates and technical support for users), and clinician engagement and training. A detailed budget will help itemize costs and establish how much funding is necessary to support the service.

Example: Champlain BASE™ eConsult service

The Champlain BASE™ eConsult pilot was funded by a two-year research grant sufficient to cover the start-up costs (e.g., form development, workflow design, user training) and the administration costs for the duration of the project. After the demonstrated success of the pilot, we were able to secure additional funding from the Champlain LHIN, eHealth Ontario, and the Ontario Ministry of Health and Long-Term Care. This funding, along with funds from several additional grants, has been critical to support the eConsult service. However, more secure sources of funding are needed to ensure the ongoing sustainability of the service. As such, our team has continued to seek new funding by applying for provincial and national grants and is working towards a model in which eConsults can be funded directly by provincial insurers. Such a system would allow the eConsult service to function indefinitely.

Going Beyond

Once you have established your platform and built a base of PCP and specialist users, your service should be able to adapt and grow. Expansion can include entirely new ways of delivering care. This chapter provides a brief overview of some of the potential expansions and alternative uses of an eConsult service.

A form of continuing professional development

One of the unexpected benefits of the Champlain BASE™ eConsult service has been its capacity for clinician education. eConsult services serve as a learning opportunity for clinicians by allowing them to communicate with other health care providers about a patient's care. PCPs and specialists praise the service's capacity to support the development of new practice skills and help them gain knowledge applicable not just to the patient in question but to other patients with similar concerns. By helping PCPs treat patients they would have otherwise referred, eConsult not only provides the patient with prompt access to care but helps the PCP develop skills he or she may not have otherwise developed. We advise anyone interested in creating an eConsult service to leverage this opportunity.

Continuing Professional Development (CPD) is a requirement in many jurisdictions. In order to have an impact on practice behaviour, CPD programs must develop skills that address the needs of the patient population (Ebell, Cervero, & Joaquin, 2011). As such, CPD program leaders must have timely access to information on providers' needs based on their practice in order to develop curricula that engage clinicians while instructing them on the skills they need to effectively treat their patients.

Traditionally, CPD programs conduct needs assessments using surveys, focus groups, and/or reviews of past clinical questions. Clinical questions arising in day-to-day practice are an ideal source of information of CPD needs as they reflect the problems that patients are currently bringing to their clinicians. These questions can be collected using a number of different methods, including direct observation by a qualitative researcher, categorization of library search requests, and/or examination of referral letters. Though effective, many of these methods are time consuming and may require significant resources to enact. Since eConsult services collect clinical questions automatically, they are an ideal source of CPD data. Analysis of questions posed through eConsult can help inform CPD development.

Example: Champlain BASE™ eConsult service

Through our ongoing evaluation of the Champlain BASE™ eConsult service, PCPs and specialists alike have cited educational capacity as one of the key benefits of eConsult (Keely, Drosinis, Afkham, & Liddy, 2015; Liddy, Drosinis, Joschko, Crowe, & Keely, 2015). PCPs in particular appreciated the service's ability to act as a "refresher" on issues they didn't frequently encounter. They also described learning more about specialties with which they were previously unfamiliar.

One PCP summed it up as follows: "Thank you very much for your detailed and very helpful response. It is great learning for me and I have shared it with a couple of my colleagues as well! I am glad that I will now be able to recommend against testing and treating the children with more evidence behind me and I will feel much more confident standing up for my now-more-educated opinion" (Liddy et al.).

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Different kinds of consultation

The standard eConsult model of asynchronous communication between a PCP and specialist is only one way in which access to care can be improved. Using the PCP-to-specialist service as a model, service developers can adjust or expand the service to suit the needs of a specific patient population.

Programs aimed at a specific subset of patients can help deliver prompt access tailored to the specific needs of the population. For instance, the Champlain BASE™ eConsult service has partnered with researchers and stakeholders in Manitoba and Newfoundland and Labrador in a project aiming to support the transition of patients with HIV from specialist clinics to their family clinicians. Other groups (e.g., patients over 65 or under 18 years of age) may also benefit from targeted services.

An eConsult platform should be flexible enough to support the adoption of alternative communication models. Examples include eConsults sent between two different specialists (as opposed to a PCP and specialist) and shared care eConsults, in which multiple providers gain access to a forum on a specific patient where they can discuss treatment options and maintain a detailed record of the patient's care.

Example: Champlain BASE™ eConsult service

The Champlain BASE™ eConsult service continues to explore new and innovative ways to connect providers and improve patients' access to specialist care. An HIV portal has been developed (see previous section) and we have developed an expanded service specifically for medically complex patients (e.g., patients with chronic pain, cancer, diabetes, HIV) who often require frequent visits to multiple specialist providers. A shared care platform is currently under development. This system will allow multiple providers to engage with one another regarding a complex patient's care. Often, such patients experience delays in care or redundant testing due to breakdowns in communication between their multiple providers. Our shared care platform aims to eliminate these problems by facilitating instantaneous and iterative interaction between all care providers. All clinicians will thus know what care the patient has received and can discuss options and next steps in an informed manner.

Final Reflections

The implementation of an eConsult service in our LHIN has been transformational for patients and providers alike. It is an immensely gratifying project of which we are proud. With over 11,000 eConsults made to date, and the number growing exponentially, we have demonstrated the effectiveness of such a service on improving timely access to specialist knowledge and thus enhancing patient care.

Throughout this eBook, we have shared our experiences and lessons learned with the intention of providing a blueprint for others interested in creating similar initiatives in their own areas. By building a service primarily grounded in patient needs; establishing key partnerships and involving stakeholders throughout the process; selecting a platform that is scalable and meets stakeholder needs; and considering policy at the local, regional, and national level you will maximize your chances of success. Further, user training is essential—both in terms of understanding the workflow of the eConsult, as well as developing any technical skills required to use the platform. Once you have realized your initial vision, don't be afraid to build on your achievements and explore opportunities for expansion of the service. Growth doesn't have to be limited to number of users, instead consider alternative uses of the service, such as informing CPD and adapting to other types of consultation.

We wish you success in your endeavours and hope that you will share your experiences with us. As we continue to build this community of practice, our knowledge and experiences will grow and we can continue to expand and refine the recommendations in this eBook. We look forward to hearing your own experiences developing and implementing an eConsult service.

Clare Liddy	cliddy@bruyere.org	613-562-6262, Ext. 2928
Erin Keely	ekeely@toh.on.ca	613-738-8400, Ext. 81941
Amir Afkham	Amir.Afkham@lhins.on.ca	613-747-3235

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BASE™

Building Access to Specialists through eConsultation

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