

Consumer Health Solutions

Exploring the value, benefits and common concerns of e-booking

White Paper (Full Report)



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Executive summary

Canadians are used to self-service activities such as conveniently booking vacations online, using an automated teller machine (ATM) for banking needs and checking out their groceries at the supermarket. They are looking for time saving options when it comes to their health care too—options such as e-booking, which allows patients to schedule and manage their appointments online. While only an estimated seven per cent of Canadian physicians currently offer such access,¹ 90 per cent of surveyed Canadians said that if the functionality was available, they would be likely to book an appointment with their health care provider electronically.^{a 2}

To better understand this evolving landscape, Canada Health Infoway (*Infoway*) reviewed and summarized current evidence from the literature, surveys, and conducted key informant interviews with early adopters to capture the perspectives and experiences of patients, clinicians, administrators and vendors. Some of the key areas in which a clear potential for benefits realization was found included:

- Reduced appointment no-show rates;
- Increased staff satisfaction;
- Reduced staff time spent booking patient appointments; and
- Increased patient satisfaction and convenience.

While there were common concerns expressed by providers and their care teams who are considering offering this functionality for patients, there were also a number of suggested strategies and examples of successful implementations to alleviate most of these fears. This white paper shares the findings of *Infoway's* investigation into e-booking. These findings highlight e-booking as an example of how a relatively small digital health innovation, when implemented well, can have a lasting positive impact on patient experience, staff satisfaction, office productivity and efficiency as well as on enabling better access to care.

^a Commissioned by Canada Health Infoway in February 2013, an Ipsos Reid Survey conducted through an online panel of 1675 adults asked whether he/she would “make appointments with his/her health care provider(s) electronically.” 90 per cent of participants responded that they would be likely to (70 per cent most likely, 20 per cent somewhat likely).

Introduction

Canadians regularly book vacations online, use ATMs and conduct a wide variety of tasks over the Internet which previously required telephone or in-person contact. In many cases, the convenience and flexibility online access offers is highly valued. Many companies offering these services also benefit from the work their customers are doing for them, often by streamlining administrative activities.

A similar dynamic is unfolding in health care: consumers are looking for the convenience to manage their interactions with the health system online, with e-booking being a leading interest. To better understand this evolving landscape, *Infoway* has gathered evidence around the perspectives and experiences of patients, clinicians, administrators and vendors.

This white paper examines these costs and benefits in detail, and provides practices with a starting point to investigate offering this technology service themselves. Data were gathered from multiple sources including: a literature review yielding approximately 30 relevant articles; an analysis of primary care physician survey data in 10 countries where e-booking is offered (2012 Commonwealth Fund International Survey of Primary Care Physicians); a review of vendor websites and interviews with five Canadian vendors; and engagement with participants of *Infoway's* e-Scheduling *Outcomes* Challenge (imaginationchallenge.ca).^b Additionally, the perspectives of Canadians were collected in an online Ipsos Reid panel of 1,675 adults (February 2013); and 13 structured interviews were conducted with Canadian physicians and clinic staff who had both adopted e-booking ("e-booking adopters", n=7) or who had not ("e-booking non-adopters", n=6).

While the varied data sources provided a rich understanding of the Canadian context, current state and value proposition, it is recognized that this is a rapidly evolving field with limited, robust research conducted to date. As the knowledge and evidence in this area continues to grow and evolve, *Infoway* invites stakeholders to contribute their experiences and continue to inform ongoing implementation efforts by contacting us at: ebooking@infoway.ca.

Canadian and international landscape

Surveys of patients reveal that e-booking is one of the top consumer digital health technologies of interest to Canadians. In a 2013 Ipsos Reid survey commissioned by *Infoway*, 90 per cent said they would be likely to book an appointment with their health care provider electronically.³ They also ranked e-booking in the top three most useful online consumer health services, just behind electronic prescription renewals and viewing their lab results online (out of a list of 18 options).⁴

^b The *ImagineNation Outcomes* Challenge was conducted in 2012/13 and focused on accelerating the use and spread of innovative solutions in four key areas of digital health technologies with the potential to improve health care quality and the patient experience. Electronic appointment scheduling for patients was one of these four areas.

That said, when asked whether they can currently make an appointment with their regular doctor or place of care electronically, only 5.4 per cent responded that they could.⁵ The 2012 Commonwealth Fund International Survey of Primary Care Physicians also showed that Canada lags in this area when compared to most other highly developed countries (Table 1).⁶ However, other countries such as the United Kingdom also started out with lower rates of adoption of their national e-booking solution for outpatient hospital and clinic appointments, commonly referred to as, “choose and book (C and B).” At time of initial pilot implementation in 2005, less than 1 per cent of first patient appointments were booked through C and B, but by the first full year of nation-wide availability, use had increased to 20 per cent and continued to grow to 50 per cent four years later in 2009.⁷ Currently, the proportion of practices offering e-booking is four times higher in the United States than in Canada, and almost 10 times higher in Sweden.⁸

Table 1 – Percent of primary care physicians reporting that patients can request appointments or referrals online, 2012^c

Participating Countries	CAN	AUS	NETH	NZ	FR	GER	SWIZ	US	UK	NOR	SWE
Per Cent Response	7	8	13	13	17	22	30	30	40	51	66

E-booking functionality

E-booking solutions vary in terms of functionality. Common features referenced by interviewees and participants in *Infoway’s ImagineNation Outcomes Challenge* included:

- 24/7 appointment scheduling
- Automated appointment confirmation
- Secure access
- Automated appointment reminders
- Individual staff logins
- Customizable scheduling rules
- Multiple appointment types

Additional features may include:

- Appointment integration with patient’s personal calendar
- Automated cancellation notice/rescheduling option
- Short message service (SMS) text options
- Wait list creation
- Mobile device compatible application

^c Commonwealth Fund. (2012). 2012 Commonwealth Fund International Survey of Primary Care Doctors. Accessed at: <http://www.commonwealthfund.org/Surveys/2012/Nov/2012-International-Survey.aspx>

Experience of early adopters: costs and benefits

The objective of this effort was to describe the benefits of implementing e-booking, as well as the costs and change requirements necessary to achieve these benefits.

Benefits

Early adopters consistently reported clear and straightforward benefits of e-booking for the provider, administrative staff and the patient. For instance, interviews with e-booking adopters in Canada highlighted provider benefits such as reductions in no-shows, increased ability for patients to cancel and re-book appointments themselves, gains in administrative staff efficiency and satisfaction, as well as improved patient empowerment and satisfaction. These reports were further supported by evidence in the international literature. Table 2 profiles the high-level benefits, combined from these two sources (i.e., early adopter interviews and published literature), from implementation of e-booking. Further details are provided in the following sections.

Table 2 – At a glance: e-booking benefits reported by early adopters and in the literature

Benefit Area	Benefits Evidence
Time and Cost Savings	<ul style="list-style-type: none"> • Reduced interruptions, telephone call backs, and appointment confirmation calls for staff and physicians leads to efficiencies.^{9 10} • Seven out of seven Canadian e-booking adopters interviewed indicated they had reduced time on the phone booking appointments.¹¹ • One study showed an 80 per cent reduction in the time required to set up a single appointment following the introduction of electronic scheduling tools.¹² • Achievable clinic cost savings of \$220/week/physician, consistent with efficiencies referenced in interviews.¹³
Patient Satisfaction	<ul style="list-style-type: none"> • 24/7 access to a clinician’s schedule is convenient and offers reassurance that an appointment can be booked at the time it is needed.^{14 15} • Automatic appointment confirmation and appointment reminder notifications reassure that the appointment has been scheduled and decreases chance it will be missed.^{16 17} • Most patients who use online scheduling prefer it to calling their provider or clinic directly.¹⁸ • For those patients who choose to call, e-booking frees up phone lines and staff time making it easier to book.^{19 20}
Reduced No-Shows and Improved Access	<ul style="list-style-type: none"> • Use of alerts and reminders decreases the number of no-shows and last minute cancellations.^{21 22} • Reduction in no-show rates identified by four of seven Canadian e-booking users interviewed.²³ • Nine per cent reduction in no-show rates experienced by one clinic.^d
Improved Staff Satisfaction	<ul style="list-style-type: none"> • Eliminates backlogs and time-consuming tasks for staff related to triaging patients at time of appointment booking, thereby freeing staff for other tasks and for interacting with patients on other issues.^{24 25} • Improved staff satisfaction identified by seven out of seven Canadian e-booking users interviewed.²⁶

^d K. Brand, University of British Columbia (UBC) Health Services, interview transcript, February 21, 2013.

Benefits to providers

For some early adopters, the key motivator for e-booking is improving the patient experience. For example, Dr. Yvan Fortin of Centre Médical Westmount Square in Montreal noted, his group offered the e-booking functionality “to put patients in the driver’s seat; to give patients a little more power...it was to provide easier access to the clinic and to make it easier for patients to schedule appointments.”^e Likewise, Dr. Sanjeev Goel, a family physician at Wise Elephant Family Health Team in Brampton, commented that scheduling patients by phone takes a lot of resources. “We hear that it’s difficult to make appointments; long wait times; it’s not a pleasant experience. So anything we can do to reduce that, letting patients have more control over that in an online manner is a welcome advantage.”^f Thus part of the impulse to adopt e-booking is to improve what can be a frustrating experience for patients.

Providers and their clinics can also experience reductions in no-shows and last minute appointment cancellations, better replacement of cancelled spots and optimization of schedules with fewer gaps in a day. Kathy Brand, manager of the University of British Columbia (UBC) Student Health Service, tracked this improvement, noting that e-booking reduced no-show appointments from 13 per cent to 3.8 per cent of all appointments.^g Nectaria Mantzoros, an administrative staff member of a specialist practice in Montreal, also reported that e-booking had “absolutely reduced no-shows and last minute cancellations.”^h

When patients fail to arrive for scheduled appointments, it not only interrupts the flow of patient care but also hurts clinic productivity and revenue.²⁷ In a study that assessed 4,055 patient visits to a family practice clinic in South Carolina over a period of 20 days, it was determined that “no-shows and cancellations represented 31.1 per cent of scheduled appointments and 32.2 per cent of scheduled time.”²⁸ For this clinic, the financial impacts of this productivity loss were not relieved by same-day appointments; and over the course of a year, the overall impact was estimated as “total revenue shortfalls ranging from three per cent to 14 per cent of the total clinic income.”²⁹ Other studies have made similar conclusions, noting that the size of the problem varies,³⁰ but could range up to 42 per cent of a clinic’s appointments.³¹ No-shows and last minute cancellations can, therefore, contribute to a significant drop in clinic revenues and productivity loss for the health system.

Reductions in no-shows result not only from patient access to the scheduling tool, but also from the use of alerts and reminders made automatic by many e-booking systems. For example, no-show rates have been found to increase in direct correlation to increases in time elapsed between the booking of an

^e Dr. Y. Fortin, Centre Médical Westmount Square, Montreal, interview transcript, February 2013.

^f Dr. S. Goel, Wise Elephant Family Health Team, Brampton, interview transcript, February 2013.

^g K. Brand, UBC Health Services, interview transcript, February 21, 2013.

^h N. Mantzoros, Dr. B. Morris, MD, interview transcript, February 2013.

appointment and the actual date it is scheduled to occur.³² The most popular and effective mitigations for resolving no-shows and last minute cancellations have been reminder calls or mailings.^{33 34} By automating these reminders, e-booking reduces both no-shows and the burden on administrative staff to make reminder calls.

Benefits to staff

For administrative staff, early adopters report that e-booking shifts time spent from hours receiving and returning phone calls to deal with basic scheduling activities to working on higher value activities that bring greater satisfaction. Reports in the literature also confirm that the ability for patients to self-schedule provides time savings, from fewer appointment calls to receive and return, reduced interruptions to workflow, and reduced need for telephone reminders, which allows administrative staff to spend more time delivering high quality patient service.³⁵ As Nectaria Mantzoros describes, “I think the automated email and phone call reminders – that for me is priceless – that is worth all the money in the world. The fact that I don’t have to sit here and reschedule 250 patients (when the doctor is away for a week) – that’s a lot.”ⁱ

Kathy Brand of UBC agrees: “By reducing the amount of phone traffic our clerical staff must manage, they are offering value added interactions to patients with immediate concerns in the office. Spending less time on the process of making and cancelling appointments allows clerical staff to focus on activities that directly impact patient care.”^j Likewise, Dr. Raphael Sharon, a general practitioner in Edmonton, says e-booking has enabled his support staff to “have more time to spend with the patients...”^k

Frontline staff members are also sensitive to the sentiments of patients, and appreciate an improvement in patient satisfaction. For instance, Kathy Brand reflected on the administrative staff in her clinic and stated, “They see it as improving the overall patient experience. [The patients] get better service because it’s more convenient and time-saving for all, so I think that’s where the satisfaction comes in.”^l

Benefits to patients

Early adopters say that for patients who are able to electronically self-schedule an appointment with their provider, 24/7 access allows them to know whether an appointment with their doctors and care team will be available when needed and provides an improved sense of empowerment and satisfaction. The literature confirms that patients are eager to book online at a time of convenience, control and choice³⁶ without having to wait for open phone lines, which also reduces their time spent in booking the

ⁱ N. Mantzoros, Dr. B. Morris, MD, Montreal, interview transcript, February 2013.

^j K. Brand, UBC Health Services, interview transcript, February 21, 2013.

^k Dr. R. Sharon, Family Practice, interview transcript, February 18, 2013.

^l K. Brand, UBC Health Services, interview transcript, February 21, 2013.

actual appointment.³⁷ The Centre for Information Technology Leadership (2008) found that “the use of online scheduling tools can reduce the time to set up a single appointment by over 80 per cent from 2.7 minutes to 30 seconds.”³⁸

One patient survey completed at a family practice clinic in Alberta showed that most patients found an online system to be as easy as booking by telephone, and all who booked online said they would do so again.³⁹ Another patient satisfaction survey completed by the Physician Information Technology Office in British Columbia (PITO) asked patients from a family practice clinic about their use and satisfaction with a patient portal. It found that self-scheduling was the second most commonly used feature. In addition, 74 per cent of respondents who booked an appointment through the portal during the pilot said that they would prefer to do so again (versus calling the clinic).⁴⁰

While it is recognized that online booking is not appropriate for all patients, early adopters suggest that allowing even a portion of a clinic’s roster to take advantage of this functionality makes telephone scheduling easier for the other patients.⁴¹ Additionally, automated online booking systems may facilitate concurrent bookings, rather than telephone systems which often require receptionists to put a patient on hold. They may also reduce the need for receptionists to spend time making appointment reminder calls.⁴²

Cost and change requirements

In Canada, e-booking is not yet commonplace, with only seven per cent of primary care physicians reporting that their practice offers patients this option.⁴³ Practices considering implementing e-booking often ask about the costs and change requirements. Experiences of early adopters and reports in the literature suggest that while there are business rules, resourcing and sometimes costs involved, e-booking can be adapted to suit the needs of many practice types and circumstances.

Technology options

There are a number of technology options available to proceed with e-booking. For clinicians using an electronic medical record (EMR), a number of EMR vendors include e-booking functionality or plan to add this feature soon. Clinicians have also reported success using standalone e-booking software, either because they do not use an EMR or the EMR they use does not yet offer e-booking. These services can be cost-effective; however not all easily integrate with EMRs.

Time

While many early adopters report that e-booking is a relatively simple technology to adopt with short timelines required to become fully operational, they note that dedicated time is required for the implementation. Activities include, but are not limited to, validating scheduling rules for providers; confirming the proportion of appointments available for online booking and then modifying as required; ensuring staff buy-in, comfort and training; and managing patient recruitment and support as usage begins.

Cost

Costs vary across solutions. Some EMR vendors bundle their e-booking solution with a full patient portal, allowing patients to view some or all of their health information online. These more powerful integrated solutions tend to cost more than e-booking alone, but may also provide a richer suite of information and support for patients. In other cases, e-booking functionality is already included in the EMR's costs. Alternatively, some standalone options can cost as little as \$20.00 per month for a solo user or \$40.00 per month for an unlimited number of clinicians plus any additional fees for items such as use of reminder notifications if not included in the monthly cost.^m Other solutions may be purchased with a one-time fee rather than on-going licensing.ⁿ Practices may also have additional associated costs beyond licensing a solution, e.g., upgrading the practice's Internet connection.

The experience of early adopters suggests that comparatively low software and implementation costs mean a relatively quick return on investment, e.g., through reduced appointment no-shows and improved use of staff time. For example, in one study, "the financial model showed that an online booking system implemented in a physician office was paid off in the sixth month".⁴⁴ Authors reported that practices with predictable, repetitive scheduling workflows benefitted most from online scheduling.⁴⁵

E-booking adopters comment on time required to implement e-booking in key informant interviews

"I'd say that a good guesstimate in terms of hours would be about three days and two full-time staff. That's total time: communication, staffing, training, also communication with equipment suppliers, and so on."

– Dr. Fortin, Montreal

"It took virtually no time at all to get the (standalone) solution up and running."

– Dr. Sharon, Edmonton

^m This information is based on *Infoway* vendor market scan and vendor interviews.

ⁿ Ibid

Table 3 – e-Booking common costs at a glance

Time and Effort within the Practice	Other Costs
<ul style="list-style-type: none"> • Implementation time for clinicians and staff <ul style="list-style-type: none"> • Assess readiness • Determine scheduling rules and configuration of solution • Staff training • Solution implementation time • Patient recruitment and training • Development of communication and marketing materials • Ongoing operations <ul style="list-style-type: none"> • Password re-set • Solution maintenance • Optimization of scheduling rules 	<ul style="list-style-type: none"> • Solution costs vary depending on solution chosen (e.g., EMR integrated versus standalone) but can be quite affordable. • Ongoing vendor/IT support, e.g.,: solution customization, integration with other information technology systems and technical support • Printing of communication/marketing materials

Getting patients to use it

A majority of Canadians said they would like to be able to book appointments electronically, so many patients are eager to embrace e-booking.⁴⁶ This does not mean that they will use e-booking for all appointments, or that all patients will go online to book, just as the Internet is now the main means of banking for less than half (47 per cent) of Canadians.⁴⁷ For e-booking, uptake varied in our user interviews as did patient marketing strategies among e-booking adopters. In general, clinics began by inviting a small group of selected patients to test out the use patterns and workflow of the system. Feedback from interviewees suggested that technologically-savvy users may be helpful first candidates.

Once implemented, clinics employed a number of strategies to enroll patients (see sidebar). Some would simply enroll the patients on a tablet device as they entered or left the clinic. Others invited them via email. One clinic set their answering machine message to inform patients that if they preferred not to wait for a call back from the clinic, they could book online.

E-booking adopters comment on patient recruitment

“We currently have about 30 per cent of patients enrolled, but we should be able to get 70 per cent if we push.”

– Dr. Morris, Montreal

“I have notes up in each of my exam rooms, and my business card has the website on it as well. So when I meet patients for the first time, I’ll say, ‘in the future you can book online if you want’ – I don’t make them only do it.”

– Dr. Sharon, Edmonton

“To recruit patients? You just explain the system to them, that takes perhaps two minutes, but enrolling them in the system, just that task takes at most 20 to 30 seconds to activate them.”

– Dr. Fortin, Montreal

Common questions

While five of the six physician non e-booking adopters expressed strong interest in implementing, all had questions. Examples are included below:

How can I make sure I don't lose control of my schedule?

E-booking solutions often have robust filtering options that direct patients to choose the correct clinician for the correct amount of time for the appointment type. Even if the patient makes a mistake or the clinician desires a change, with most e-booking solutions the patient can be notified automatically and can reschedule appropriately. Early adopters reported that the clinic does not give up control of the schedule, but merely the burden of filling it.^o

Doesn't this open up my schedule to abuse? What if patients book up my whole schedule?

A number of early adopters of e-booking described e-scheduling as a privilege that clinics afford their patients. If it is abused, they noted, it can be taken away. However, none of the adopters we spoke to had experienced over-use of e-booking by patients, and none worried that they would not be able to respond to it if it did occur.

Some of my patients won't use a computer to book an appointment.

Canadians overall are leading the pack in terms of online engagement.^p Surveys show that patients of all ages, including those over 55 years of age, are interested in being able to make an appointment with their health care provider electronically.^q Likewise, Canadian market data shows that the use of smartphones in Canada increased 17 per cent between 2011–2012,⁴⁸ and while income does seem to play a role in levels of mobile access, 51 per cent of people with an annual income less than \$20,000 indicated they would be most likely to make an appointment with their health care provider electronically.⁴⁹

Early adopters of e-booking noted that the option of making appointments by phone remains available and the use of e-booking by other patients frees up the phone lines and staff, making phone scheduling easier to access.⁵⁰ They also mentioned that patients who need help to use e-scheduling may call on friends and family for help, just as they do for help in managing other aspects of their care.

^o L. Creton-de-Limerville, Centre Medical Westmount Square, Montreal, interview transcript (translated from French), February 2013.

^p As compared to selected geographies such as the United Kingdom, China, United States and others listed in comScore.Inc. (2013). *Canada digital future in focus 2013*. [PPT presentation]. Accessed online at http://www.comscore.com/Insights/Presentations_and_Whitepapers/2013/2013_Canada_Digital_Future_in_Focus2 (August 7, 2013).

^q In a consumer tracking survey (Ipsos Reid, 2012), 70 per cent of patients aged 55 years and older indicated they would be most likely to book an appointment electronically with their health care provider, equivalent to 70 per cent of patients aged 35–54 and 69 per cent of patients aged 18–34. (Source: Canada Health Infoway).

I have some appointments slots in my schedule that I don't want people to book online.

E-booking schedules tend to be customizable. If a clinic wishes to reserve afternoon appointments for walk-ins, for example, staff can make those appointment slots unavailable for online booking.

Resources

The following resources may be useful to practices considering offering e-booking to their patients and to those who may already be underway:

- [Infoway's ImagineNation Outcomes Challenge videos](#) provide an opportunity to hear from users of e-booking;
- Infoway's [e-booking](#) web page provides links to some privacy and security resources, such as "[e-booking Privacy and Security Considerations](#)" which note some of the key factors to be assessed in ensuring alignment to privacy and security best practices;
- EMR and e-booking vendors and their websites provide details on products and benefits; and
- Websites such as the American Academy of Family Physicians share some advice for developing an online presence and specifically for offering appointment scheduling to your patients online.⁵¹

Conclusion

Across Canada, e-booking is in the early stages of adoption, and there remains limited rigorous evidence of the costs and impacts. However synthesizing the data available does provide a compelling case for moving forward in appropriate settings. For patients, the value is clear and the demand is significant. Importantly however, for clinicians and practices who are struggling with multiple priorities and high workloads, evidence suggests that e-booking is worth serious consideration.

Medical office assistants describe no longer being occupied on the phone for the better part of their day, allowing them to focus on higher-value tasks, such as interacting with the patient in front of them and assisting with other administrative duties to further support the patient's care. Some clinics experience lower no-show rates, increases in access for their patients and more total appointments for the clinic. Many e-booking scenarios investigated required little initial investment and low ongoing costs, and have been described by users as simple to implement and easy to use. Clinics often start small and grow e-booking incrementally with time as they adjust workflow and optimize scheduling practices.

Health care e-booking is becoming mainstream in many countries, with 30 per cent of United States' primary care physicians reporting they offer the service, as well as 40 per cent in the United Kingdom, 51 per cent in Norway and 66 per cent in Sweden.⁵² Similarly, as uptake in Canada continues, more evidence on actual outcomes attainable through implementation of e-booking

will surface and bring clarity to any outstanding questions for practices. Additionally, information to support the development of best practices for managing solution configuration, addressing privacy considerations, patient recruitment and the like, will continue to evolve and support organizations and practices that implement this consumer technology. *Infoway* invites stakeholders and readers to contribute their experiences and inform these ongoing implementation efforts by contacting us at: ebooking@infoway.ca.

End Notes

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