Electronic Health Records

2015

Canada’s next generation of health care at a glance
Contents

Foreword 6
The Canadian healthcare context 7
The next stage of the journey 10
A vision for health infostructure in Canada 11
  1. Foundational elements 12
  2. Additional elements 12
  3. System enablers 12
Five key priorities 15
The future in focus 18
As a small business owner, John rarely had time for regular exercise, eating properly or relaxing. That changed last spring when he had a heart attack. Determined to follow a healthier lifestyle, John, in consultation with his team of caregivers, begins to actively participate in his care. John uses a secure Internet patient portal to access his personal health record, document and follow his home blood pressure readings and learn how to control his cholesterol. He also uses the Internet portal to track his physical fitness regimen.

This is the future of health care in Canada.
Suzanne is a diabetic patient with multiple related health problems. Her care is monitored by a diverse, but coordinated team of healthcare providers who communicate and work together. Laboratory results, medication information, the blood sugar readings which Suzanne takes from her home, as well as notes added from the various caregivers are all readily available to the team of healthcare professionals attending to Suzanne. She doesn’t have to worry about remembering to schedule appointments or comply with treatment. There are routine reminders for follow-up tests as well as advice on other measures to manage her condition.

This is the future of health care in Canada.
At a local hospital, Dr. Roy uses an order entry system to prescribe drugs for his patients. His prescriptions are directly entered via his computer, avoiding both handwriting legibility concerns and dosage calculations. So there is a reduced chance of an adverse event. The advantages of this system go beyond patient safety and Dr. Roy is able to provide better quality of care. Dr. Roy and other members of the cancer treatment and support team can confidently use emerging drug therapies for their patients because the system has a variety of features such as best practice guidelines, alerts on dosage, duplicate therapies, potentially dangerous drug interactions and drug allergies. This kind of decision support translates into savings for Canada’s healthcare system.

This is the future of health care in Canada.
Since 2001, Canada Health Infoway, with its public sector partners, has been working to deliver a safer and more efficient healthcare system through electronic health records (EHR). Considerable progress has been achieved since Infoway’s inception and promising advances are on the horizon. But Infoway’s funding has limitations. In the drive to create a pan-Canadian electronic health record, more needs to be done to create a healthcare infostructure across all points of care.

Recognizing this, in 2006, Infoway initiated a process to develop a comprehensive health IT strategy for Canada to guide the next 10 years of investment. As part of this process, McKinsey & Company was commissioned to provide an independent fact-based analysis as an input to the development of the plan. The consulting firm heard from deputy ministers and health region executives, hospital executives, clinicians, patients, health associations and government agencies.

What emerged was a vision for the next 10 years of investment in healthcare information systems. More importantly, this vision serves as a roadmap for advancing Canada’s healthcare infostructure and forms the strategic framework to guide Infoway’s investments and priorities in the years ahead. This publication provides a summary of 2015: advancing Canada’s next generation of health care.
The Canadian healthcare context

Few, if any, industries can match the size and complexity of Canada’s public healthcare sector. As a $100 billion-plus enterprise, Canada’s healthcare system would rank No. 10 on the Fortune 500. It is also one of the country’s most information-intensive industries. With almost 400,000 general practitioners, along with specialists, nurses, pharmacists, healthcare professionals, more than 700 hospitals and 1,600 long-term care facilities, managing health information across these points of care is a huge challenge.
Unlike other major enterprises, however, Canada has under-invested in the development of a strong infostructure necessary to support the delivery of quality health care and superior performance management. While Canada has not yet fallen behind other countries in putting advanced systems in place, relying on manual processes and general practitioners as primary repositories for health information can compromise the quality of health care.

This is not a problem that improves with age. Given the multiple points of care and the coordination of more than one billion service encounters each year, the potential for errors and missed opportunities in a largely manual system is staggering.

For the better part of this decade, managers and providers of our healthcare system as well as physicians and nurses have expressed their support for a standardized electronic health record for patients containing critical health information and connected across sources of care delivery. In their view, the electronic health record is fundamental to better healthcare quality and efficiency.

In 2000, as part of the First Ministers’ Agreement, political leaders identified the development of an interoperable electronic health record as a top priority in health care. This commitment was subsequently reinforced in the 2003 Accord on Health Care Renewal and the 2004 10-Year Plan to Strengthen Health Care. The Government of Canada established Canada Health Infoway with the mandate to “accelerate the development and adoption of modern systems of health information and to define and promote standards governing the health infostructure to ensure interoperability.” From inception to the end of 2006, the federal government had provided $1.2 billion in funding to Infoway for electronic health records, telehealth and public health surveillance solutions.
Canada’s public healthcare system is so huge it would rank No. 10 on the Fortune 500. It is more than three times the size of the country’s largest bank (compared to total revenue). Yet Canada under-invests in healthcare IT relative to other healthcare providers and information management industries.

### IT INVESTMENT LEVELS

<table>
<thead>
<tr>
<th></th>
<th>Annual IT spend</th>
<th>Per cent of total budgets/revenues</th>
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<tr>
<td></td>
<td>Average of other systems/ information-intensive industries</td>
<td>Estimated average Canadian healthcare IT spend</td>
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<tr>
<td>US HC providers¹</td>
<td>3.4</td>
<td></td>
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<tr>
<td>UHN³</td>
<td>4.0</td>
<td></td>
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<tr>
<td>UK healthcare⁴</td>
<td>4.0</td>
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<td>Calgary Regional Health Authority</td>
<td>4.5</td>
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<tr>
<td>Professional services</td>
<td>4.7</td>
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<tr>
<td>US banking/financial services</td>
<td>5.4</td>
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Canadians spend an estimated 4.3% of total healthcare revenues on IT annually, a 1.5-2.0% gap compared to the US banking/financial services industry.

¹ Operating and capital
² Gartner estimate as per cent of revenues; assume providers working on a non-profit basis
³ The University Health Network in Toronto, ON; spend is between 3.75 and 4.2%; on average; UHN operates slightly below 4%
⁴ Predicted to rise to 4% from 1.5% in 2004

Source: Information Technology Association of Canada, 2004; Gartner; interviews
“People who have never talked about an EHR in the past are talking about it now... the dialogue is active.”

– Regional CIO

The next stage of the journey

Consistent with Infoway’s mandate, Canada has made solid progress in building the interoperable electronic health record infostructure. While implementation is underway across the country and all jurisdictions have some components of the infostructure in place, Canada’s journey to establish a fully interoperable electronic health record is far from complete. To finish this journey, stakeholders point to four areas that require attention. The first is completion of the baseline electronic health record for 100 per cent of Canadians. The second requirement is a strong business case for ongoing support and secure funding. While the electronic health record is viewed as a necessary cost by politicians, they have not consistently articulated it as a specific policy priority. Another challenge is to bring key stakeholders – the public and front-line practitioners in particular – on board. Stakeholders also see it necessary to extend the interoperable electronic health record infostructure to address patient self-care, wait times and access, and chronic disease management.

Stakeholders expressed a strong need for an integrated plan or vision to guide the next stage of the infostructure journey.
Managing a large, complex, interdependent health system requires managing information flows as well as patient and resource flows. Without an integrated infostructure, Canada will struggle to meet the increasing demands of all its stakeholders to deliver superior care at a sustainable cost.

Stakeholders identified three critical business goals for this integrated plan.

The first goal is to continue to improve patient safety by eliminating errors caused by misinformation or delayed information and encouraging greater communication across the continuum of care.

The second goal is greater and more consistent access to health services through streamlined processes and flexibility to reinvest in patient care.

The third goal is improved system sustainability by driving performance management and lowering cost of care.

With these in mind, stakeholders proposed a vision for Canada’s health infostructure that comprises foundational elements, additional elements and system enablers.
1. Foundational elements

Steps include:

- Completing the baseline electronic health record infrastructure for 100 per cent of Canadians
- Enabling seamless communication across the continuum of care and into community-based settings. (The availability of electronic medical records, for example, would integrate primary care physicians and specialists into community care facilities)
- Extending order entry functionality and other decision-support elements in acute care settings to support delivery of high-quality care
- Empowering patients to manage their own care by creating patient portals with self-care tools and basic personal health information

Stakeholders consider completion of these foundational elements of the electronic health record imperative because they will generate significant benefits to the system and support future business needs.

2. Additional elements

Reflecting key public and healthcare provider demands, these elements enhance the baseline electronic health record:

- Ensuring health system preparedness to manage public risk, such as pandemics
- Improving patient safety
- Providing chronic disease management
- Facilitating access to patient care with reduced wait times
- Enabling patient self-care and health promotion
- Protecting the sustainability of the healthcare system through superior management

3. System enablers

The final components of the vision are the system enablers to leverage the benefits from investment:

- Establishing common data and communication standards
- Applying appropriate legislative frameworks for privacy and patient consent
- Redesigning the key business processes that need to be in place to realize the value from the infrastructure investment, along with change management efforts, education and training
**VISION FOR HEALTH IT IN CANADA**

**Overall business goals:**
- Better quality and safe patient care
- Greater, more consistent access
- More efficient use of health system resources

<table>
<thead>
<tr>
<th>Additional elements</th>
<th>Foundation for improving access, quality of care, and system productivity</th>
<th>Key enablers</th>
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<tr>
<td><strong>A</strong> Manage health system risks and crises (e.g., pandemics)</td>
<td>Complete baseline EHR infrastructure at a jurisdictional / health region level (DI, drug, lab, registries, and iEHR) for 100 per cent of Canadians</td>
<td>• Common data and communication standards</td>
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<td><strong>B</strong> Improve patient safety</td>
<td>Integrate primary care settings (electronic medical records in GP and specialist offices, and community and home care)</td>
<td>• Secure systems</td>
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<td><strong>C</strong> Deliver proactive chronic and episodic disease management</td>
<td>Enable advanced order entry and decision support in acute care settings (clinical information systems)</td>
<td>• Privacy and consent legislation</td>
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<td><strong>D</strong> Facilitate consistent access to patient care with reduced wait times</td>
<td>Empower patients to become more active partners in their own care through patient portals</td>
<td>• Regulatory harmonization</td>
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<tr>
<td><strong>E</strong> Enable advanced patient self-care and personal health promotion</td>
<td>Enable health system performance management to ensure sustainable patient care</td>
<td>• Redesigned supporting business processes, including education and training</td>
</tr>
<tr>
<td><strong>F</strong> Enable health system performance management to ensure sustainable patient care</td>
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Achieving the full health infostructure vision over the next 10 years will require a total incremental investment of $10 billion to $12 billion in capital and $1.5 billion to $1.7 billion in annual operating costs.

The upfront capital investment – approximately $350 per person – would bring Canada’s spending in line with comparable systems in the United Kingdom, the U.S. Department of Veterans Affairs, and Kaiser Permanante, a large American healthcare provider.

The elements of the vision are expected to deliver an estimated $6 billion in annual benefits.
Five key priorities

Compelling as this vision may be, given its wide scope, along with cost constraints and competing health investment demands, it is unrealistic to believe Canada can achieve full implementation by 2015. Recognizing this, stakeholders identified five priority areas for investment until 2015:

1. Ensure the baseline EHR and public health infrastructure are in place across the country.

2. Unlock additional quality and safety benefits by enabling decision support and communication across the care continuum.

By “finishing what we started,” 100 per cent of Canadians will have a baseline electronic health record containing registries with viewer functionality of core patient information, diagnostic imaging, laboratory, medication, hospital/clinical reports and immunization data. Not only does the baseline electronic health record support the overall vision, it is essential in supporting patient self-care and chronic disease management, improving patient safety and increasing access.

Stakeholders view this priority as necessary to realize the value of the baseline EHR and drive improvement in patient safety, care, and access. This includes implementing standardized electronic records in physician offices and physician order entry systems in hospitals. It also includes clinical information systems to provide advanced decision support, such as best practice guidelines and potentially dangerous drug interactions.

Priorities 1 and 2 represent the majority of expenditures and activities along with the change management challenges in achieving the integrated vision.
While individual efforts are underway in many jurisdictions, stakeholders believe a pan-Canadian approach would add consistency and allow jurisdictions to report and manage aggregated wait times by location, procedure and provider.

Wait times and chronic disease management – onerous health system needs – will be difficult to implement across Canada because of financial, technical and capacity constraints. Stakeholders agree the pan-Canadian goal is to demonstrate a solution for wait times and another for chronic disease management in different health regions to create a sound business case for future investment and test implementation and change management techniques.

The total cost of achieving these five priorities is estimated to range between $4.5 billion and $5 billion. Once implemented, the systems are expected to generate between $2.8 billion to $3.4 billion in annual benefits.

Recognizing the public’s increasing demand to patient empowerment, this priority calls for the creation of Internet portals which would allow individuals to access their own health data and take advantage of self-care tools.
“We can’t stay static. We need to ensure that the dialogue and momentum continue… and that we have a repository of expertise so we can share best practices across the country.”

– Deputy Minister

Five key priorities
“It’s important to have an integrated vision. We haven’t had one in the past, and we’re suffering for it now. We’re spending a lot of money to get our systems talking to each other – we could have avoided this.”

– Regional CIO

“We have a history of under-investing in healthcare IT in this country. We need to increase our investments so we can deliver the quality and service we aspire to. It’s what it takes to do business properly.”

– Regional CEO

“There are so many people involved in care that communication is a large challenge. We need information that is more easily shared among providers. It saves time and helps us deliver quality care to our patients.”

– Clinician
The future in focus

Canada has embarked on an ambitious journey to develop the information technology infrastructure necessary to modernize the country’s healthcare system. But as a sizable industry, the healthcare system requires a comprehensive view of, or vision, for the future. The stakeholders engaged in this project have created a workable plan that puts the future in progress. The vision for Canada’s health infrastructure balances priorities and ensures that systems developed are integrated and can work together to achieve lasting improvement in patient care, safety, access and healthcare productivity.
To read the full report, *2015: advancing Canada’s next generation of health care*, visit [www.infoway-inforoute.ca](http://www.infoway-inforoute.ca)

Ce document est également disponible en français