

The Electronic Health Record: A National Endeavour or Bureaucratic Nightmare?

by Gordon Atherley

Canada Health Infoway, an independent, not-for-profit federal foundation created by the Liberal government in 2000 to work on the creation of electronic health records for all Canadians, recently released its corporate business plan for 2005-06. The plan focuses on accelerating the implementation of electronic health records across Canada, though in a manner somewhat different than previously proposed. The business plan, which could cost Canadians an additional \$9 billion if the federal government bends to Infoway's desires, is one that is much less sound than it appears at first glance.

Infoway emphasizes *interoperability*. This is the capability of computers to exchange data with each other when the computers and their software are standardized in the ways they import and export data. An undoubted technical efficiency, interoperability raises difficult issues that could have a major impact on

health care and the patients who use it: whether people want their personal data widely shared, what uses will be made of it, and whether it's adequately protected against malicious attacks and even crime (Atherley, 2005a; 2005b).

Infoway's business plan foresees a network of interoperable electronic health record *systems* across Canada that would connect clinics, hospitals, pharmacies, and other points of care. Infoway believes that, through wide patient-data sharing, such a network will help improve Canadians' access to health care services, enhance the quality of care, and make the health care system more productive. Infoway's role in this electronic health record world would be, as now, the channel through which federal funds would flow and, additionally, the setter of national standards for interoperability (which would presumably include standards for what data was included, how it was included, and by whom it could be accessed).

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According to Infoway's CEO, Richard Alvarez, "One of the key impediments [to implementing its business plan] is money." Infoway puts the total price tag at \$10 billion, and notes that to date it has received \$1.2 billion, just a tenth of the funds required (Lysecki, 2006).¹

With a new federal government in power, Alvarez reportedly hopes that e-health initiatives remain near the top of the governing party's agenda (Lysecki, 2006), which raises important questions of health policy:

- Should the federal government be involved in health care information technology (IT) for a program that is so thoroughly provincial in its focus and oversight, and is, according to the evidence available, too centralized already? (Harris and Manning, 2005).
- If the federal government decides it must get involved, despite sound opinion to the contrary, is it a good idea to funnel federal money to provincial governments and provincial health care facilities through a quasi-non-government federal foundation?
- Relative to all the other priorities in health care, is an additional federal "investment" of \$9 billion supported by a defensible business case?

The Infoway business plan bases its quantitative business case on an Infoway-commissioned report from US consultants Booz Allen Hamilton (Canada Health Infoway, 2005b). The report estimates acquisition costs for a national electronic health record system at \$10 billion, with the cost of complete implementation ranging from \$7.9 to \$16 billion. The benefits, which are constructed on the assumption of coverage for 100 percent of the population and an enhanced mandate for Infoway, are estimated to be \$6.1 billion per year. Nota-

bly, Booz Allen Hamilton warns that its data are "sophisticated extrapolations" because no nation has yet completed "an implementation of comparable scale or technical sophistication" (Canada Health Infoway, 2005c).

Independent analysis of the costs and benefits is required not only because of Booz Allen Hamilton's cautions but also because of the striking absence from its analyses of contrary evidence, especially relative to the qualitative benefits claimed (Canada Health Infoway, 2005c). Infoway's own claims for the benefits of electronic health record solutions, which are indeed impressive, need particular scrutiny.

For access, says Infoway, there will be improved wait times and capacity to deliver needed services, patient access to the electronic health record, and greater access to health care services in the home and community. For quality, there will be fewer medical errors and adverse drug events, greater effectiveness in achieving desired health outcomes, and more informed prescribing and clinical decision-making. For productivity, there will be reduced administrative time and costs and complete patient information for sharing across the continuum of care.

International experience indicates that such benefits are not always obtained easily or even at all. For example, a review of IT projects and evaluations in the UK found "a surprisingly small amount of convincing evidence that information and communications technology can deliver greater public value in health" (Bend, 2004).

Since 2004, the UK has experienced problems with its health care information technology. In January 2006, United Press International reported that the UK's "colossal" \$US10.9 billion electronic

data initiative, expected to be complete by the end of the decade, is dogged by concerns over patient privacy, as is the move to paperless medical records in the United States (Strange, 2006). And concerns over privacy are not unique to the US and the UK. In Australia as early as 2000, privacy issues were recognized as powerful challenges to electronic health records systems (NSW Ministerial Advisory Committee on Privacy and Health Information, 2000). Privacy and security deserve careful consideration for any Canadian initiative.

More insights come from the US, where Kaiser Permanente, a large and respected private health insurer, tried in Hawaii to implement a single electronic medical record system (Scott *et al.*, 2005). The Hawaii implementation, which covered some 250,000 patients (a number far fewer and theoretically much more manageable than the number of Canadians or Britons to be covered), fell well short of success:

The reasons put forward for the failure of the implementation will come as no surprise to those with experience of working in health informatics: the initial decision making was seen as remote from the clinical user base; resistance was increased by poor product design; clinical productivity was reduced (although this had been planned for in the implementation, many staff felt that they would be unable ever to return to their previous levels of performance); roles and responsibilities were unclear and were constantly changed... (Teasdale, 2005)

Notably, the Infoway business plan takes no evident account of problems with health care IT abroad. Moreover, though Infoway's account of electronic health records salutes security and privacy, it has too little to say on current

and growing challenges to them. Loss of patients' trust resulting from insufficient attention to privacy and protection of information would be a major blow to any health record system and perhaps even to health care itself.

A more central concern with Infoway's plan, beyond issues of proclaimed benefits and lack of consideration of problems experienced elsewhere, is whether or not a federal quasi-non-governmental foundation should be involved at all in the implementation of information technology systems for health care, instead of a bottom-up approach that responds to on-the-ground needs.

The implementation of an electronic health record system, whether at the facility, regional, or provincial level, will require much more than the creation of an IT infrastructure and purchase of computers. Large-scale IT projects such as an electronic health record system require major organizational transformation because they affect the daily work of a significant number of participants—especially if the grand plan is to link each system with every other system. Such change is not easy, and is increasingly difficult to handle as the scope of implementation grows. Change in a small office is more easily handled than change in a large organization. Regional change is significantly more difficult, and so on.

It is clear that implementing information technology effectively will mean managing complex organizational change. The evidence suggests, given the difficulties of managing this task in general and the Ontario government's experience with IT projects in particular (Government of Ontario, 2005), that the undertaking of an interoperable electronic health record should be managed at the lowest level possible. Implementation will require discretion in priorities, close control over the applica-

tion of resources, and careful involvement of health care personnel and organizations—all tasks that are best handled from the bottom up. If interoperability does indeed confer the benefits Infoway proclaims and can reliably offer the necessary ongoing protections, then it would automatically be in the best interests of these organizations and facilities to ensure that their record systems are able to communicate effectively with others²—a task best handled not by governments or federal agencies, but by private-sector actors who are well experienced in dealing with such issues.

Given the experience of grand IT plans generally as well as in health care—cost overruns, failures of varying degrees, lack of key-user acceptance, and concerns about productivity, security, and privacy—debate is surely essential prior to the commitment of any additional taxpayer funds to Infoway's concept of interoperable electronic health records systems. Does it tangibly and cost-effectively assist Canada's search for better health care services, or is it yet another bureaucratic burden on health care and an additional drain on public monies?

The debate, which should be widely accessible and publicly intelligible, ought to exercise critical faculties informed by thoroughly examined experience in Canada and abroad.

It should begin by positioning the Infoway Corporate Business Plan as marketing material for a product that claims to possess sweeping benefits. The debate and discussion should then proceed to provide the due diligence that Infoway omitted.

Notes

¹Infoway received \$1.2 billion in total funding from the Government of Canada in three

phases (Canada Health Infoway, 2005a):

- ♦ \$500 million in March 2001 to develop and ensure the use of common, pan-Canadian information standards and compatible communications technologies;
- ♦ \$600 million in July 2003 as a result of consensus by the First Ministers in support of a country-wide electronic health record (EHR) as well as support for Infoway resulting from both the Romanow and Kirby reports advocating a pan-Canadian EHR. This amount also included an additional mandate to develop Telehealth systems (i.e., the use of telephones and videoconferencing to support clinician-patient interactions at a distance); and
- ♦ \$100 million in June 2004 for the development of a pan-Canadian Health Surveillance System, partially in response to the SARS crisis (the crisis revealed shortcomings in the data systems of public health departments).

²While the drive towards more efficient and cost-effective delivery of services is apparent in many of Canada's health facilities, hospitals are likely to implement fewer cost-saving/efficiency-enhancing/patient-focused technologies than is optimal simply because of the incentives engrained in the current budgetary system (Esmail, 2004). A change in the way hospital care is financed in Canada, from global budgets to an output based remuneration system, and the introduction of private competition into the hospital care sector would lead to more informed decision making with regards to the efficacy of implementing electronic health record systems, either interoperable or not (Esmail, 2004; Clemens and Esmail, 2002a; 2002b).

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