Name Game: Canada's Blueprint for a Nationwide Master Patient Index

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Electronic health records operate on a basic but crucial requirement: accurately identifying the patient and linking to his or her complete medical data. Canada aims for a nationwide solution to a universal challenge.

Public and private organizations worldwide are navigating the transition from paper-based to electronic health information management. In Canada, the government has turned to Canada Health Infoway, an independent, publicly funded organization, to make strategic investments in electronic health record (EHR) projects that can be replicated throughout the country. Canada plans to have half the country using interoperable EHR systems by 2010.

One of Infoway's immediate tasks is to enable a fundamental, crucial function of electronic health information systems everywhere: the ability to accurately identify patients, guarantors, physicians, and others seeking, providing, and insuring care. Without the ability to uniquely and continuously identify patients and link their medical records from multiple systems and providers, it is impossible to provide physicians, clinicians, and researchers with an on-demand, complete health history for a given patient. The benefits of the EHR—higher quality of care, increased patient safety, and greater cost efficiency—begin with accurately linking an individual's identifier in a secure and private electronic environment.

In Canada the solution is the client registry, more commonly known as an electronic master person index (EMPI) in the US. As organizations continue to create and merge integrated regional electronic delivery networks, there will be a pressing demand for EMPIs. However, though the need is absolute, hard and fast guidelines for creating and implementing a strategy of this magnitude are lacking.

Standards for a Nationwide Solution

That's why Canada's experience is worth watching, especially by HIM professionals in the US, where the government recently announced its own framework for providing each citizen with an interoperable EHR in 10 years. Many of Canada's goals closely resemble the goals and strategies outlined in the US report "The Decade of Health Information Technology: Delivering Consumer-centric and Information-rich Health Care," authored by the US secretary of Health and Human Services and the national coordinator for health information technology.

The Canadian Institute for Health Information (CIHI) conducted research into the feasibility of a national unique patient identifier, and while the research was specific to Canada, the issues CIHI identified apply to virtually any region or country undertaking an EHR initiative. CIHI found that:

- Multiple identifiers were assigned to a single patient
- A common identifier scheme was lacking
- Standards for matching patient data were lacking

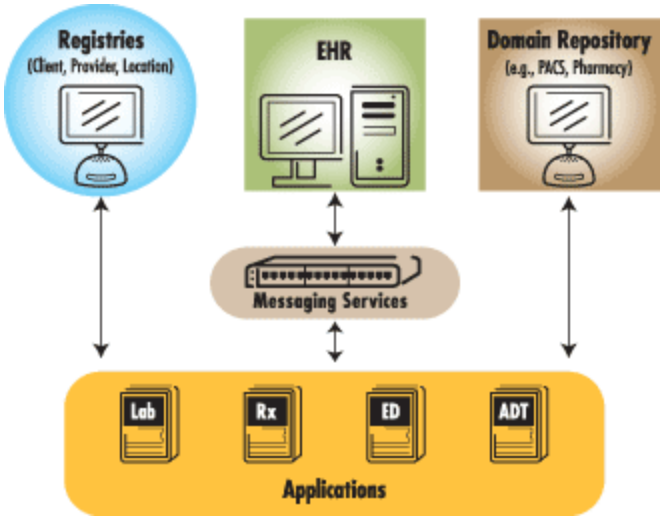
In response, Infoway set the following goals for Canada's client registry:

1. Establish a nationwide patient identity solution to support the clinical objectives of the national EHR initiative
2. Provide a provincial client registry deployment to create and maintain a single provincial view of the patient
3. Allow for a provincial client registry to potentially communicate and share patient identifiers across provinces
4. Support a national view of the patient without the burden of a national client registry

To achieve these goals, Infoway has defined the following principles for client registry investment and deployment. Provincial and territorial projects supported by Infoway must:

- Be vendor independent
- Be based on a single specification and message standard
- Adopt EHR interoperability specifications wherever available
- Provide support for current HL7 standards
- Be scalable to support significant adoption and growth within Canadian jurisdictions
- Integrate with other Infoway-funded program initiatives

The client registry will link all identifiers within and across all applications—regardless of possible disparity—to provide a complete patient care imprint at any point of service in a region, province, or territory.



The client registry, or electronic master person index, maintains a patient's demographic information from multiple systems. It uses the information to identify patients and link their medical records across multiple applications, clinical systems, and providers.

A patient may visit several different facilities in the course of receiving care, such as a hospital, physician office, oncology center, outpatient surgery suite, and radiology imaging center. Thus, it is not unusual for a patient to have clinical information from these different locations and systems together so that any care provider can get the complete clinical view of a patient. The registry tells the EHR which medical records and clinical information pertain to the same person.

Maintaining Quality, Flexibility, and Security

Infoway works as a catalyst throughout Canada, investing in local projects and applying the experience toward nationwide models. “Leveraging the investments we’ve made in successful projects, we’ve acted as a facilitator—negotiating bilateral arrangements that bring value to our provincial and territorial partners and offer them attractive conditions to reuse proven solutions,” says Richard Alvarez, president and CEO of Infoway, in a press release.[1] In the case of client registries, healthcare facilities can employ software licensed through an agreement negotiated by Infoway.

Several provinces are already deploying the client registry software, including Capital Health, a regional health authority centered in Edmonton, Alberta. “Our patient registry accurately matches and instantly links 5.5 million patient charts from existing registration systems across our region,” says Capital Health president and CEO Sheila Weatherill.[2] Capital Health plans to have information linked from all points of service regionally, provincially, or nationally within the next three years.

The Newfoundland and Labrador Center for Health Information (NLCHI) is collaborating with Infoway to create an electronic client registry that will serve as a model for other jurisdictions. Other provinces are in the early planning and near-implementation stages.

Infoway has identified three critical issues in the overall software implementation:

Data Integrity. Addressing data quality in all sources is crucial to a successful deployment of any interoperable or longitudinal application. It is common for users of these applications to expect that all current and historical data for any given patient be complete and accurate. This expectation can only be achieved through data linking that uses sophisticated algorithm software to accurately link all identifiers for a patient, regardless of the extent of data variation present. Today's linkage technology does not need a national patient identifier, and in fact, as the US and Canada illustrate, there are many reasons not to have a national identifier.

Interoperability. The registry or EMPI technology must offer flexibility and configurable architecture that interfaces with all applicable, and sometimes disparate, source systems with ease and speed regardless of the volume of patient data. This is key in reducing implementation timelines and costs. It is important to implement solutions that are flexible to meet the varying business objectives and environments across communities and states. The technology must link or point information in real time to the actual data rather than linking actual patient health records (an important requirement of both the Infoway business plan and the US EHR framework). Technology must also support interoperability, whereby it can:

- Poll other client registries for identifiers at the time of registration
- Broadcast new identifiers to other registries where that person lives
- Provide batch updates of identifiers to other registries to allow for reducing backlog as interoperability is rolled out

Security and Privacy. The registry must ensure that all data stored within the application is protected from fraudulent or unauthorized use. The technology must allow for unlimited levels of security, which will be driven by processes established within each entity. The registry technology must also protect the confidentiality of patient data, particularly as information sharing expands to include neighborhood clinics, neighboring regions, community-based initiatives, or large managed-care groups.

Accurate and on-demand person identification is a critical component of any interoperable electronic health information infrastructure. No matter where an EHR system is implemented, it requires the ability to accurately identify customers. Having accurate person identity data enables healthcare organizations to deliver high quality care, decrease medical errors, increase customer satisfaction, and reduce healthcare costs.

Notes

1. Canada Health Infoway. "Canada Health Infoway Signs Arrangement with Initiate Systems for Client Registry." Press release, May 9, 2004. Available at www.infoway-inforoute.ca.
2. Ibid.

Reference

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