Canada Health Infoway

EHR’s in the Canadian Context

June 7, 2005
Mike Sheridan, COO
Canada Health Infoway
Healthcare Renewal In Canada

National Healthcare Priorities


- Improving access
- Wait time reduction
- Health human resources
- Home care
- Primary care reform
- National pharmaceuticals strategy
- Public health
- Health innovation
- Aboriginal health
- Accountability

The evidence demonstrates that an interoperable pan-Canadian electronic health record will significantly reduce the number of deaths and injuries due to medical errors

Booz Allen Hamilton, EHR ROI, March 2005
Healthcare Renewal In Canada

National Healthcare Priorities

Attempting to Address Canada’s Healthcare Challenges

<table>
<thead>
<tr>
<th>For Every ....</th>
<th>.... in Canada</th>
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</thead>
<tbody>
<tr>
<td>1000 hospital admissions</td>
<td>75 people will suffer an Adverse Event</td>
</tr>
<tr>
<td>1000 patients with an ambulatory encounter</td>
<td>20 people will suffer a serious Adverse Drug Event</td>
</tr>
<tr>
<td>1000 patients discharged from hospital</td>
<td>90 people will suffer a serious Adverse Drug Event with the drugs received on discharge</td>
</tr>
<tr>
<td>1000 Laboratory tests performed</td>
<td>up to 150 will be unnecessary (range 50-150)</td>
</tr>
<tr>
<td>1000 Emergency Department visits</td>
<td>320 patients had an information gap identified, resulting in an average increased stay of 1.2 hours</td>
</tr>
<tr>
<td>Study of 168 traditional medical records</td>
<td>81% lacked the information required for patient care decisions</td>
</tr>
<tr>
<td>1000 women at risk of cervical cancer</td>
<td>300-400 are not screened</td>
</tr>
<tr>
<td>1000 Canadians recommended for influenza protection</td>
<td>370-430 are not vaccinated</td>
</tr>
</tbody>
</table>
Electronic Health Records

The Benefits of Electronic Health Records and Infoway’s Priorities

**Infoway**
Electronic Health Record Program

- Demographics
- Diagnostic Images
- Laboratory Results
- Drug Profile
- Clinical Reports
- Immunizations
- Telehealth

**Benefits = $30 million per year**

- Medical Transportation Savings = $30 m/yr

**Benefits = $3.4 billion per year**

- Inpatient ADE = $1.6 b/yr
- Ambulatory ADE = $1.4 b/yr
- Post Discharge ADE = $0.4 b/yr

**Benefits = $1.6 billion per year**

- Diagnostic Imaging Efficiencies = $1.1 b/yr
- Laboratory Test Efficiencies = $0.5 b/yr

**Access**

- Availability of Services
- Ability to Access Services
- Consumer Participation

**Quality**

- Safety
- Effectiveness
- Appropriateness

**Productivity**

- Efficiency
- Continuity of Care

Sources
2. Booz Allen Hamilton – EHR ROI Model
3. Courtyard Group – DI ROI Model

- Improved access by rural/remote communities to health services
- Reduced patient transfers from rural/remote communities
- Reduced physician office visits due to drug complications
- Reduced emergency department visits due to drug complications
- Improved patient drug compliance
- Increased patient access and use of their health record

- Decreased medical errors
- Improved radiologic interpretation of digital images
- Decreased adverse drug events
- Increased speed in detecting infectious disease outbreaks
- Decreased information storage and management costs

- Faster access to patient information throughout the system
- Reduced duplicate tests and prescriptions
- Decreased costs
Canada Health Infoway

Mission

- To foster and accelerate the development and adoption of electronic health information systems with compatible standards and communications technologies on a pan-Canadian basis, with tangible benefits to Canadians. To build on existing initiatives and pursue collaborative relationships in pursuit of its mission.

Vision

- A high-quality, sustainable and effective Canadian health care system supported by an infostructure that provides residents of Canada and their healthcare providers timely, appropriate and secure access to the right information when and where they enter into the healthcare system. Respect for privacy is fundamental to this vision.

Goal

- Infoway’s plan is to have an interoperable electronic health record in place across 50 percent of Canada (by population) by the end of 2009.
## Canada Health Infoway

### The Strategic Investor Role

<table>
<thead>
<tr>
<th>Funder</th>
<th><strong>Strategic Investor</strong></th>
<th>Intervener</th>
<th>Developer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>“Fund &amp; ignore”</strong></td>
<td><strong>“Invest, advise &amp; monitor”</strong></td>
<td><strong>“Work alongside &amp; take over if needed”</strong></td>
<td><strong>“Write code &amp; build modules”</strong></td>
</tr>
<tr>
<td>Grants funding</td>
<td>Invests with Partners</td>
<td>Invests with partner</td>
<td>Invests independently</td>
</tr>
<tr>
<td>Is uninvolved in project execution</td>
<td>Involved in project planning</td>
<td>Involved with partner in planning, and execution</td>
<td>Engages potential partners in needs analysis and testing</td>
</tr>
<tr>
<td>Checks on status of phase-based deliverables</td>
<td>Monitors progress of projects and quality of deliverables</td>
<td>Ensures success through ongoing, active participation or intervention when something goes wrong</td>
<td>Aims for speed and success by working without a partner or on behalf of a future partner</td>
</tr>
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*Gated funding approach allows management of risk*

*Infoway also provides leadership in setting the strategic direction and standards for EHR deployment across Canada*
Nine Strategic Investment Programs

- **End user Adoption and Setting the Future Direction**
  - Innovation & Adoption - $60m

- **The Electronic Health Record**
  - Interoperable EHR - $175m
    - Drug Information Systems $185m
    - Laboratory Information Systems $150m
    - Diagnostic Imaging Systems $220m
    - Public Health Systems $100m
    - Telehealth $150m

- **Domain Repositories and Healthcare Applications**
  - Client, Provider and Location Registries - $110m

- **Cross Program Components**

- **Architecture and Standards**

- **Infostructure** - $25m
Canada Health Infoway

Bringing Shared Accountability to the Health ICT Investment

The Canada Health Infoway model provides

- **National Agenda** – leveraging what is in place in all jurisdictions through a “network of networks”.
- **Shared Governance** – joint governance of large shared investment in a pan-Canadian electronic health record system.
- **Collaboration** – an environment that facilitates participate together as partners.
- **Shared Capitalization** – on a shared investment between Infoway and the jurisdictions.
- **Managed Financial Risk** – minimizes the financial risk of very large ICT investments through joint planning procurements, standards and gated funding.
- **Direct Business Benefits** – an investment model that demands the benefits realized from every project.
- **Pan-Canadian Interoperability** – common architecture and internationally accepted interoperability profiles and standards that ensure interoperability.
Seven Business Strategies

Targeted Programs
Leveraged Investment
Collaboration with Health Ministries and Other Partners
Joint Investments with Public Sector Partners
Focus on End-Users
Alliances with the Private Sector
Measure Benefits and Adjust
Key Definition: EHR

An Electronic Health Record (EHR) provides each individual in Canada with a secure and private lifetime record of their key health history and care within the health system. The record is available electronically to authorized health care providers and the individual anywhere, anytime in support of high quality care.

This record is designed to facilitate the sharing of data – across the continuum of care, across healthcare delivery organizations and across geographies.
Healthcare Provider’s View of EHR

EHR Solution (EHRS)

- Client Registry
- Provider Registry
- iEHR
- Domain Repository (Lab)
- Domain Repository (Pharmacy)
- Domain Repository (Diagnostic Imaging)

Common Services

Communication Bus

EMR

Applications

Public Health
Tele-health

Patient Info
- Patient History
- Drug Profile
- Laboratory
- Diagnostic Imaging

HIAL
What Canadians Think About EHRs

Overall, 85% of Canadians support the development of electronic health records, a very high level of endorsement

Specifically, Canadians strongly believe that electronic health records will improve the ability of healthcare providers to provide quality care

Canadians say the following will make them feel more comfortable about electronic health records

- Find out when and who accessed record 71%
- Serious criminal offense for unauthorized access 64%
- Clear and accessible privacy policy 61%
- Ability to access, verify and correct record 57%
- Supported by their doctor 57%
The Privacy Challenges for Interoperable EHR Solutions

Ensure solutions support privacy and IT security requirements and features between multiple sites and persons

- Consent representation and mechanisms
- Authentication and authorization techniques
- Role based security and privacy
- Contextual access criteria to data
- Trust models between systems

Enabling will be based on

- Use of Privacy Enhancing Technologies and Security Technologies

Appropriate use of IT will make personal health information stored in an EHR secure and private, while increasing the ability to have authorized access to share data for treatment
Infoway Privacy Initiatives

Developing the conceptual architecture for privacy, security and consent in support of the interoperable EHR

- Consultations with a broad group of stakeholders
  - Providers of care
  - Health ministries and health regions
  - Privacy commissioners
  - Vendors
  - Experts

Advisory Commission on Information and Emerging Technologies (ACIET)

- Input on privacy and confidentiality policy framework
- Consent management architecture and costing

Privacy in our project investments

- Privacy impact assessments
- Privacy audits
Moving Forward …

If properly secured EHR systems offer the potential of increased privacy and confidentiality

- Automate audit and alert capabilities
- Limit who can access what, when
- Automated consent validation and management
- Limit modification of EHR data to authorized personnel

Technology exists today to enforce privacy principles

Designing privacy into the solution will enhance

- Adoption
- Trust
Challenges:

● Progress has been slower than planned

● Ability of some jurisdictions to support several programs

● Adoption / Acceptance by healthcare professionals

● Capitalization insufficient to achieve all objectives