Future Directions for Digital Health in Canada
Paths to Better Health

- **1998** - The Canada Health Infoway report set out a vision for a pan-Canadian health infostructure.

- **2000** - The Health Accord set the stage for the formation of Canada Health Infoway and $500M in initial funding for electronic health records.

- **2001-2004** - Canada Health Infoway created; $1.2B in funding; country-wide consultations; focus was on EHR (DI, lab, drug), telehealth and public health.

- **2006** - Vision 2015; country-wide consultations; included investment in areas beyond EHR and telehealth such as EMR, CPOE, Wait Times, Chronic Disease Management and Consumer Health.

- **Now 2013** – the Federal Government has now provided $2.1B in capitalization; significant progress has been made but still a lot is left to be completed. A revised Strategic Plan as been released.
The Vision since 2001

A high-quality, sustainable and effective Canadian healthcare 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.
What is the Right Information?

**General Practitioner**
- Laboratory results
- Drug profiles
- Clinical reports

**Emergency Physician**
- Medication history
- Clinical history

**Radiologist**
- Diagnostic images
- Clinical reports

**Nurse**
- Medication schedule
- Treatment schedule

**Pharmacist**
- Prescriptions
- Allergy information
- Drug profiles

Patient demographic information, laboratory results, prescriptions and medication profiles, images, and clinical reports forms a core requirement.
The Current Path...

• Canada is working to digitize paper-based health records across the country and create a network of health information systems.

• Connecting to the network will allow your authorized health care providers to securely access your health record history.

• Once connected, your care providers will be able to share an accurate and complete record of your critical health information in a timely way.

• Equipped with the right information, providers enhance their clinical knowledge, make better informed decisions and improve care outcomes for all Canadians.
Supported by a Technology Blueprint

Demographic Data
Electronic Health Record Data
Personal Health Data

Radiologist
Hospital Physician/Provider
Community Physician/Provider
Pharmacist
Public Health Provider
Consumer

Data exchange and data sharing
The change model and the associated tools must be applied to all facets of a national e-health initiatives in order to create value.
Over 500 Stakeholders Were Consulted

Stakeholders representing consumers (37%), clinicians (25%), government & administrators (30%), vendors (3%) and others (5%) from across Canada were consulted between October 2011 and February 2012.

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<td>14 one-on-one/small group meetings with jurisdiction Deputy Ministers of Health and key representatives.</td>
<td>39 stakeholder focus groups with individual Canadians and clinician groups</td>
<td>10 regional stakeholder forums were held in Vancouver, Edmonton, Winnipeg, Toronto, Montreal and Halifax, including sessions with the Federal Government, National Associations, the Privacy Forum and Government/RHA CIOs.</td>
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E-Visits as an Example

*Straightforward technical solutions but many questions to be resolved*

- Who does the patient contact?
- How is patient confidentiality ensured?
- How is the clinician compensated for his/her time?
- How can s/he fit answering emails into an already busy clinical day?
- What happens if a patient emails about an emergency?
- How does the correspondence become part of the patient’s health record?
The Right Information
Consists of a integrated and linked structured data and textual information

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Leveraging the Existing Investments

### Hospital Acquired Infection Rates

**Ventilator-Associated Pneumonia**

- 2005: 10.5
- 2006: 3.7
- 2007: 2.3

**Central Line Infection**

- 2005: 7.6
- 2006: 5.4
- 2007: 3.4

Source: New York City Health and Hospitals Corporation.
Powered by Five Opportunities for Action
Opportunities to Improve the Patient Experience

- Support New Models of Care
- Improve Patient Safety
- Enable a High-Performing Health System
- Provide Easier Access
- Bring Care Closer to Home
Bring Care Closer to Home

**What is it?**
Using mobile patient monitoring solutions, coupled with other consumer health solutions, seniors and other chronic disease patients will be able to monitor their own health conditions from their home or within their community.

**What does success look like?**
As a consumer, I can monitor my health condition, either at home or within a few minutes of where I live.

**What types of key enablers need to be in place?**
Patient monitoring, personal health records and other consumer health solutions
Provide Easier Access

What is it?
Assist Canadians to have a more convenient health care experience, with reduced wait times, through the use of e-health solutions to better interact with health care team and navigate the health care system.

What does success look like?
• As a consumer, I can book appointments, communicate with my provider and have my medications renewed, all online.
• As a consumer, having somebody to help me navigate the health care system means I no longer feel lost.

What types of key enablers need to be in place?
e-Visits, e-Scheduling, e-RxRenewal, e-Navigation
Support New Models of Care

What is it?
Continue to expand the deployment and use of EHR, EMR and other point-of-care solutions into all care settings to enable person-centred care and continuity of care, including, but not limited to, chronic disease management.

What does success look like?
• As a consumer, I can see that all my care providers are working together to seamlessly manage my care.
• As a provider, I now have the timely information I need to provide quality care as well as to communicate and collaborate with the rest of the health care team.
• As government and as an administrator, we can support changes in scope of practice to enable new ways of providing care.

What types of key enablers need to be in place?
Electronic medical record, electronic health record, referral management, discharge summaries, care transitions, chronic disease management, telepathology

Note: Enhancement /Upgrade of Hospital, Long Term care and Home Care Information Systems will be needed to support the above initiatives.
Improve Patient Safety

**What is it?**
Accelerate the deployment of medication management to reduce preventable medical errors. This may require the enhancement and/or replacement of many aging hospital information systems in the acute care setting.

**What does success look like?**
- As a consumer, I am comfortable that the medications I am taking are safe.
- As a provider, I am more confident now that my prescribing practices are evidence-based and safe.
- As an administrator, I can see a reduction in preventable adverse drug events and improvements in process efficiency.

**What types of key enablers need to be in place?**
e-Prescribing in primary care, CPOE and closed-loop medication management in acute care, medication reconciliation across transitions of care

Note: Enhancement of Hospital Information Systems will be needed to support the above initiatives
Enable a High-Performing Health System

What is it?
Accelerate the deployment of analytics solutions to support the creation of information and evidence for clinical and administrative decision making in the quest to create a high-performing health system across Canada.

What does success look like?
• As a provider, I have the evidence to support me using best practices.
• As an administrator, I have the information necessary to monitor key indicators, such as unnecessary hospitalizations, and put in place actions to prevent them from happening.
• As a government, we can determine what services give us value for money and allocate future funding accordingly.

What types of key enablers need to be in place?
Clinical analytics and evidence development and use for clinicians; analytics supporting LEAN, population health, research, planning, operations and evaluation for governors and administrators
Opportunities for Action

**Bring Care Closer to Home**
- Patient Monitoring
- Personal Health Record

**Provide Easier Access**
- e-RxRenewal
- e-Visits
- e-Scheduling
- e-Navigation

**Support New Models of Care**
- Ambulatory EMR
- Community-based EMR
- Electronic Health Record
- Discharge Summaries
- Referral Management
- Chronic Disease Management
- Care Transitions
- Telepathology

**Improve Patient Safety**
- Hospital Medication Management
- Medication Reconciliation
- e-Prescribing

**Enable a High-Performing Health System**
- Clinical Analytics
- Health System Analytics
- Public Health Surveillance
- LEAN

**Foundational Clinical Systems**
- Hospital Information System
- Home Care / Long Term Care Systems
Infoway Investment Focus

Bring Care Closer to Home
- Patient Monitoring
- Personal Health Record

Provide Easier Access
- e-RxRenewal
- e-Visits
- e-Scheduling
- e-Navigation

Support New Models of Care
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Foundational Clinical Systems
- Hospital Information System
- Home Care / Long Term Care Systems
Foundational Clinical System Financing

- 97% of hospitals at Stage 3 or lower
- At the current rate of investment it will take over 20 years to implement CPOE in Canada
- If jurisdictions want to meet their 5-10 year planning priorities then something has to change
Foundational Clinical System Financing

• There is both a quantitative and qualitative business case to invest in replacing or upgrading hospital information systems.

• To move from stage 3 to stage 4/5 with public or private financing will increase the IT budgets of RHA/hospitals from 2% to 4% of the total annual organization budget (based on 1,000 beds)

• However, to unlock public or private capital will require greater levels of rigor and discipline in IT projects, especially the implementation/change management portion of the project. Further, a disciplined approach to benefit realization needs to be developed for health IT projects for funders to get really interested

• There is no reason P3s cannot work for health IT projects, however there is little or no experience to draw on. Therefore, the first step would be to engage champions and complete a couple of demonstration projects to start to develop some best practices.
Infoway Investment Focus

Bring Care Closer to Home
- Patient Monitoring
- Personal Health Record

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Foundational Clinical Systems
- Hospital Information System
- Home Care / Long Term Care Systems
2010 Investments

**Community-Based EMR**

- 56% of physicians using an EMR, up from 37%. Core functions + 40% now printing prescriptions; most receiving lab results.

- Funding in place to achieve up to 65% adoption and use

- 20 products have been upgraded, but only in part – privacy, security and interoperability

- ePrescribing, plus access to the drug profile from the EMR is only just starting with QC leading

- At the same time, some mature provincial EMR programs are ramping down
2010 Investments

**Ambulatory EMR**

- EMRs used by physicians, nurses and support staff in out-patient clinics – 2.5 users per seat.
- Infoway is just completing a national Ambulatory EMR survey conducted by Harris Decima
- Indications are 32% adoption and use currently
- Funding in place to achieve up to 50% adoption and use
2010 Investments

**Consumer Health**

- Access to personal health records, evisits, escheduling and eRX renewal and remote patient monitoring
- 11 projects across the country. Alberta (MyHealth.Alberta.ca) the only province-wide initiative at this time. The rest are regional/local in nature.

**Innovation**

- 20 projects across the country
- Focus has been on CPOE, eReferral, Mobile in clinical settings, Synoptic Reporting, Capacity Planning, Nursing Assessment Tools, Infection Control.
- A number of *Challenges*
e-Connect Impact Challenge

Challenging Canadian health care providers to use digital health to accelerate the connections among providers and patients.

- Registration opens October 24, 2013
- Main award phase: January 1, 2014 to March 31, 2015
- Over $1 Million in awards available
- Four Challenge categories under two streams:
  - Consumer Stream categories:
    - e-Visits
    - Prescription e-Renewals and e-Refills
  - Clinical Stream categories:
    - e-Request for Services
    - e-Reports of Services

http://imaginenationchallenge.ca/
2013 Investments – Soon to be Announced

**Consumer Health**

- Access to personal health records, evisits, escheduling and eRX renewal
  - 1 or 2 more province-wide initiatives, plus smaller demonstration projects

- Remote patient monitoring – targeted total patient base of ~100,000 patients/yr Canada-wide.
  - Immediately looking to support up to 5,000 patients, based on jurisdiction readiness and 12-24 month growth.
Key Takeaways

• The Opportunities for Action point to where health organizations across Canada will need digital health solutions.

• Infoway’s investment focus will continue to be in interoperable EMR-EHR solutions on the clinical side and remote personal health monitoring, personal health records and other consumer health solutions on the patient side. Lots of immediate opportunity here.

• Infoway will look to fund demonstration projects in the other areas of the Opportunities of Action. Great zone for new products and players.

• The upgrade/replacement of hospital information systems is an issue if Canada wants to improve HIS maturity of use, specifically CPOE and closed loop medication management.

• The use of P3s is one option (not the only one), however the ehealth industry will need to “up its game” before this will become a reality.
Thank you