Canada's e-health Journey

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Canadian Context

Governance of Canada's health care: a shared accountability

- Federal government sets and administers national principles
- 13 provincial/territorial governments plan, finance, manage, evaluate health services in their own jurisdictions
- 100+ health regions coordinate care delivery over a set geographical area
- 700+ hospitals and 2,500+ long-term-care homes
- Approximately 400,000 general practitioners, specialists, nurses, pharmacists and health care professionals deliver care to Canadian patients

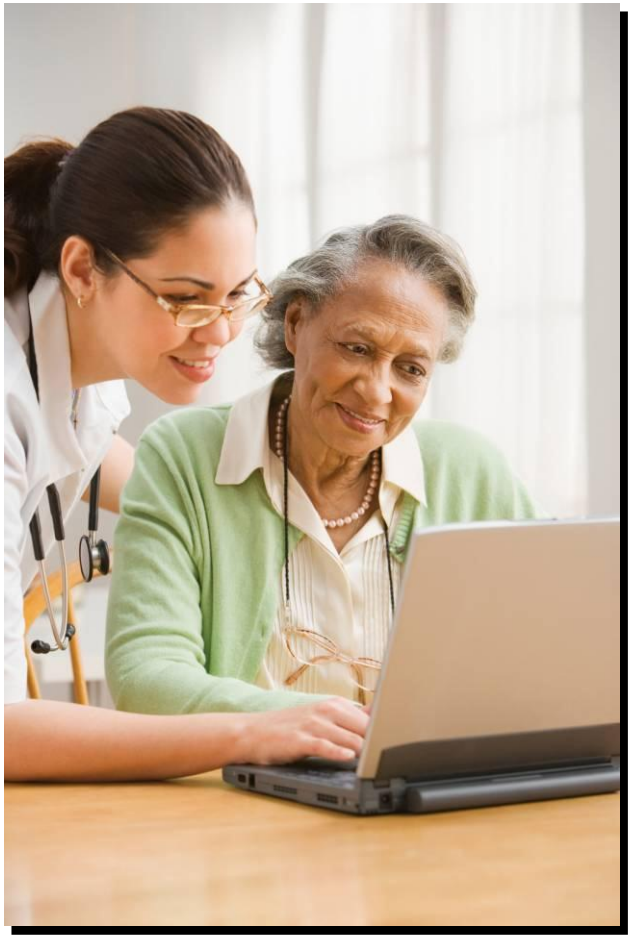
Health care in Canada

- Forecast cost of $200.6 billion in 2011 and $207.4 billion in 2012
  - Annual increases of 3.9% and 3.4%, respectively
- 60% of cost for hospitals, drugs and physicians
- 70:30 public vs. private funding

Source: Canadian Institute for Health Information – National Health Expenditure Trends, 1975 to 2012

Health care pressures

- Aging population
- Rising incidence of chronic disease
- Wait times
- Health care spending
- Political debate over private role in health care delivery
- Health system sustainability
- Modernization
- Meeting expectations



The need for EHR

For every **1,000**…	…in Canada
• hospital admissions	• **75** people will suffer an adverse drug event
• patients with an ambulatory encounter	• **20** people will suffer a serious drug event
• patients discharged from hospital	• **90** people will suffer a serious adverse drug event
• laboratory tests performed	• **up to 150** will be unnecessary (range 50-150)
• emergency department visits	• **320** patients have an information gap identified, resulting in an average increased stay of 1.2 hours
• Canadians recommended for influenza protection	• **370-430** are not vaccinated

Our Approach

Canada Health Infoway

- Created in 2001
- $2.1 billion in federal funding
- Independent, not-for-profit corporation
- Accountable to 14 federal/provincial/territorial governments

Mission:

Fostering and accelerating 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. *Infoway* will build on existing initiatives and pursue collaborative relationships in pursuit of its mission.

Infoway's vision

Healthier Canadians through innovative e-health solutions

Infoway business strategies

- Collaborate with health ministries and other partners
- Co-invest with public sector partners (75:25 formula)
- Leveraged investment
- Engage clinicians
- Form strategic alliances with the private sector
- Manage risk and ensure quality solutions
- Measure benefits and adjust
- Strategic investor
- Privacy safeguards

Engagement approach

Partnership built on collaboration

- **Shared governance** – represented by the federal, provincial and territorial governments
- **Pan-Canadian approach** – a common national direction, leveraging investments and replicating solutions but with local flexibility
- **Collaboration** – working together with jurisdictions to plan and implement a pan-Canadian health infostructure
- **Sharing of cost and risk** – co-investing with jurisdictions in the successful modernization of health information technology across Canada
- **Benefits driven** – clearly demonstrating what was achieved for the investment

A collaboration model built on strong relationships, continual communication and a premise of win-win, lose-lose

Approach – Investment model

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

Infoway also provides leadership, expertise and pan Canadian services to support EHR deployment across Canada

A strategic investor model that ensures an accountable e-health spend

Approach – Investment model

$2.09B in approved projects to date; 384 active or completed projects

Common Blueprint & Standards

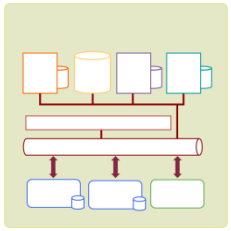
Twelve investment programs

Program criteria

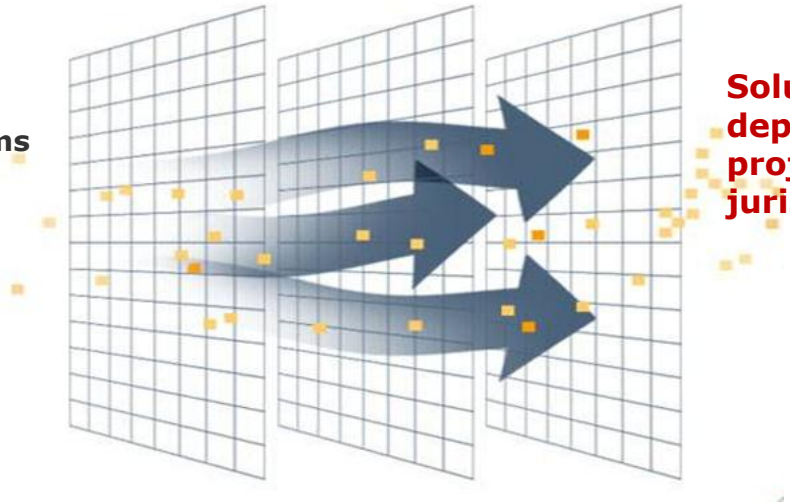
Program eligible costs

Project sizing and estimation

Approved projects for investment



1. Registries
2. Diagnostic Imaging Systems
3. Drug Information Systems
4. Laboratory Information Systems
5. Interoperable EHR
6. Telehealth
7. Public Health Surveillance
8. Patient Access to Quality Care
9. Innovation and Adoption
10. Infostructure
11. EMR and Integration
12. Consumer Health Solutions

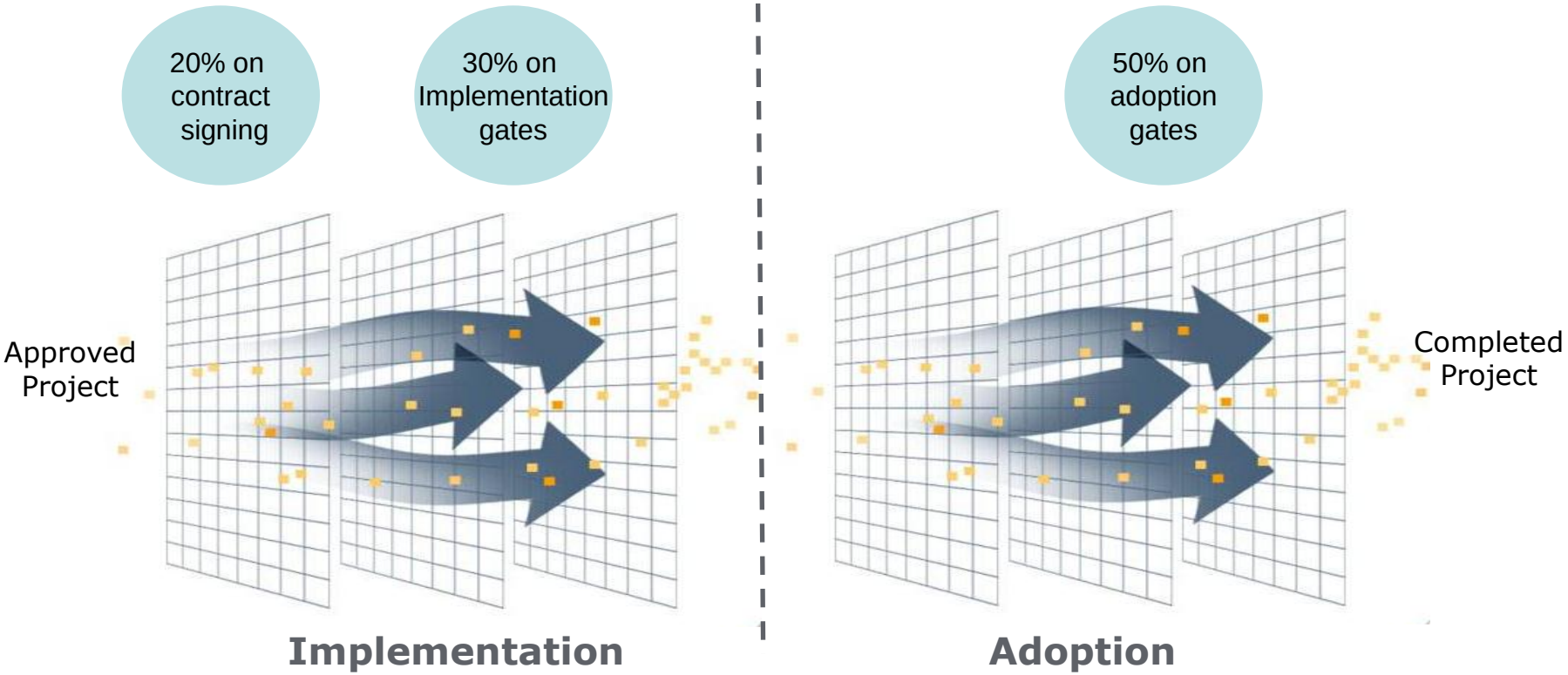


Solution deployment projects in each jurisdiction

Approach – Investment model

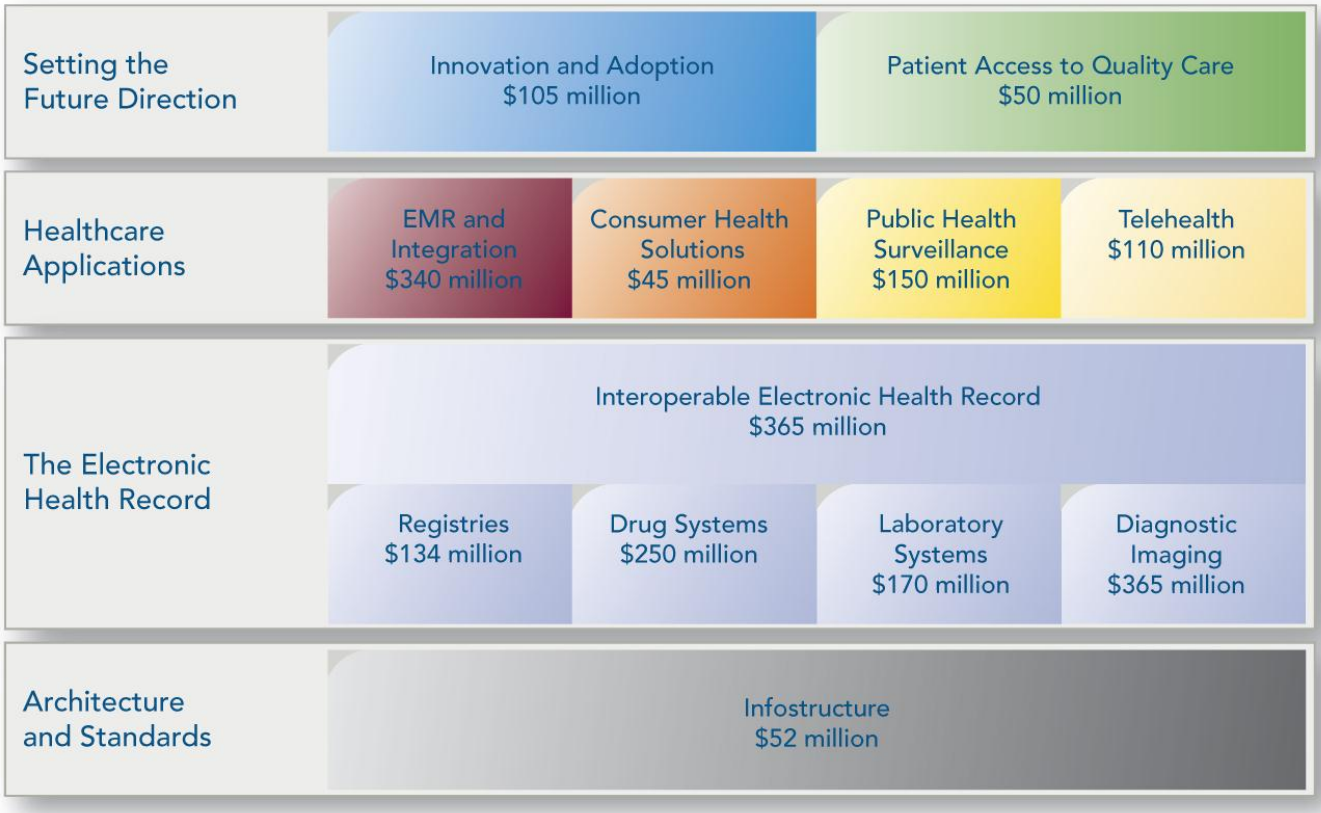
Infoway co-invests with jurisdictions at 75:25 of eligible project capital costs. Jurisdictions pay for the operating costs

Gated Funding and 50% of the investment for system adoption raised the accountability bar

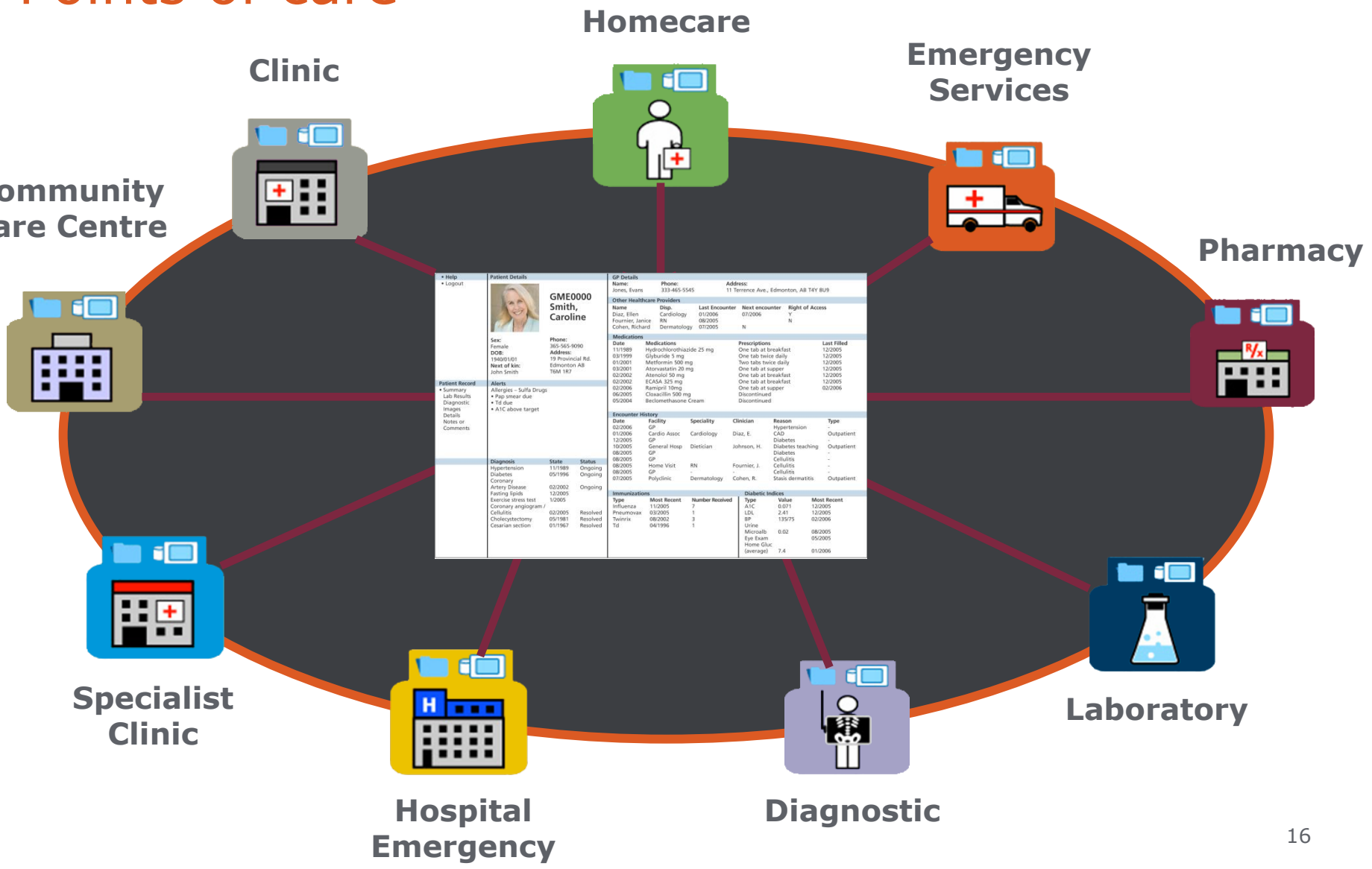


Investment approach

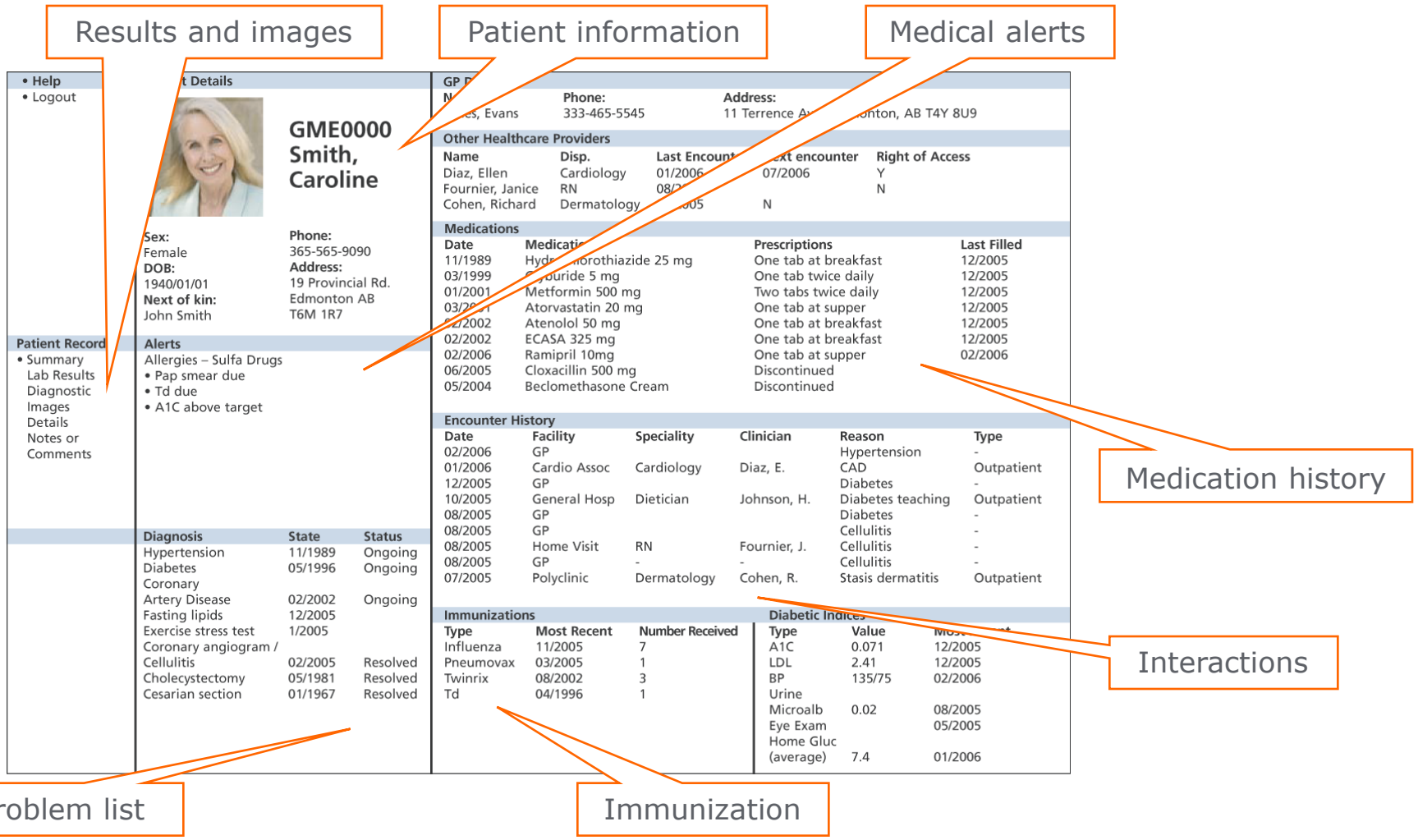
12 targeted investment programs totalling more than $2.1 billion



Points of care

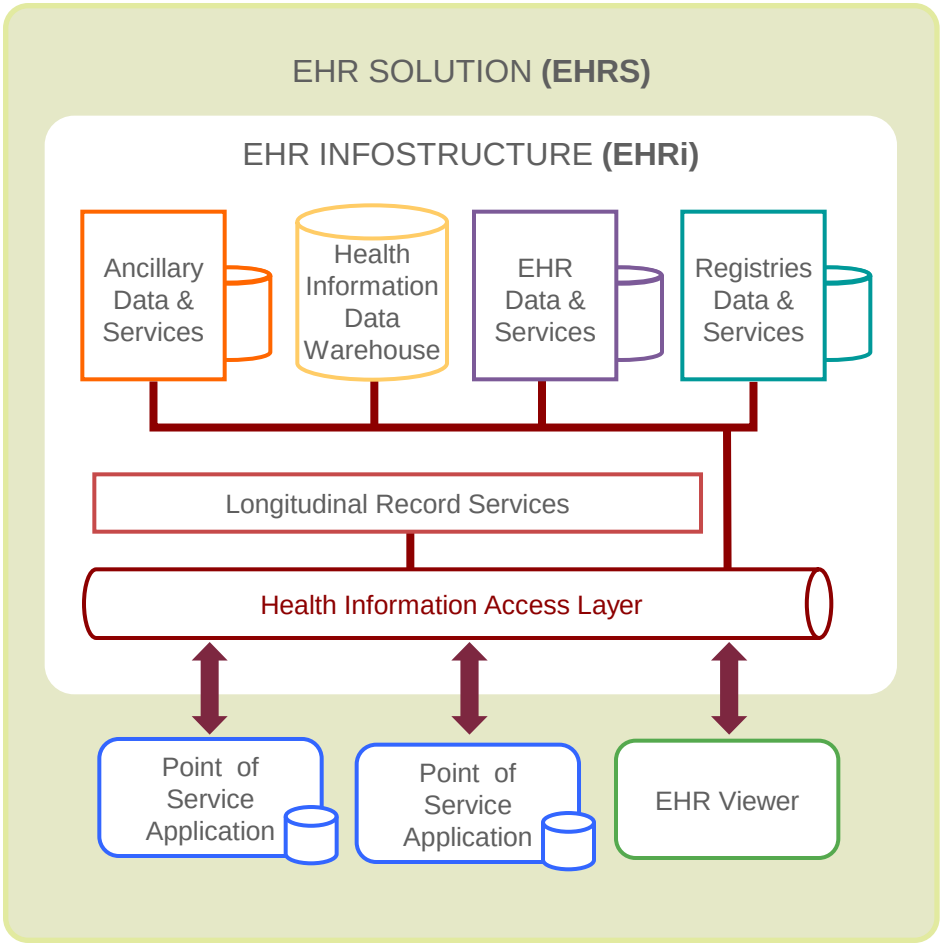


One patient, one record



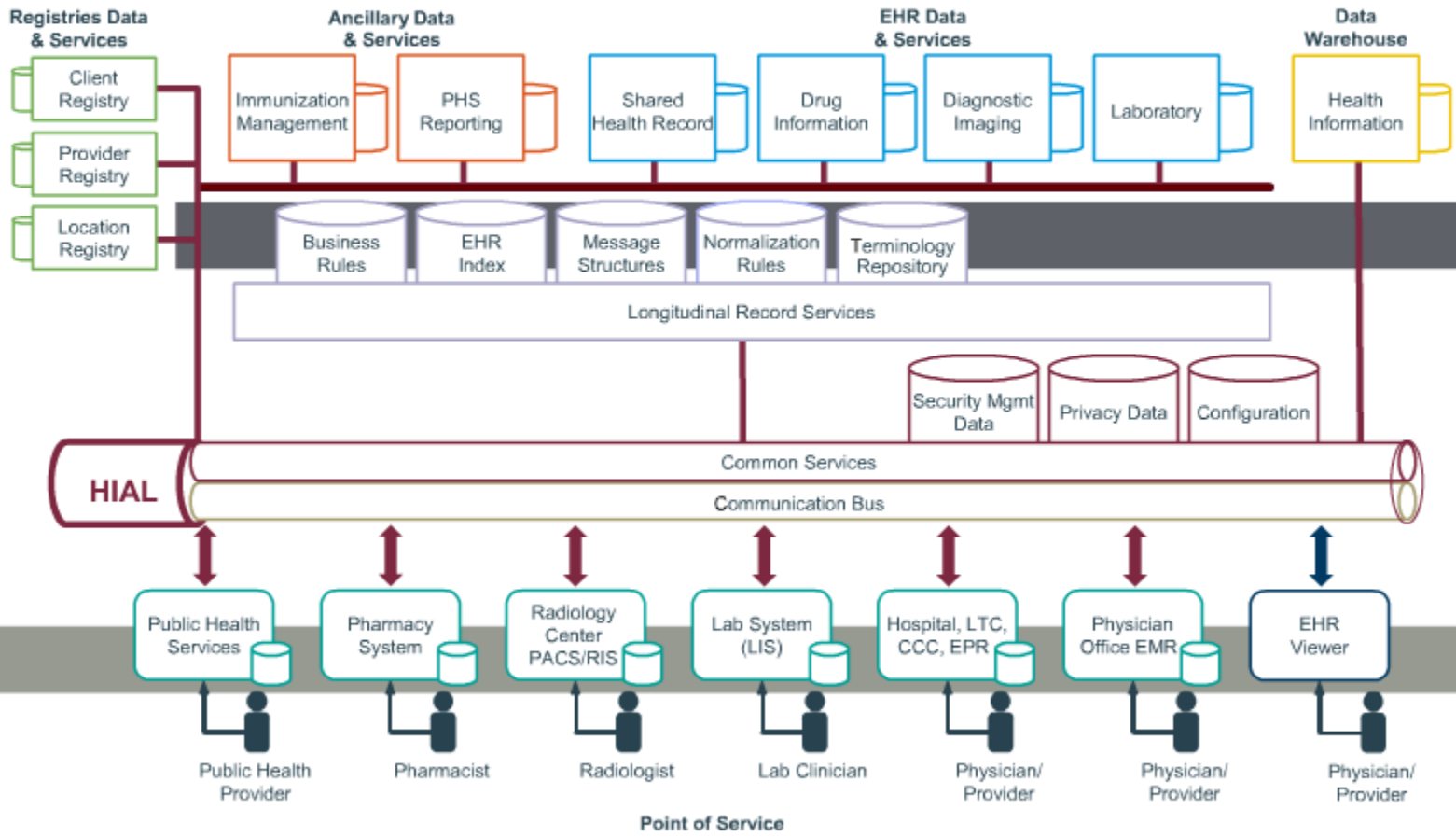
Approach – Architecture

- Common business and technical architecture accepted by jurisdictions and vendors
- Links local clinical systems with jurisdiction and regional registries and repositories using a data sharing approach
- Serves as a reference model for *Infoway* investments
- Extensible to support new functions, scalable
- Jurisdictions will be federated to create a national view
- Freely available on the *Infoway* website



EHR Architecture

Jurisdictional Infostructure



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Approach – Standards

Ensuring interoperability and privacy

- ***Infoway* Standards Collaborative**; a single national group for standards development, support and maintenance
- Standards necessary to allow data and document sharing – for example, HL7 CCOW, HL7 v2.4, HL7 v3, HL7 CDA
- International promotion of the standards developed in Canada
- *Infoway* investments require standards compliance
- e-health Certification Services introduced in 2009

Messaging

HL7 and DICOM are the primary standards for the electronic exchange of clinical and administrative data

Terminologies

LOINC and SNOMED CT are the primary terminologies for coding of clinical information

Interoperability Profiles

Define functional behaviours of components of the EHR system

Approach – Privacy

Infoway's approach to privacy

- Require every project that involves personal health information to conduct a privacy impact assessment (PIA)
- PIA to be approved by jurisdiction privacy commissioners
- Provided a privacy and security architecture
- Contribute to legislative reviews
- Encourage action in relation to governance of health records
- Continue to monitor public attitudes
- Be transparent with privacy commissioners and the public

Benefits


A-F
G-L
M-R
T-Z
MENU
Log Entry: 0218
RESEARCHER ID: 4492
Conection status
00:1509:1963 - Imput signal-OK - Connection Time: 00:03:45

Availability

Use

Benefits

Benefits and value of electronic health information technologies

- Reduced wait-times for diagnostic imaging services
- Improved availability of community based health services
- Reduced patient travel time and cost to access services
- Increased patient participation in home care

ACCESS

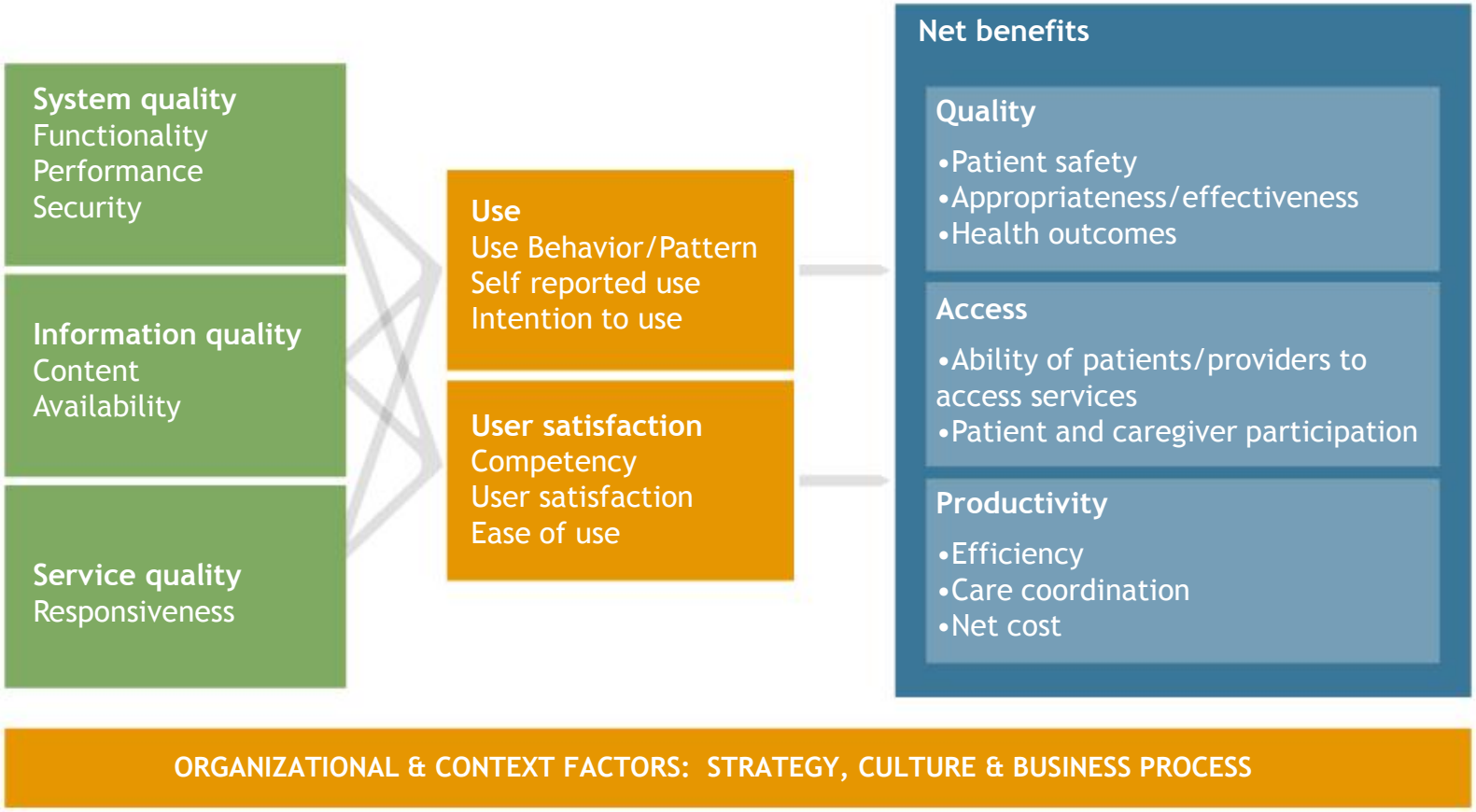
- Improved interpretation of diagnostic and laboratory results
- Decreased adverse drug events
- Decreased prescription errors
- Increased speed and accuracy in detecting infectious disease outbreaks

QUALITY

- Increased access to integrated patient information
- Reduced duplicate tests and prescriptions
- Reduced physician prescription call-back
- Reduced patient and provider travel costs

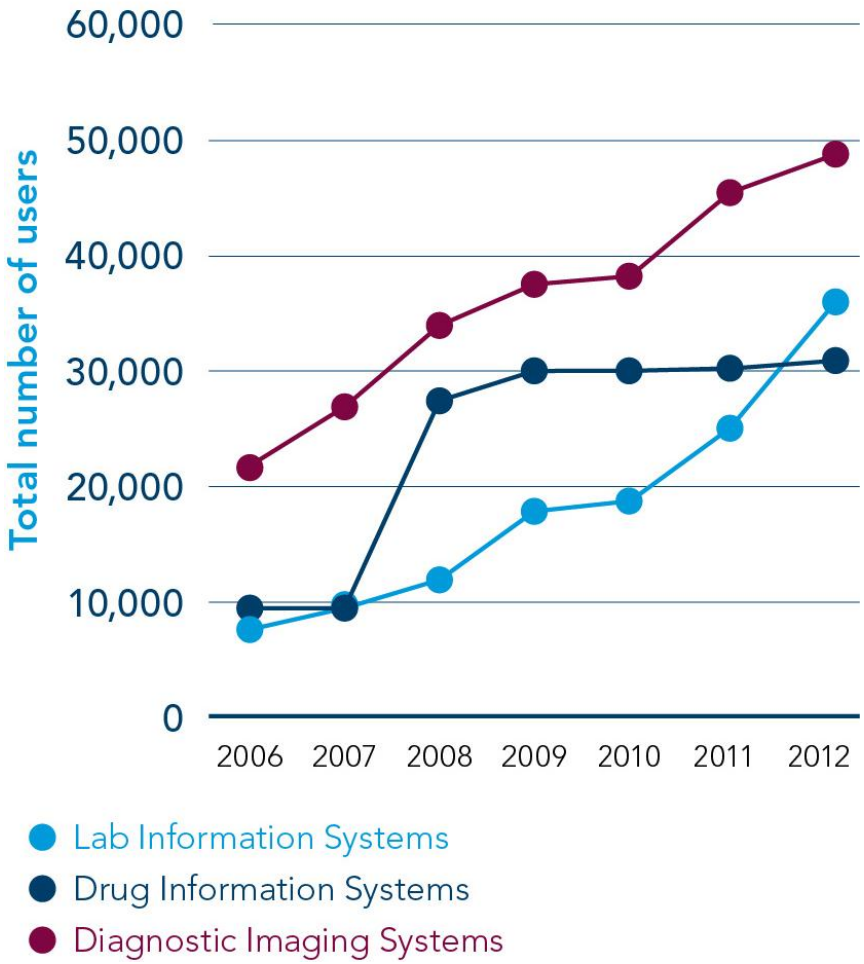
PRODUCTIVITY

Infoway benefits evaluation framework

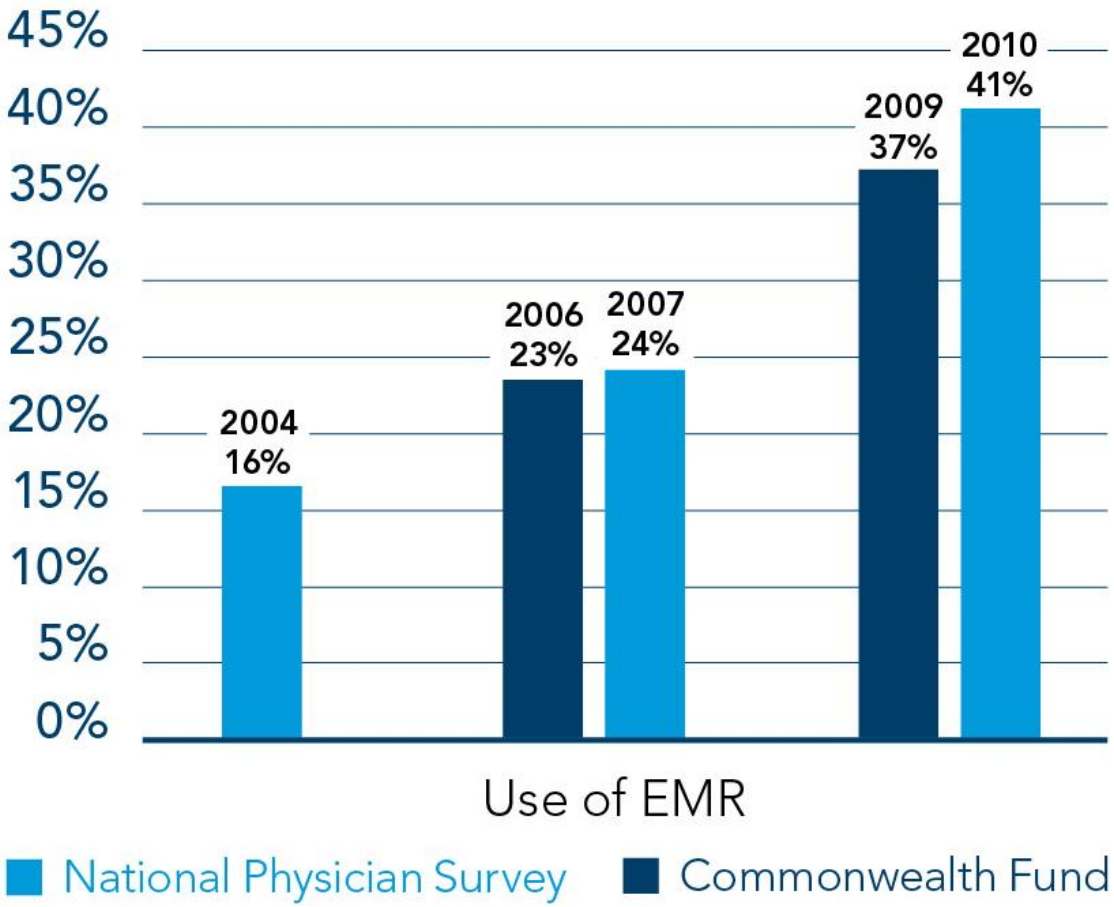


Based on the Delone & McLean IS Success Model

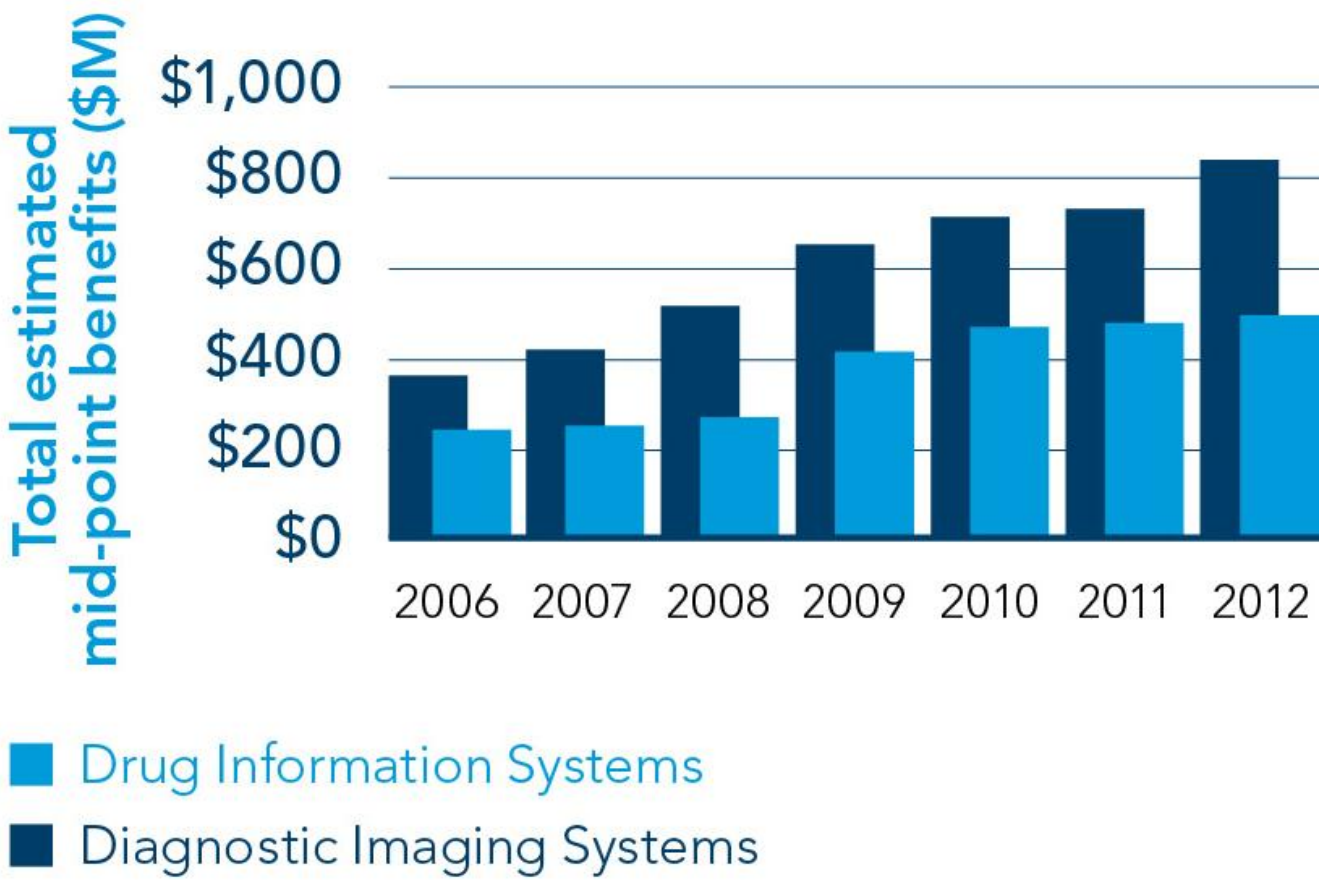
Electronic health record use is growing



Primary care use of EMRs



Diagnostic imaging and drug information systems benefits



Health IT could save time for Canadians

In 2011, if Canadians had been able to consult with their health care providers, access test results and request prescription renewals electronically, they could have:

- Saved nearly **70 million hours**, translating into
  - 18.8 million fewer hours off work ($408 million boost to potential output)
  - 51 million hours that could have gone toward non-paid activities like education, volunteer work and leisure

- Avoided nearly **47 million in-person visits** to health care providers

Source: Conference Board of Canada study, 2012

Economic impact of Infoway's new funding

$500 million received from federal government in 2010

Over the next four years, investment of $500 million from *Infoway* and $248 million from jurisdictions will result in:

- $1.11 billion increase in real Gross Domestic Product (GDP)
- 10,700 person-years of employment
- Approximately $319 million being recouped by federal and provincial governments through increased tax revenues

For every $1 invested by *Infoway* and the jurisdictions:

- About $1.48 is added to Canada's overall GDP
- There is an estimated 28.2 cent improvement in federal fiscal position and 12.2 cent improvement in aggregate provincial fiscal position

Source: Conference Board of Canada Study – October 2010

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E-health 2018 Strategic Plan

Purpose

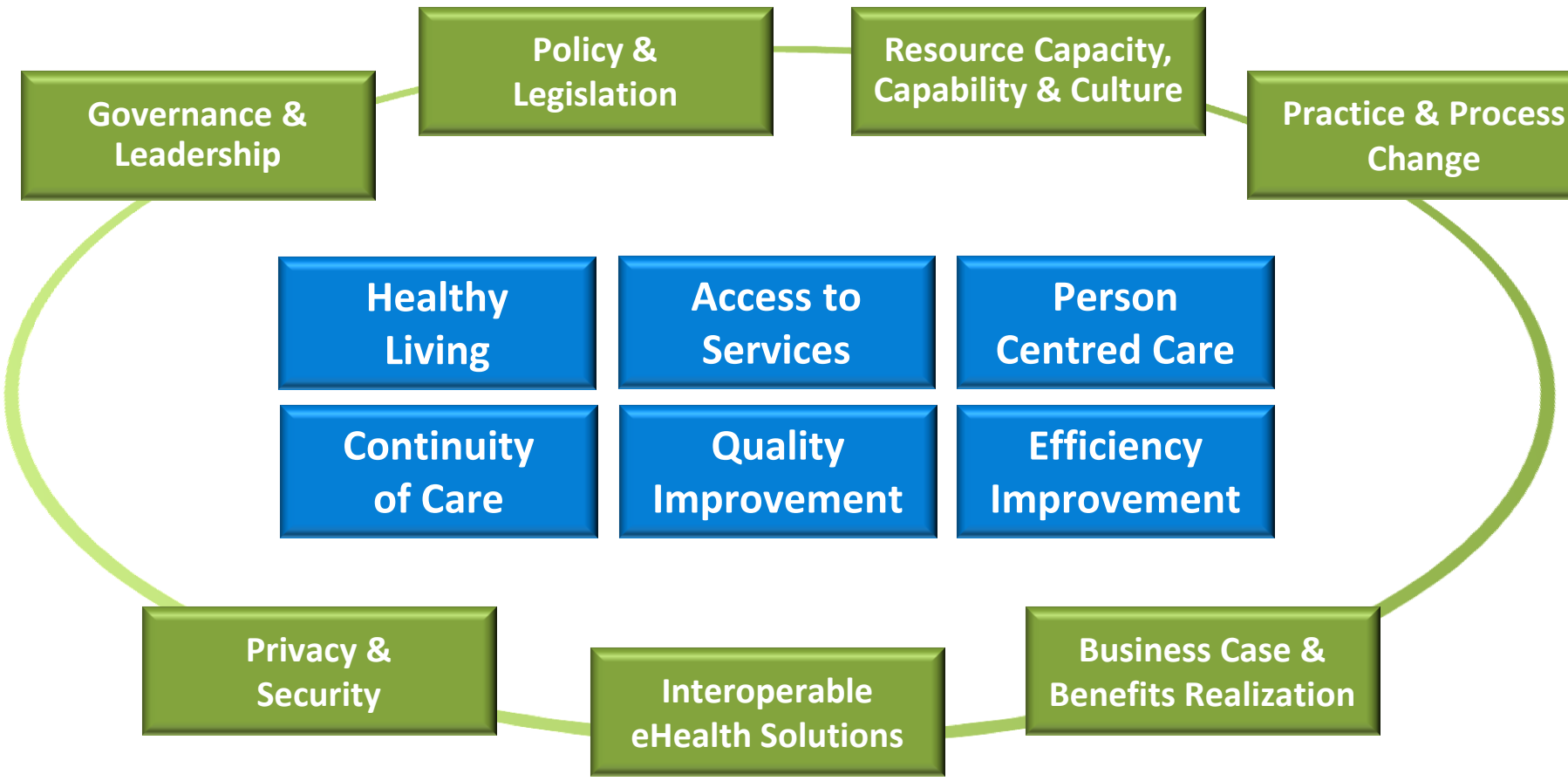
- Canada has been on its national e-health journey for 10 years and is now six years into Vision 2015.
- The *Infoway* board felt it was an opportune time to reflect on the progress made, determine where the current direction would take the country and whether a course adjustment is required.

Over 500 stakeholders were consulted

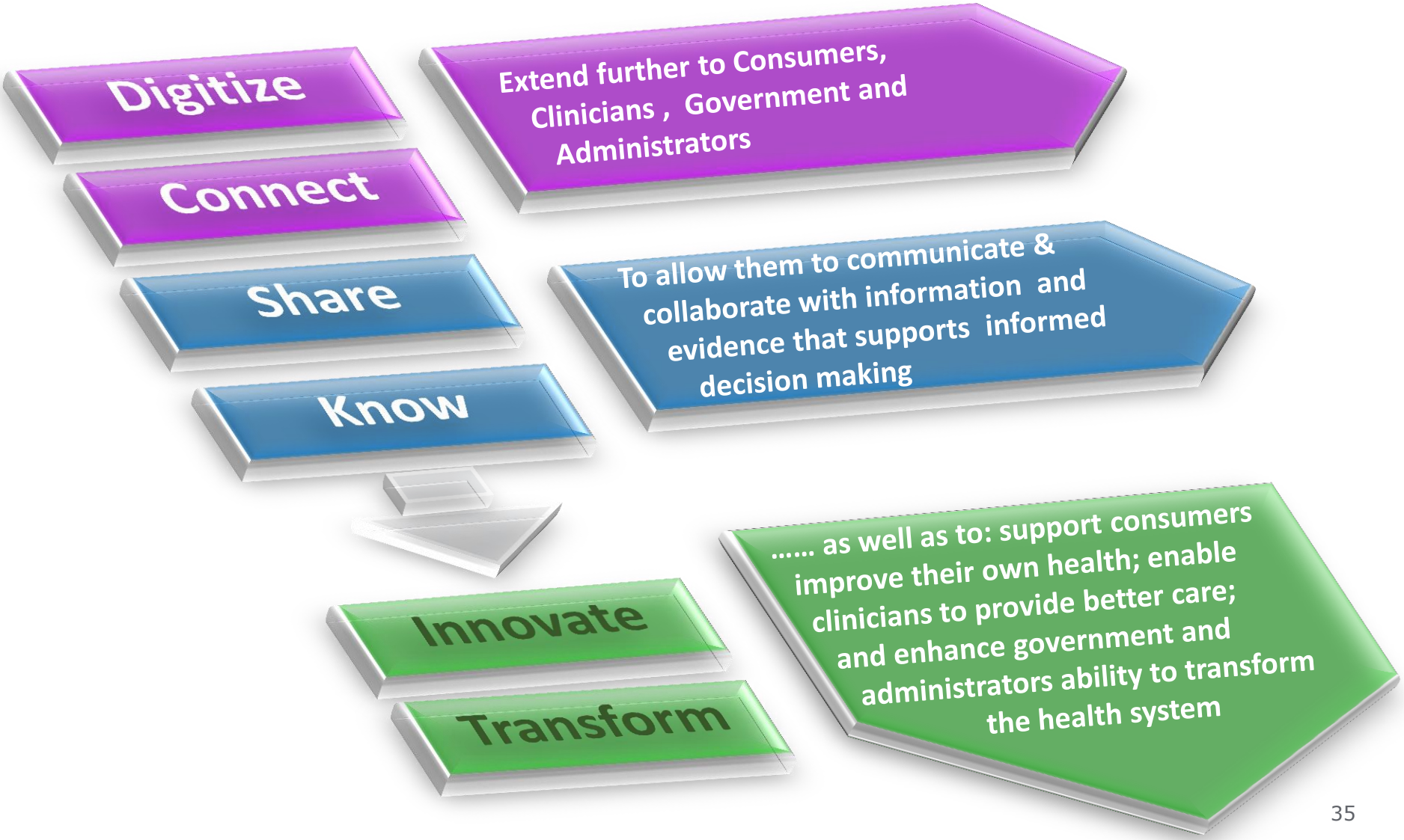
Stakeholders representing consumers (37%), clinicians (25%), government & administrators (30%), vendors (3%) and others (5%) from across Canada were consulted between October 2011 and February 2012.

Interviews	Focus Groups	Stakeholder Forums
14 one-on-one/small group meetings with jurisdiction Deputy Ministers of Health and key representatives.	39 stakeholder focus groups with individual Canadians and clinician groups	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.

Stakeholder priorities & key enablers



The path forward …



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.

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.

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

Improve Patient Safety

- Hospital Medication Management
- Medication Reconciliation
- e-Prescribing

Provide Easier Access

- e-RxRenewal
- e-Visits
- e-Scheduling
- e-Navigation

Enable a High-Performing Health System

- Clinical Analytics
- Health System Analytics
- Public Health Surveillance
- LEAN

Support New Models of Care

- Ambulatory EMR
- Community-based EMR
- Electronic Health Record
- Discharge Summaries
- Referral Management
- Chronic Disease Management
- Care Transitions
- Telepathology

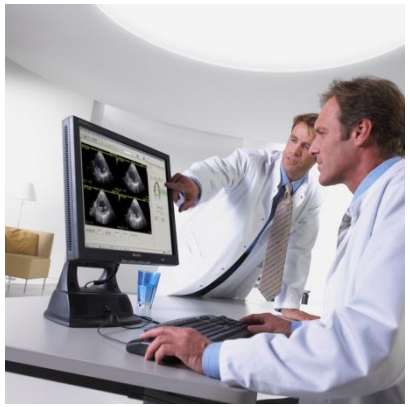
Foundational Clinical Systems

- Hospital Information System
- Home Care / Long Term Care Systems

In conclusion

Infoway adds value at every step

- Joint governance
- Joint planning
- Predictable funding
- Common solutions architecture
- Common ICT standards
- Accountable spend
- Common procurement
- Common solutions
- National pricing
- Shared services
- Knowledge sharing
- Global leaders exporting expertise



Challenges to overcome

- Project slippage
- Slower than expected clinician uptake
- Adequate funding not available
- Failure to deliver viable, interoperable EHR solutions
- Privacy and security breaches
- Insufficient skilled human resources
- Failure to demonstrate expected benefits

The promise

- Increased patient participation in care
- Well-managed chronic illness
- Improved access to care in remote and rural communities
- Fewer adverse drug events
- Better prescribing practices
- Reduction in duplicate or unnecessary tests
- Reduced wait times
- Saving lives

Thank You!

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www.knowingisbetter.ca