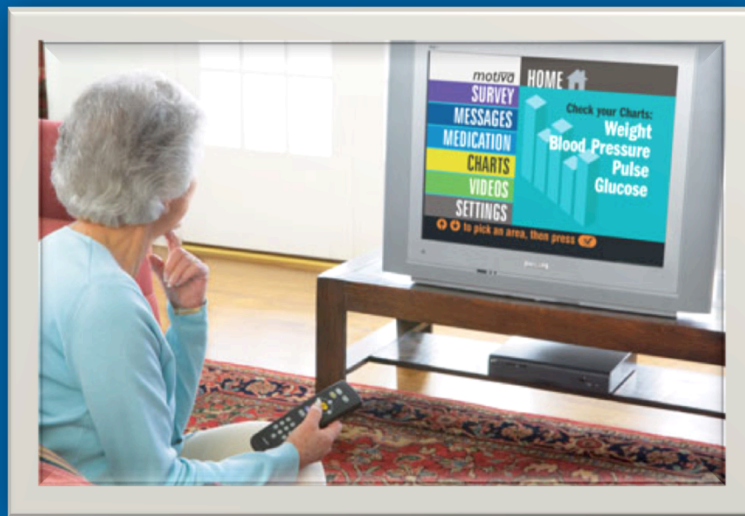


3rd Annual Conference of the McGill University Health Centre's Institute for Strategic Analysis and Innovation

# From the Hospital to the Home: Information Technology & Health System Integration



Presented by:  
Matthew Anderson  
President & CEO  
William Osler Health System

# The Care Coordination Imperative

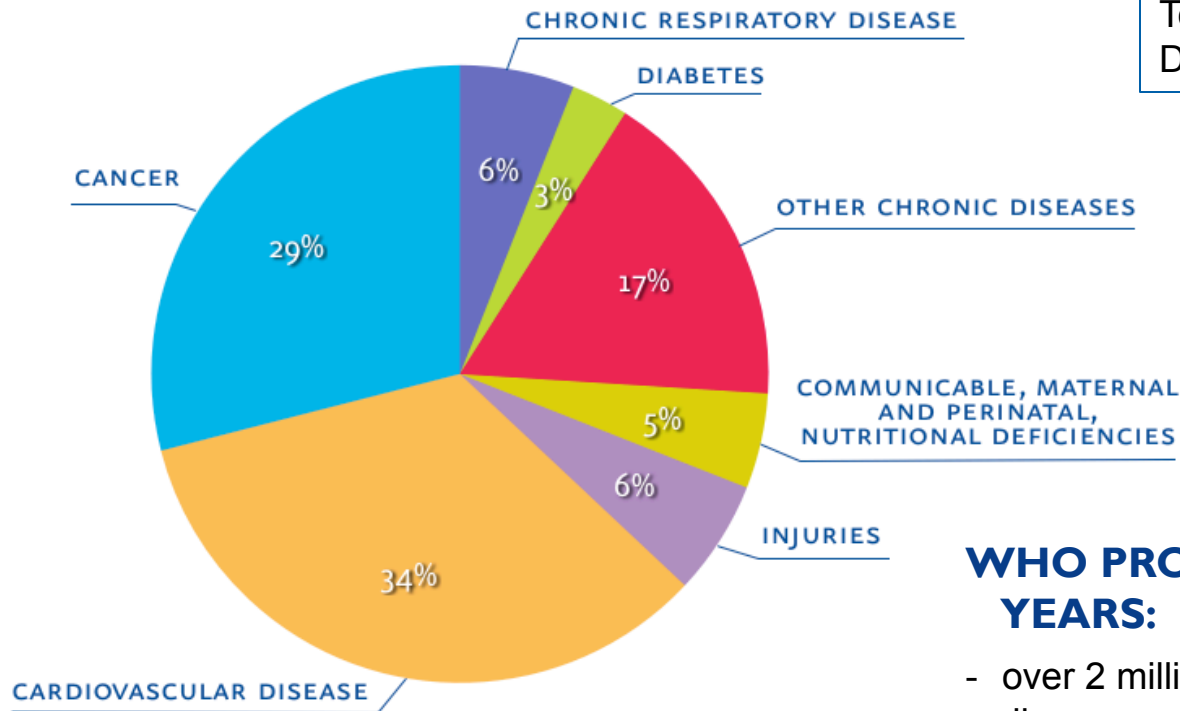


1. Quality & Cost issues
2. Medically complex patients
3. Multiple providers
4. Communication issues



# Chronic Disease in Canada (2005)

Total Projected Deaths	<b>231,000</b>
Total Projected Chronic Disease related Deaths	<b>207,000</b>



## WHO PROJECTIONS FOR NEXT 10 YEARS:

- over 2 million people will die from a chronic disease
- deaths from chronic diseases will increase by 15%
- deaths from diabetes will increase by 44%



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**When food allergies strike, will you be prepared?**



**Should you be carrying an EpiPen® Auto-Injector?**  
Take the Severe Allergy Risk Test now!



Emergency response at hand.

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## Diabetes could cost Ontario \$7B a year by 2020: report



Diabetes already costs Ontario \$4.9 billion annually, mostly in lost productivity (\$2.8-billion) and long-term disability claims (\$998-million). Another \$1-billion is spent on hospital visits, doctors' fees and medications. Foltola

Comments Twitter LinkedIn Digg Buzz Email

Pauline Tam, Postmedia News · Wednesday, Sept. 8, 2010

OTTAWA — More than one in 10 Ontarians could be living with diabetes by 2020, costing the province \$7-billion a year in health care and lost productivity, a new report reveals.

TOOLS

Change text size


SEARCH

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**FORD FOR MAYOR**  
Rob Ford for Mayor of Toronto  
**RESPECT FOR TAXPAYERS**

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**tvo** The Love of Money  
A 3-part series starting September 27 at 10 pm

 2010-11  
NHL  
PREVIEW

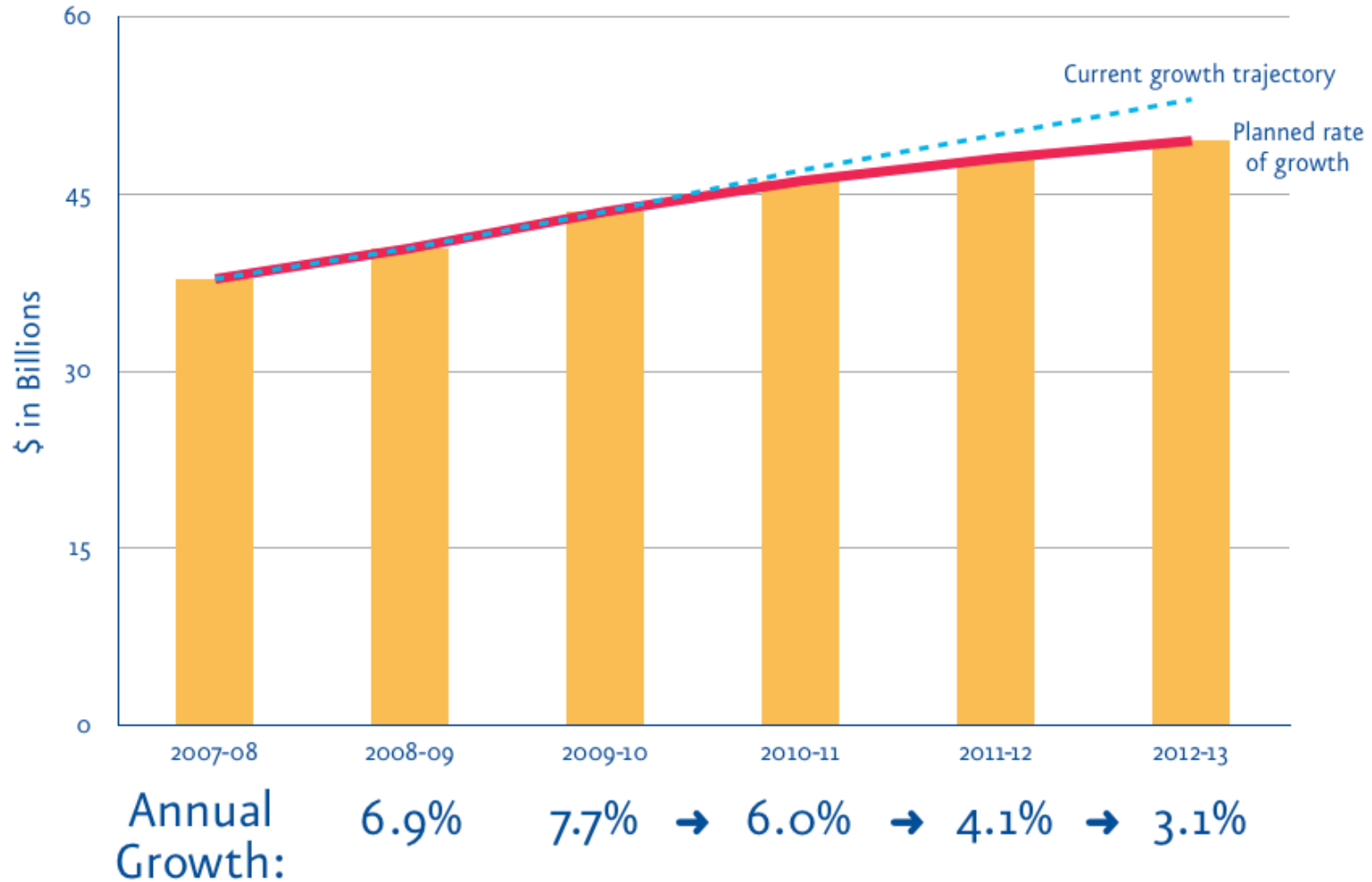
Arthur: The NHL enters its Rorschach era

Top of the Charts: Ranking the NHL's best players



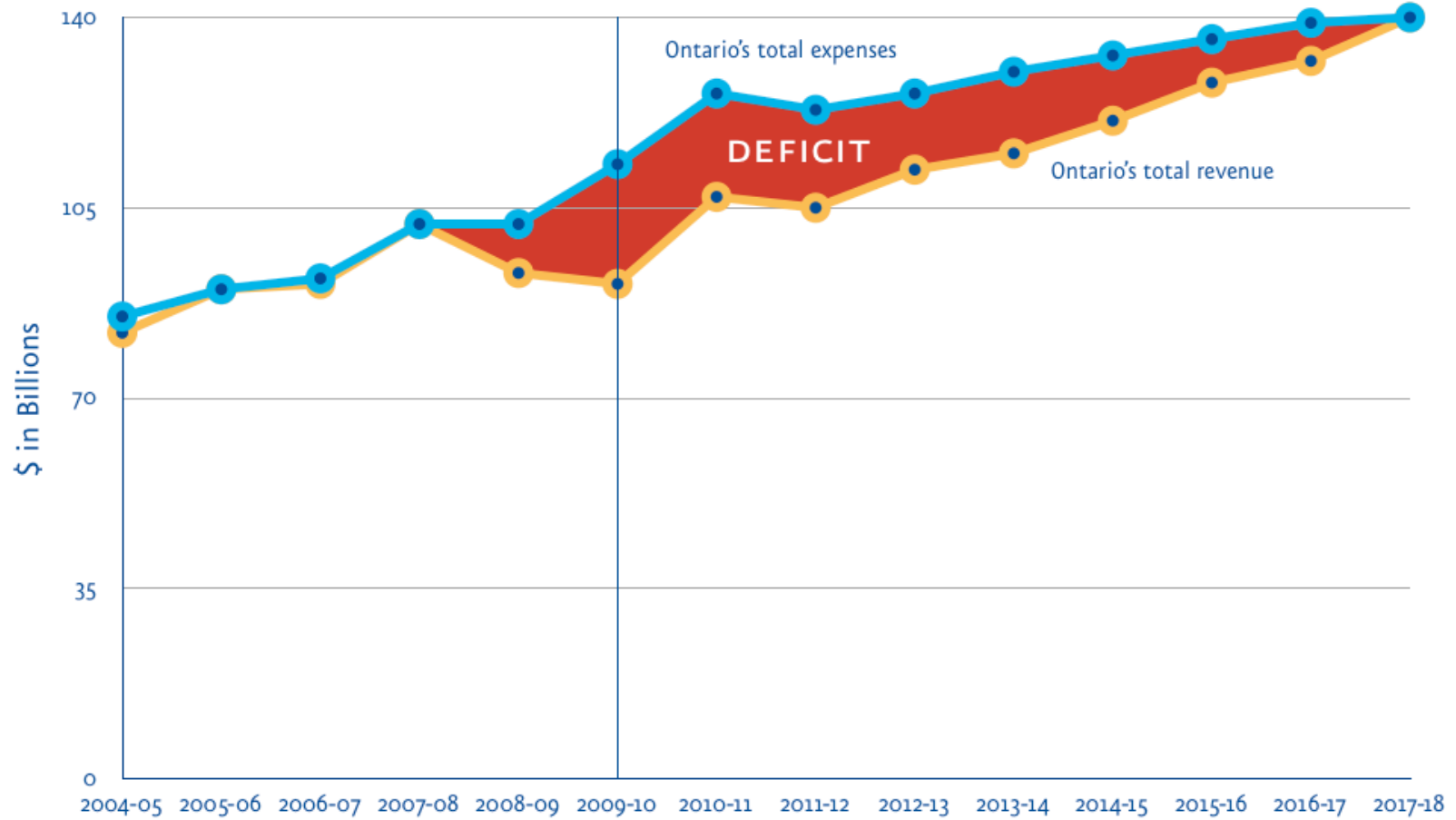
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# Ministry of Health & Long Term Care Annual Spending



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# Closing the Fiscal Gap

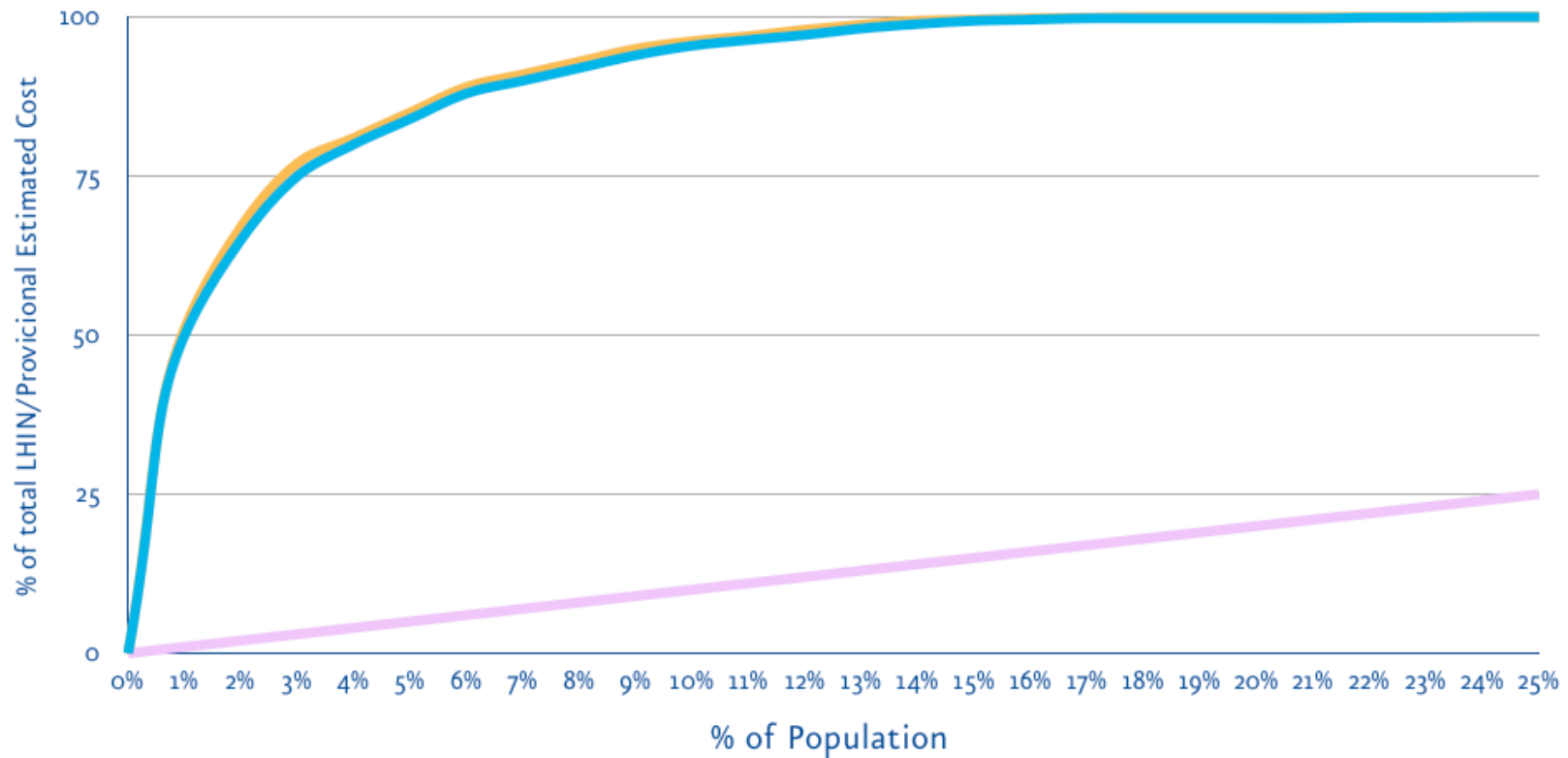


Source: CIHI data 2009, in current dollars



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# Health Care Estimated Costs Cumulative Distribution



○ Line of perfect equality

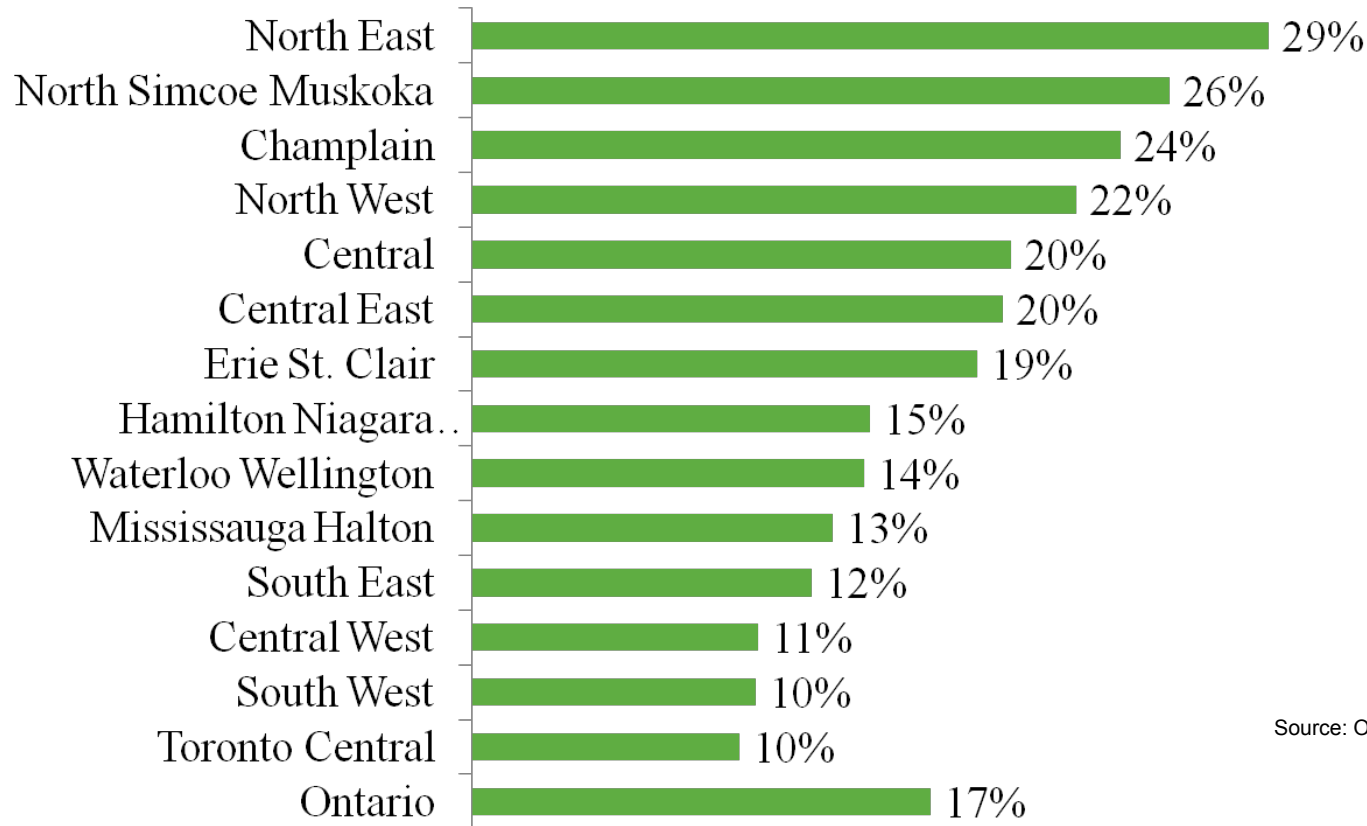
○ Central West (1%=7,800)

○ Ontario (1%=126,900)



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# Percent of Acute Care Beds Occupied by ALC Patients by LHIN



Source: OHA ALC Survey Results - July 2010

Percent of Acute Care Beds Occupied by ALC Patients =  $\frac{\text{Total number of patients in acute care beds waiting for an ALC}}{\text{Total acute care beds}}$



**ismp**  
CANADA

Institute for Safe Medication Practices Canada

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A Key Partner in the Canadian Medication Incident Reporting and Prevention System (CMIRPS)

### Advancing safe medication use

The Institute for Safe Medication Practices Canada is an independent national not-for-profit agency committed to the advancement of medication safety in all healthcare settings. ISMP Canada works collaboratively with the healthcare community, regulatory agencies and policy makers, provincial, national and international patient safety organizations, the pharmaceutical industry and the public to promote safe medication practices. ISMP Canada's mandate includes analyzing medication incidents, making recommendations for the prevention of harmful medication incidents, and facilitating quality improvement initiatives.

**REPORT a Medication Incident**

**CMIRPS**  
Supported by Health Canada

**OPERATING ROOM SAFETY**  
Supported by the Ontario Ministry of Health and Long-Term Care

**Pharmaceutical Bar Coding Project**

Members of the healthcare industry are collaborating to implement standardized bar codes on all aspects of [pharmaceutical labelling](#).

**Reporting and Prevention Systems**

[SafeMedicationUse.ca](#)

Medication Incident and Near Miss Reporting Programs for:

- Practitioners
- General Public

[SafeMedicationUse.ca](#)

**MOHLTC Supported Initiatives**

**Ontario Antimicrobial Stewardship Project**

- Ontario Antimicrobial Stewardship Project
- Operating Room Medication Safety Check
- Medication Safety Support Service (MSSS)

ISMP Canada Home  
ISMP Canada Safety Bulletins  
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Medication Reconciliation in Home Care Virtual Action Series

**MEDICATION RECONCILIATION IN HOME CARE  
VIRTUAL ACTION SERIES**  
*Home is where the heart is!*

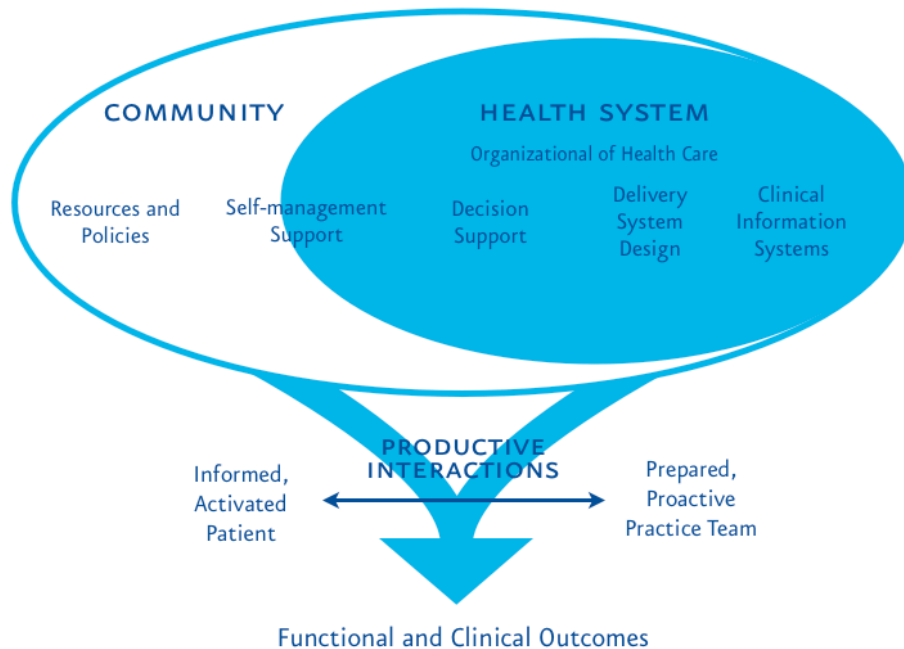
safer healthcare **now!**

**cpsi** **icsp**

## Communication Issues

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# The Information Powered Healthcare System

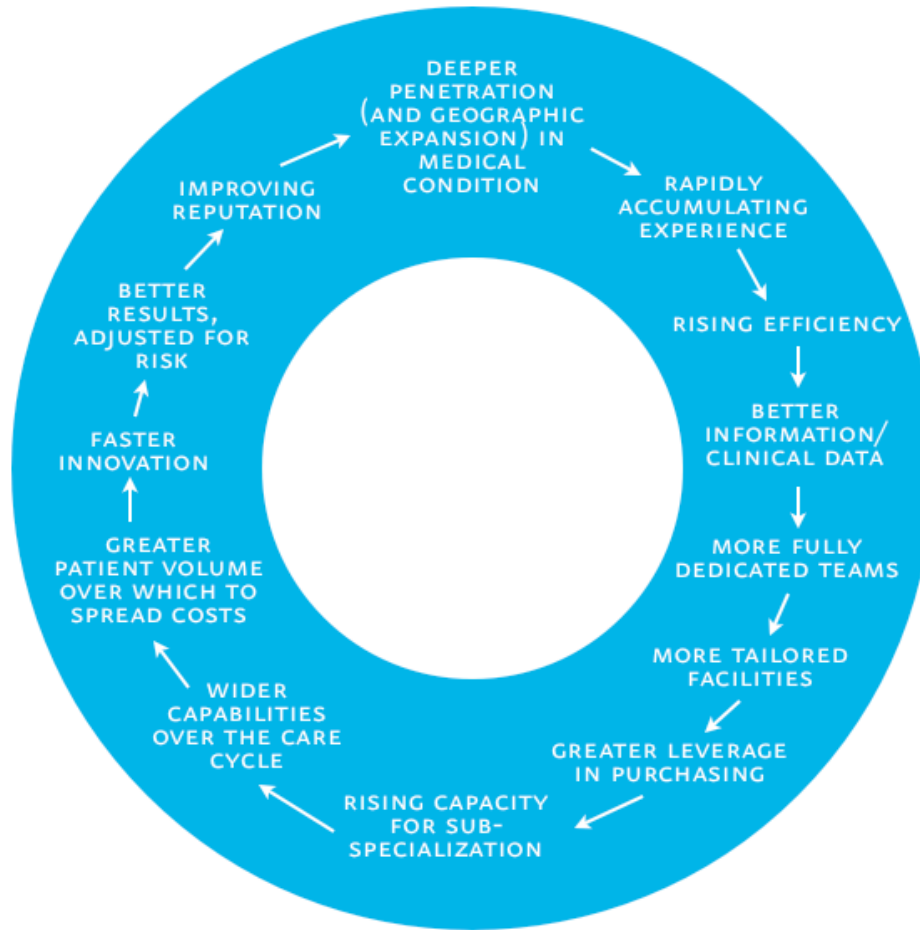


Wagner Model

- ↑ Efficiency, quality & safety
- Patient becomes active participant
- IT backbone to manage care across continuum



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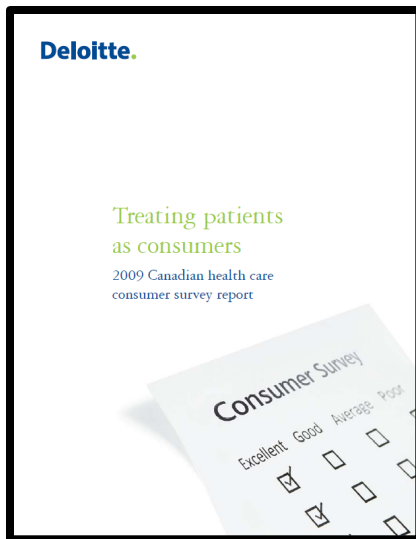


## PORTER MODEL



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# Treating patients as consumers



## Top findings

**60%**

For information about treatment **options**, nearly 60% of respondents went online.

**53%**

For information about treatment **effectiveness and safety**, 53% went to each of medical associations and academic health sciences centres (AHSCs).

**46%**

For information about treatment **costs**, 46% went to medical associations and 42% went to AHSCs.

**42%**

For information on accessing treatment or diagnostic services more quickly, 42% turn to medical societies and associations, while 31% look to hospitals. That said, the majority of consumers don't take any steps to seek information related to the quality and services of a hospital before choosing it for care – which implies that their trust in the system makes them less interested in comparative information. For the 19% of consumers who did search for information in advance, 61% focused on type of services offered while 66% looked for quality ratings.

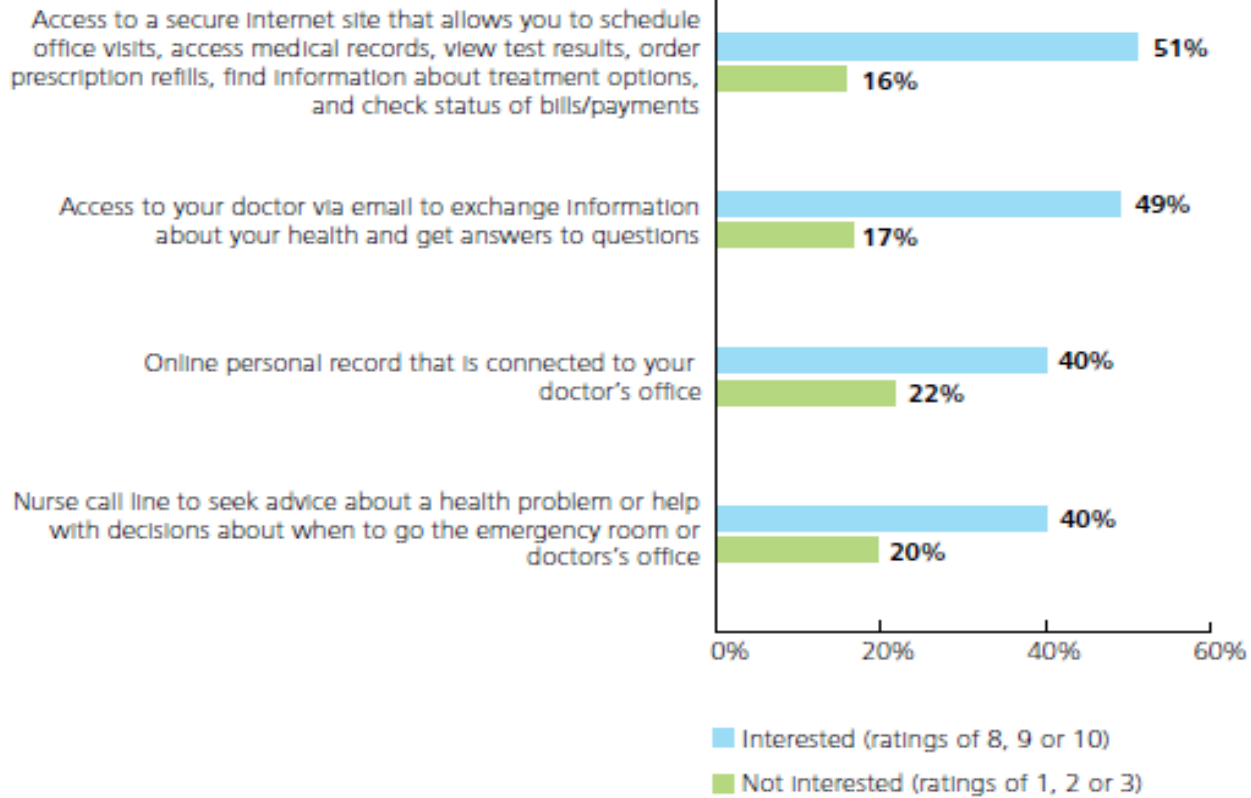
As to the least trusted sources of information, these tend to be life sciences manufacturers and private health insurance companies.

Deloitte, 2009



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**Figure 2: Interest in online tools and services**



Deloitte, 2009



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# IT the Integration Enabler

- Health system backbone
- Enable seamless transitions for patients & providers
- Facilitate key information exchange
- Timely & effective communication



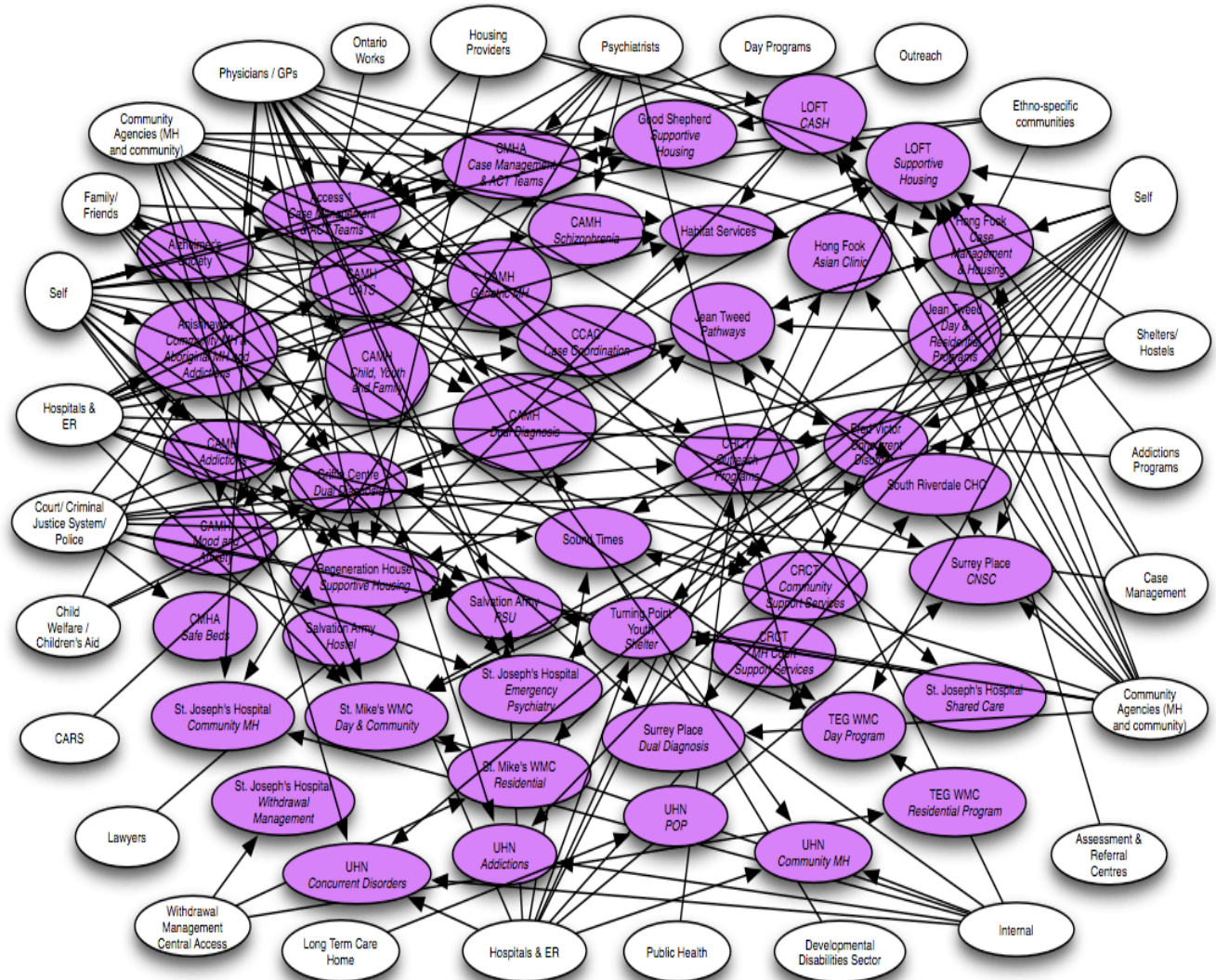
Source: Connecting GTA , October 2010



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# Health System Barriers

- Unorganized at system level
- Healthcare Tribalism
- Siloed care and system fragmentation



## IT Barriers

- Isolated islands of information
- Limited integration capabilities
- Prohibitive costs to replace legacy systems

*From admission to discharge, patients in Ontario go through 230 steps/interactions with different care providers*

- Patients and care providers are accessing information via single point-to-point connections and often re-record patient information asking patients to repeat their stories over and over again.<sup>1</sup>*

<sup>1</sup>Flo Collaborative (2007) *Transforming from Acute Care to Subsequent Care—The Role for Discharge Planning*, OHAchieve





# The Future of the EHR

...not just patient records



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**Medical Records Scanning**  
Convert your paper based patient records into electronic records



**EMR Users: Stop Scanning**  
Get fast, accurate & reliable entry of new documents into your EMR

Ads by Google

Home  
Current issue  
About us  
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Links

## CANADIAN Healthcare Technology

### Electronic medical records

## Infoway to invest \$380 million in physician systems

TORONTO – Canadian physicians and nurse practitioners will benefit from a \$500 million investment made by the Government of Canada in Budget 2010, announced Richard Alvarez, President and CEO of Canada Health Infoway.

Of the total amount allocated to Infoway, \$380 million of the new money will be directed to speed up the implementation of electronic medical record systems.

EMR systems are the gateway that will enable physicians and nurse practitioners to securely access vital patient information including diagnostic images, blood test results, drug histories and clinical reports.

"A number of provinces and territories are making solid progress developing systems to electronically store the patient information that is far too often unavailable when health providers need it," said Alvarez. "The time has come to shift our attention to the front-lines, where the lion's share of care is delivered, so more physicians and nurse practitioners can access and retrieve the information stored in these systems."

EMRs will provide physicians and nurse practitioners with a better picture of their patients' overall health so better-informed care decisions can be made. They also allow health care professionals to record their clinical notes electronically, eliminating the need for inefficient paper-based systems.

"Electronic medical records will allow health professionals to access the vital patient information that is too often lacking in a paper-based environment," added Alvarez. "Currently, 37 percent of community-based physicians have adopted EMR systems across Canada. The new funding is intended to significantly increase their use in clinics, clinician offices and ambulatory care clinics."

KNOWING IS BETTER THAN NOT KNOWING.

## Connection

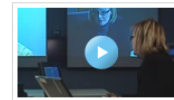
Connecting the health care community is beginning to occur in various areas across Canada.



Faster than the six o'clock news

For example, an Ottawa practitioner has used practice-based electronic medical records to improve the care he provides to his patients.

Plus, there are additional EHR success stories that you can browse and watch below. These are examples showing positive steps toward a fully connected network of EHRs. As the provinces and territories complete all of the components, even more benefits will be realized.



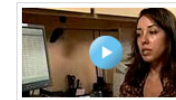
Telehealth brings quality care to remote patients.

Ontario Telemedicine Network delivers clinical care to over 615 locations across the province.



Nova Scotia goes digital

In Cape Breton, facilities use diagnostic image systems, which archive CT scans and X-rays, to increase efficiency by 25%, reduce transportation costs and improve the quality of care.



Computer-based patient record (CPR)

Two Montréal hospitals improve communication by adopting integrated electronic information systems.



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# Emergency Department Reporting System

Percent Within Target								
High Acuity (Admitted CTAS 1-5 & Non-Admitted CTAS 1-3 less than 8hrs)	Baseline (Apr08)	April	May	June	Q1	July	August	% Change vs Baseline
Province	79%	83%	83%	84%	83%	83%	83%	4%
Toronto Central LHIN*	66%	76%	77%	80%	78%	77%	78%	12%
Central West LHIN	79%	78%	78%	80%	79%	79%	79%	0%
William Osler - Brampton Civic Site	77%	77%	77%	77%	77%	77%	77%	0%
William Osler - Etobicoke General Site	77%	77%	77%	77%	77%	77%	77%	0%

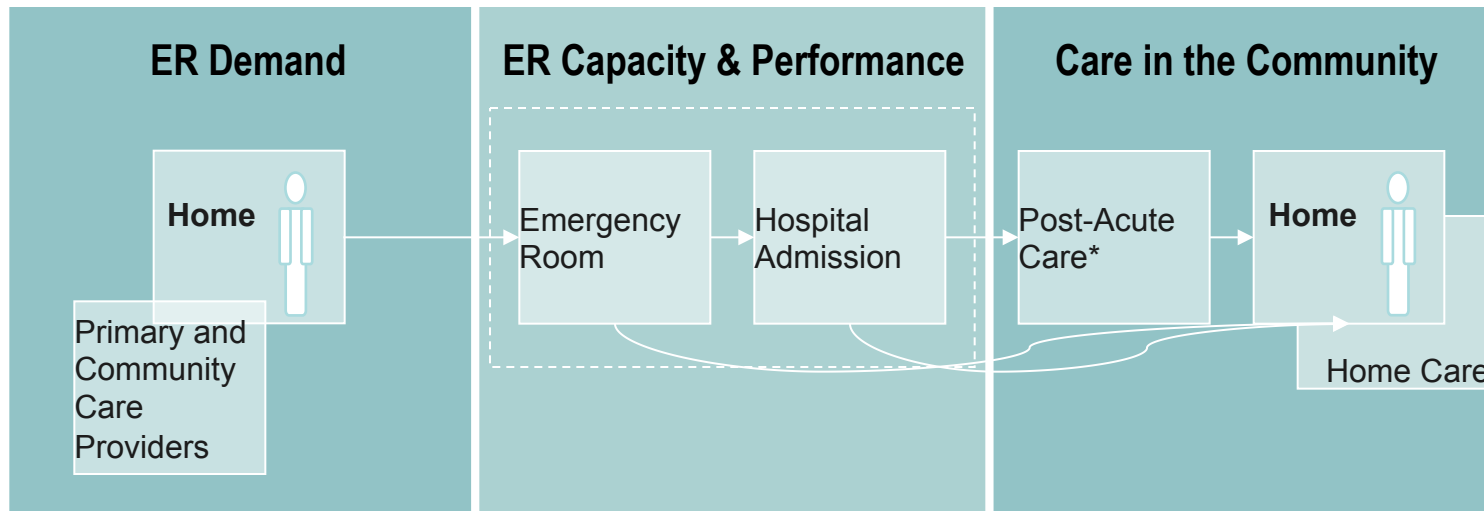
Percent Within Target								
Low Acuity (Non-Admitted CTAS 4-5 less than 4hrs)	Baseline (Apr08)	April	May	June	Q1	July	August	% Change vs Baseline
Province	84%	87%	87%	88%	87%	87%	87%	3%
Toronto Central LHIN*	66%	81%	79%	81%	80%	81%	82%	16%
Central West LHIN	82%	88%	86%	87%	87%	87%	88%	7%
William Osler - Brampton Civic Site	77%	88%	85%	88%	87%	85%	86%	10%
William Osler - Etobicoke General Site	88%	89%	88%	90%	89%	88%	88%	0%



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## Diversions

## Transitions



### eHealth

- Diabetes Registry
- CAISI

- eWhiteboards
- Emergency Department Information Systems

- ED/CCAC Notification
- Resource Matching & Referral

*Health Integration Access Layer & Provider Portal*

### Programs & Services

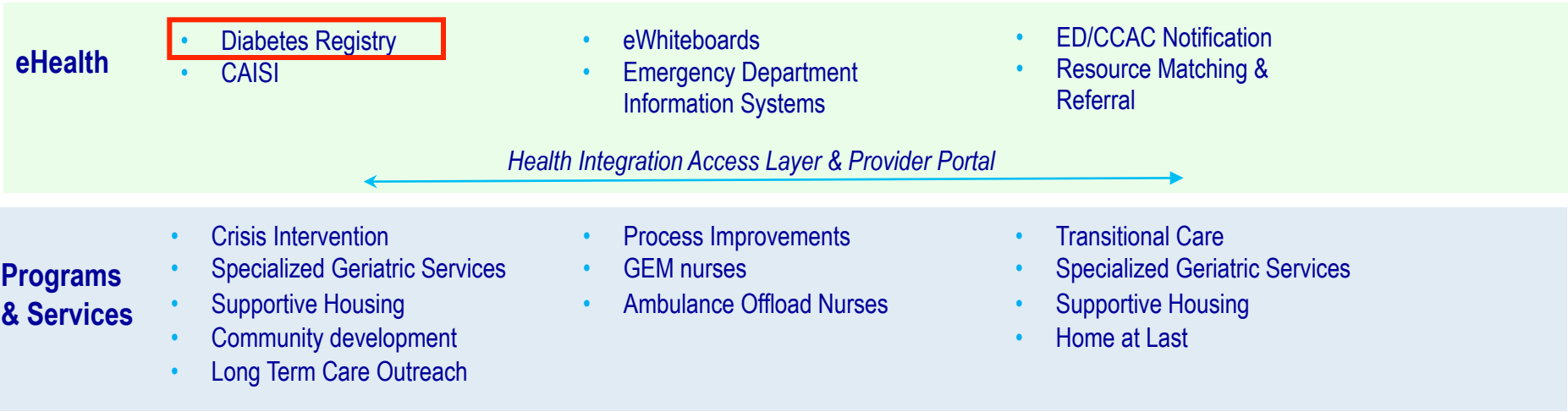
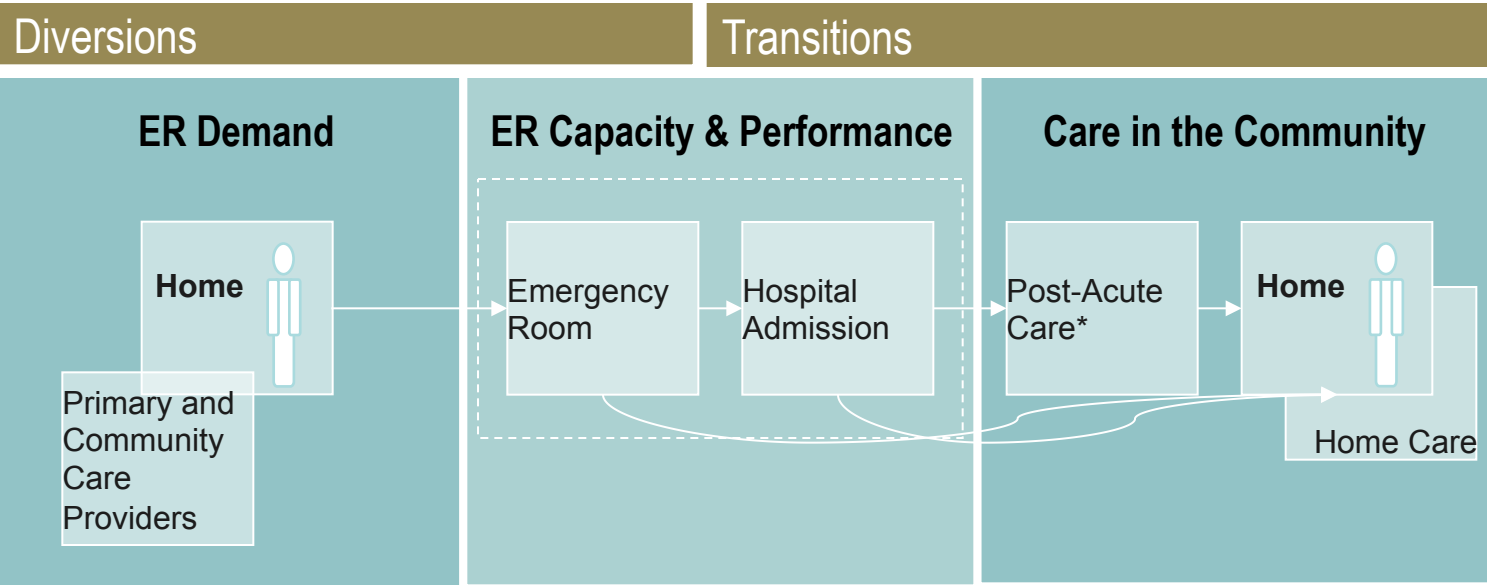
- Crisis Intervention
- Specialized Geriatric Services
- Supportive Housing
- Community development
- Long Term Care Outreach

- Process Improvements
- GEM nurses
- Ambulance Offload Nurses

- Transitional Care
- Specialized Geriatric Services
- Supportive Housing
- Home at Last



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Primary Care Diabetes Report  
Practice Overview

Diabetes

Provider: Smith, Robert    12 Stanley Avenue, Toronto    CPSO: 52316    Date report generated: DD/MM/YYYY

Indicator Status for My Patients with Diabetes

Diabetes Status	Number of Patients	To see a list of your patient please go to:
Number of patients with diabetes	100	
Patients with A1C completed within last 6 months	38	Page 2
Patients with LDL completed within last 12 months	58	Page 3
Patients who have had a retinal exam in last 24 months	27	Page 4

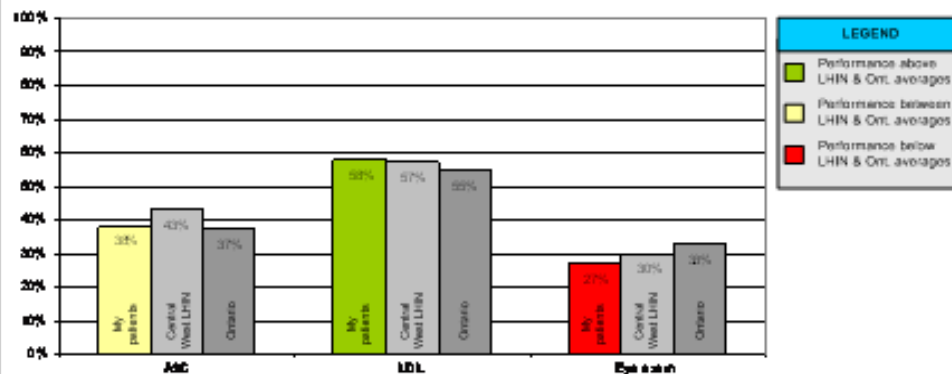
This chart groups patients by their diabetes care status. Page numbers are references to the complete patient list in the appendices.

Interpretive Summary of My Patients with Diabetes:

You currently have:

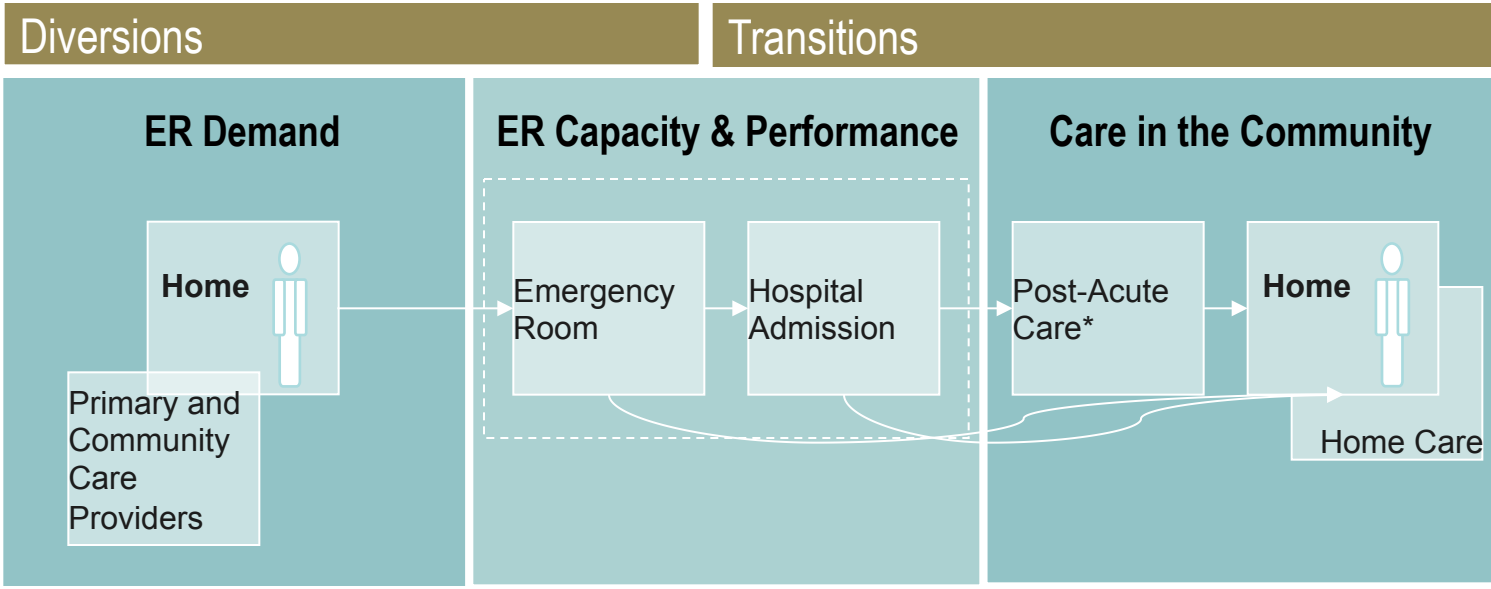
- 62 patients who have not had their A1C measured in the last 6 months (see page 5)
- 42 patients who have not had their LDL measured in the last 12 months (see page 6)
- 73 patients who have not had a retinal exam in the last 24 months (see page 7)

Comparison of My Results to LHIN and Provincial Averages



This chart identifies your practice pattern compared to your LHIN and the Ontario average for the current fiscal year.

Practice-level Report available via the Provincial Diabetes Registry



**eHealth**

- Diabetes Registry
- CAISI
- eWhiteboards
- Emergency Department Information Systems
- ED/CCAC Notification
- Resource Matching & Referral**

*Health Integration Access Layer & Provider Portal*

**Programs & Services**

- Crisis Intervention
- Specialized Geriatric Services
- Supportive Housing
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- Process Improvements
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- Ambulance Offload Nurses
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# Resource Matching & Referral

## Matching patients with the right care

User: **Seaton, Terra**  
Acting on behalf of:  
**TGH - 13 ES General Medicine**

Client: **LHIN, Rehab Demo**  
Birthdate: **Jan 01, 1940**  
OHIP: **999999999 XX**

**PathWays**  
Referral

Main Page > Referrals and Profiles > Referrals

go back help main page home log out

Please select service provider(s). Legend

Client does not match Short wait (0-6 days) Moderate wait (7-30 days) Long wait (31+ days) Static service provider

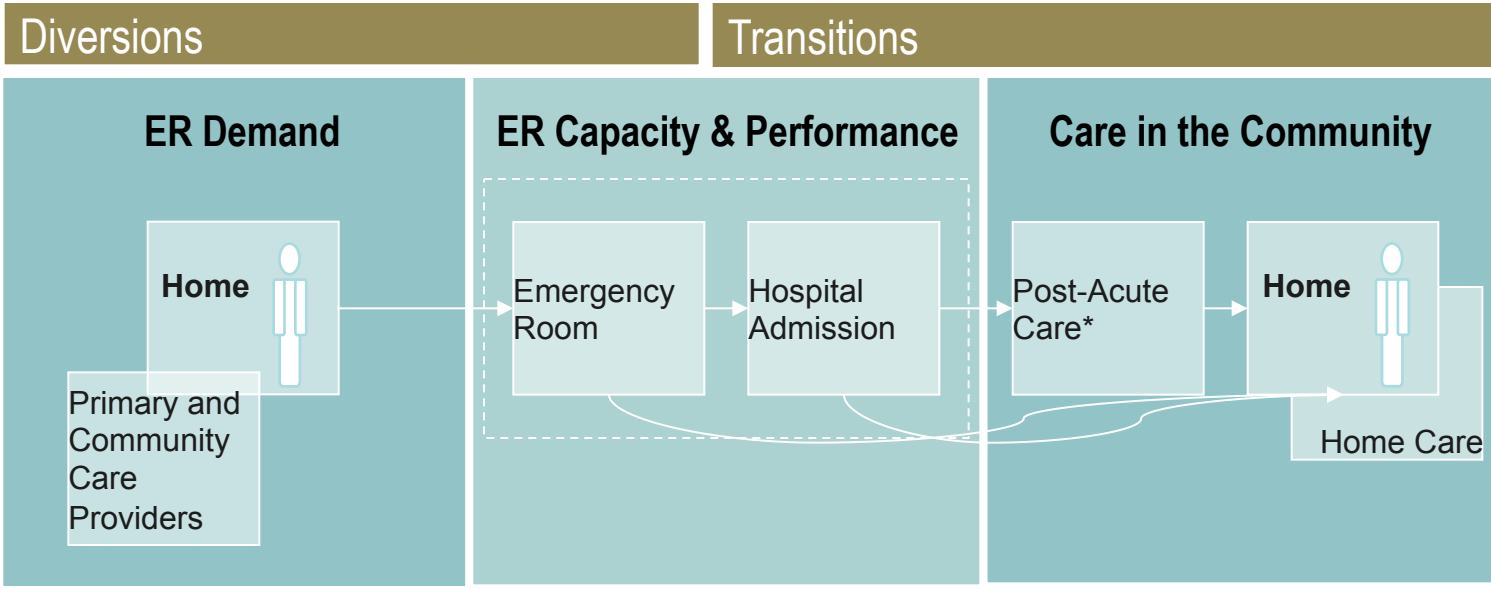
Selected provider Referral is pending Referral is accepted Referral is denied Subcategory

Rehab	CCC
ABI	General CCC Services
Amputee	Palliative Care
Cardiac	Dialysis Services
Chronic Ventilation	Neuro Complex Care
General / Medical	Bridgepoint Complex Care - Medical Activation

- Acute medical and surgical units (8)
- Rehabilitation/Complex Continuing Care (8)
- Toronto Central Community Care Access Centre
- Long Term Care Homes (12 of 39 live to-date)
- Mental Health and Addictions and convalescent care beginning in 2009





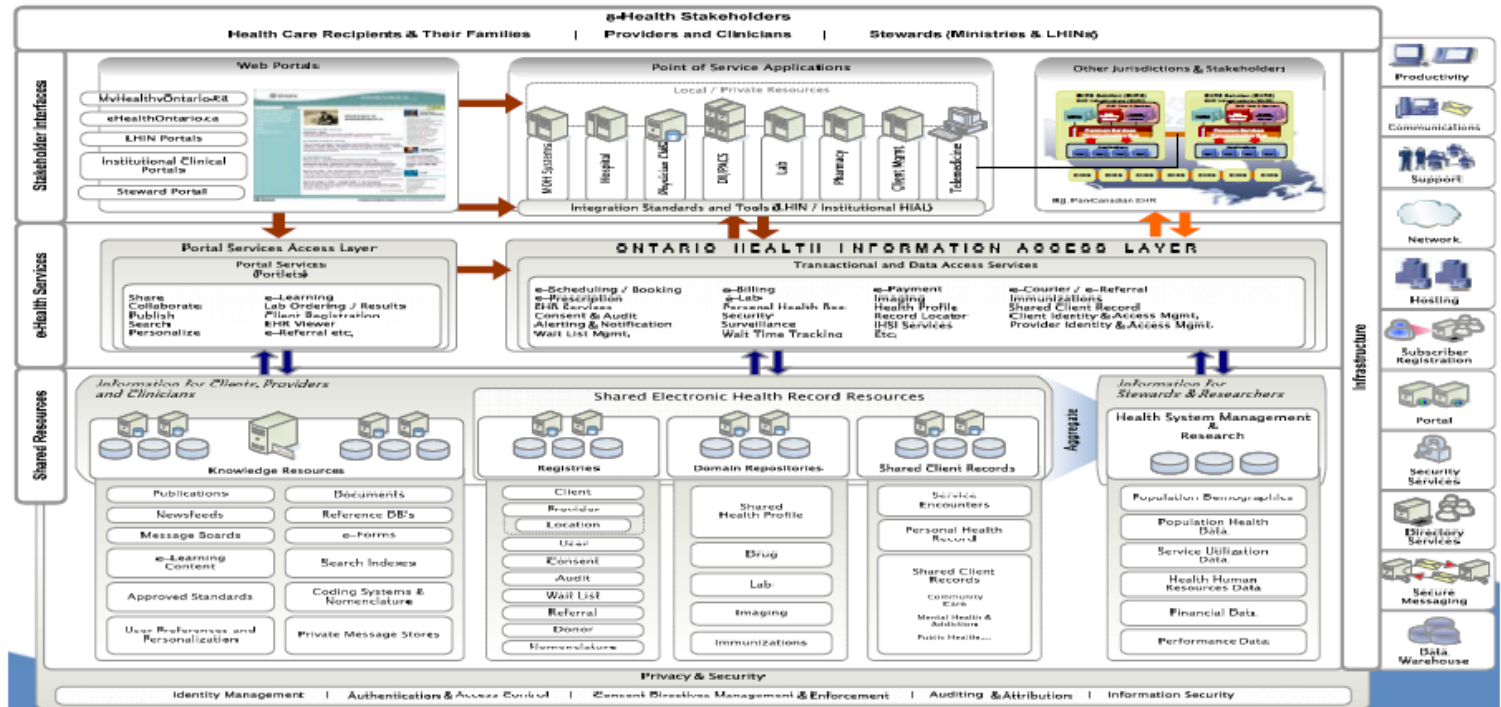
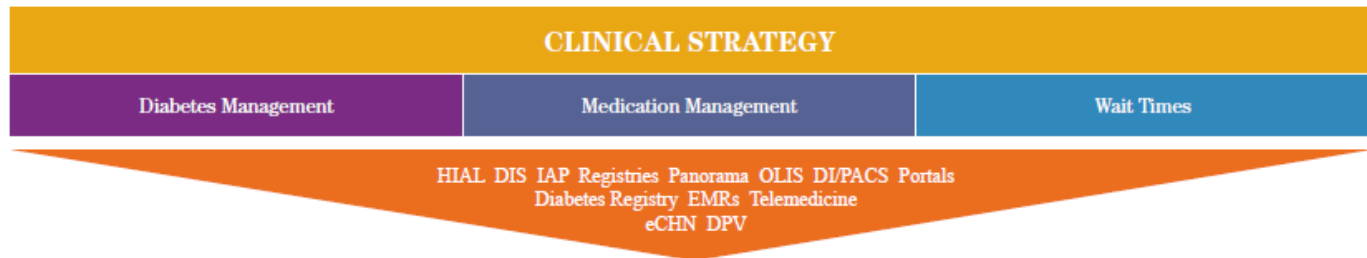


- eHealth**
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- Health Integration Access Layer & Provider Portal*

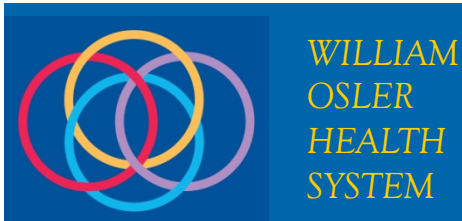
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  - Home at Last

While meeting immediate clinical priorities, the eHealth Strategy will build key elements of the 2015 Ontario Electronic Health Record

# Health Integration Access Layer & Provider Portal



Source: eHealth Ontario 2009-2012  
February 4, 2009



# ... And Supporting Patients in the Home

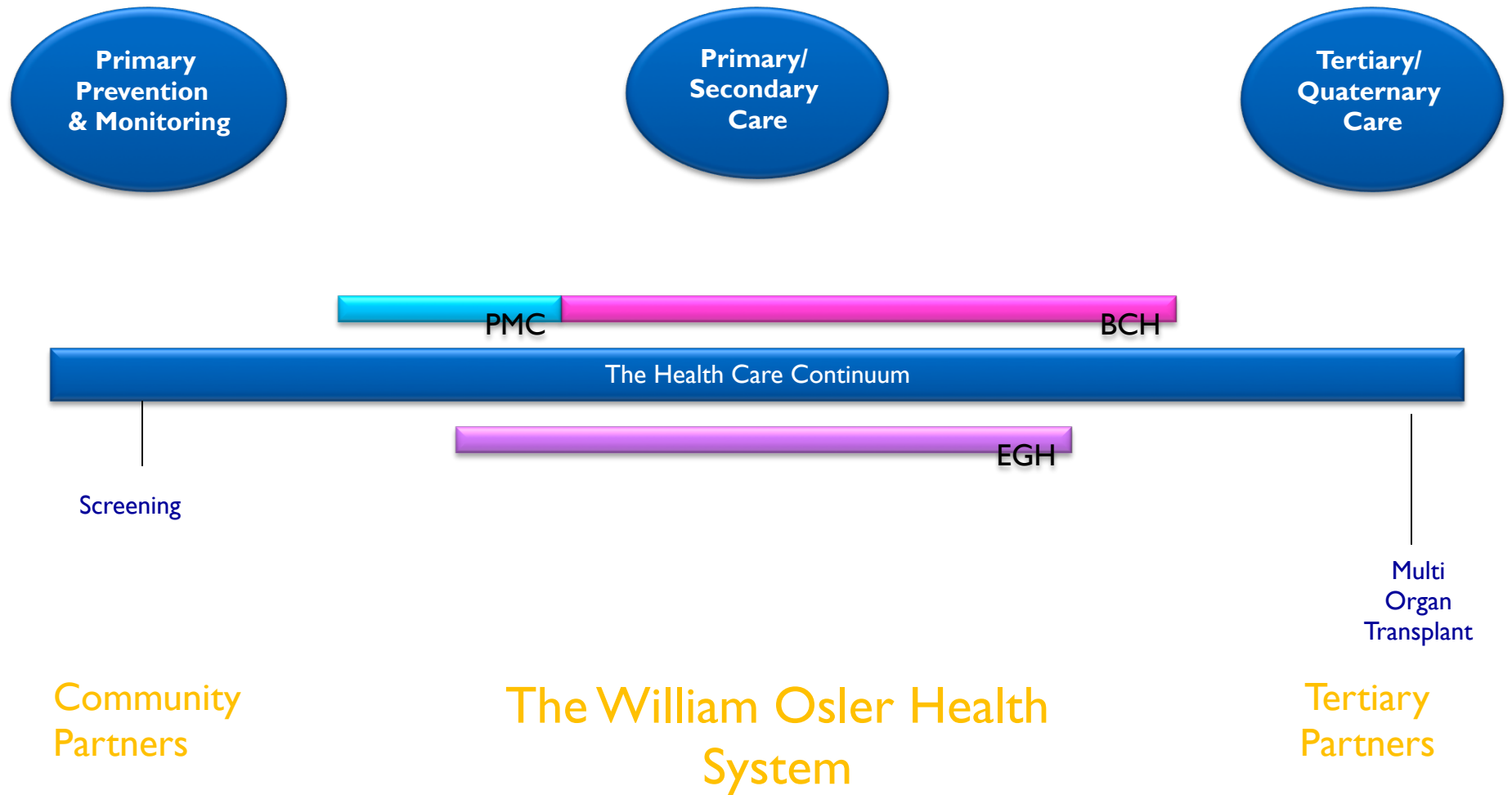


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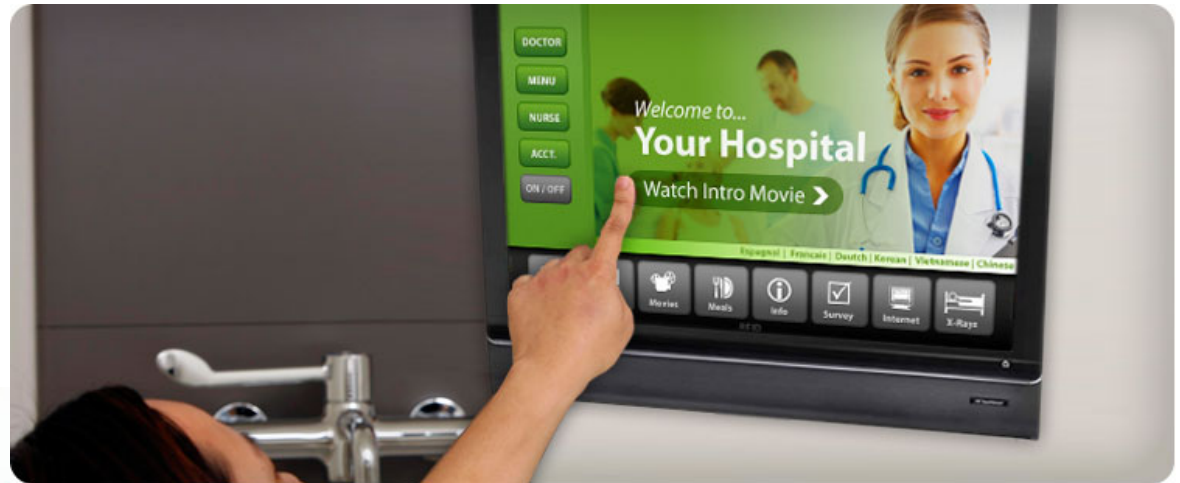


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To Design Health Systems that Serve the Global Community... Driven by Diversity



To succeed...



- Change the relationships
- Location of service
- Monitor the system
- Build trust



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## The ROI...

- Investment drives productivity & operational savings
- Reduced risk of drug & medical error
- Improved patient outcomes and autonomy
- System integration, standardization & consolidation



*Source: McKinsey & Company 2010*



Canadian experience with regional health care provider – Investment \$100M CDN - Generated equivalent savings – Able to treat 20% more patients without increasing personnel or reducing quality



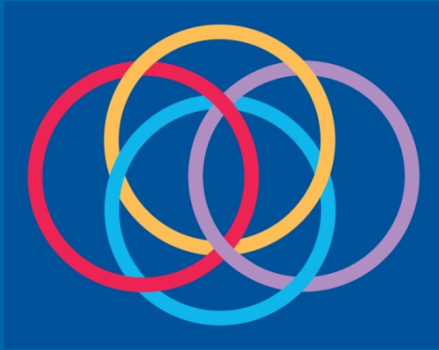
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## Solutions

- System approach
- Infrastructure support
- Macro changes
- Digitizing workflow
- eHealth/mHealth

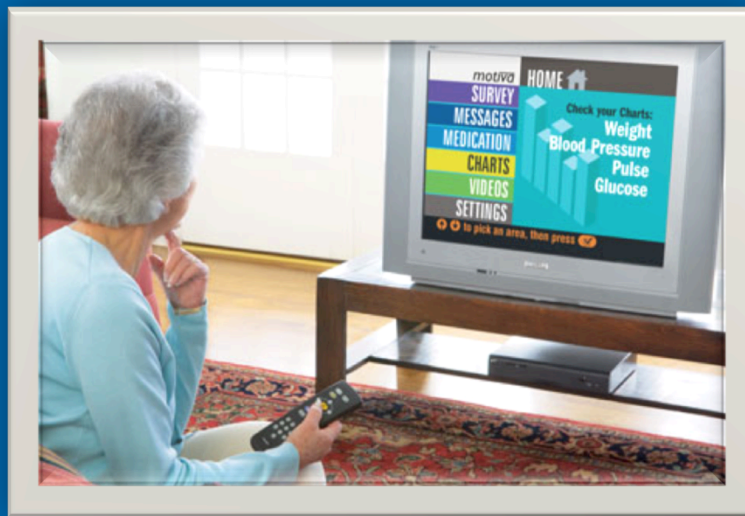


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