Collecting and Improving Electronic Health Information for Health Services Including Cancer: Work to Date and What's Ahead

Presented by:
Dr. Terrence Sullivan, President and CEO, Cancer Care Ontario

Presented to:
Longwoods Breakfast with the Chiefs Session

Date: Tuesday, December 15, 2009

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Recent News Media on eHealth…

CTV OTTAWA

No value for $1B on eHealth, Ont. auditor finds

Updated: Wed Oct. 07 2009 16:57:41

CTV.ca News Staff

thestar.com

GREATER TORONTO

10,000 patients' data a click away

THE GLOBE AND MAIL

MEDICAL RECORDS FAIL CHECKUP

Nov 4, 2009 ... Ms. Fraser's audit did not mention the scandal over untendered contracts that recently engulfed **eHealth Ontario**, but she did raise questions ...

THE CANADIAN PRESS

Ontario's eHealth wasted $1 billion

By Keith Leslie - THE CANADIAN PRESS

CBC news

EHealth medical records: Do they improve care?

December 7, 2009 11:36 AM |

By POV

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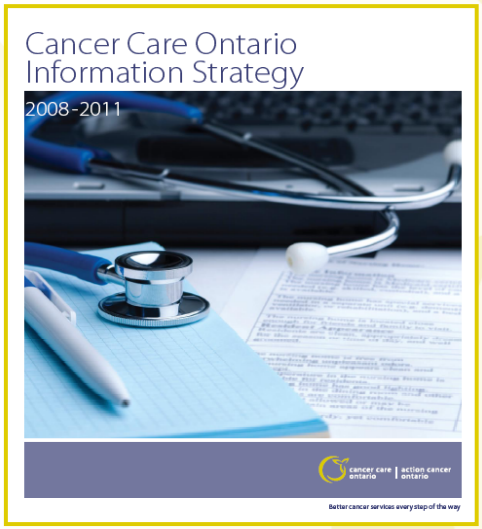
2008-2011 Ontario Cancer Plan and Information Strategy



SIX GOAL

1. Reduce the incidence of cancer
2. Reduce the impact of cancer through effective screening & early detection
3. Ensure timely access to effective diagnosis and high quality cancer care
4. Improve the patient experience across continuum
5. Improve the performance of cancer system
6. Strengthen translation of research into improvements in cancer control

Ensures CCO has the information systems and technology to meet the goals of the Ontario Cancer Plan, and to continue to drive quality, accountability, and innovation in the rapidly changing cancer system environment.

-Transform cancer care using IM/IT and eHealth
- Build out the cancer health system
- Enable the Regional Cancer Programs
- Accelerate change through innovation
- Strengthen the organization

Key Core Competencies

- Active clinician engagement & administrative alignment
- Performance measurement & management cycle
- Development & adoption of standards & guidelines
- Research & surveillance
- Public reporting & transparency in performance

AND

- Successful deployment of IM/IT solutions to support the transformation of cancer care & access to care which serves to support our other competencies

Active use of Health Information to Drive Disease Prevention/Management, Quality and Access

- Disease Surveillance
- System planning (Ontario Cancer Plan 2008-2011)
- Program management and performance improvement
- Access and quality improvement (linking data and $$$)
- Public Reporting
  (Ontario Cancer Plan Progress Report 2008-2009)
- Research (cancer imaging, health services research, population studies and experimental therapeutics)

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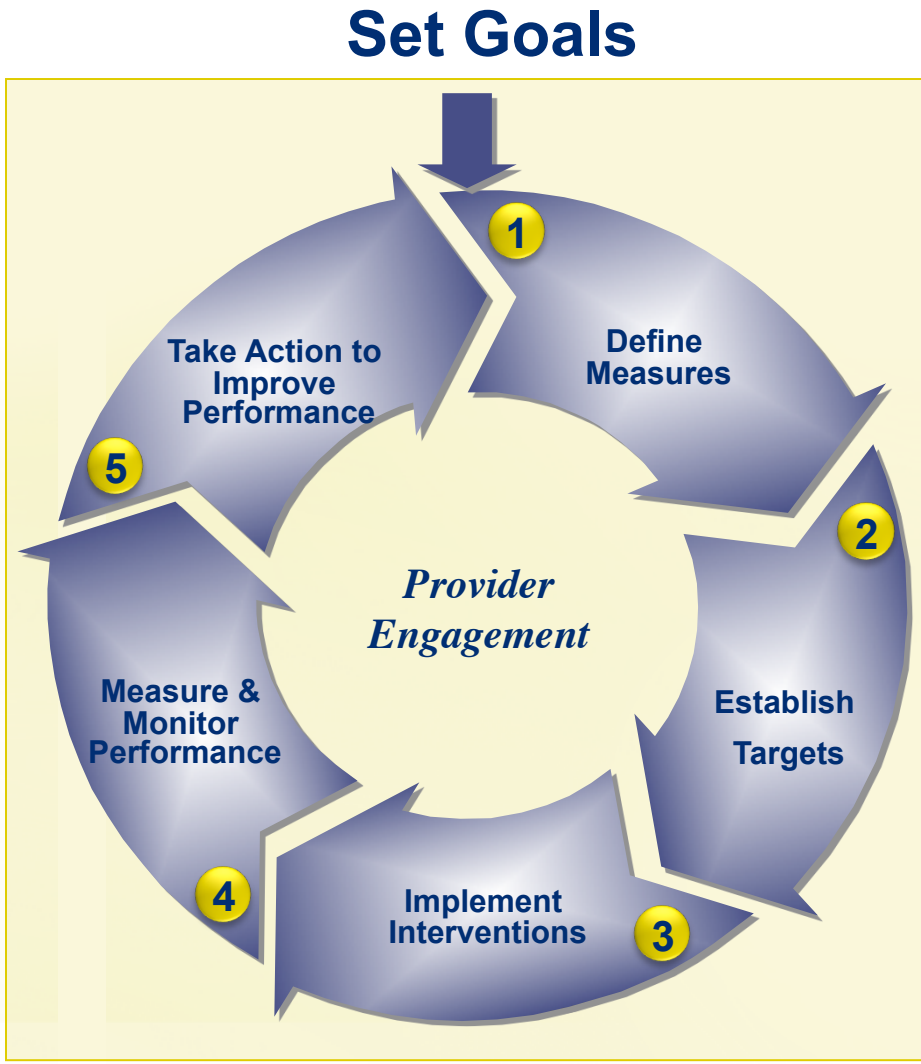
Principles for Data Collection

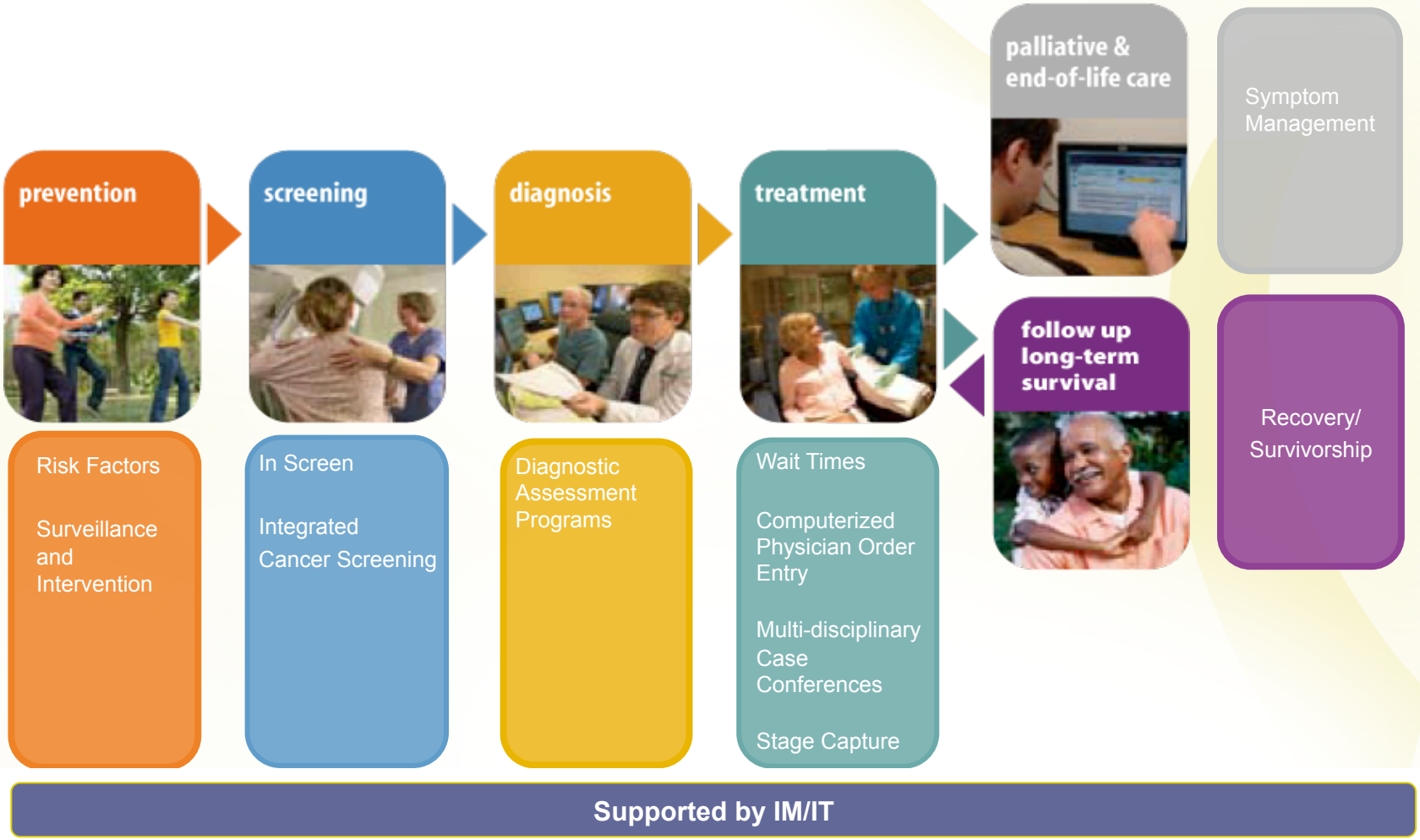
1. All data must have a clear purpose and use (for clinicians, local and system-wide administrators and/or patients)
2. Information requirements driven by business – clinicians, administrators, scientists
3. Collect once, use many times
4. Balance quality and utility
5. Wherever possible, integrate information collection into clinical processes

Clinically Driven From Data to Information to Action



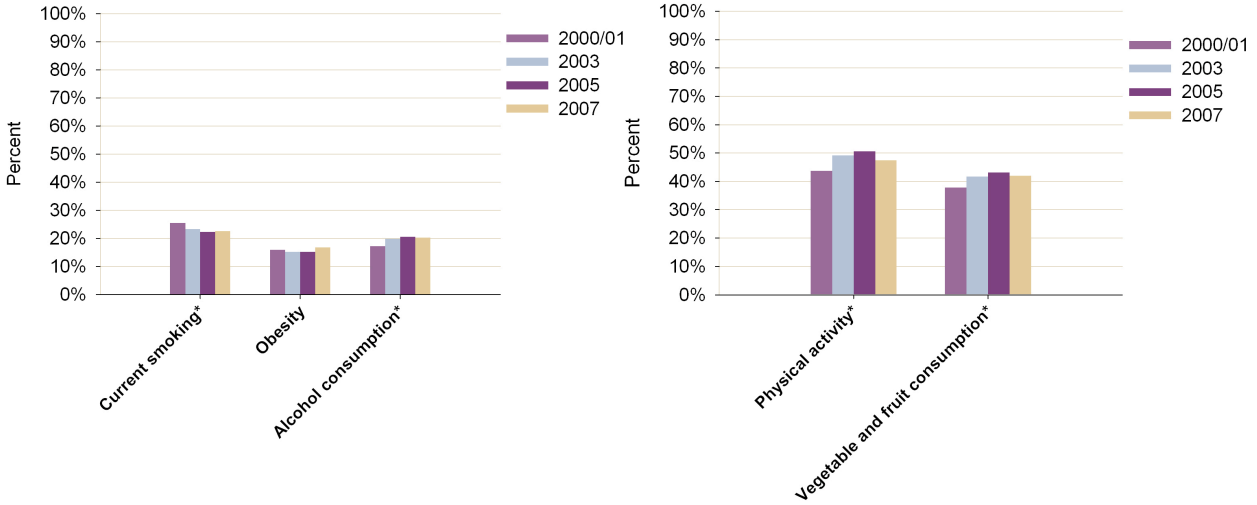
1. DEFINE MEASURES
2. ESTABLISH TARGETS
3. IMPLEMENT INTERVENTIONS
4. MEASURE & MONITOR PERFORMANCE
5. TAKE ACTION TO IMPROVE PERFORMANCE

CCO's disease pathway management approach



Prevention: Risk Factors

Selected Modifiable Cancer Risk Factors
Percentages of Ontario adults self-reporting selected modifiable cancer risk factors, Ontario, by year



Report date: February, 2009
Data source: Statistics Canada (Canadian Community Health Survey 2000/01, 2003, 2005, 2007)
Notes: Rates are age-standardized to the 2001 Canadian population
*2007 significantly different from 2000/01
Current smoking: daily or occasional smoker (aged 20+) who smoked at least 100 cigarettes in lifetime and at least 1 cigarette in the past 30 days
Obesity (aged 18+). Body Mass Index of 30 or greater. Body Mass Index (BMI) = weight in kilograms/(height in metres) square. Excludes pregnant and lactating women.
Alcohol consumption (aged 19+): proportion who do not follow the CAMH low-risk drinking guidelines: abstention or < or equal to 2 drinks per day, and < or equal to 14 drinks for men or < or equal to 9 for women per week.
Vegetable and fruit consumption(aged 18+) > or equal to 5 times a day
Physical activity (aged 18+): average daily energy expenditure in leisure activities over the past 3 months > or equal to 1.5 kcal/kg/day

CSQI 2009

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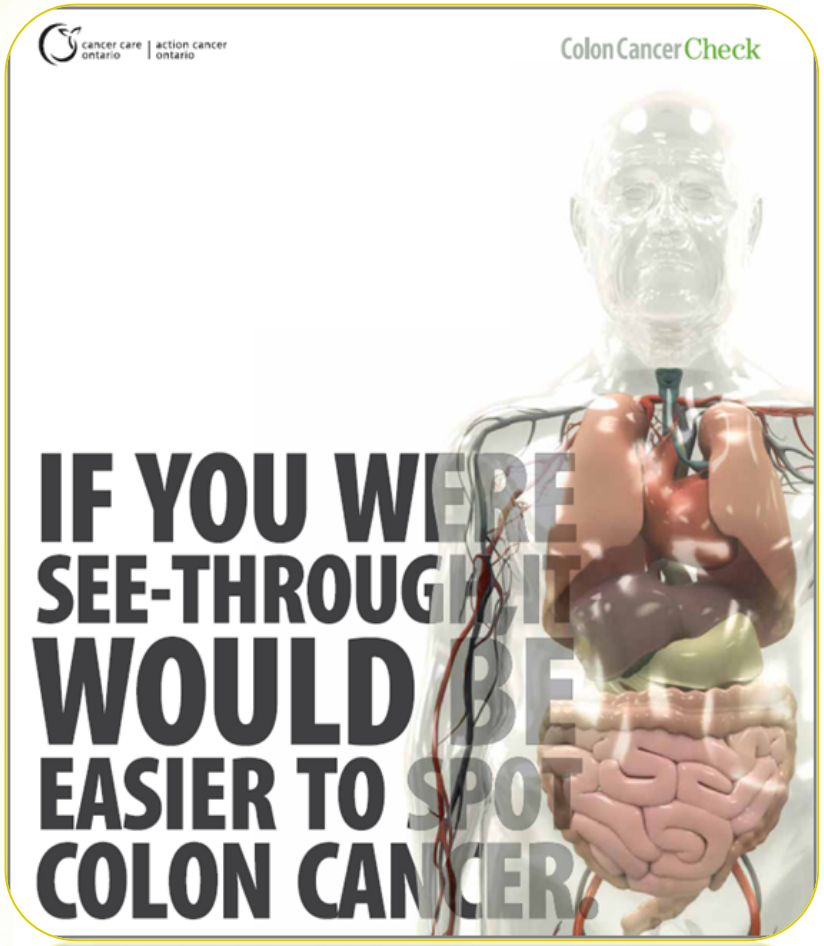

Increasing screening rates for colorectal cancer

InScreen
screen for life | dépister pour la vie

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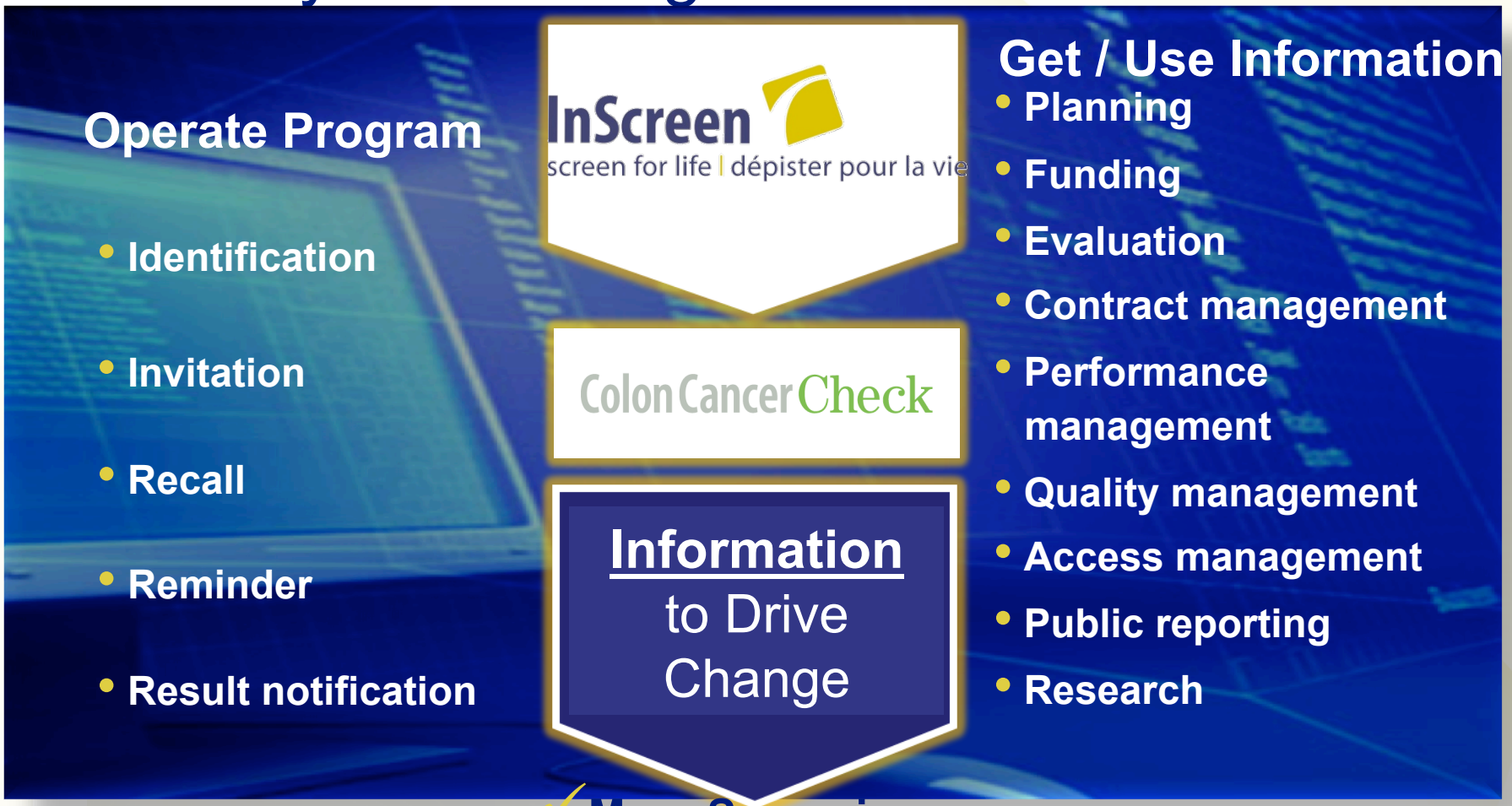
Colon Cancer Check is using information to drive system change



✓ More Screening

✓ Better Screening

✓ Increased support for Primary Care

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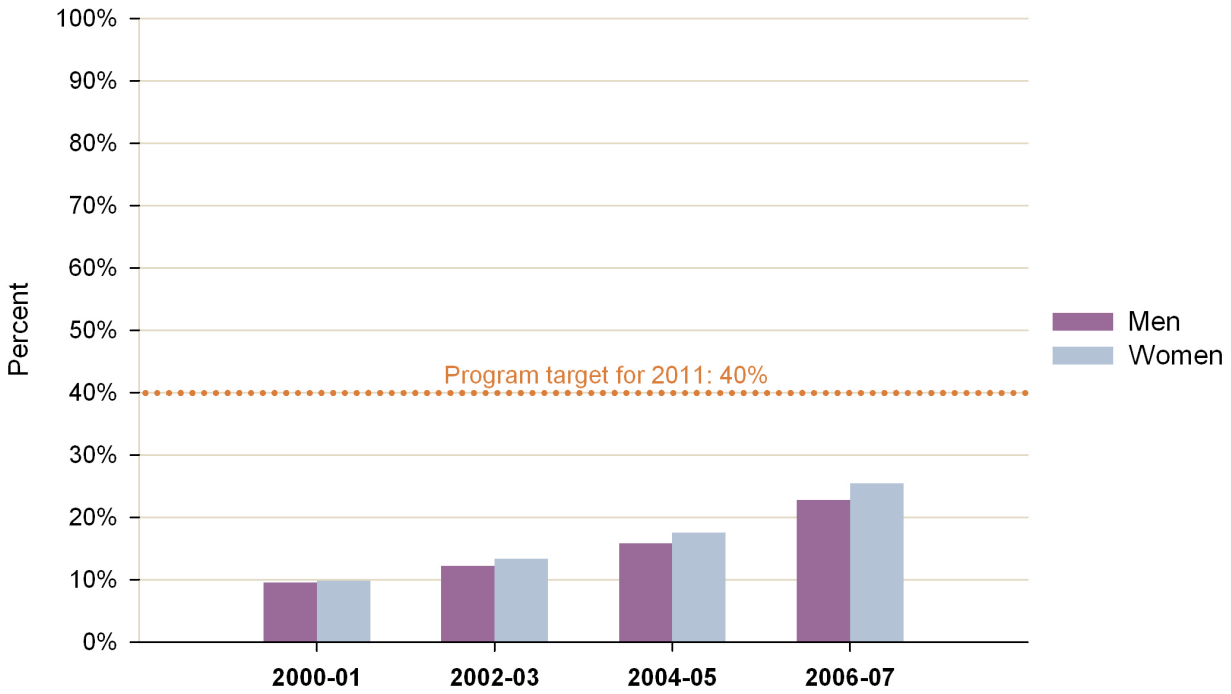
Colorectal Cancer Screening (FOBT) Participation

Biennial fecal occult blood test (FOBT) participation (ages 50-74), 2000-2007, by sex



Report date: March, 2009
Data source: OHIP, Statistics Canada
Prepared by: ICES
Notes: Rates are standardized to the 1991 Canadian population

Diagnostic Assessment Program

Diagnostic Processes (DP)

- Create central access point for all lung & CRC diagnosis and staging in province
- Work with regions to develop DPs that are:
  - tailored to regional needs
  - built around PEBC guidelines & validated clinical pathways
  - built to capture quality indicators

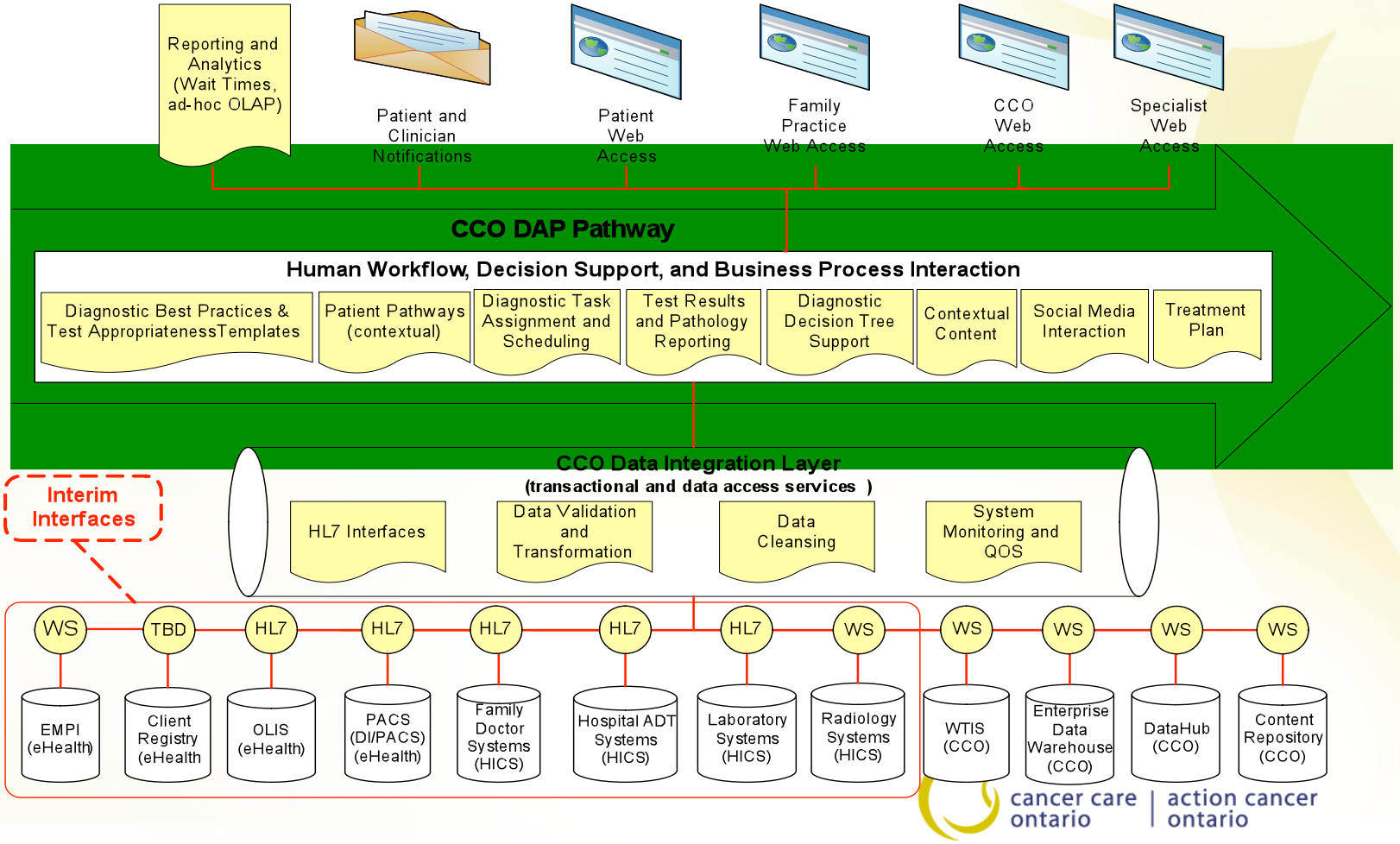
Wait Time

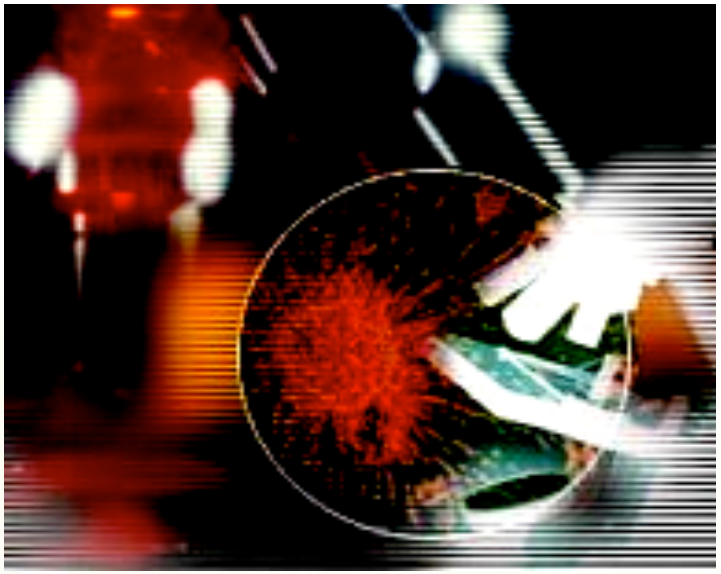
- Define & validate beginning and end of diagnostic phase
- Identify quality indicators to assist with tracking and measuring of wait time data and best practices
- Create structure/process to capture diagnostic wait time indicators
- Develop priorities in diagnostic testing

Electronic Pathway Solution

- Develop an electronic navigation and workflow tool to assist family doctors, patients and diagnosticians:
  - Understand and navigate the diagnostic journey
  - Connect to same content management systems for review of test results, scheduling and next steps
  - Assist family doctors with patient management
  - Reduce wait times, testing overlap and patient anxiety
  - Provide access to relevant community and psychosocial supports

DAP Electronic Pathway Solution – An Early Conceptual Architecture





Improving the quality and completeness of cancer stage data collection and cancer pathology reporting

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Pathology Information Management System (PIMS) – Automates Cancer Pathology Reporting to Improve Data Timeliness, Completeness and Quality

Proportion of hospitals reporting cancer pathology to CCO, by level of standardization.

Leading Edge →

Reporting Level	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Description	▪ Narrative ▪ No CAP content ▪ Single text field data	▪ Narrative ▪ CAP content ▪ Single text field data	▪ Level 2+ ▪ Synoptic-like structured format	▪ Level 3+ ▪ Electronic reporting tools using drop down tools	▪ Level 4+ ▪ Standardized reporting language ▪ Data elements stored in discrete data fields	▪ Level 5+ ▪ LOINC, ICD-O SNOMED CT coding standards
% Ontario Hospitals 2004-05	5%	40%	50%	5%	0%	0%
% Ontario Hospitals 2006-07	0%	5%	70%	25%	0%	0%
% Ontario Hospitals 2008-09	0%	0%	51%	21%	28%	0%
% Ontario Hospitals 2009-10 TARGET	0%	0%	0%	0%	100%	0%
% Ontario Hospitals 2012 TARGET	0%	0%	0%	0%	0%	100%

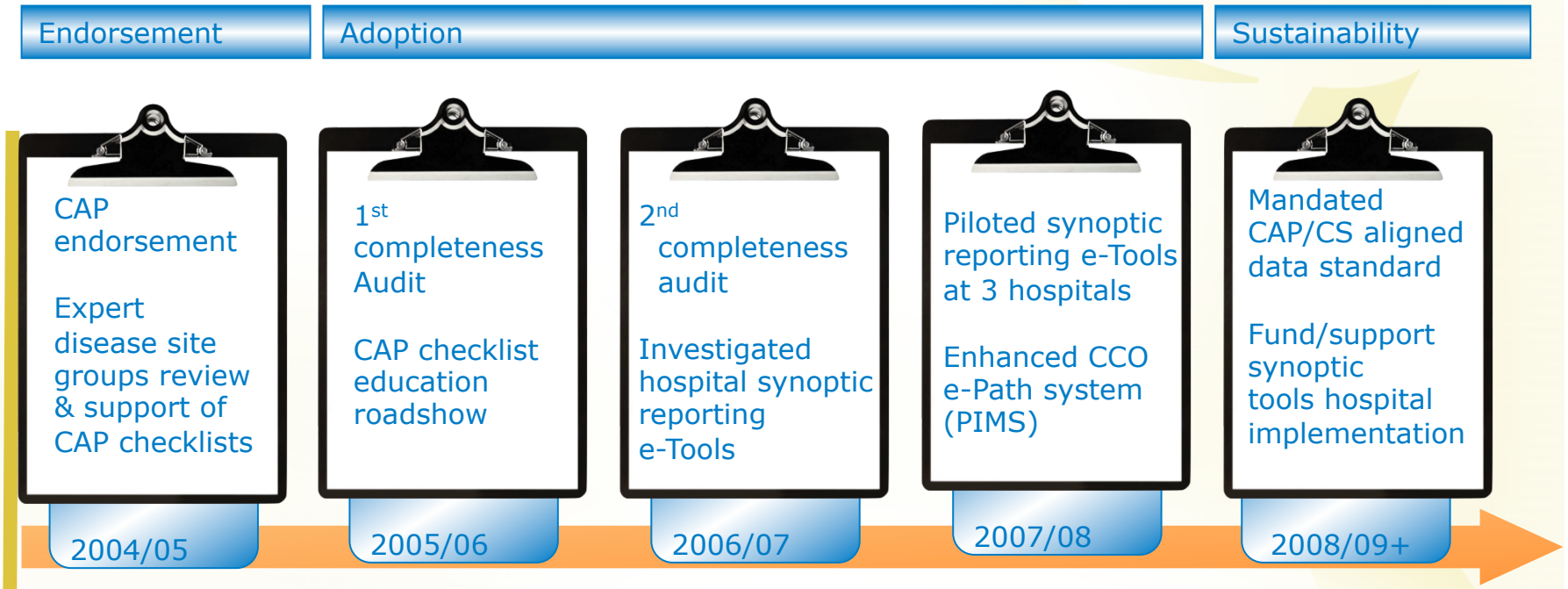
08/09 CCO Standard (Top 5 cancer resection reports only)

2010 CCO Standard CAP and NAACCR aligned All cancer checklists

*Breast, Colorectal, Lung, Prostate & Endometrium

- Pathology reports for five* common cancers submitted electronically in standardized, synoptic format
- Almost all cancer is diagnosed through the combined efforts of surgeons & pathologists
- The thorough & clear recording of their findings ensures timely diagnosis, prognosis & best treatment choices for patients

Implementing CAP reporting standard in Ontario has engaged pathologists across the province



Education Outreach and Knowledge Transfer

Bulletins and Updates

Monthly Teleconferences with all Hospital Pathologist Leads

Reporting Back to Hospitals and Pathologists

Increasing safety for Ontario's chemotherapy patients

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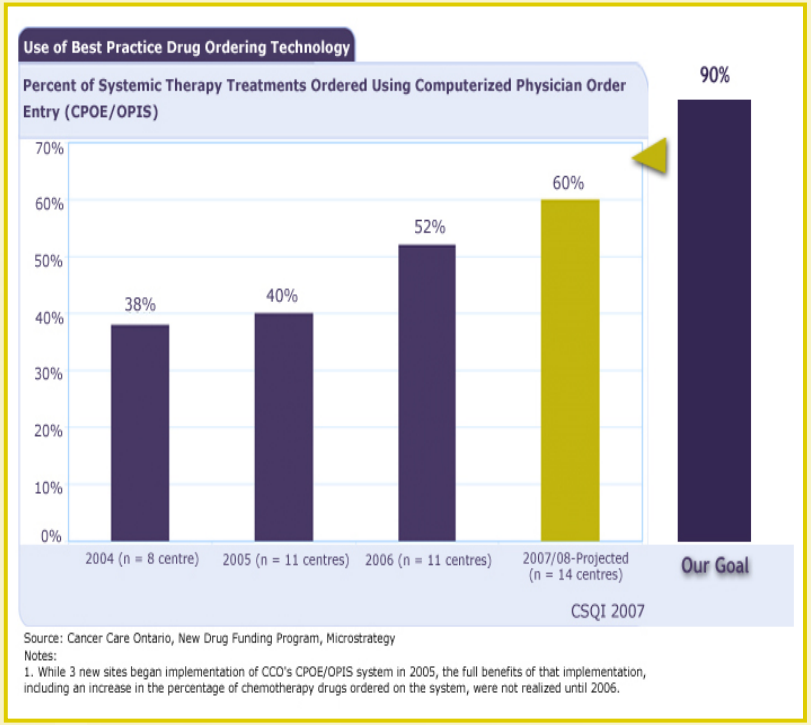
Systemic Treatment Computerized Physician Order Entry (ST CPOE) system: Improving patient safety



Helps prevent approximately 8,500 drug errors, 750 hospitalizations, 500 physician office visits annually

- Reduces prescription errors, offers clinical decision support to medical oncologists through the Oncology Patient Information System (OPIS) 2005 – CCO's ST CPOE system
- Our current successes
  - Used by more than 1,000 physicians, 750 nurses and 250 pharmacists serving 50,000 Ontario patients
  - 100% physician adoption rate (where deployed)
  - 250,000 orders placed annually through OPIS 2005 system

Reducing Wait Times for Surgery and MRI/CT Scans in Ontario

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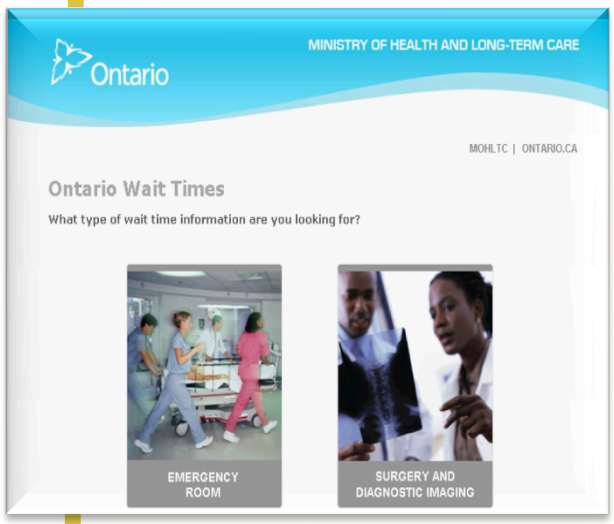
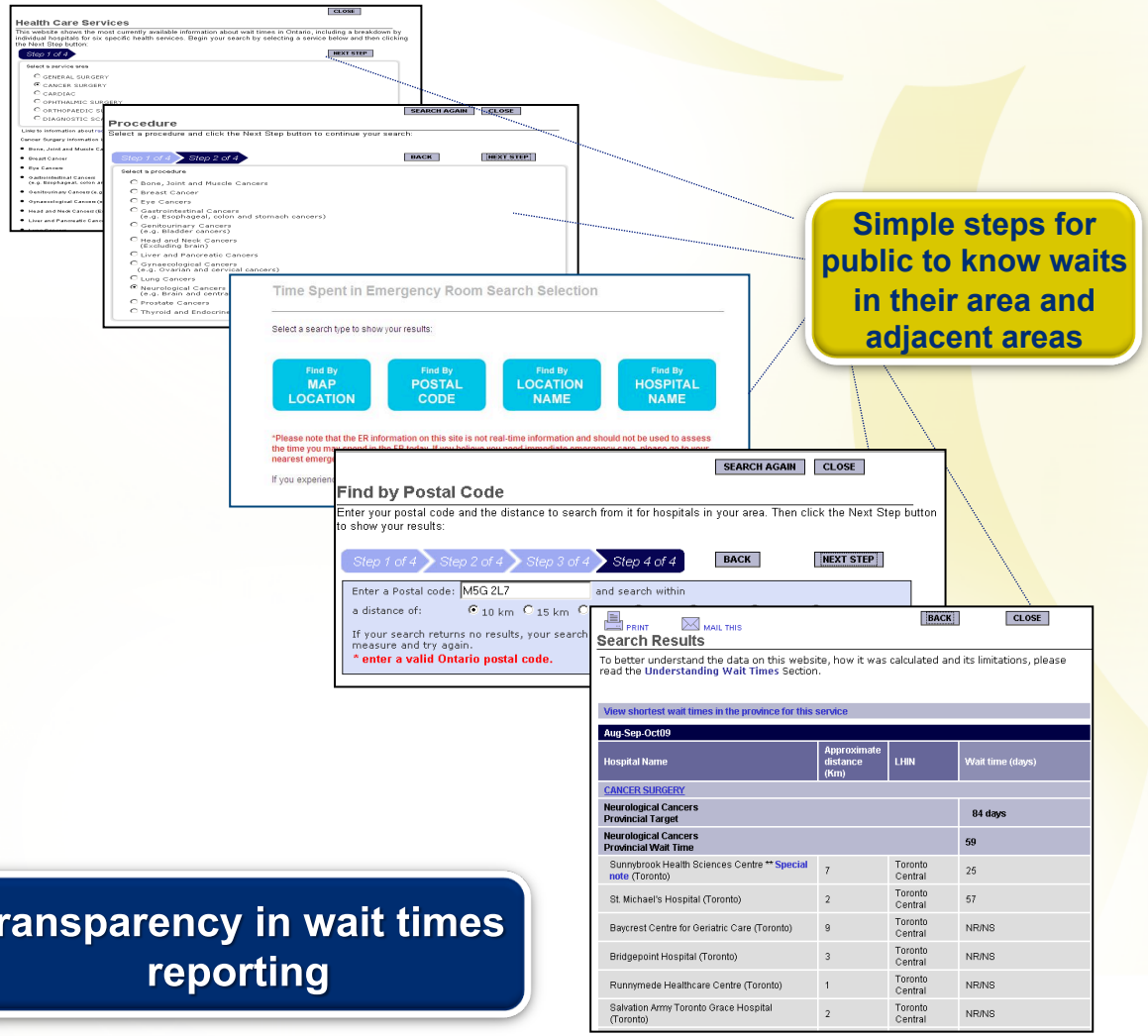
Wait Times Information System (WTIS): Public, Clinicians and Administration using information to make decisions

Information at the patient's fingertips



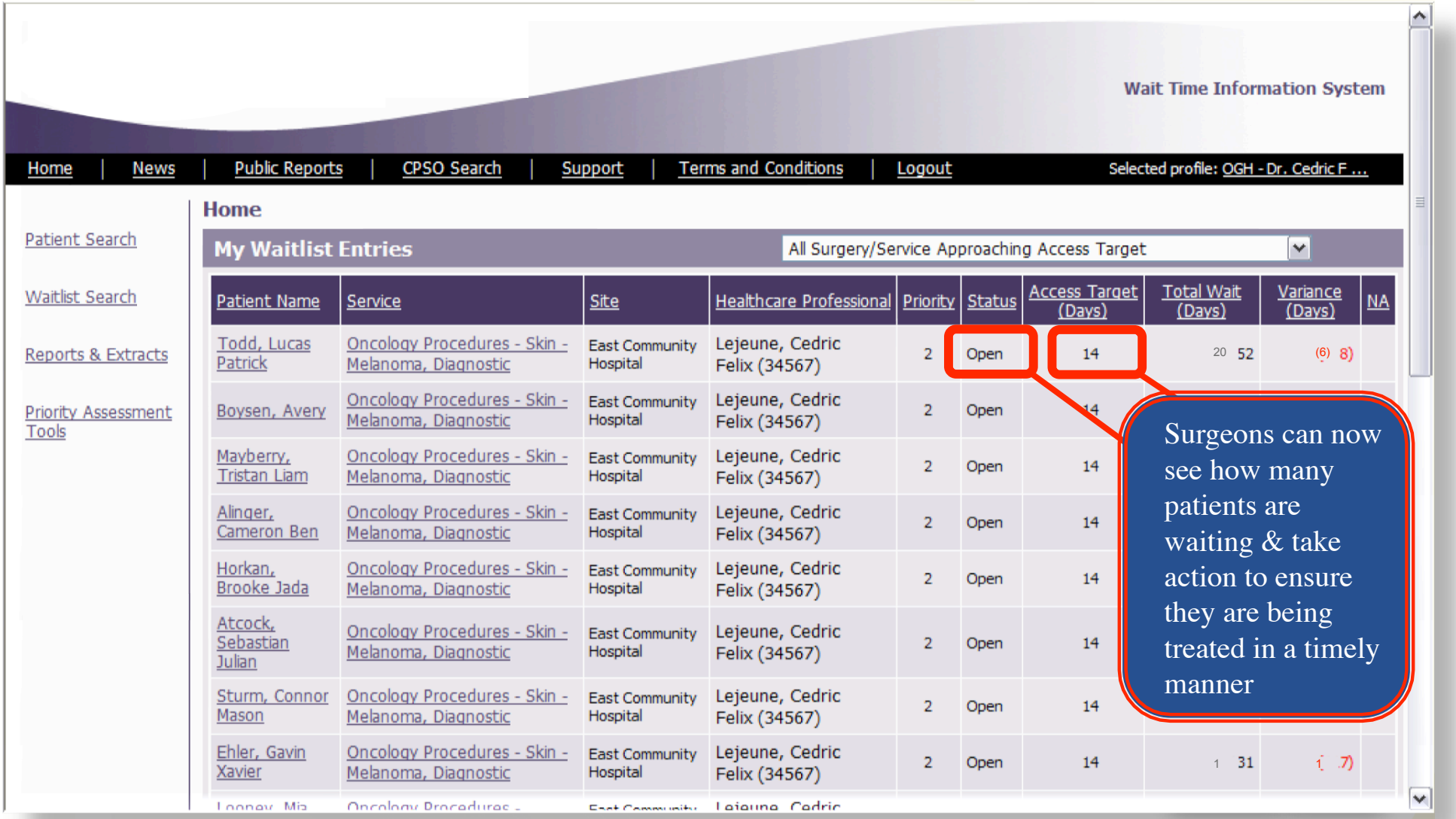
- www.ontariowaittimes.com
- **Consumer view of information**
- **Increased accountability**



Simple steps for public to know waits in their area and adjacent areas

Transparency in wait times reporting

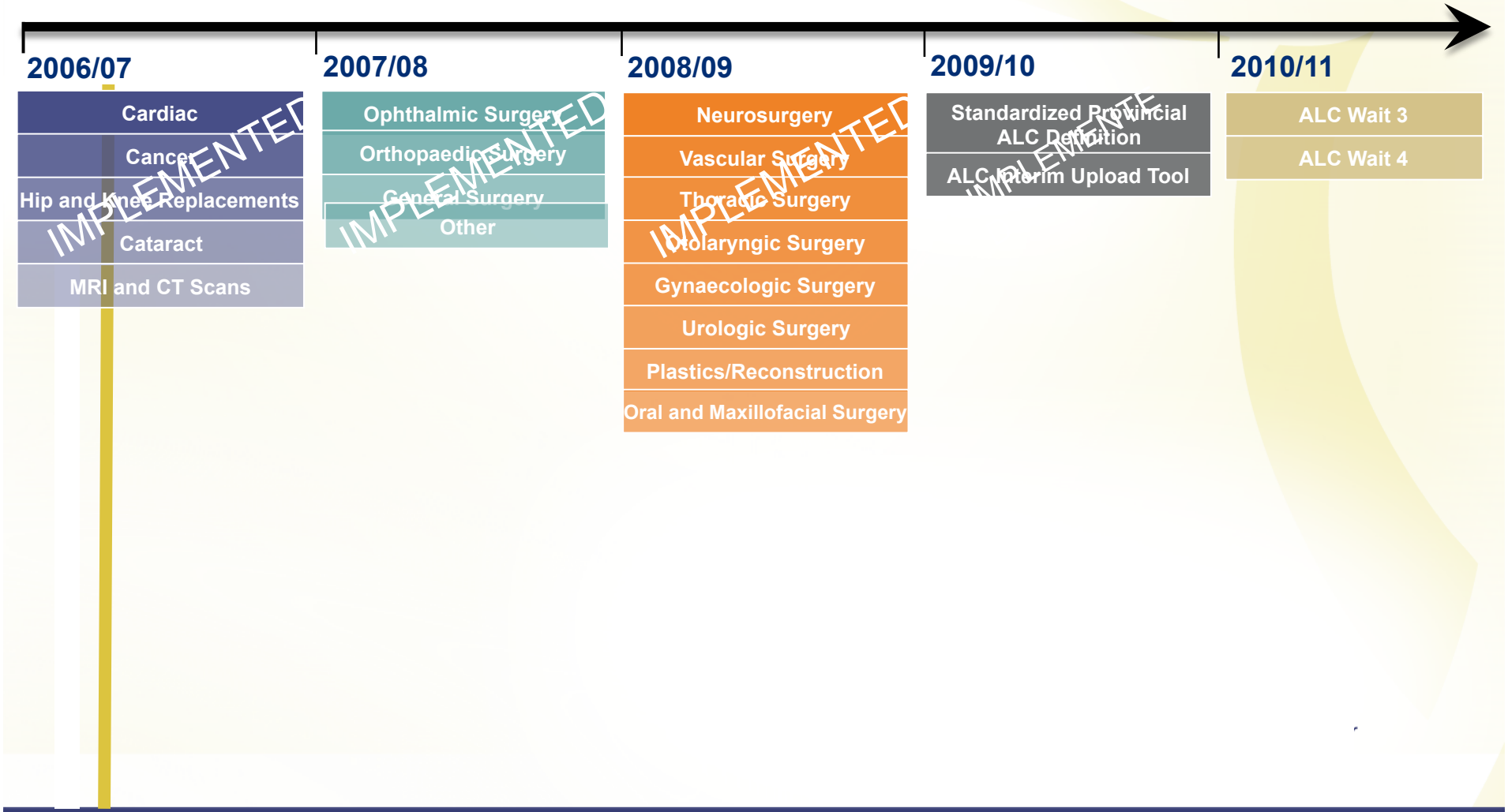
The Wait Time Information System Was Built



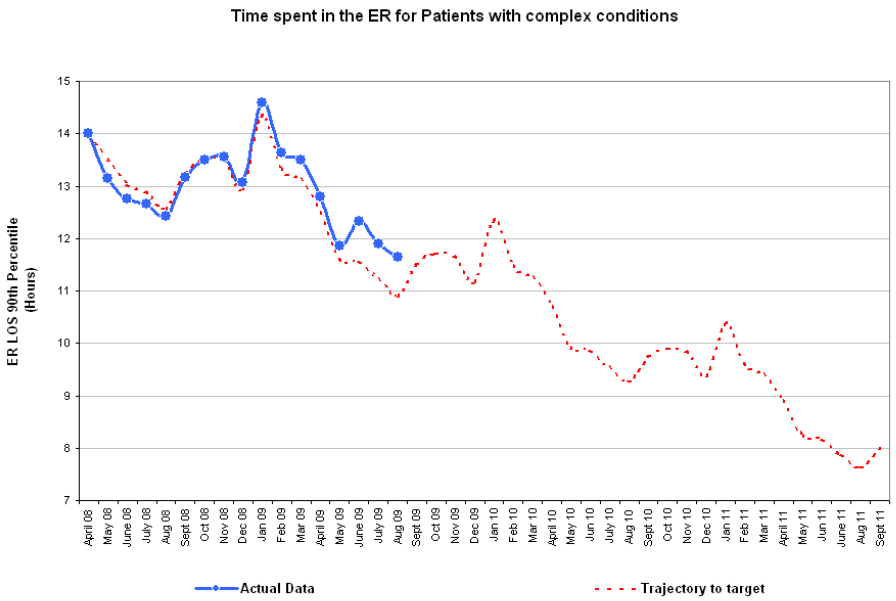
Seeing the Results in Lower Wait Times

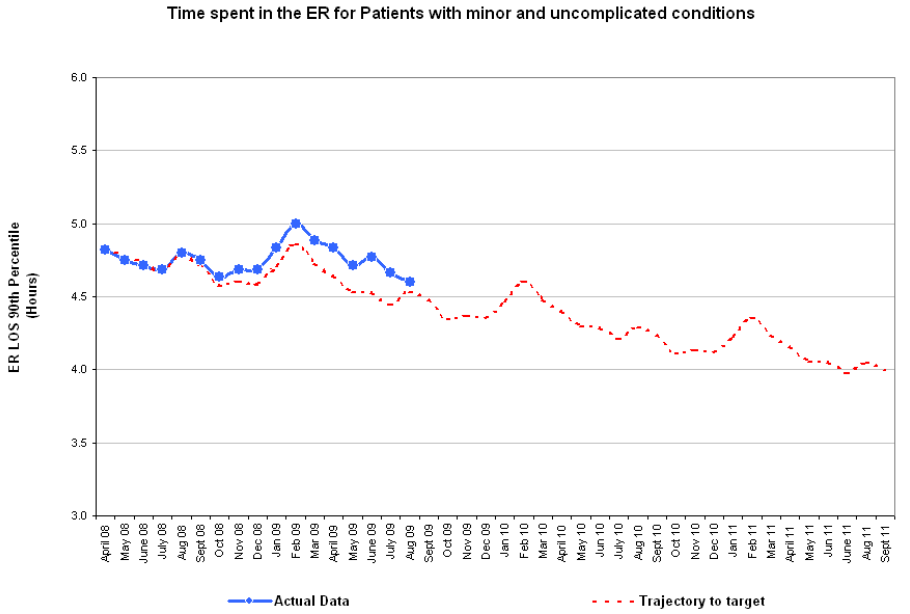
Service	90 Percent Completed Within					
	Baseline (Days) [1]	Current (Days) (Oct. 09)	Access Target (Days)	Percentage Completed Within Target	Current vs. Baseline	
					Net change (Days)	Percentage change
General Surgery	121	113	182	97%	-8	-6.6
Cancer Surgery	81	63	84	95%	-18	-22.2
Angiography[2]	56	30	–	–	-26	-46.4
Angioplasty[2]	28	20	–	–	-8	-28.6
Bypass Surgery[2]	49	58	182	100%	9	18.4
Ophthalmic Surgery[3]	130	118	84-182	98%	-12	-9.2
Cataract Surgery	311	116	182	99%	-195	-62.7
Other ophthalmic surgery	114	134	84-182	90%	20	17.5
Orthopaedic surgery	190	178	182	91%	-12	-6.3
Hip replacement	351	166	182	93%	-185	-52.7
Knee replacement	440	178	182	91%	-262	-59.5
Other orthopaedic surgery	175	181	182	90%	6	3.4
MRI	120	115	28	41%	-5	-4.2
CT	81	43	28	81%	-38	-46.9

Wait Time Information System- continuing to expand beyond cancer



Actual ER LOS Trend vs. Trajectory to Target





- In August 2009, for Low Acuity patients, the gap between actual ER LOS (4.6 hours) and the trajectory to target (4.5 hours) is only 0.1 hours.
- ER LOS for High Acuity patients decreased in August 2009; however, it is still not on the trajectory target point of 10.9 hours.
- Typical seasonal peaks are during winter months; seasonal lows are summer months.
    - We expect to see a decrease for next month based on seasonal trend

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The importance of quality indicators: a call to action (CUAJ Editorial)

EDITORIAL CUAJ • December 2009 • Volume 3, Issue 6 © 2009 Canadian Urological Association

This topic (USE OF QUALITY INDICATORS), triggered in part by a recent Cancer Care Ontario (CCO) report of positive margin rates in radical prostatectomies, was of profound interest at the January 2009 Issues & Controversies in Prostate Care (ICPC) conference, an annual educational program for Canadian physicians involved in the care of patients with prostate diseases. Similar to the successful quality-improvement initiatives by CCO in colorectal and ovarian cancer surgery, the hope was that by identifying any inconsistencies across health regions in the number and measurable outcomes of radical prostatectomies as compared against "accepted or reasonable standards," the quality of surgeries and their oncologic and functional outcomes could be improved.

GUIDELINE FOUND AT: http://www.cancercare.on.ca/pdf/pebc17-3f.pdf

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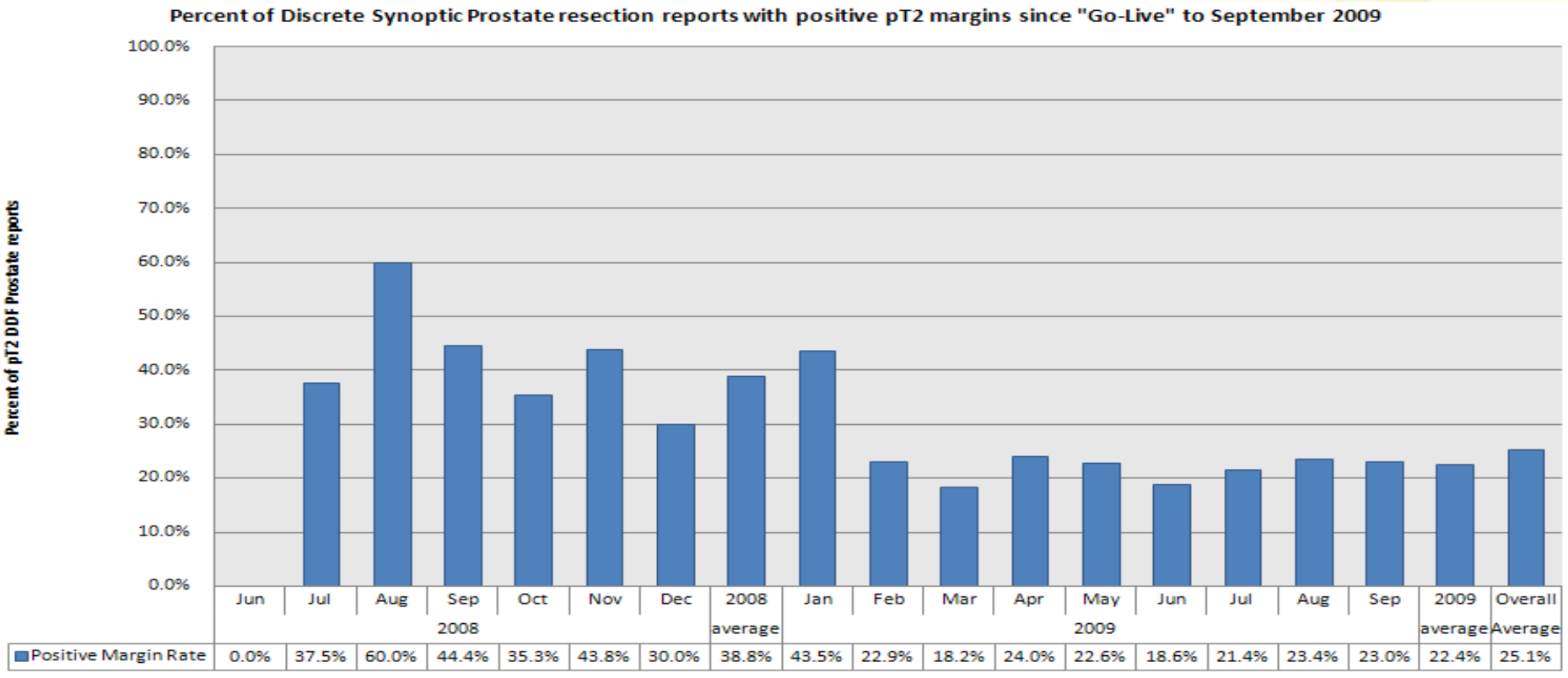
Prostate Margin Rate Audit

Positive Surgical Margin Rate for Radical Prostatectomies for pT2 Patient Overall Since Synoptic Pathology “Go Live Date” to Sept. 2009



	Jun 2008	Jul 2008	Aug 2008	Sep 2008	Oct 2008	Nov 2008	Dec 2008	2008 average	Jan 2009	Feb 2009	Mar 2009	Apr 2009	May 2009	Jun 2009	Jul 2009	Aug 2009	Sep 2009	2009 average	Overall Average
Positive Margin Rate	0.0%	37.5%	60.0%	44.4%	35.3%	43.8%	30.0%	38.8%	43.5%	22.9%	18.2%	24.0%	22.6%	18.6%	21.4%	23.4%	23.0%	22.4%	25.1%

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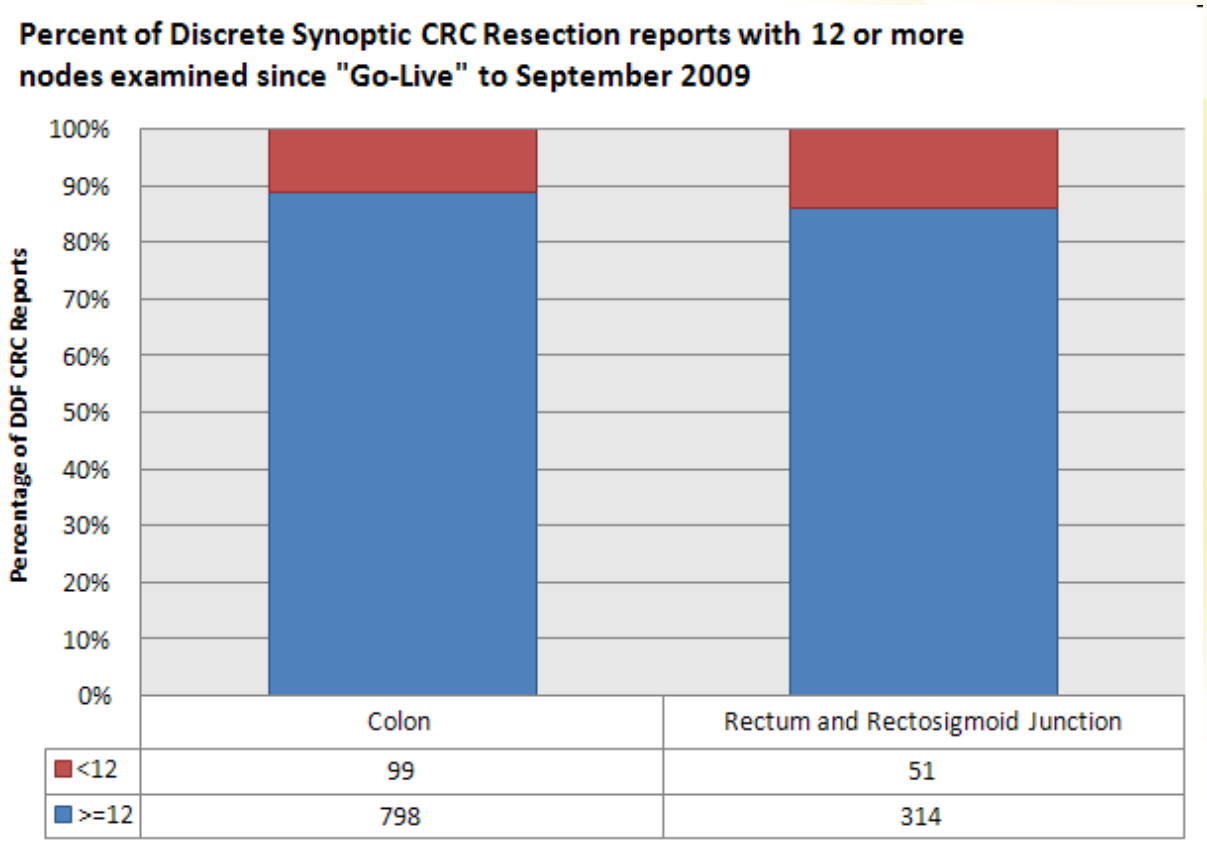
Colorectal surgical pathology indicators are now available monthly



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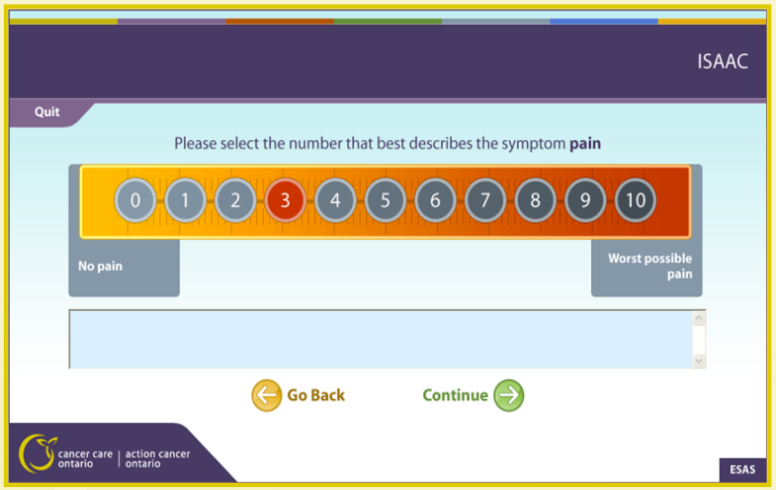
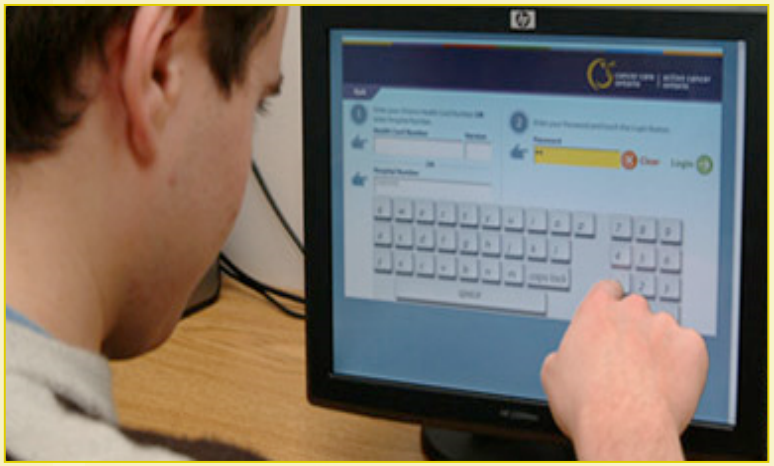
Centers performing Breast Surgery but not SLNB

Hospitals with > 30 Breast Surgeries		Hospitals with < 30 Breast Surgeries	
LHIN	**Hospital**	**Hospital**	
1	▪ Leamington District Hospital		
2	▪ Listowel Memorial Hospital	▪ Alexandra Marine & General Hospital ▪ Four Counties Health Services ▪ Clinton Public Hospital ▪ Grey Bruce Health Services (Markdale & Wiarton) ▪ Hanover & District Hospital	▪ Seaforth Community Hospital ▪ South Bruce Grey Health Center (Walkerton & Kincardine) ▪ South Huron Hospital ▪ St. Mary's Memorial Hospital ▪ Strathroy-Middlesex General Hospital
3		▪ Groves Memorial Community Hospital ▪ North Wellington Health Care (Mount Forest & Louise Marshall)	
4	▪ Hamilton General Hospital ▪ Niagara Health System – Greater Niagara ▪ West Lincoln Memorial Hospital	▪ Haldimand War Memorial Hospital ▪ West Haldimand General Hospital	
8		▪ Stevenson Memorial Hospital	
10	▪ Brockville General Hospital	▪ Lennox and Addington County General Hospital	
11	▪ Hopital Monfort	▪ Almonte General Hospital ▪ Arnprior and District Memorial Hospital	▪ Hawkesbury and District Hospital
12		▪ Huronia District Hospital	
13	▪ Sault Area Hospital	▪ Anson General Hospital ▪ Espanola General Hospital ▪ Kirkland and District Hospital ▪ Lady Dunn	▪ Lady Mnto ▪ Sensenbrenner Hospital ▪ St. Joseph's General Hospital – Elliot Lake ▪ Weeneebayko General Hospital
14		▪ Dryden Regional Health Centre ▪ Geraldton District Hospital ▪ Lake of the Woods District Hospital	▪ McCausland Hospital ▪ Sioux Lookout Meno Ya Win Health Centre ▪ Temiskaming Hospital

Symptom Management: Empowering Patients to Manage their Symptoms





- ISAAC is an easy-to-use electronic tool that puts cancer patients in control of their own symptoms
  - Allows patients to track their symptoms over time
  - Notifies appropriate clinicians when the scores exceed certain parameters
- ISAAC is web-based, patients can access where internet connection is available
- Currently piloting Tele-ISAAC
  - A new telephone access option for patients

Ontario Renal Network
Program of Work – Core Elements Going into 2010…

1. Provincial Program Management

2. Regional Program Management

3. Performance Measurement & Management

4. Information Technology

5. Communications and Stakeholder Relations

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Cancer System Provincial Scorecard December 2009

Region	RADIATION Apr-Sept 2009				SYSTEMIC Ref-Con = Apr-Sept 2009 Con-Tr = Jul-Sept 2009				SURGERY Apr-Sept 2009				COLONOSCOPY WT & Vol = Apr-Sept 2009 Participation = 2006-2007				STAGE Rate = Apr-Jan 2009 % Hosp = at Q2 ending		PATHOLOGY # hosp = at Q2 ending % Complete = Sept 09		SYMPTOM MGMT Jul-Sept 2009		THORACIC Apr-Mar 08	MCC Q2 Ending 09/10	RSTP Safe Handling as of Nov 09	Overall Provincial Rank	Change from Previous Rank
	WT Ref-Con (% w/in 14 days)	WT RTT-Tr (% w/in target)	Vol (C1R)	% of Budgeted Vol in the Province	WT Ref-Con (% w/in 14 days)	WT Con-Tr (% w/in 14 days)	Vol (C1S)	% of Budgeted Vol in the Province	WT (% w/in target)	WT (90th)	Vol (cases)	% of Budgeted Vol in the Province	WT (FOBT+)	WT (Family History)	Vol	% of Budgeted Vol in the Province	FOBT Participation *	Combined Rate	% Hosp. Collaborative Staging	% Hospitals Discrete Path Report	% Complete-ness	Lung	All Other					
PROVINCE	▼	▲	▲	100%	▲	▼	▼	100%	▼	▼	▼	100%	▼	▲	▲	100%		▲						▲				
Waterloo Wellington	▼	▲	▼	4%	▼	▲	▼	5%	▼	▼	▲	4%	▼	▲	▲	6%		▲					▲	▲			1	0
North West	▼	▲	▲	2%	▼	▲	▼	4%	▼	▼	▲	2%	▼	▼	▲	3%		▲						—			2	2
Central	▲	n/a	▲	0.2%	▼	▲	▲	2%	▼	▼	▼	11%	▲	▲	▼	12%		▲						▲			3	-1
Erie St. Clair	▼	▲	▲	3%	▲	▼	▼	4%	▼	▼	▲	4%	▼	▲	▼	9%		▼						—			4	2
North Simcoe Muskoka	▲	▲	▼	1%	▼	▼	▲	6%	▲	▼	▼	1%	n/a	n/a	n/a	n/a		▲			n/a			—			5	-2
North East	▲	▲	▲	5%	▼	▼	▼	4%	▲	▲	▼	1%	▼	▼	▲	5%		▲						▼			6	3
Hamilton NHB	▼	▼	▲	12%	▲	▲	▼	9%	▼	▼	▼	9%	▼	▼	▼	15%		▼						—			7	-2
South East	▲	▼	▲	4%	▲	▲	▼	5%	▲	▼	▲	4%	▲	▲	▲	6%		▲			n/a			—			8	0
Toronto Central PMH	▲	▲	▼	24%	▼	▲	▲	17%	▼	▼	▼	20%	▲	▼	▼	4%		▲				n/a		▲			8	-1
Champlain	▲	▲	▼	11%	▲	▼	▲	11%	▼	▼	▼	10%	▲	▲	▼	10%		▲			n/a			▲			10	1
South West	▲	▲	▲	9%	▼	▼	▼	11%	▼	▲	▼	11%	▲	▼	▼	6%		▲			n/a			▲			11	3
Toronto Central Odette	▲	▲	▼	16%	▲	▼	▲	12%	▼	—	▼	8%	▲	▲	▼	3%		▼						▼			12	-1
Central East	▼	▲	▲	4%	▲	▲	▼	6%	▲	▼	▼	3%	▼	▲	▲	14%		▲						▼			13	0
Central West & Miss. Halton	▼	▲	▲	4%	▲	▼	▼	5%	▲	▼	▼	12%	n/a ▼	n/a ▲	n/a ▲	6%		▼			n/a			▼			14	-4

Note:

- Overall Provincial Ranking is the sum of all rankings relative to all other Regions normalized to number of measures available. Collaborative Staging and Pathology indicators are excluded from this calculation as implementation is scheduled at different times for hospitals.
- Cancer surgery ranking is based on provincial performance, not LHIN targets.
- The previous scorecard (October 2009) include the following measures: Radiation Apr-Jul 09, Systemic Ref-Con Apr-Jul 09, Systemic Con-Tr Jul 09, Surgery WT Apr-Jul 09, Surgery Vol Apr-Jun 09, Colonoscopy Apr-Jul 09, FOBT Participation 2006-07, Stage Rate Apr-Nov 08, Symptom Management Apr-Jun 09, Thoracic Apr-Jan 09, MCC Q4. Note that the MCC indicator is different in this scorecard.
- An asterisk (*) in the header means the data in the current scorecard is the same as the previous one.
- There is no trend symbol for data being measured for the first time in the scorecard.

Performance against the previous scorecard

- ▲ Improved
- ▼ Decreased
- — No change

Performance against the regional target

- Not meeting target
- Not meeting target, but improving or meeting provincial target
- Meeting or within 2% of target. If the region has a stretch target, it is within 5%.

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Conclusion

- Despite recent media attention that may suggest otherwise, Ontario has made significant progress in eHealth.

- Common elements of successes at CCO include:
  - Ensuring that IT/IM innovation is addressing a specific use (access, quality, patient, program)
  - Moving forward with ‘good’ solution even if not ‘perfect’
  - Letting experience guide improvements

- Our imperatives going forward are:
  - Advance disease pathway innovations for cancer
  - Advance measuring/reporting wait times and access to care
  - Improve disease pathway management for renal disease

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Questions?

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