

Cancer Care Ontario

Action Cancer Ontario

Real Time Discrete Data Elements from Synoptic Radiology Reports to Enhance Cancer Registry Operations

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Outline

- **Ontario Cancer Registry (OCR) Overview**
 - Current state of OCR
 - Benefits of synoptic radiology reporting to OCR
- **Benefits of combined synoptic radiology and pathology reporting**
- **Synoptic Radiology Project Status**
 - Activities to date

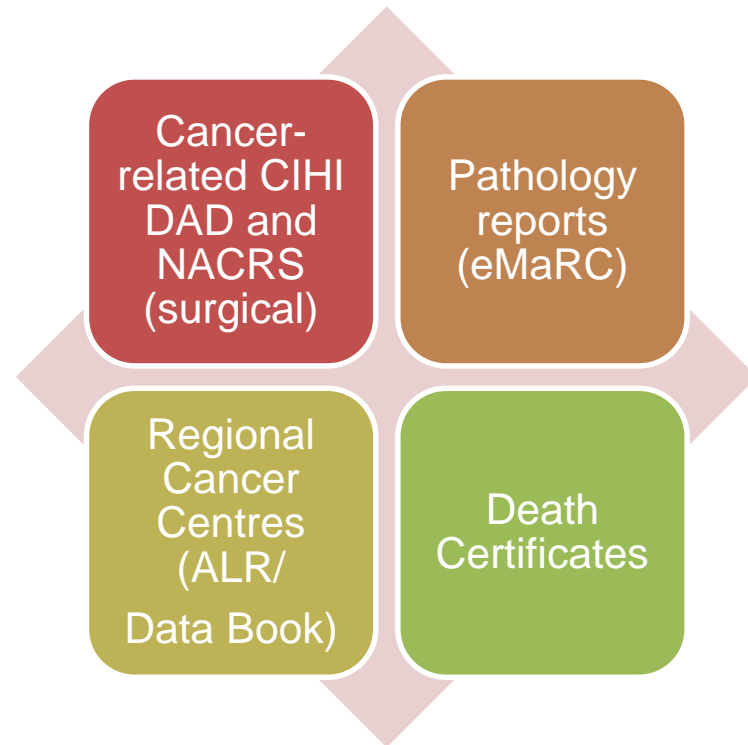
What is OCR?



A computerized database of information about all Ontario residents who have been diagnosed with cancer (“Incidence”) or who have died of cancer (“Mortality”).



4 Major Data Sources



Earliest Incidence Data:
1964

Earliest Mortality Data:
1950

Purpose of the OCR

...

MISSION

To generate, analyze and disseminate timely, high quality information describing all cases of cancer diagnosed among Ontario residents.

...

The OCR facilitates reporting of:

Incidence

- The number or rate of new cancer diagnoses over a specified period of time in a known population.

Mortality

- The number or rate of deaths from cancer over a specified period of time in a known population.

Survival

- The proportion of people diagnosed with cancer that are still alive after a given time period, most commonly 1 to 5 years after diagnosis.

Prevalence

- The number of people who have been diagnosed with cancer during a specified time period and who are still alive at a point in time.

OCR Key Processes

Patient Linkage

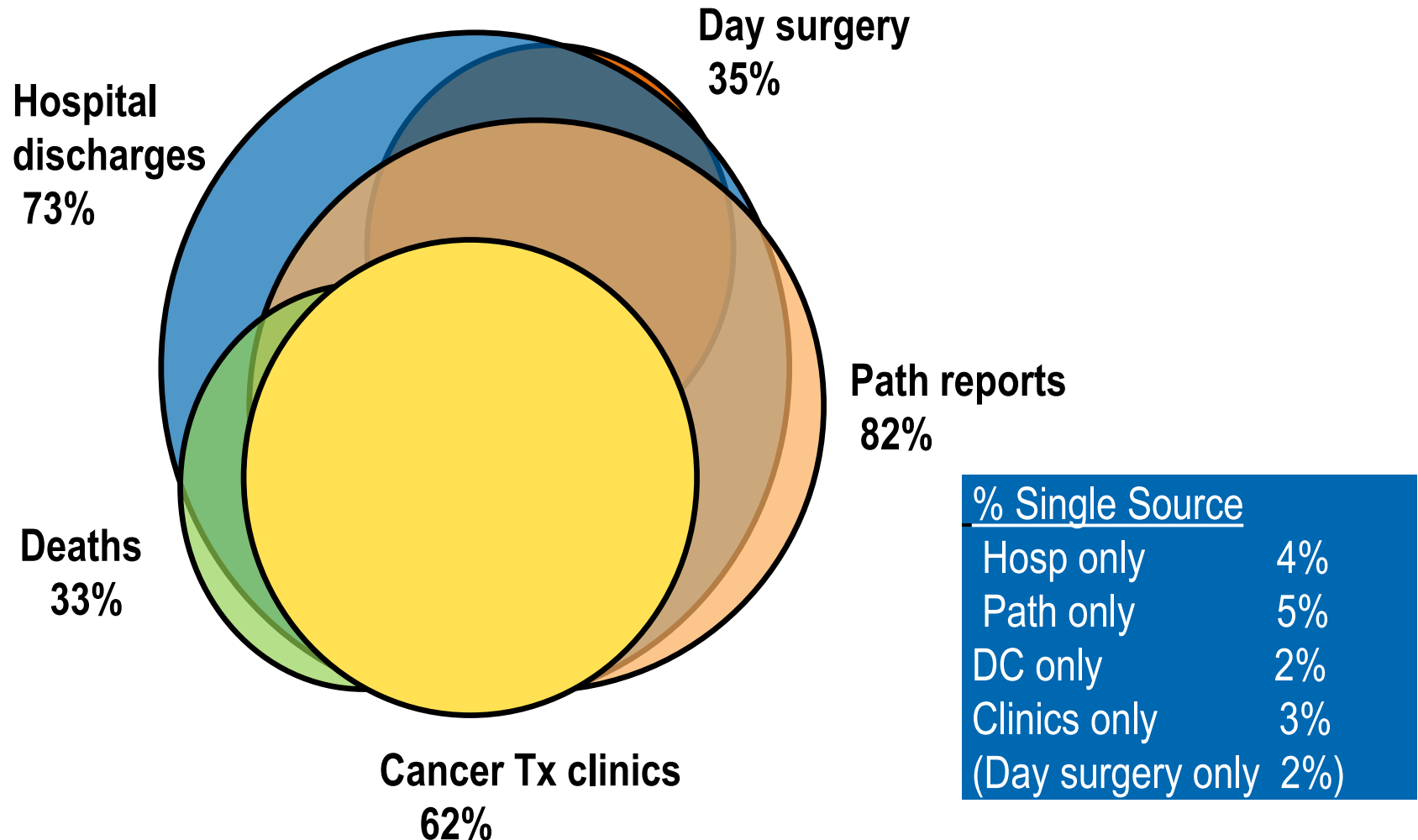
- Combination of deterministic and probabilistic linkage routines to aggregate a person's source records (what was submitted to CCO) into a "best of linked person record."
- Generates a single composite/representative record representing that individual.

Case Resolution

- Consolidates records from multiple data sources into one or more primary cases of cancer
- Generates a single "resolved" record representing each primary case.

Source Accrual Patterns

Reporting sources for 2007 incident cases in OCRIS, Oct. 2013



Benefits of Cancer Radiology Reports to OCR

- Verification of cancer confirmation on clinical cases
- Addresses issue of Over-registration vs. Under-registration
 - Under-registration in current OCR has been verified by Stage Capture work for lung (approximately 500-800 lung cancer cases)
 - suspect that other clinical cancer cases may be missing from OCR

Benefits of Cancer Radiology Reports to OCR Cont'

- Timely capture of clinical TNM
 - It will allow central staging system more effective/efficient.
 - Ability to identify metastatic status of cancer cases to assign cM effectively
- According CIHI CCI code for Inpatient Single Record only (excluding cancer centre and hospital day visits)
 - Lung 2010 (270) vs. 2011 (582) vs 2012 (643)
 - CRC 2010 (94) vs. 2011 (172) vs 2012 (193)

Benefits of combined synoptic radiology and pathology reporting

- Cancer Staging
- Patient treatment and Patient follow-up
- Quality Assurance
- Research and Clinical Trials

Synoptic Radiology Reporting Project

Report Continuum

NARRATIVE REPORTS

STRUCTURED REPORTS

SYNOPTIC REPORTS

- No structure in report body
- No discrete fields
- May or may not be standardized content
- Free Text

- Structure in report body
- No discrete data fields
- May or may not be standardized content
- Free Text

- Structure in report body
- Discrete data fields
- Standardized clinical content using standardized terminology
- Free Text

THIS PATIENT CAME INTO THE ROOM AND
 REPORTED A MYOCARDIAL INFARCTION.
 THE PATIENT WAS IN THE ROOM FOR
 15 MINUTES AND WAS OBSERVED BY
 THE NURSE. THE PATIENT WAS
 STABLE AND WAS DISCHARGED
 HOME WITH MEDICATIONS AND
 INSTRUCTIONS.

Myocardial Infarction
 Heart Attack
 Cardiac Event

FINDINGS
 THIS PATIENT CAME INTO THE ROOM AND
 REPORTED A MYOCARDIAL INFARCTION.
 THE PATIENT WAS IN THE ROOM FOR
 15 MINUTES AND WAS OBSERVED BY
 THE NURSE. THE PATIENT WAS
 STABLE AND WAS DISCHARGED
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 INSTRUCTIONS.

Myocardial Infarction
 Heart Attack
 Cardiac Event

FINDINGS
 MYOCARDIAL INFARCTION
 HEART BURN
 ANGINA

Myocardial Infarction

Synoptic Radiology Reporting – Vision



Patient undergoes exam



Radiologist reviews images, populates eChecklist and signs report



Effectiveness 



Data stored



Data mined



Quality of life & patient experience 



Integrated care 



Improved outcomes through optimal patient care and enhanced system level opportunities

Referring physician reads report and uses it as a communication and decision making tool



Health Policy Planners



Cancer Registries



Epidemiologists and Researchers




Clinicians

Project Vision:

Provincial synoptic reporting for key cancer imaging reports.

1. To improve the quality, clarity, and comprehensiveness of radiology reporting for cancer;



2. To drive standards in radiology reporting; and



3. To facilitate automated data mining in radiology reports for staging data collection and population research to improve patient care decisions and patient treatment

Project Work Streams:

Diagnostic Imaging

Cancer Imaging

Clinical Standards

Clinical Interoperability Standards

Change Management

Infrastructure

Data-enabled Quality Initiatives

CIP Strategy for Synoptic Reporting

Multidisciplinary Expert Advisory Panel



Synoptic Radiology Reporting for Cancer Imaging –
The Architecture of a Cancer Imaging Synoptic
Report



Synoptic Radiology Reporting: Clinical Checklist
Development Governance

Multidisciplinary Working Groups



CT Lung for Cancer Staging
Template



PET CT for Lung Cancer Staging



CT Lung Nodule Assessment



CT Adrenal Adenomas

Multidisciplinary External Reviewers



SRR Project - Progress to Date

Task	Next Steps
Clinical Standards	<p>Leading development of clinical standards for Cancer Imaging</p> <ul style="list-style-type: none"> ✓ Establish Advisory Panel ✓ Architecture of a Synoptic Radiology Report (White Paper) ✓ Governance for clinical checklist working group (White Paper) ❑ Checklist Development <ul style="list-style-type: none"> • CT Lung for staging – draft complete by multidisciplinary working group, - Pending Final Review • Version 2.0 release of CCO MR Template for Rectal Cancer – July 2015 Release • Planning for next three (3) clinical checklists for development
Clinical Interoperability Standards	<p>Working with standards development organizations to advance interoperable standards</p> <ul style="list-style-type: none"> ✓ CHI XDS/XDSi implementation guide synoptic radiology chapter ✓ DICOM Supplement 155 for Imaging Reports using HL7 CDA ✓ Terminology Selection Guide Process for Diagnostic Imaging ❑ Assess/Collaborate on RSNA the open source T-Rex Report Template Editor for e-Templating ❑ Assessing impact of evolving SDC standard and CAP e-Templating
Change Management	<p>Identifying and engaging stakeholders</p> <ul style="list-style-type: none"> ✓ Understanding radiology work flow (Site Visits) ✓ Championing MRI Rectal Template ✓ Synoptic Radiology Readiness and CCO MRI Template for Rectal Cancer Adoption Survey ✓ Collaborate and communicate with RSNA regarding structured reporting ✓ Synoptic Radiology Reporting Symposium – View to the Future ✓ Development of a Visual Demonstration of effective Synoptic Reporting ❑ CT Lung Reporting for Lung Cancer Staging Landscape Assessment

SRR Project - Progress to Date

Task	Next Steps
Infrastructure	<p>High-level architectural concept for potential reporting infrastructure</p> <ul style="list-style-type: none"><li>✓ Draft conceptual high level design for future CCO synoptic radiology reporting infrastructure leveraging provincial assets<li>❑ Assess continued alignment with e-Health Ontario, Canada Health Infoway, CPAC Surgical Synoptic initiatives
Data-enabled Quality Initiatives	<p>Develop data and reporting framework, indicators, and reporting tool requirements</p> <ul style="list-style-type: none"><li>✓ Collaboration with RSNA regarding CCO vision for Convergence of Radiology and Pathology report data elements<li>❑ CT Lung Reporting for Lung Cancer Staging Landscape Assessment<li>❑ Investigate stakeholder requirements for the integrated Radiology data /report<li>❑ Draft data-use plan for synoptic reporting data

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Questions



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