IHE Integrating the Healthcare Enterprise

The Value of Structured Data Capture to CCO

CCO Cancer Care Ontario

CCO's Role in Ontario's Health System

OHIP Card

- The Ontario Health Insurance Plan (OHIP) is government funded coverage provided to every Ontarian, and overseen by the Ministry of Health and Long-Term Care (MOHLTC)
- Cancer Care Ontario (CCO) is the Ontario government's principal cancer advisor agency

How do we unlock this data potential?

Synoptic Reporting

~80%

of health data is considered

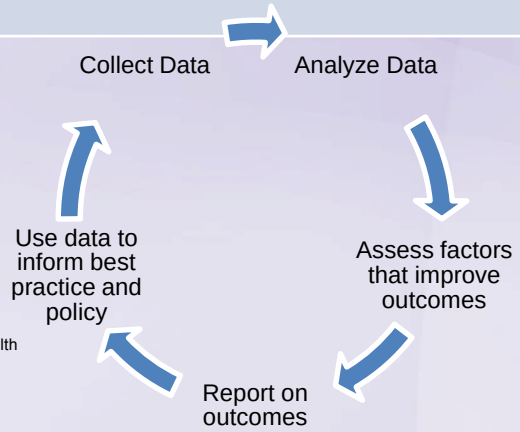
"Dark Data"

- Siloed
- Captured and stored in different formats
- Narrative and not machine readable
- Not standardized

What is Synoptic Reporting

Type of Report	Description
Narrative	A report that has little to no fields separating content
Structured	A report that has content in defined fields and headings. The level of structure may vary from simple reports with headings, and more complex reports with checklists, or radio buttons
Synoptic	A report that has content in discrete fields like a structured report, but that is data mineable with coded concepts

CCO provides evidence-based knowledge and tools to help prevent cancer and deliver high-quality care, but we need more and better data

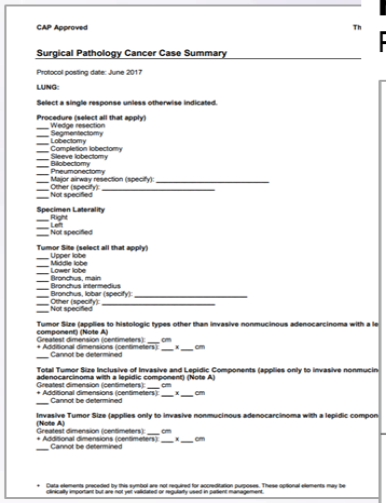


CASSEL, C., PENHOET, E., & SAVITZ, M. (2014, May 29). New PCAST Report Says "Systems Engineering" Can Improve Health Care. Retrieved July 20, 2018, from https://obamawhitehouse.archives.gov/blog/2014/05/29/new-pcast-report-says-systems-engineering-can-improve-health-care

Synoptic reporting – at CCO

Pathology

Electronic cancer checklists from the College of American Pathologists



CAP Approved

Surgical Pathology Cancer Case Summary

Protocol posting date: June 2017

LUNG:

Select a single response unless otherwise indicated.

Procedure (select all that apply)
___ Wedge resection
___ Segmentectomy
___ Lobectomy
___ Completion lobectomy
___ Sleeve lobectomy
___ Bilobectomy
___ Pneumonectomy
___ Major airway resection (specify): _____
___ Other (specify): _____
___ Not specified

Specimen Laterality
___ Right
___ Left
___ Not specified

Tumor Site (select all that apply)
___ Upper lobe
___ Middle lobe
___ Lower lobe
___ Bronchus, main
___ Bronchus intermedius
___ Bronchus, lobar (specify): _____
___ Other (specify): _____
___ Not specified

Tumor Size (applies to histologic types other than invasive nonmucinous adenocarcinoma with a le component) (Note A)
Greatest dimension (centimeters): ___ cm
+ Additional dimensions (centimeters): ___ x ___ cm
___ Cannot be determined

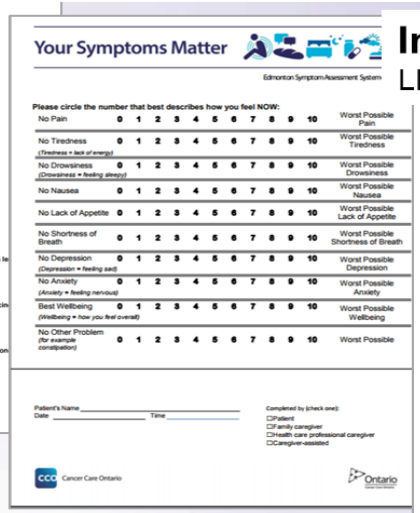
Total Tumor Size Inclusive of Invasive and Lepidic Components (applies only to invasive nonmucin adenocarcinoma with a lepidic component) (Note A)
Greatest dimension (centimeters): ___ cm
+ Additional dimensions (centimeters): ___ x ___ cm
___ Cannot be determined

Invasive Tumor Size (applies only to invasive nonmucinous adenocarcinoma with a lepidic compon (Note A)
Greatest dimension (centimeters): ___ cm
+ Additional dimensions (centimeters): ___ x ___ cm
___ Cannot be determined

* Data elements preceded by this symbol are not required for accreditation purposes. These optional elements may be clinically important but are not yet validated or regularly used in patient management.

PROs

Patient Reported Outcomes



Your Symptoms Matter

Edmonton Symptom Assessment System

Please circle the number that best describes how you feel NOW:

No Pain	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Pain
No Tiredness (Tiredness = lack of energy)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Tiredness
No Drowsiness (Drowsiness = feeling sleepy)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Drowsiness
No Nausea	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Nausea
No Lack of Appetite	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Lack of Appetite
No Shortness of Breath	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Shortness of Breath
No Depression (Depression = feeling sad)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Depression
No Anxiety (Anxiety = feeling nervous)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Anxiety
Best Wellbeing (Wellbeing = how you feel overall)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible Wellbeing
No Other Problem (for example constipation)	0	1	2	3	4	5	6	7	8	9	10	Worst Possible

Patient's Name _____
Date _____ Time _____

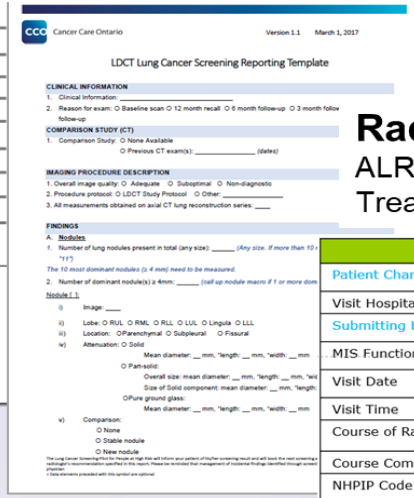
Completed by (check one):
☐Patient
☐Family caregiver
☐Health care professional caregiver
☐Caregiver-assisted

Cancer Care Ontario

Ontario

Imaging

LDCT for lung cancer screening



Cancer Care Ontario Version 1.1 March 1, 2017

LDCT Lung Cancer Screening Reporting Template

CLINICAL INFORMATION
1. Clinical Information: _____
2. Reason for exam: ○ Baseline scan ○ 12 month recall ○ 6 month follow-up ○ 3 month follow-up

COMPARISON STUDY (CT)
1. Comparison Study: ○ None Available
○ Previous CT exam(s): _____ (dates)

IMAGING PROCEDURE DESCRIPTION
1. Overall image quality: ○ Adequate ○ Suboptimal ○ Non-diagnostic
2. Procedure protocol: ○ LDCT Study Protocol ○ Other: _____
3. All measurements obtained on axial CT lung reconstruction series: ___

FINDINGS
A. Nodules
1. Number of lung nodules present in total (any size): _____ (Any size. If more than 10 r "11")
The 10 most dominant nodules (≥ 4 mm) need to be measured.
2. Number of dominant nodule(s) ≥ 4mm: _____ (call up nodule macro if 1 or more dom
Nodule [1]:
i) Image: ___
ii) Lobe: ○ RUL ○ RML ○ RLL ○ LUL ○ Lingula ○ LLL
iii) Location: ○Parenchymal ○ Subpleural ○ Fissural
iv) Attenuation: ○ Solid
Mean diameter: __ mm, *length: __ mm, *width: __ mm
○ Part-solid:
Overall size: mean diameter: __ mm, *length: __ mm, *wid
Size of Solid component: mean diameter: __ mm, *length:
○Pure ground glass:
Mean diameter: __ mm, *length: __ mm, *width: __ mm
v) Comparison:
○ None
○ Stable nodule
○ New nodule

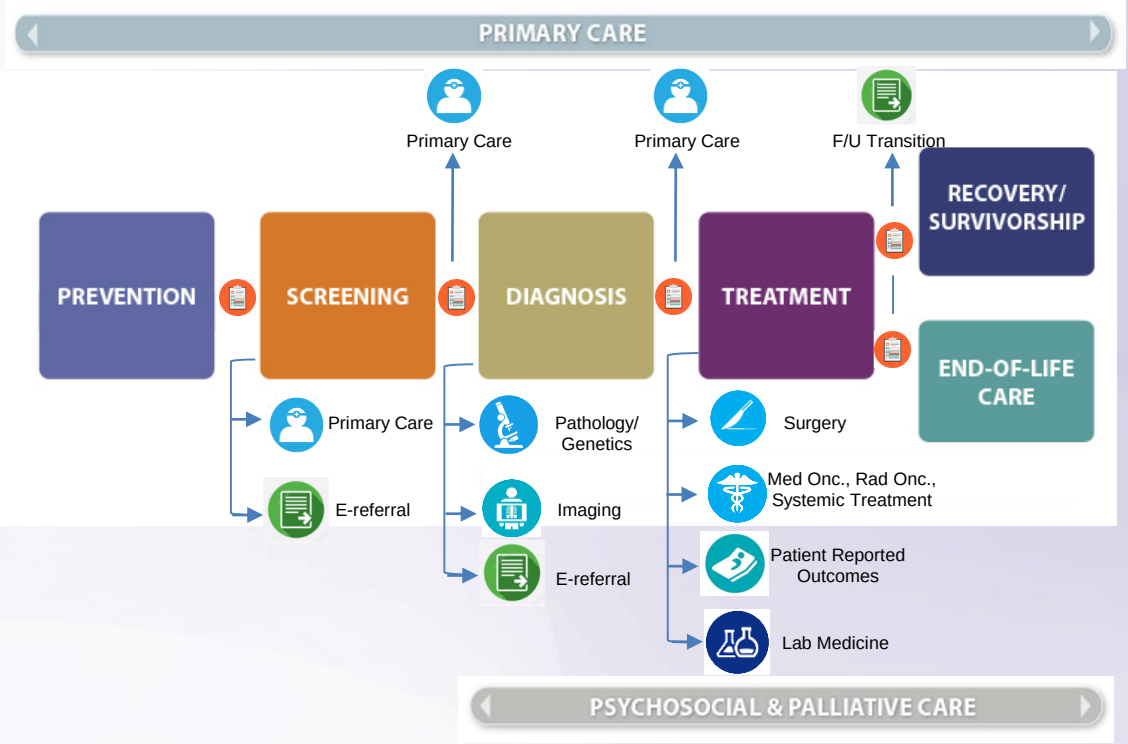
Radiation Therapy

ALR Data – Radiation Planning/ Treatment Activity

Data Elements	
Patient Chart Number	Intent of Radiation Treatment
Visit Hospital Number	Inpatient Flag
Submitting Hospital Number	Chemo Flag
MIS Functional Centre	Clinical Trial Flag
Visit Date	Registration Date
Visit Time	Disease Sequence Number
Course of Radiation Treatment	HCP Number
Course Complete Flag	Ready To Treat Date
NHPIP Code	Urgency Category
Body Region Code	Trt Unit Name
Dose Per Fraction	

Our synoptic initiative intends to break down these silos of information

Cancer Care Continuum



Aim to improve interoperability across the continuum

Synoptic Reporting: more than filling out a template

Filling out the template enables quality improvement for the whole system:

Self-evaluation

- Key data elements can be easily extracted, enabling real-time self-evaluation of quality indicators

Access to the data you need, when you need it

- Synoptic can ensure that critical information is available to all clinicians in a patient's circle of care, regardless of where and when the patient is seen

Improve overall guideline concordance

- Synoptic reporting can enable incorporation of evidence-based best practices into reporting to improve continuity of care

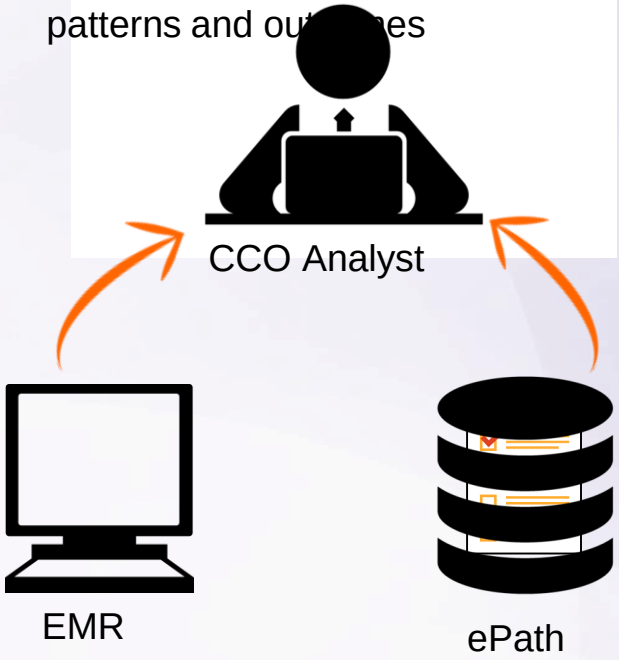
Strengthen data quality for secondary use

- Data from synoptic reporting can be used for outcomes analysis for diagnosis, treatment, system planning, quality improvement, system control and population-based research

Reporting at CCO

In addition to direct care benefits, CCO is interested in synoptic reporting to improve internal processes

For Example: The Ontario Cancer Registry (OCR) captures population-level stage at diagnosis to inform planning and managing cancer services, as well as evaluating, measuring and reporting cancer treatment patterns and outcomes



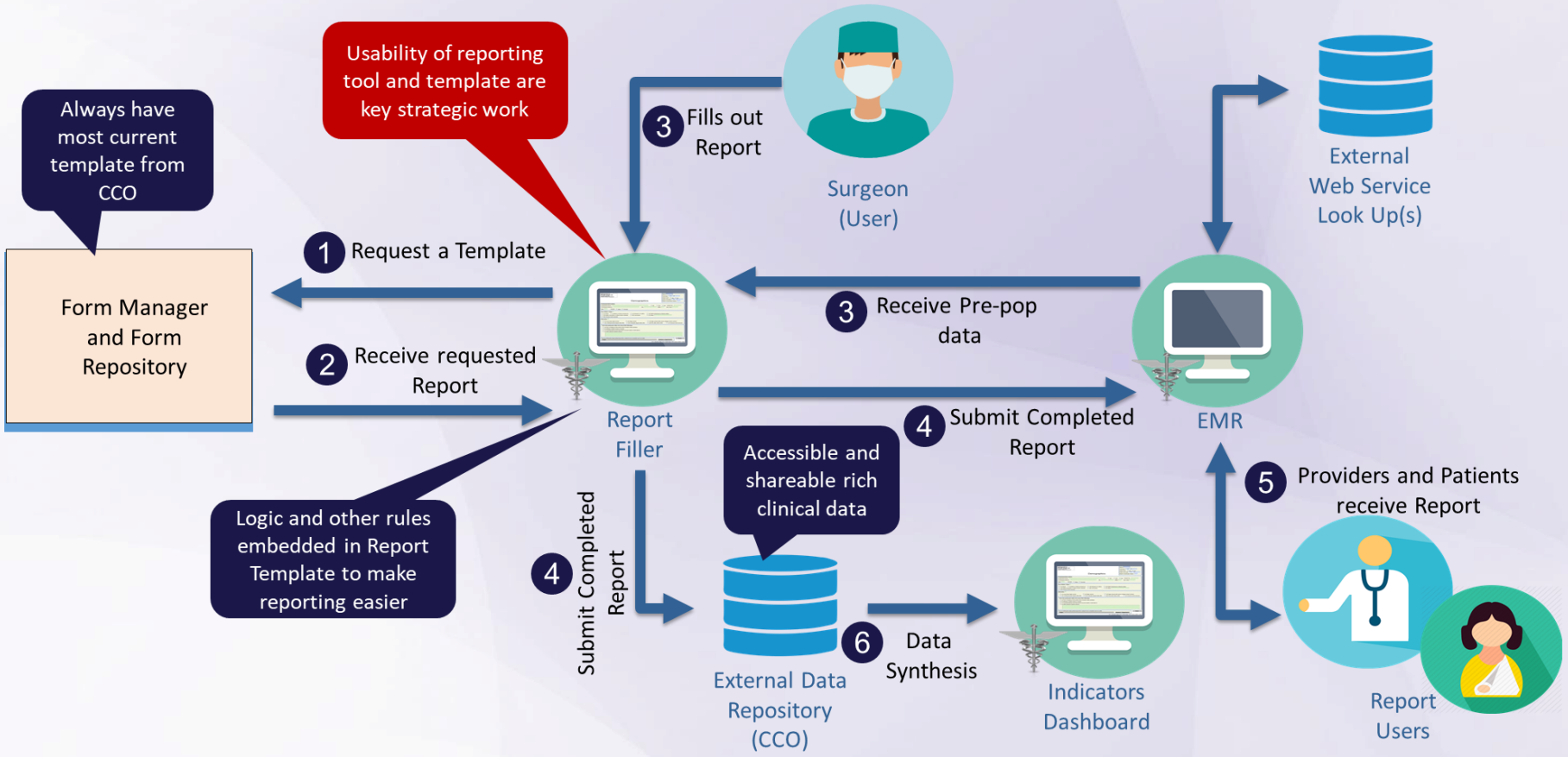
CCO analysts remotely access patient records one-by-one to manually input medical data and create the best stage

Each analyst derives ~2800 of the ~63,000 “stageable” new incident cases annually (from ~75,000 cases total)

Only 79% of “stageable” cases are staged each year, with data being available 1 year after collection

Increasing synoptic data coming to CCO will decrease the manual work efforts by Analysts, creating efficiencies in the OCR

A Vision


Always have most current template from CCO
Usability of reporting tool and template are key strategic work
Form Manager and Form Repository
1 Request a Template
2 Receive requested Report
3 Fills out Report
Surgeon (User)
External Web Service Look Up(s)
3 Receive Pre-pop data
Report Filler
EMR
4 Submit Completed Report
Logic and other rules embedded in Report Template to make reporting easier
Accessible and shareable rich clinical data
4 Submit Completed Report
External Data Repository (CCO)
6 Data Synthesis
Indicators Dashboard
5 Providers and Patients receive Report
Report Users

Potential Outcomes

- Integrated reporting - Rad/Path/Surgery reporting and communications
- Clinical decision support, conditional logic, pre and auto-population of reports from internal and external data sources
- “Unlock the Patient Clinical Content” for use by primary care, patients, public health, healthcare administrators and researchers
- Customized and contextualized reports for providers and patients, predictive analytics, and more!

Ritz, D. (2017, March). How can we leverage big data to improve population health in LMICs? Hamilton, ON, CAN.

Questions?

Contact information:

Alex Goel

Integrated Synoptic Reporting

Patient Centred Care

Cancer Care Ontario

email: alex.goel@cancercare.on.ca