Standardizing Cancer Pathology Reporting: Promoting Interoperability through Collaboration

June 7, 2012
NAACCR Annual Conference
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Overview

• Canadian Partnership Against Cancer
• National Staging Initiative Background
• National approaches to promote adoption of standards
• Electronic Synoptic Pathology Reporting Initiative overview
• Next Steps
The Partnership is an independent organization, federally funded, to accelerate action on cancer control for all Canadians.

**Reduce** the expected number of cancer cases

**Enhance the quality** of life for those affected by cancer

**Lessen** the likelihood of Canadians dying from cancer

**Increase effectiveness and efficiency** of the cancer control domain
Actively promoting the adoption and implementation of synoptic reporting to standardize data collection

- Synoptic Pathology Data
- Synoptic Surgery Data
- Synoptic Imaging Data
- Synoptic Lab Data
- Synoptic Clinical Notes

Integrated Data Set
The National Staging Initiative (NSI) was established in 2008 to:

- address key gap by bolstering the ability of provinces and territories to collect population-based cancer stage data
- standardize electronic pathology reporting to improve quality of care
Standardizing the format and content of the pathology and surgery reports

Narrative Report
Narrative, hence data not divided into question/answer pairs

Synoptic Report
Each diagnostic or prognostic parameter pair listed on a separate line

Narrative Report

Patient Name: Jane Doe
Date of Birth: 14/11/51
Age/Sex: 52/F
Unit Number: 000000
Location: LAB
Status: REG REF
Health Card#: 0000000000

DIAGNOSIS:
MODIFIED RADICAL MASTECTOMY SPECIMEN (LEFT):
- INVASIVE DUCTAL CARCINOMA. (see microscopic)
- METASTATIC DUCTAL CARCINOMA INVOLVING AXILLARY LYMPH NODE. (see microscopic)

GROSS DESCRIPTION:
This modified radical mastectomy consists of an ellipse of skin measuring 13 cm ML x 7 cm SI with underlying fibrofatty breast tissue measuring 16 cm ML x 8.5 cm SI x 4.5 cm AP. There is an axillary tail measuring 8 x 5 x 3 cm. A normal nipple and areola, the latter measuring 2.8 cm in diameter are present. On the upper outer aspect of the skin, there is a 2 cm healed transverse scar. The outer aspect of the specimen is painted with marking ink.

On sectioning the breast, there is a firm tan-gray tumour nodule measuring 3 x 2 x 1 cm, located in the left upper quadrant. The remainder of the breast consists of fatty tissue admixed with white streaks of breast stroma. The tumour is 1 cm from the closest (deep) margin. Nine lymph nodes are identified in the axillary fat. They range from 0.5 to 1.2 cm in greatest dimension.

MICROSCOPIC DESCRIPTION:
Sections of the breast reveal an infiltrating ductal carcinoma of usual type. There is moderate tubule formation (2/3) and the nuclei show moderate degree of pleomorphism. There are approximately 8 mitoses per 10 high power fields. The modified Bloom-Richardson grade is 2/3. A minor intraductal component with a cribriform and comedo growth pattern, nuclear grade 2, is present. Focal lymphovascular space invasion is seen. There is no involvement of the skin or nipple. The margins are clear. One of 9 lymph nodes from the axilla contains metastatic ductal carcinoma. The greatest diameter of the tumour is 5 mm and there is no evidence of extranodal spread.

Immunohistochemistry for estrogen receptor (ER) shows extensive positive nuclear staining. The progesterone receptor and Her-2 (Cerb2) markers are negative.

Synoptic Report

True Synoptic Report

Specimen type
left modified radical mastectomy

Tumour site
left outer upper quadrant

Tumour size
3 x 2 x 1 cm
ductal, NOS

Histologic type
2/3 (modified SBR)
tubes – 2/3;
nuclei – 2/3;
mitoses – 2/3

Histologic grade
uninvolved by invasive carcinoma

Margins
1 cm to deep margin

Number of nodes examined
9
**GROSS DESCRIPTION:** Modified radical mastectomy consists of an ellipse of skin measuring 13 cm ML x 7 cm SI with underlying fibrofatty breast tissue measuring 18 cm ML x 8.5 cm SI x 4.5 cm AP. Axillary tail measures 8 x 5 x 3 cm. Normal nipple and areola measuring 2.8 cm diameter.

**MICROSCOPIC DESCRIPTION:**
- Invasive Tumour Size: 3 x 2 x 1 cm
- Type: infiltrating ductal carcinoma

**Grade:** 2/3 (tubules – 2/3; nuclei – 2/3; mitoses – 2/3; 8 mitoses/10 HPF)

**Lymph nodes:** 1/9 contains metastatic ductal carcinoma.
Key dimensions of quality for Cancer Pathology Reporting

**Timeliness**
- The amount of time to generate/obtain the final pathology report.

**Completeness**
- Reports are complete for the purpose of clinical decision-making.
- The need for follow-up calls for clarification of information

**Clarity/Accuracy**
- Describes clinical information relevant to specific cancer diagnostic group
- Reports received are accurate

**Usability**
- Ease of finding information required for clinical decision making
- Facilitates consistent approach to the interpretation of diagnostic and prognostic factors.

**Satisfaction**
- Overall satisfaction with synoptic pathology reporting (reporting process and information provided)

Source: Cancer Care Ontario
Pathology Report is a fundamental source of information to provide care.

Since implementation of synoptic pathology reporting, completeness against the pathologist endorsed CAP standard maintained.

Data Source: CCO PIMS Database; Synoptic reports received by month of date of surgery; from May 2008 to Sept 2010, as of Oct 30, 2010.

Data Source: CCO ePath; Synoptic resection reports received by month of date of surgery, from May 2008 to Nov 2011, as of Mar 14, 2012.
Pathology report data can be used to inform indicators

Prostate margin rates can be calculated without labour-intensive manual audits

Data Source: Cancer Care Ontario
NSI’s approach to facilitate change

Shared Vision

→

Collaboration

coordinate + partner
broker knowledge
invest strategically
align priorities
In July 2009, Canadian Association of Pathologists (CAP-ACP) endorsed the College of American Pathologists’ (CAP) Cancer protocols as a pan-Canadian content standard for all cancer pathology reporting.
Advancing Standards – Capturing the Canadian perspective

- In July 2010, an MOU was signed between CAP-CAP and CAP, which ensures Canadian participation in evolution of CAP Cancer protocols
  - Disease-based expert panels are now in place to review evidence, inform staging and pathology standards
Brokering knowledge through clinician collaboration

• National Pathology Standards committee has representation from pathologists across the country

• Pathologist-led CAP Cancer protocol education sessions promote awareness of cancer protocols

• Pathologist-led demos of electronic tools
Brokering knowledge to aid implementation

- Vendor-led education sessions
- Education material from cancer registry and informatics communities
- Vendor-focused Communities of Practice
Continued synergies to promote adoption and improve care

Additional synergies with our partners included:

• ICCR Project – partnering with pathologists from UK, Australasia and USA
• French translation of CAP Cancer protocols
Summary of accomplishments

NSI invested $21M enable the capture of Cancer Stage and Pathology data

✓ Achieved 90% population stage data capture for Breast, Lung, Colorectal and Prostate cancers in 9 of 10 provinces

✓ Pilots of synoptic pathology in two provinces successful and groundwork laid in additional provinces
Have changes resulted in improvements that impact clinical decision making? Yes

A recent study shows that there is evidence of strong physician satisfaction with standardized synoptic cancer pathology reporting as a clinical decision support tool in the diagnosis, prognosis and treatment of cancer patients.

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<thead>
<tr>
<th>Item Mean Scores</th>
<th>Clinician Mean Score</th>
<th>Pathologist Mean Score</th>
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<tbody>
<tr>
<td>Reports are complete as compared to accepted content standards</td>
<td>NA</td>
<td>4.44</td>
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<tr>
<td>Reports are complete for the purpose of clinical decision-making</td>
<td>4.66</td>
<td>NA</td>
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<tr>
<td>Ease of finding information required for clinical decision-making</td>
<td>4.58</td>
<td>4.73</td>
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<tr>
<td>When asked to provide a secondary review of pathology reports; the ease of finding information required for clinical decision-making</td>
<td>NA</td>
<td>4.77</td>
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<tr>
<td>Reports received are accurate</td>
<td>4.16</td>
<td>NA</td>
</tr>
<tr>
<td>Facilitates consistent approach to diagnostic and prognostic factors</td>
<td>4.66</td>
<td>4.61</td>
</tr>
<tr>
<td>The need for follow-up calls / consultation with surgeon for clarification of information and/or concerns re: missing information.</td>
<td>3.84</td>
<td>3.85</td>
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<tr>
<td>Describes clinical information relevant to specific cancer diagnostic group</td>
<td>NA</td>
<td>4.14</td>
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**Overall Satisfaction Score**

<table>
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<th>(Scale 1-5; with 5 = significantly better than narrative reports)</th>
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<tr>
<td>Your overall satisfaction with synoptic pathology reporting process</td>
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<tr>
<td>Your overall satisfaction level with the information provided by synoptic reports</td>
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Statistically significant difference in scores for overall satisfaction with the synoptic reporting process [t (169) = 3.044, p = .003].
Synoptic Reporting in Canada moves forward with the ESPRI Initiative

Building on the success of the NSI, the Electronic Synoptic Pathology Reporting Initiative (ESPRI) aims to further adoption of standards through implementation of electronic synoptic pathology reporting tools across Canada.
Goals of the Initiative

• Support adoption and advance implementation of electronic synoptic pathology resection reporting in discrete field formats for Breast, Colorectal, Lung, Prostate & Endometrial cancers

• Maintain and promote adoption of standards

• Advance the use of standardized data by generating performance indicators
ESPRI: Two-Phased Approach

• Planning phase - analyze current state, identify desired outcomes, and develop detailed project plans
• Implementation phase - put project plans into action and realize goals of earlier planning phase
Next Steps

Continue to develop shared vision and work collaboratively with our partners to enable success
Questions?
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