A National Standard for Stage in Canada:

*Early Results from Selected Canadian Provinces for Collaborative Stage in Breast & Colorectal Cancer*

NAACCR Annual Meeting Presentation

June 22, 2010 – Quebec City
Outline

• Stage Collection in Canada

• Project Overview

• Results

• Observations
Canadian Staging Activity

• Long history of cancer registration
  – 1935~1970 Provinces/Territories
  – 1964 National

• 1992 – national registry overhaul
  – New standards; move to person-based database
  – No agreement on stage data standard
    • Some stage data at provincial levels

• 2003 – decision to establish first stage data standard
  – Coincided with development of CS
Canadian Staging Activity

• Making it happen
  - Setting the standard was the easy part….

• Significant increase in data collection
  - Limited new resources
    • No hospital registrar infrastructure in Canada
    • Access to stage data at population level a challenge in some jurisdictions
    • No Canadian staging ‘experts’ to assist with training and support

• Data systems largely home grown and not built to support CS

• So it has taken time to move forward…
Project Overview

• **Proud of our accomplishments**
  – Time to show our progress

• **Stage data not yet available nationally**
  – Contacted provinces with multiple years of data for at least 3 disease sites (breast, colorectal, lung)
  – Outlined study dataset - individual level records (e.g. disease/histology, age at diagnosis, sex, diagnostic method, all CS variables)
  – Set up data release agreements
  – Central analysis in NS
Results – Summary

- 3 Provinces – dataset represents all incident cases, 26,500 + cases
  ~7.4% of national incident cases (2009)
  ~6.7% sample of Canadian population (2009)

- Manitoba (MB) 2004 – 08 100%
- Prince Edward Island (PE) 2005 – 08 100%
- Nova Scotia (NS) 2004 – 08 97%
CS Core Variables

• 6 data variables combine to compute TNM, and stage groupings

• 3 evaluation variables used to determine source of information: clinical, pathological, etc.
Results – Data Variable Level

Regional Nodes Evaluation: Rectal Cancer
Manitoba, 2004 - 2008

Clinical
Pathological
Neo-adjuvant
Clinical
Pathological
Neo-adjuvant
Results - CS SSF Variables
example: CEA in Colorectal Cancer

MB (4,015)
NS (3,838)
PE (418)
## Results – Median Nodal Harvest

### Colorectal Cancer

<table>
<thead>
<tr>
<th></th>
<th>200</th>
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<th>2007</th>
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### Breast Cancer

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<td>Stage II</td>
<td>Stage III</td>
<td>Stage IV</td>
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## Results – Variable Combinations

Most Common TNM descriptor combinations, Nova Scotia (%)

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<tr>
<td>other</td>
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<td>6</td>
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% Histo

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</table>
## Results – Rectal Cancer:
### TNM Assignment Combinations by Year

<table>
<thead>
<tr>
<th>Site</th>
<th>Pathological (%)</th>
<th>Clinical (%)</th>
<th>Others* (%)</th>
<th>NA: Carcinoid cases (%)</th>
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<tbody>
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<td>NS</td>
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<tr>
<td>2008</td>
<td>44</td>
<td>41</td>
<td>24</td>
<td>35</td>
</tr>
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</table>
Results – Stage Distribution for Breast

* SEER 17, 2004 - 2007
Results – Stage Distribution for Breast by age

[Bar chart showing stage distribution for Breast by age for different datasets: NS, MB, PE, SEER*.
Results – Stage Distribution for Rectum

NS  MB  PE  SEER*
Results – Stage Distribution for Colon Cancer by sex

- NS: 0%
- MB: 20%
- PE: 40%
- SEER: 60%

Stage Distribution by Sex:

- NS: FM 100%
- MB: FM 100%
- PE: FM 100%
- SEER: FM 100%

Legend:
- UNK
- NA
- IV
- III
- II
- I
- 0
Observations

• Population based stage data is available and complete for analytic purposes
• Examine data at the variable level to explore potential quality issues
• Substantial consistency exists across provinces examined
• Overall stage comparison in Canada & with other jurisdictions is possible
• Scope of CS data set provides macro level indicators of changes in standards of care