National Audit Results

NPCR Data Completeness and Quality Audits

Presented by:
Mary Lewis, CTR
NPCR Data Completeness and Quality Audit (DCQA)

- 2007 – 2011
  - 2004 – 2008 Diagnosis Years

- **ALL** sites included in audit process

- Casefinding and Data Quality

- Evaluation of Stage of Disease:
  - Collaborative Stage
  - Derived Summary Stage 2000

- Treatment Data
Hierarchical Review:

- Pathology
  - Non-GYN cytology,
  - Bone marrow
  - Autopsies

- Medical Record Disease Index (MRDI):
  - Lung, Brain, Hematopoietic, Pancreas

- Radiation Therapy Log
DCQA Casefinding Results
Yr 1 & Yr 2 NPCR Audit

Number of Missed Cases by Site Grouping

- Oral
- Digestive
- Resp
- Soft Tiss
- Skin
- Breast
- Fem Gen
- Male Gen
- Urinary
- Brain/CNS
- Benign CNS
- Endocrine
- Lymphoma
- Myeloma
- RHD
DCQA Casefinding Results
Yr 1 & Yr 2 NPCR Audit

Percent Complete

2004 2005

Diagnosis Year

2004

2005
Enhance Case Completeness:

- Medical Records Disease Index
- Pathology Reports
- Cytology Reports
- Autopsy Reports
- Clinic Logs
  - Radiation Therapy
  - Medical Oncology/Hematology
  - Out-patient surgery
DCQA - Data Quality
Yr 1 & Yr 2 NPCR Audit

- Reabstracted - 5,247 cases
  - ALL Sites
- 19 core elements
- SSF 1 – Pleura; SSF 3 – Prostate
- Yr 1 accuracy rate: 96.2%
- Yr 2 accuracy rate: 94.8%
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

Diagnosis Year

Accuracy Rate

2004
2005

CDC
## Data Quality Results
### Yr 1 & Yr 2 NPCR Audit

<table>
<thead>
<tr>
<th><strong>Patient Data:</strong></th>
<th>2004 Dx Year</th>
<th>2005 Dx Year</th>
<th>Error Rate:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>38</td>
<td>44</td>
<td>4.1%</td>
</tr>
<tr>
<td>Sex</td>
<td>10</td>
<td>5</td>
<td>5.1%</td>
</tr>
<tr>
<td>Date of Birth</td>
<td>21</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Sequence of Tumor</td>
<td>41</td>
<td>53</td>
<td></td>
</tr>
</tbody>
</table>

Error Rate: 4.1% 5.1%
## Data Quality Results

**Yr 1 & Yr 2 NPCR Audit**

### Cancer Data:

<table>
<thead>
<tr>
<th>Data Type</th>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>223</td>
<td>250</td>
</tr>
<tr>
<td>Histology</td>
<td>217</td>
<td>249</td>
</tr>
<tr>
<td>Subsite</td>
<td>176</td>
<td>208</td>
</tr>
<tr>
<td>Dx Date</td>
<td>120</td>
<td>83</td>
</tr>
<tr>
<td>Site</td>
<td>42</td>
<td>37</td>
</tr>
<tr>
<td>Laterality</td>
<td>34</td>
<td>41</td>
</tr>
<tr>
<td>Behavior</td>
<td>15</td>
<td>17</td>
</tr>
</tbody>
</table>

**Error Rate**

- 2004: 31%
- 2005: 34%
## Data Quality Results

**Yr 1 & Yr 2 NPCR Audit**

### Cancer Data:

<table>
<thead>
<tr>
<th>Field</th>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>223</td>
<td>250</td>
</tr>
<tr>
<td>Histology</td>
<td>217</td>
<td>249</td>
</tr>
<tr>
<td>Subsite</td>
<td>176</td>
<td>208</td>
</tr>
<tr>
<td>Dx Date</td>
<td>120</td>
<td>83</td>
</tr>
<tr>
<td>Site</td>
<td>42</td>
<td>37</td>
</tr>
<tr>
<td>Laterality</td>
<td>34</td>
<td>41</td>
</tr>
<tr>
<td>Behavior</td>
<td>15</td>
<td>17</td>
</tr>
</tbody>
</table>

**Error Rate**

- 2004: 31%
- 2005: 34%
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

◆ Cancer Data:  

<table>
<thead>
<tr>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis Date</td>
<td>120</td>
</tr>
</tbody>
</table>

Highest in Lung and Breast

✓ Chest X-ray
   “Nodule consistent with cancer”

✓ Mammography
   “Suspicious for malignancy”
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

◆ Cancer Data:

- Primary Site
  - 2004 Dx Yr: 42
  - 2005 Dx Yr: 37

Highest errors in:

- Colon/Rectum:
  - Sigmoid vs rectosigmoid

- Lymphoma:
  - Nodal vs extra-nodal
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

◆ Cancer Data: 2004 Dx Yr 2005 Dx Yr
  ● Subsite 176 208
  Highest errors in Breast, Digestive and Lung
  X-rays, Breast Clock, Over-lapping Sites
  ● Laterality 34 41
  Known vs unknown
## Data Quality Results

Yr 1 & Yr 2 NPCR Audit

<table>
<thead>
<tr>
<th>Stage Data:</th>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>CS Extent</td>
<td>371</td>
<td>453</td>
</tr>
<tr>
<td>CS Lymph Nodes</td>
<td>198</td>
<td>236</td>
</tr>
<tr>
<td>CS Metastasis</td>
<td>130</td>
<td>145</td>
</tr>
<tr>
<td>Derived SS2000</td>
<td>153</td>
<td>192</td>
</tr>
<tr>
<td>SSF 1 (Pleura)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>SSF 3 (Prostate)</td>
<td>43</td>
<td>38</td>
</tr>
<tr>
<td><strong>Error Rate</strong></td>
<td><strong>31.9%</strong></td>
<td><strong>39.9%</strong></td>
</tr>
</tbody>
</table>
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

Collaborative Stage of Disease

<table>
<thead>
<tr>
<th>Data Elements</th>
<th>Percent of Errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS Ext</td>
<td>18%</td>
</tr>
<tr>
<td>CS LN</td>
<td>16%</td>
</tr>
<tr>
<td>CS Mets</td>
<td>6%</td>
</tr>
<tr>
<td>SS2000</td>
<td>8%</td>
</tr>
</tbody>
</table>

2004

2005

CDC
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

Error Rate - Summary Stage of Disease

Year of Diagnosis

% of Errors

0% 2% 4% 6% 8% 10% 12% 14%

1998-2002 2004 2005

Assigned
Derived
Collaborative Stage: Digestive
Yr 1 & Yr 2 NPCR Audit Data

Error Rate

Data Elements

CS Extent  |  CS LN  |  CS Mets  |  SS2000

Error Rate:
0%  |  2%  |  4%  |  6%  |  8%  |  10%  |  12%  |  14%  |  16%  |  18%  |  20%

2004  |  2005

18
Collaborative Stage: Prostate

Yr 1 & Yr 2 NPCR Audit Data

Percent of Errors

0% 5% 10% 15% 20% 25% 30% 35%

Clin EOD  Path EOD  EOD LN  EOD Mets  SS2000

Data Elements

Yr 1  Yr 2
Collaborative Stage: Lung

Yr 1 & Yr 2 NPCR Audit Data

Data Elements

Percent of Errors

- CS Extent
- CS LN
- CS Mets
- SS2000

2004 vs. 2005
# Data Quality Results

Yr 1 & Yr 2 NPCR Audit

## Surgery Data

<table>
<thead>
<tr>
<th>Category</th>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Surgery</td>
<td>130</td>
<td>141</td>
</tr>
<tr>
<td>Surg Primary Site</td>
<td>274</td>
<td>318</td>
</tr>
<tr>
<td>Surg Reg Nodes</td>
<td>140</td>
<td>174</td>
</tr>
<tr>
<td>Surg Other Site</td>
<td>69</td>
<td>59</td>
</tr>
</tbody>
</table>

Error Rate: 23% 27%
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

◆ Surgery Data
  - Date of Surgery
  - 5% of Total Errors

<table>
<thead>
<tr>
<th>Issues:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timing – doesn’t need to coincide with Surgery of Primary Site</td>
</tr>
<tr>
<td>What is Surgery?</td>
</tr>
<tr>
<td>Confusion re: 00/00/0000 vs 99/99/9999</td>
</tr>
</tbody>
</table>
# Data Quality Results

## Yr 1 & Yr 2 NPCR Audit

### Surgery Data

<table>
<thead>
<tr>
<th></th>
<th>2004 Dx Year</th>
<th>2005 Dx Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surg Primary Site</td>
<td>274</td>
<td>318</td>
</tr>
<tr>
<td>11% Total Errors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Issues:

- What is Surgery? Excisional Bx – 25
- Using NOS

### Coding specific procedure:

- Breast: 40/50 – Mastectomy, NOS
- 41/51 – Without removal of contralateral breast
Data Quality Results
Yr 1 & Yr 2 NPCR Audit

**Surgery Data**

<table>
<thead>
<tr>
<th></th>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surg Reg Nodes</td>
<td>140</td>
<td>174</td>
</tr>
<tr>
<td>Highest Errors in Breast</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Includes Sentinel biopsy w/ removal axillary nodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Doesn’t need to be done @ same time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- <strong>Number</strong> of lymph nodes examined</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Includes combination codes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Data Quality Results

## Yr 1 & Yr 2 NPCR Audit

**Surgery Data**

<table>
<thead>
<tr>
<th></th>
<th>2004 Dx Yr</th>
<th>2005 Dx Yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surg Other Regional</td>
<td>69</td>
<td>59</td>
</tr>
<tr>
<td>/Distant Sites</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Highest Errors in Digestive System**
  - Non-cancer Surgery: Cholecystectomy
  - Suspected Cancer: Wedge Resection of Liver
  - Other regional site: Appendectomy
Use **Audit Results**

to

Drive Education Opportunities