Data collected by central cancer registries is utilized for patient outcomes research.

Requires complete detailed treatment data.

Capturing information from physician offices can improve cancer surveillance without increased burden on physicians.

Medical claims from hospitals and Medicare have been used by central registries for case ascertainment and data enhancement.

Use of claims from physician offices offers more complete dataset.

Enables longitudinal tracking.

Updates patient information with each encounter.
Introduction

- National standard record layout currently used by every private practitioner in the nation
  - HCFA 1500 (Health Care Financing Administration, now CMS)
  - 837 Record, Version 5010 (electronic)

- Using existing insurance industry standard record layout (837 record)
  - Patient demographics
  - Insurance type
  - Patient diagnosis
  - Procedures
  - Date of last contact

HCFA 1500 – Demographics

HCFA 1500 – Diagnosis

Diagnosis ICD-9-CM Codes; Principal DX and Comorbid Conditions
To efficiently gather claims information:

- Need to automate and translate data from medical claims forms
- Convert data into established standard coding layouts for national cancer reporting

Crosswalk/derive treatment/procedure codes to cancer registry codes:

- ICD-9-CM – International Classification of Disease, 9th revision
- HCPCS – Healthcare Common Procedure Coding System
- Anti-neoplastic agents, RT, Hormones
- Ancillary therapies to enhance chemo tolerance
Objective: To validate the processing of claims and to evaluate enhancement to chemo treatment information.

Background: Florida is one of ten states funded for the Comparative Effectiveness Research project. Part of funding for this project aimed at expansion of physician cancer reporting.


FCDS launched a pilot project using electronic physician medical claims as the reporting standard.

Established partnership with large, multi-site medical oncology practice as the claims data provider.

Implemented NCI-funded software with automated algorithm for processing claims (Dr. Lynne Penberthy).
Project Partners

- Florida Cancer Specialists
  - One of Florida’s largest private med/onc practices
  - More than 120 physicians at 45 locations across state
  - Developed a trigger mechanism to copy standardized insurance claims forms and transmit to FCDS nightly
  - Trigger activated by presence of reportable ICD-9-CM code
  - Began transmitting June 2012 and included medical claims with service dates January 2011 forward

- Lynne Penberthy, MD, MPH
  - Responsible for development of MD Office software algorithm
  - Algorithm translates ICD-9-CM, HCPCS, and CPT codes to populate 56 fields in standardized layout and coding schemas of NAACCR v12.2
  - Resulting NAACCR record contains consolidated treatment received by the patient for each ICD-9-CM tumor

Methods

- Pilot captured patient encounters from 1/1/2011 through 9/1/2013
- Included cases of breast, colon, rectum cancers or CML diagnosed in 2011, where full first course treatment was received at FCS
- CER data used as the gold standard as these cases included all treatment details from hospital abstracts and the FCS EMR
- The CER dataset was used to validate the treatment mapping accuracy from the medical claims
- Pilot also measured enhancements from claims to the original registry record submitted by hospital facilities
### Results

- 15,273 claims transmitted from FCS
- Processed claims to produce claims abstract record by patient/tumor
- Matched claims abstract to original registry record
- Linked to 623 CER patient tumors

![Diagram showing FCS - Claims Abstracts, FCS - CER abstracts, and Matched Records for Validation Study]

### Methods

- Claims records were consolidated by patient and tumor
- Consolidated record compared to the gold standard record by NAACCR chemotherapy data item 1390 – RX Summ – Chemo
- Values compared at two levels
  - Resulting statistics for chemo received YES/NO
  - Single/Multi Agent
- Visual review of false negative/positives

### Percent Chemotherapy Received by Data Source

- Claims captured 41% with chemotherapy, compared to 28% in the registry dataset
- 45% of cases with chemotherapy captured in the gold standard CER data

![Bar chart showing percentages of chemotherapy received by data source]
### Consolidation of Claims and Registry Chemotherapy Treatment Received Compared to Gold Standard

![Bar chart showing comparison between claims and registry data]

### Percent Chemotherapy Received by Single/Multiple Agents

<table>
<thead>
<tr>
<th></th>
<th>Gold Standard (%)</th>
<th>Claims (%)</th>
<th>Registry (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Chemotherapy</td>
<td>53</td>
<td>60</td>
<td>57</td>
</tr>
<tr>
<td>Chemotherapy NOS</td>
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<td>0</td>
<td>9</td>
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<tr>
<td>Single Agent</td>
<td>5</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Multiple Agent</td>
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<td>34</td>
<td>19</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
<td>&lt;1</td>
<td>13</td>
</tr>
</tbody>
</table>

Abbreviations: NOS, Not Otherwise Specified; CER, Comparative Effectiveness Research

### Limitations

- Possible gaps in claims submitted
- Rapid expansion of FCS practice possible incomplete capture of patient services reported
- Coding errors/incomplete reporting
- First course vs. subsequent therapy identification
- Oral medications not captured on claims
Limitations

- Single vs. Multiple Primary – how to determine metastatic disease?
- Oral therapy not recorded on claim (dispensed from Pharmacy)
- First course vs. subsequent course
- Claim-only records – Follow back?

Conclusions

- Physician medical claims data capture chemotherapy information not otherwise reported by facilities
- Provide standardized and efficient mechanism for cancer reporting
- Claims data usage considered a sustainable activity

Questions?

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References