NPCR-AERRO’S CLINIC/PHYSICIAN OFFICE (CPO) REPORTING TO REGISTRIES PROJECT

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BACKGROUND
The Problem

- Traditional data collection for central cancer registries has been primarily from hospitals and anatomic pathology laboratories.
- As medical advances have occurred, diagnosis and treatment of certain cancers has moved from the acute care setting to being fully cared for within the physician/clinic office.
- Because cancer registries have not traditionally required physicians to actively report cancer cases, under-reporting or a delay in reporting occurs.
- Incidence rates and research are adversely affected by the incomplete data collection.
NPCR – AERRO includes cancer data sources and the lines drawn to the Central Cancer Registries and the National Cancer Programs.

Numbers rank the data sources on the quality of useful data available on a scale of 1 being the most useful and 10 being the least useful.

*Pathology Laboratories–Freestanding and Hospital–send data to both the Hospital Registries and the Central Cancer Registries.

**CoC receives data directly from hospitals.

NPCR–AERRO Scope Diagram

Radiation Oncology Treatment Logs Admissions
Central Cancer Registries
State Health Departments

National Cancer Programs/Organizations
SEER NAACCR
***CoC
NPCR

EHR

Freestanding Healthcare Practitioners
Health Insurance Plans
Bureau of Vital Statistics
Census Tract Database
State Health Departments
IHS/Local Tribe Clinics
National Death Index
Nursing Homes/Hospices

IHS/Local Tribe Clinics

National Death Index

Nursing Homes/Hospices

State Cancer Registries
Freestanding Diagnostic Imaging Centers

Voter Registration

Department of Motor Vehicles

Prisons

Hospitals

Freestanding Pathology Laboratories

Cancer Treatment Facilities

Central Cancer Registries

Outpatient Services

Diagnostic Imaging

Specialty Databases

Admissions

Business Office

Medical Records

Disease Index

Pharmacies

Oncology Clinics

Radiation Oncology

Treatment Logs

**Pathology Laboratory

Hospitals with/without Registries

Business Office

Medical Records

Disease Index

Specialty Databases

Admissions

Outpatient Services

Pharmacies

Oncology Clinics

Radiation Oncology

Treatment Logs

**Pathology Laboratory

Version 1.0
Revised 12-11-2008
The Solution

- Form Clinic/Physician Office (CPO) Workgroup within NPCR-AERRO project
- Develop methods and standards for electronic reporting from CPOs to cancer registries
- Develop an automated electronic process to identify and report cancer cases using the electronic medical record (EMR)
- Develop Integrating the Healthcare Enterprise (IHE) profile based on workgroup output
Use Case

*Physician sees a patient and diagnoses them with cancer:*

- EMR checks to see if the diagnosis meets the criteria for reporting to the state cancer registry.
- Criteria met, EMR creates and auto-populates a cancer reporting form and transmits it to the central registry.
- Central cancer registry receives the form and updates their database in a timely manner.
Workgroup Formation

- **September 2009:** Invitations to NAACCR listserv and other professional organizations

- **September 29, 2009:** Kickoff meeting
  - Over 90 responded, over 70 participated
  - Over 25 Central Cancer Registries
  - Other US federal government agencies: ASPE, NCI/SEER, other CDC branches
  - Canadian government agencies
  - Hospital registries, professional organizations, software vendors

- **Twice monthly workgroup meetings**
  - Over 50 indicated interest in ongoing active participation
Workgroup Scope: Goal

- Goal: move cancer registry community forward in using consistent standards for electronic clinic/physician office reporting from EMR to improve completeness, timeliness, and quality of cancer registry data by:
  - Implementing consistent electronic clinic/physician office reporting;
  - Providing guidance to central cancer registries and clinics/physician offices for implementing electronic reporting;
  - Providing central cancer registries with new and improved capabilities for utilizing clinic/physician office reports as a source of cancer information.
Workgroup Scope: Objectives (1)

- Develop the Clinic/Physician Office module of the NPCR-AERRO model ("Freestanding Healthcare Practitioners")
- Develop business model, including use cases, domain, data flow and class diagrams to describe the processes, and identify and develop standards
- Test and document the implementation of electronic clinician reporting from specific medical practices to central cancer registries
Workgroup Scope: Objectives (2)

- Identify existing software and/or develop software requirements needed to successfully implement electronic clinician reporting
- Provide guidance to central cancer registries and clinics/physician offices on the requirements for implementing electronic reporting
Workgroup Scope: Core Activities (1)

- **Modeling**
  - Review and use existing use cases/models where possible.
  - Develop domain, use case, work flow, data flow, and class diagrams.
  - Develop use cases for functions identified in the use case diagram.

- **Analysis/Design**
  - Identify and evaluate existing standards for exchange of clinical data
  - Identify and evaluate use of vocabulary standards and tools for vocabulary access and distribution
  - Identify and evaluate tools for secure data exchange.
  - Identify IHE profiles and transactions that may be applicable to the use case
Workgroup Scope: Core Activities (2)

- **Analysis/Design (con’t)**
  - Identify appropriate data elements to include on clinician reporting form
  - Modify existing or develop new standard format using IHE constructs and other relevant eHealth Standards that are consistent with NAACCR standards, and present to NAACCR for consideration.
  - Identify functional needs of central cancer registries to receive and process clinician data
Workgroup Scope: Core Activities (3)

- **Implementation**
  - Implement clinician reporting form
  - Develop tool to validate format produced by the EMR applications
  - Test initial data exchange format for content and format and modify as needed.
  - Implement or expand existing data transmission software or other tools for the secure transmission of messages
  - Based on central cancer registry identified needs for receiving and processing data, enhance Electronic Mapping, Reporting, and Coding (eMaRC) Plus to:
    - Convert data from data exchange format to the standard NAACCR file format
    - Process the data, including message verification, data validation and other quality control measures
CPO Activities to Date

- Completed Scope document to clearly define the goals, objectives, in-and-out of scope activities, and timeline
- Developed Domain Diagram
- Developed draft Business Use Case Diagram
- Brainstorm obstacles/barriers
Obstacles and Barriers

- **Process Issues**
  - Data volume and consolidation
  - Process must be totally electronic and seamless
  - Which reporting situations to address
  - New submission vs updates

- **Data Issues**
  - Data elements not in EMRs
  - Impacts on quality; potential increase in missing data elements

- **Resources**
  - Affordability
  - Access to data transmission tools

- **Legal**
  - In some states, physicians are not required to report unless no report submitted by a hospital or other source such as pathology
CPO Activities to Date

- Completed Scope document to clearly define the goals, objectives, in-and-out of scope activities, and timeline
- Developed Domain Diagram
- Developed draft Business Use Case Diagram
- Brainstorm obstacles/barriers
- Developed preliminary data item list, based on:
  - ASCO CORE document
  - NAACCR data items
Clinical Oncology Requirements for the EHR (CORE)

Clinical oncology involves many care processes, such as chemotherapy administration, that are not supported by the electronic health record (EHR) products currently on the market. The CORE project will provide a clear understanding of the EHR functions needed to support an oncologist in clinical practice, paving the way for development of oncology-specific products.
Data Elements List--Categories

- Demographics
- Facility
- Tumor characteristics
- State/prognostic factors
- Comorbid/Complications
- Treatment 1st Course
- Follow-up/recurrence/death
- Prior treatment
- Current plan
- Current treatment
CPO Activities to Date

- Completed Scope document to clearly define the goals, objectives, in-and-out of scope activities, and timeline
- Developed Domain Diagram
- Developed draft Business Use Case Diagram
- Brainstorm obstacles/barriers
- Developed preliminary data item list, based on:
  - ASCO CORE document
  - NAACCR data items
- Develop Prepare and Transmit Event Report Use Case
  - Discuss what situations trigger report to cancer registry
  - Discuss when to send report to cancer registry
CPO Next Steps (1)

- Complete Prepare and Transmit Event Report Use Case development
- Continue to refine data elements list
- Develop use cases for other functions
- Identify functional needs of central cancer registries to receive and process provider data
CPO Next Steps (2)

- Develop a tool to validate the format produced by the EMR applications
- Test initial data exchange format for content and format and modify as needed
- Enhance Electronic Mapping, Reporting, and Coding (eMaRC) Plus to convert and process the data
- Pilot test implementation of exchange of data from clinic/physician offices to NPCR registries
VENDOR DEMONSTRATION
Greenway Medical EMR
IHE Showcase Demo (1)

Patient presents with symptoms and is diagnosed with cancer

Clinic/Provider Office (CPO)
<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Name</td>
<td>Muffit</td>
</tr>
<tr>
<td>First Name</td>
<td>Missy</td>
</tr>
<tr>
<td>Street Address #1</td>
<td>88 Tuffet Way</td>
</tr>
<tr>
<td>Street Address #2</td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>Brookwood</td>
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<td>State:</td>
<td></td>
</tr>
<tr>
<td>Postal Code</td>
<td>35444</td>
</tr>
<tr>
<td>Patient Telephone</td>
<td>251-555-7474</td>
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<tr>
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<td>19340512</td>
</tr>
<tr>
<td>Sex</td>
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<tr>
<td>Race</td>
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</tr>
<tr>
<td>Social Security Number</td>
<td></td>
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<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Primary Payer</td>
<td></td>
</tr>
<tr>
<td>Usual Industry</td>
<td></td>
</tr>
</tbody>
</table>
## FACILITY SPECIFIC
- NPI Reporting Facility
- Reporting Facility: Greenway Endocrinology
- Medical Record Number: 19609
- Date of Service
- Responsible Physician

## INTENT TO HOSPITALIZE
- Hospital Name

## INTENT TO USE PATHOLOGY LABORATORY SERVICE
- Pathology Laboratory Name

## DIAGNOSIS
- Comment
- Primary Site (Text)
- Laterality (Text)
- Morphology (Text)
- Diagnosis Code 1: 204.10
- Diagnosis Code 2
- Diagnosis Code 3
- Diagnosis Code 4

## PROCEDURE CODES
Patient presents with symptoms and is diagnosed with cancer.
Patient presents with symptoms and is diagnosed with cancer.

Clinic/Provider Office (CPO)

IHE RFD, DSC; HITSP TP50, C76, T66

Infrastructure

IHE RFD, DSC, SVS; HITSP TP50, C76
Security, Form Manager, Form Filler, Form Receiver, Form Archiver

CPO transmits patient data to Public Health Cancer Registry

State Public Health Agency

IHE RFD, DSC

Decision Support Tool

Public Health Cancer Registry System

IHE Showcase Demo (3)
NPCR, HIMSS IHE Interoperability Showcase
eMaRC Plus: receipt of physician report
### eMaRC Plus: receipt of physician report

**Patient Information**
- **Medical Record:** 11609
- **Sex:** F
- **Service Date:** 08/30/2009
- **Status:** Review

**Facility Specific**
- **NPI Reporting Facility:** NP123
- **Reporting Facility:** Greenway Endocrinology
- **Medical Record Number:** 11609
- **Date of Service:** 08/30/2009
- **Responsible Physician:**

**Diagnosis**
- **Comment:**
- **Primary Site:**
- **Laterality:**
- **Morphology:**
- **Diagnosis Code 1:** 204.10
- **Diagnosis Code 2:**
- **Diagnosis Code 3:**
- **Diagnosis Code 4:**

**Procedure Codes**
- **Endoscopic Tests:**
- **Diagnostic Imaging:**
- **CPT Codes:**

**Intent to Hospitalize**
- **Hospital Name:** NONE
- **Pathology Laboratory Name:** NONE

**Demographics**
- **Name-Last:** Mull
- **Name-First:** Mary
- **Name-Middle:**
- **Name-Maiden:**
- **Addr Current-Street:** 88 Tuffet Way
- **Addr Current-City:** Brookwood
- **Addr Current-State:** 01
- **Addr Current-Postal Code:** 35644
- **Birth Date:** 05/12/1934
- **Sex:** F
- **Race 1:** 2136-3
- **Social Security Number:**
- **Marital Status at DX:**
- **Primary Payer at DX:** MF
- **Text-Usual Industry:**
- **Text-Usual Occupation:**

**Status**
Improving Public Health Cancer Registry Reporting
Centers for Disease Control and Prevention

State Cancer Registry System → State NHIN Gateway Adapter* → Adapter SDK → CONNECT
State Health Department NHIN Gateway → NHIN

CDC NPCR Existing HIT System → CDC NHIN Gateway Adapter* → Adapter SDK → CDC NHIN Gateway
Sandy Thames and Dr. David Blumenthal, National Coordinator for Health Information Technology
Opportunities to Get Involved

- Participate in CPO workgroup
- Provide feedback on IHE profile during public comment period
- Registries partner with EMR vendor and participate in IHE Showcase demonstrations
- Registries partner with clinic/physician office and EMR vendor their area to pilot test implementation of profile
- NPCR funded registries can apply for CER special project to implement electronic reporting from CPOs using the developed standard (IHE profile)
For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.