National Program of Cancer Registries – Advancing E-cancer Reporting and Registry Operations (NPCR-AERRO): Activities Overview

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National Center for Chronic Disease Prevention and Health Promotion
Division of Cancer Prevention and Control

National Program of Cancer Registries – Advancing E-cancer Reporting and Registry Operations (NPCR-AERRO)

- **CDC funded project to collaboratively develop an electronic reporting model for cancer surveillance**
  - recommendations, guidelines, and diagrams
- **Promote the utilization of the EHR**
- **Increase electronic reporting and automated processing**
- **Standardize electronic data exchange**

NPCR-AERRO Approach

Modeling: Develop consensus best practice models for automating processes and electronic reporting

Analysis and Design: Analyze current technology and infrastructure surrounding registry operations and develop products supporting automation and electronic reporting

Implementation: Coordinate, lead, and support software vendors, hospitals, and state cancer registries pilot testing NPCR-AERRO models and products

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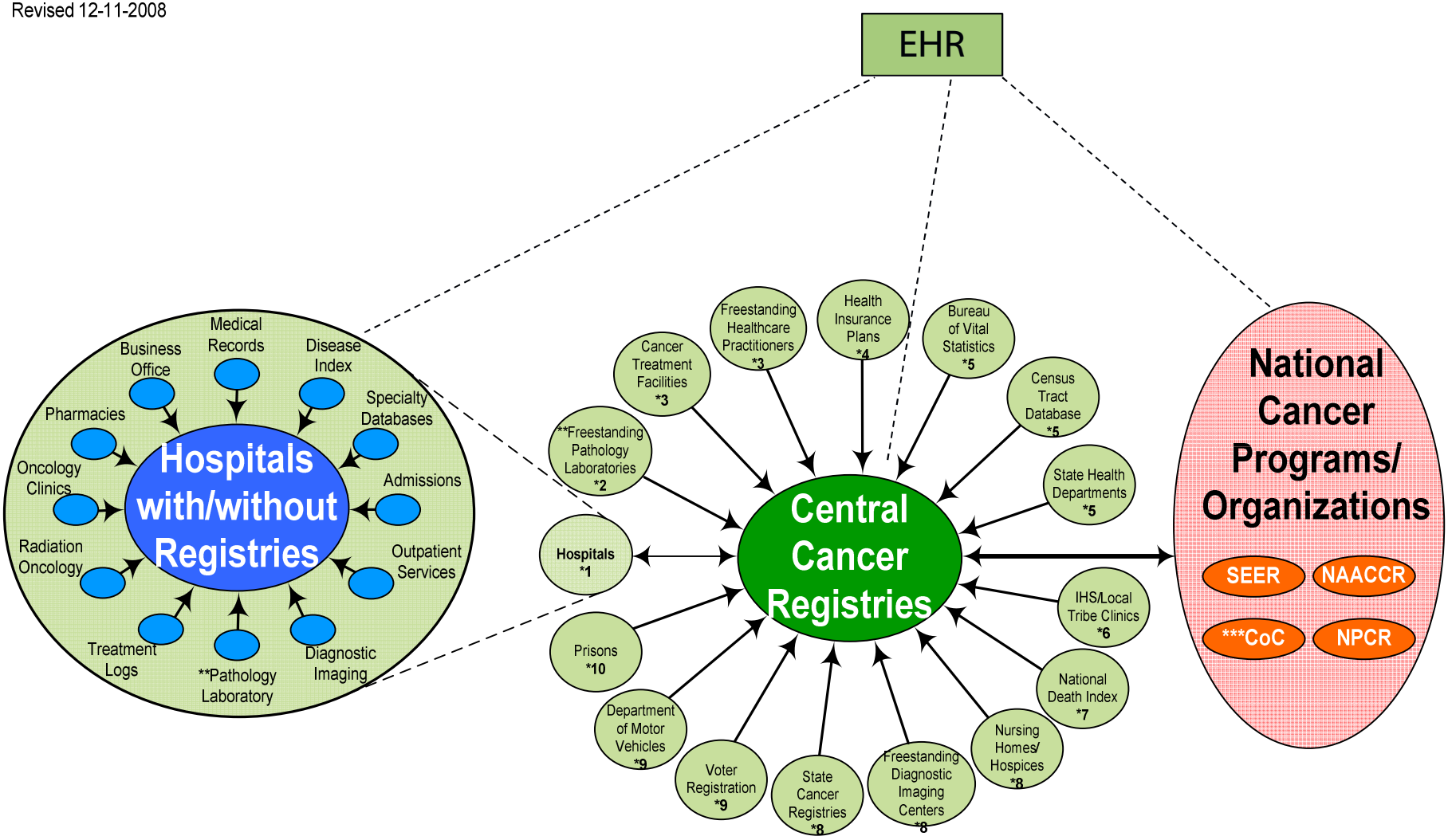
NPCR – AERRO Scope Diagram

Version 1.0
Revised 12-11-2008



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.

Modeling and Analysis/Design Activities

- Hospital Operations - Complete
- Central Cancer Registry - Complete
- Cancer Control and Data Use – Complete
- Clinic/Physician Office – Under development

CLINIC/PHYSICIAN OFFICE

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.

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

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.

ELECTRONIC PATHOLOGY REPORTING

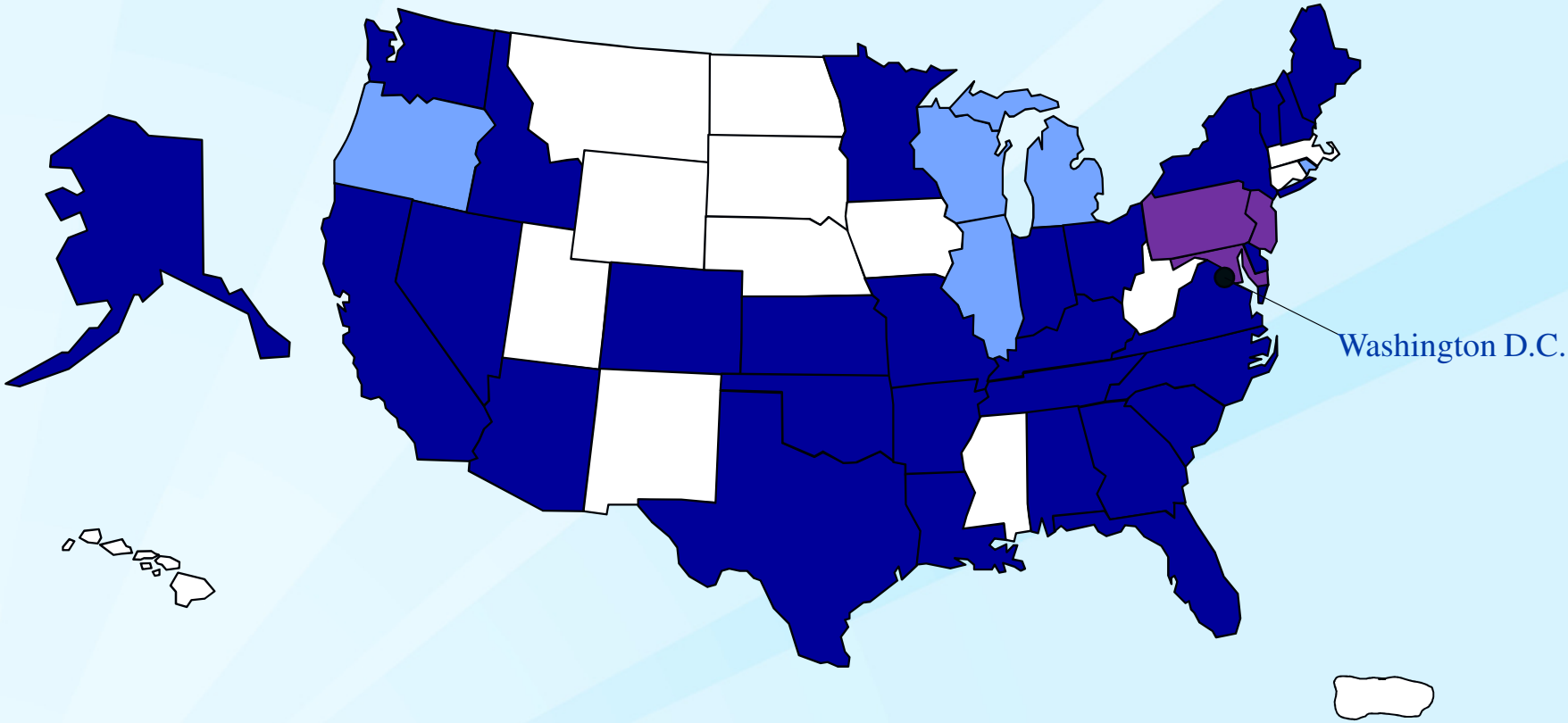
ePath Activities

- **Engaged a National Laboratory (LabCorp) to:**
  - use NAACCR Volume V
  - establish appropriate methods for filtering out cancer case reports – Using ICD-9/ICD-10 Code List or NAACCR Search Term List
  - use Public Health Information Network Messaging System (PHINMS) for secure message transport
- **Expanded state participation (in the last year) from 18 states to 39 states**
- **Expanded implementation to other national/regional laboratories (Bostwick, Quest, CBLPath, Caris Labs)**
- **Implemented 'Live' ePath reporting with:**
  - LabCorp to 28 state cancer registries
  - Bostwick Laboratories to 26 state cancer registries
  - CBL Path Laboratories to 7 state cancer registries

ePath Activities

- Developed software for cancer registries to receive and process laboratory reports (eMaRC Plus)
- Integrated NAACCR Volume V specifications into laboratory information system (LIS) vendor software
- Developed an Integrating the Healthcare Enterprise (IHE) Profile for Anatomic Pathology Reporting to Public Health based on NAACCR Volume V
- College of American Pathologists Cancer Protocols and Checklists (Synoptic Reports)
- Developing a standard for reporting of biomarker tests for Comparative Effectiveness Research (CER) activities that can be implemented on a broader scale in the future

ePath Project Participants as of June 13, 2011

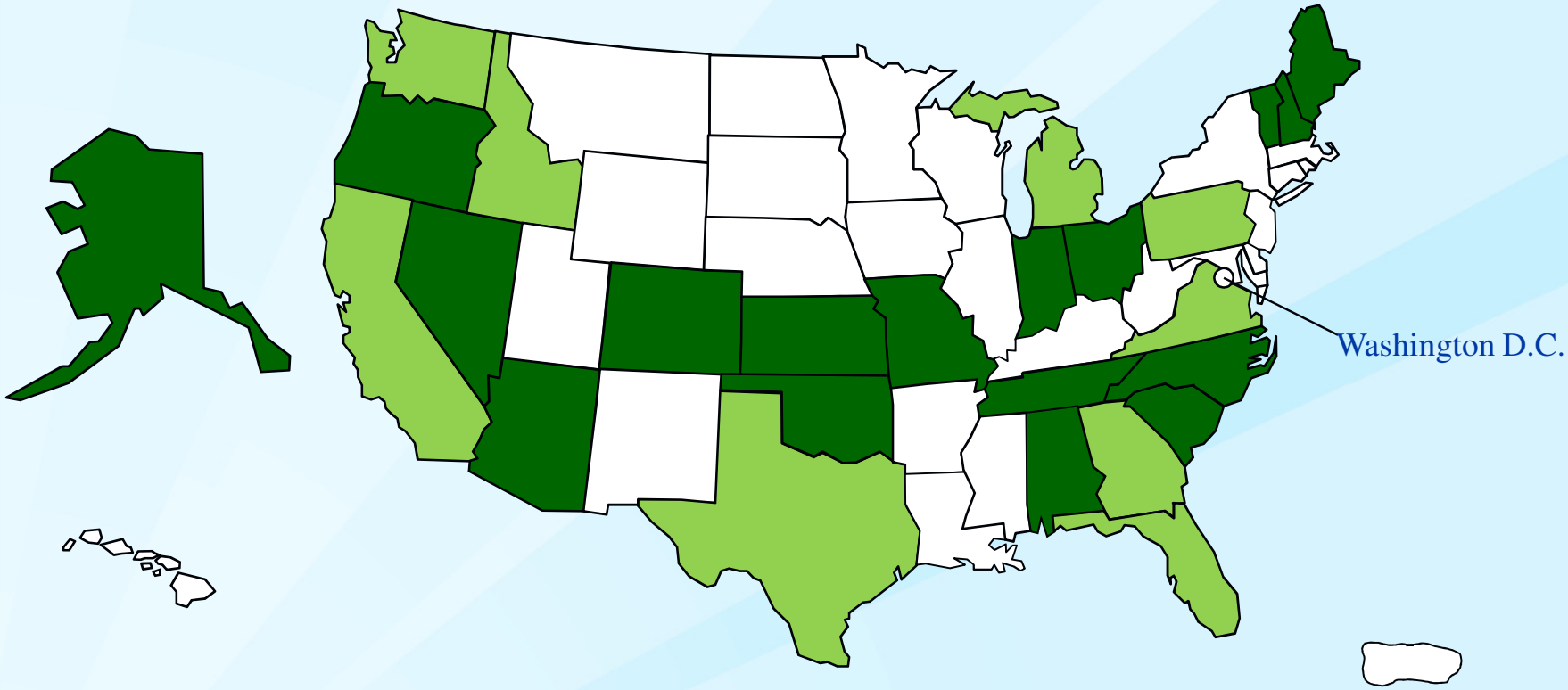


- Using PHINMS for Cancer Reporting (29 States)
- PHINMS installation for Cancer Reporting in Progress (5 States)
- Participation via sFTP or other methods (3 States)

electronic Mapping, Reporting, and Coding (eMaRC) Plus Software

- **Freely available tool developed by CDC NPCR**
- **Features:**
  - Multiple Database Support
  - Interfaces with Public Health Information Network Messaging System (PHINMS)
  - Receive and Process Data from Pathology Laboratory and Physician EMR
  - Message Mapping to NAACCR Data Elements
  - Filtering
  - Auto-populates Abstract with Relevant Data Elements
  - Auto-Coding of Histology, Primary Site, and Behavior
  - Manual Review

ePath Project Participants using eMaRC Plus as of June 13, 2011



Currently use eMaRC Plus (17 States)

Planning to Use eMaRC Plus (9 States)

INTEGRATING THE HEALTHCARE ENTERPRISE (IHE) AND MEANINGFUL USE

IHE: Background

- Initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information
- Promotes the coordinated use of established standards (e.g., HL7, DICOM)
- IHE organizes demonstrations of IHE-compliant systems working in real-world clinical scenarios at medical meetings and other venues
- IHE profiles support health information networks worldwide, and have been accepted as requirements by the U.S. Secretary of Health and Human Services for federal procurement of healthcare IT systems

IHE: Process

- Users of healthcare information identify a need for information exchange and define the use case
- Technical and subject matter experts work together to develop detailed specifications ("profile") to address the use case
- Profiles are vetted by community subject matter experts and then published for trial implementation
- Software vendors work with healthcare professionals to implement a profile in their software application
- Vendors and healthcare professionals perform tests and conduct demonstrations of the implemented profile

IHE: Cancer Profiles

- **Anatomic Pathology Reporting to Public Health – Cancer Registry (ARPH) Profile**
  - NAACCR Volume V used as baseline for text-based reports
  - Uses HL7 v.2.5.1 ORU message format
  - Profile for synoptic reporting will be developed
- **Physician Reporting to a Public Health Repository – Cancer Registry (PRPH-Ca) Profile**
  - Developed based on work from Clinic/Physician Office Workgroup activities
  - Uses HL7 Clinical Document Architecture (CDA) format

Meaningful Use of Electronic Health Records

- **Established by American Recovery and Reinvestment Act (ARRA) of 2009**
- **"Simply put, 'meaningful use' means providers need to show they're using certified EHR technology in ways that can be measured significantly in quality and in quantity."[1]**
- **Criteria for meaningful use will be staged in three steps over the course of five years:**
  - Stage 1 (2011 and 2012) sets the baseline for electronic data capture and information sharing
  - Stages 2 and 3 will continue to expand on this baseline and be developed through future rule making
  - Timeline under consideration for possible changes

[1]Centers for Medicare and Medicaid Services: https://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp#BOOKMARK1

Meaningful Use

- **Two regulations released**
  - Incentive Program for EHRs (Centers for Medicare & Medicaid)
    - Final rule defines the minimum requirements for Clinical Quality Measures and MU Criteria that eligible providers and hospitals must meet through their use of certified EHRs
  - Standards and Certification Criteria for EHRs (DHHS Office of the National Coordinator for Health Information Technology)
    - Final rule identifies the standards and certification criteria for the certification of EHR
  - Two Federal Advisory Committees formed:
    - HIT Policy Committee – (Meaningful Use, Privacy & Security, etc.)
    - HIT Standards Committee – (Clinical Operations, Vocabulary, etc.)

Cancer and Meaningful Use

- **Improve cancer surveillance, cancer prevention and control efforts, health care quality, and public health outcomes**
- **Improve timeliness of cancer surveillance information such that it can be used to impact patient care and clinical decision making**
- **Health Information Technology Policy Committee (HITPC) Proposed Stage 2 criterion:**
  - Eligible Provider: Submit reportable cancer conditions (attest to at least one) in accordance with applicable law and practice
  - New objective for CMS consideration
  - Signal to Health Information Technology Standards Committee: Possible use of IHE cancer reporting implementation guide

Meaningful Use: Why Cancer?

- Cancer community has a well-established SINGLE national data standard for case reporting that has been agreed upon and used by all state cancer registries for over fifteen years (NAACCR Vol. II)
- State Cancer Registries ready to receive and process data from physician offices by early 2012 or sooner
- eMaRC Plus, CDC-developed, freely available software, receives and processes CDA documents from EMRs
- Cancer reporting requirements are part of capture of information related to cancer diagnosis and treatment; fit in normal clinical workflow
- State Cancer Registries are CURRENTLY receiving electronic pathology reports (HL7 2.3.1 and 2.5.1)

Meaningful Use (MU) and Public Health

- **MU provides important opportunity for public health to exchange data with hospitals and providers**
- **3 public health criteria in Stage 1**
- **Relevant to cancer community: electronic laboratory reporting requirement**
  - Clinical laboratories only; does not include pathology laboratories
  - Uses ELR implementation guide as standard, which NAACCR Volume V is based on
  - NPCR has requested inclusion of pathology laboratory reporting for future stages

HOSPITAL DISCHARGE DATA

Project Activities

- Worked with National Association of Health Data Organizations (NAHDO), NAACCR Discharge Data Workgroup, and state cancer registries to align the NAACCR standards with the state reporting system standards
- Formed a small workgroup including staff from NAHDO, CDC NPCR, state discharge and state cancer registries to brainstorm possible solutions resulting in improved data collection and use
- Initial gap analysis of key data elements in the core hospital discharge (HDD) and cancer registry data sets

Project Activities (con't)

- Developed spreadsheet to provide a comparison of data element definitions and the specified field lengths for both data formats
- Presented the results of gap analysis document with representatives from both data systems
- Developed recommendations document based on review/discussions
- Developed a document that examined the types of research questions that could be answered using combined databases to provide concrete examples of the value of linking
- Developing oint statements to CMS and National Uniform Billing Committee

NPCR-AERRO Website and CyberView

- NPCR-AERRO Website provides an update on all past and current projects
- NPCR-AERRO CyberView website provides:
  - Model drill down capability
  - Model Map and list of models for quick access to any level of detail
  - Glossary of Terms and references used in the project

- http://www.cdc.gov/cancer/npcr/informatics/aerro/

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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.