SS-08 Electronic Health Records: How will they change the way we collect data?

Speakers:

Clarice Brown
Michelle Williamson
Brian Gugerty
Harold Luft

8/7: 1:30-3:00 PM Tuesday

Organizers: Monica Wolford
Anita Bercovitz

Welcome

Clarice Brown

Division Director
Division of Health Care Statistics
NCHS

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Michelle Williamson — Supporting Standards Development for HIT/EHR Adoption

Brian Gugerty — Electronic Health Records

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Supporting Standards Development for HIT/EHR Adoption

Michelle Williamson, MS, RN
Senior Health Informatics Scientist
Centers for Disease Control and Prevention
National Center for Health Statistics
Classifications and Public Health Data Standards

NCHS Data Users Conference
August 7, 2012

Agenda

- Federal Focus on Health Information Technology (HIT) and Electronic Health Records (EHR)
- NCHS Participation in HIT/EHR Standards Development

U.S. Plans for Health Information Technology

"To lower healthcare cost, cut medical errors, and improve care, we'll computerize the nation's health record in five years, saving billions of dollars in health care costs and countless lives."

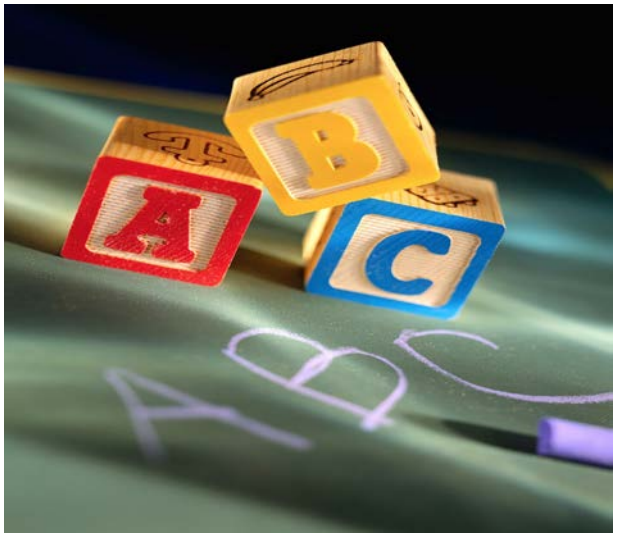
~~ President Barack Obama
First Weekly Address
January 24, 2009

Consistent with Bush's 2014 goal for electronic health records

American Recovery & Reinvestment Act (ARRA)

- President Obama signed ARRA on Feb. 17, 2009
- ARRA required HHS to create, vet and publish an initial set of HIT system **standards**, implementation specifications and testing criteria to promote adoption and “meaningful use” of EHRs
- ARRA is serving to stimulate adoption of HIT

Standards for HIT/EHR



- Standards are the essential building blocks for information systems
- Various types of standards:
  - Message formats and structured documents
  - Core Data Sets
  - Classification Systems and Terminologies
  - Privacy and Security
  - Many, many more.....

Standards Development Organizations (SDO)

- Health Level Seven International (HL7)
  - Message Standards (Version 2/Version 3)
  - Document Standards
    - Clinical Document Architecture (CDA)*
      - Specifies the structure and semantics of "clinical documents" for the purpose of exchange between healthcare providers and patients
    - Continuity of Care Document (CCD)
      - Implementation guide for sharing Continuity of Care Record (CCR) patient summary data using the HL7 CDA

*Source: http://www.hl7.org/implement/standards/product_brief.cfm?product_id=7

SDOs and Standards Related Organizations

- Accredited Standards Committee (ASC) X12
  - Administrative standards designated under HIPAA to support administrative simplification
  - Includes the standard transactions for Electronic Data Interchange of health care data for claims, eligibility, enrollment and remittance
- Many, many more.....
  - NCPDP
  - NUBC
  - NUCC
  - ADA DeCC
  - CDISC
  - IHE
  - ASTM
  - DICOM

NCHS Focus on Standards

It is worthwhile to lay the foundation for standardizing the transmission of survey data as efforts towards developing and implementing EHRs continues

NCHS Standards for Population Health and Healthcare

- NCHS and its partner organizations have developed, implemented and maintained many of the critical standards used in population health and healthcare:
  - Standard certificates for vital events
  - International Classification of Diseases and its clinical modifications
  - Uniform data sets for hospital and ambulatory care
- These standards can contribute to and benefit from current deliberations on national standards

NCHS Participates in the HIT Standards Landscape

PUBLIC HEALTH DATA STANDARDS CONSORTIUM
PHDSC

S&I FRAMEWORK

World Health Organization

National Center for Health Statistics

HL7 INTERNATIONAL

IHE

ASCX12
The Accredited Standards Committee

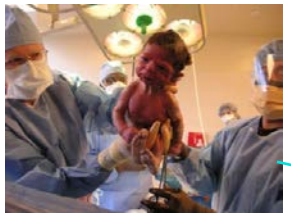
NUBC

Developing Standards for EHR Birth and Death Data Exchange with Vital Records Systems

Mother

Mother's Worksheet

Birth Information Specialist

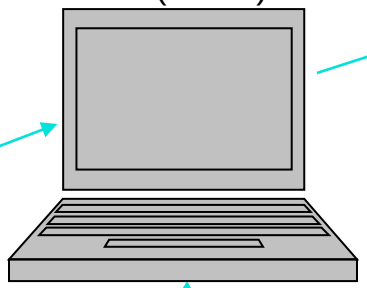


Birth Event

Nurse

Physician

Birth Registration System (EBRS)



Electronic Health Record

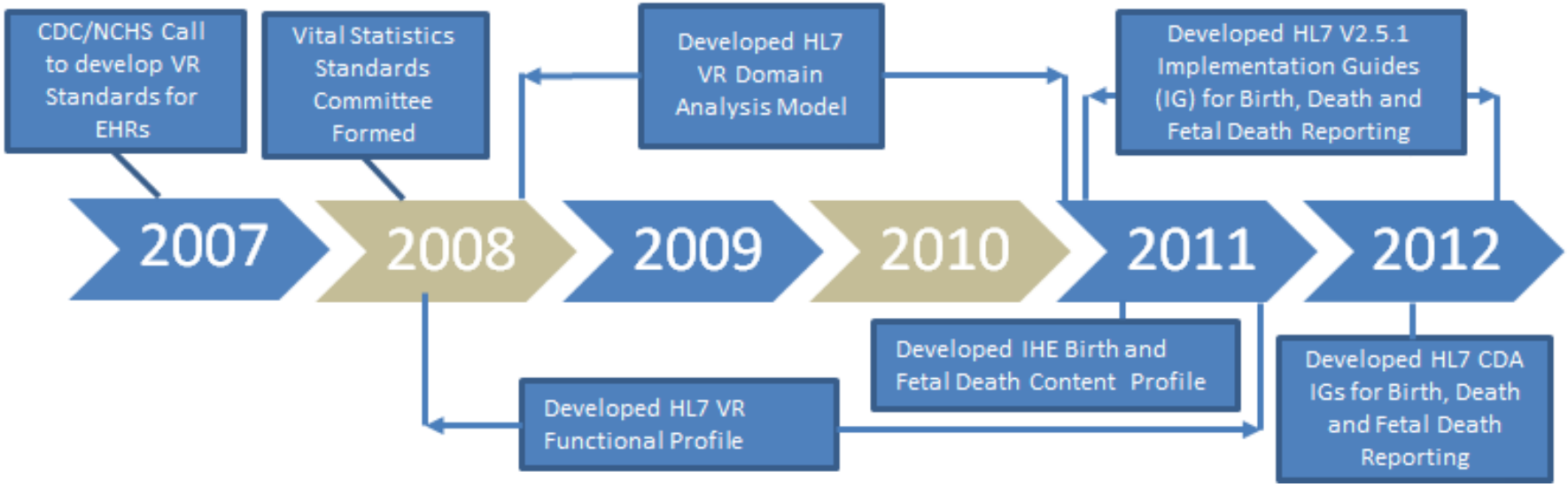
Registrar

Birth Certificate

State Department of Health

CDC/NCHS

eVitals Standards Development Timeline



Defining Public Health Functional Requirements

NCHS has provided support to develop an HL7 Public Health Functional Profile (PHFP)

- Identifies functional requirements and conformance criteria for public health-clinical information collection, management and exchanges as they apply to the various public health programs
- Based on EHR System Functional Model and Standard, Release 1.1 U.S. Realm
- Developed through NCHS collaboration with the Public Health Data Standards Consortium (PHDSC) EHR-PH Task Force

NCHS Engaged in ONC S&I PHRI

- Office of the National Coordinator for Health Information Technology (ONC)
  - Standards and Interoperability (S&I) Framework
    - Public Health Reporting Initiative (PHRI)
      - Community-led S&I Framework initiative
      - Focused on harmonizing information exchange standards and creating implementation specifications for PH reporting from healthcare providers to PH agencies to promote HIT adoption and facilitate electronic PH reporting from EHR systems
      - Includes NCHS User Stories for Division of Vital Statistics and Division of Health Care Statistics

Supporting Maintenance of the ASC X12 Health Care Service Data Reporting Guide (837R)

- NCHS provided support for development and maintenance of the X12 837R - Health Care Service Data Reporting Guide
  - Provides a standardized guide for developing and executing the electronic transfer of health care systems data for reporting purposes to local, State, and Federal agencies
- Evaluate how the ASC X12 837 Health Care Service Data Reporting Technical Report can be expanded to include specific requirements to meet the needs of the surveys

DHCS Using X12 and HL7 CDA/CCD Standards

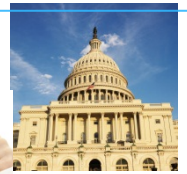
Inpatient

X12 837I/R Health Care Claims Data

HL7 CDA (Clinical Content)

National Center for Health Statistics

DATA USERS



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Electronic Health Records

- Brian Gugerty, DNS, MS, RN
  EHR Consultant, GIC Informatics

Division of Healthcare Statistics

Core Surveys

- National Hospital Care Survey (NHCS)
  - Hospital Inpatient Discharges
  - National Hospital Ambulatory Medical Care Survey (NHAMCS)
    - ED
    - OPD
    - Hospital ASL & Freestanding ASC
- National Ambulatory Medical Care Survey (NAMCS)
- National Study of Long-Term Care Providers (NSLTCP)

Promise of Electronic Data

More

Better

Cheaper

Faster

Electronic Health Record Drivers

ARRA

- Meaningful Use

Data/ Information for:

- Competitive/ Market
- Regulatory
- Patient Safety
- Research
- Operations Improvement

Electronic Health Record Drivers

Specific driver for Health Information Exchange

- Meaningful Use Stage 2 criteria

  Transition of Care Summary

  - Eligible Hospitals and Eligible Providers
    - Exchange summary of care for each episode of care
    - 2014

Hospital Adoption of EHRs

16% in 2009

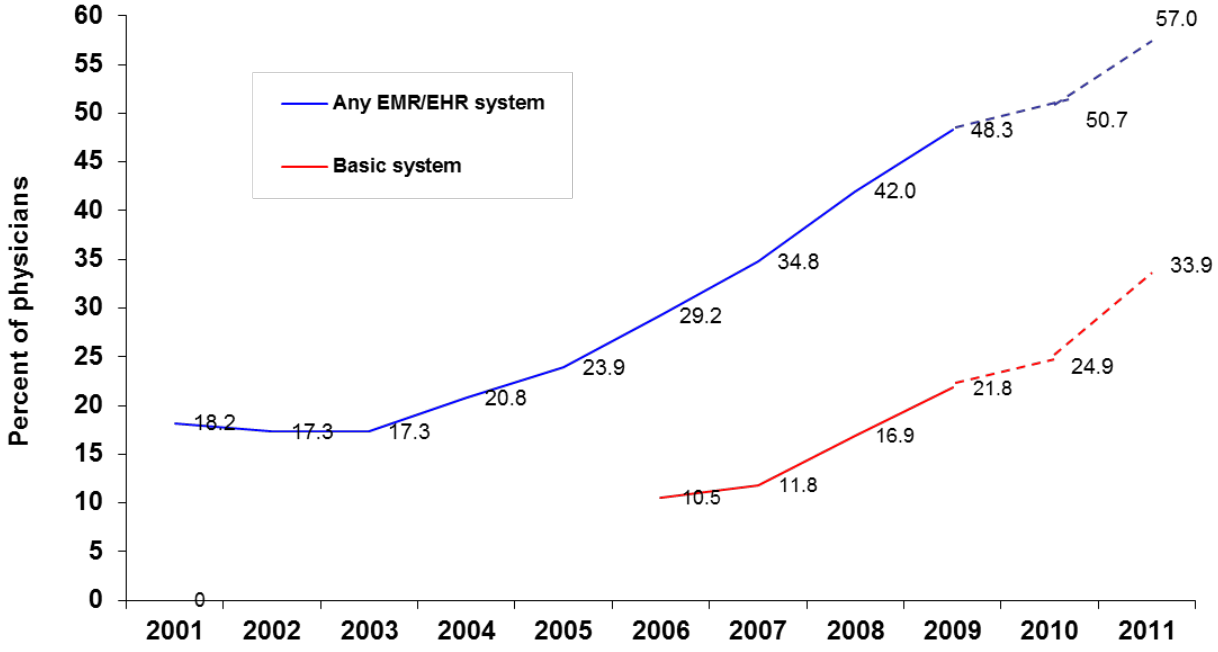
35% in 2011

85% plan to seek Meaningful Use funds

Thus by 2015-2017, 85% of hospitals should have EHRs

Source: American Hospital Association 2012

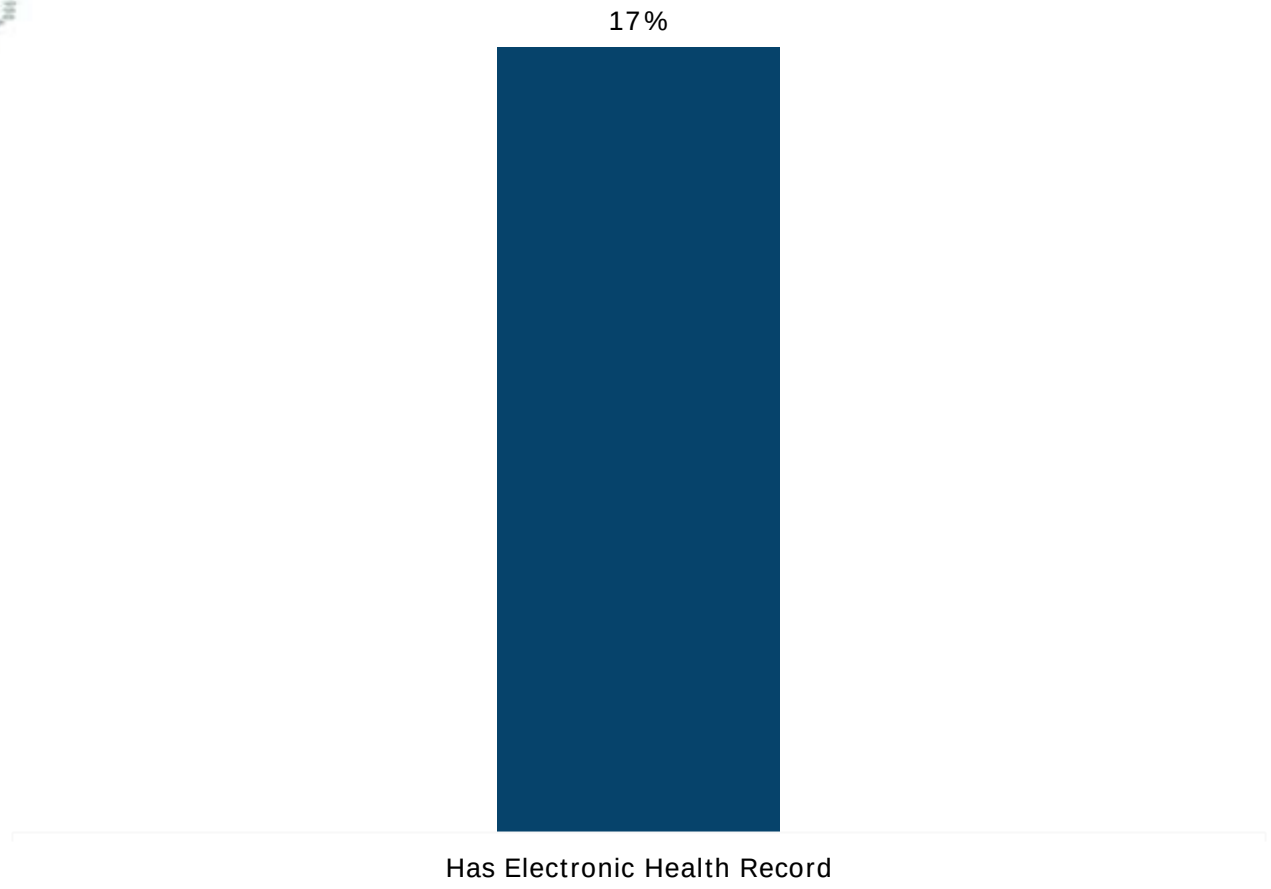
Physician Office Practice adoption of EHR



34% basic systems in 2011

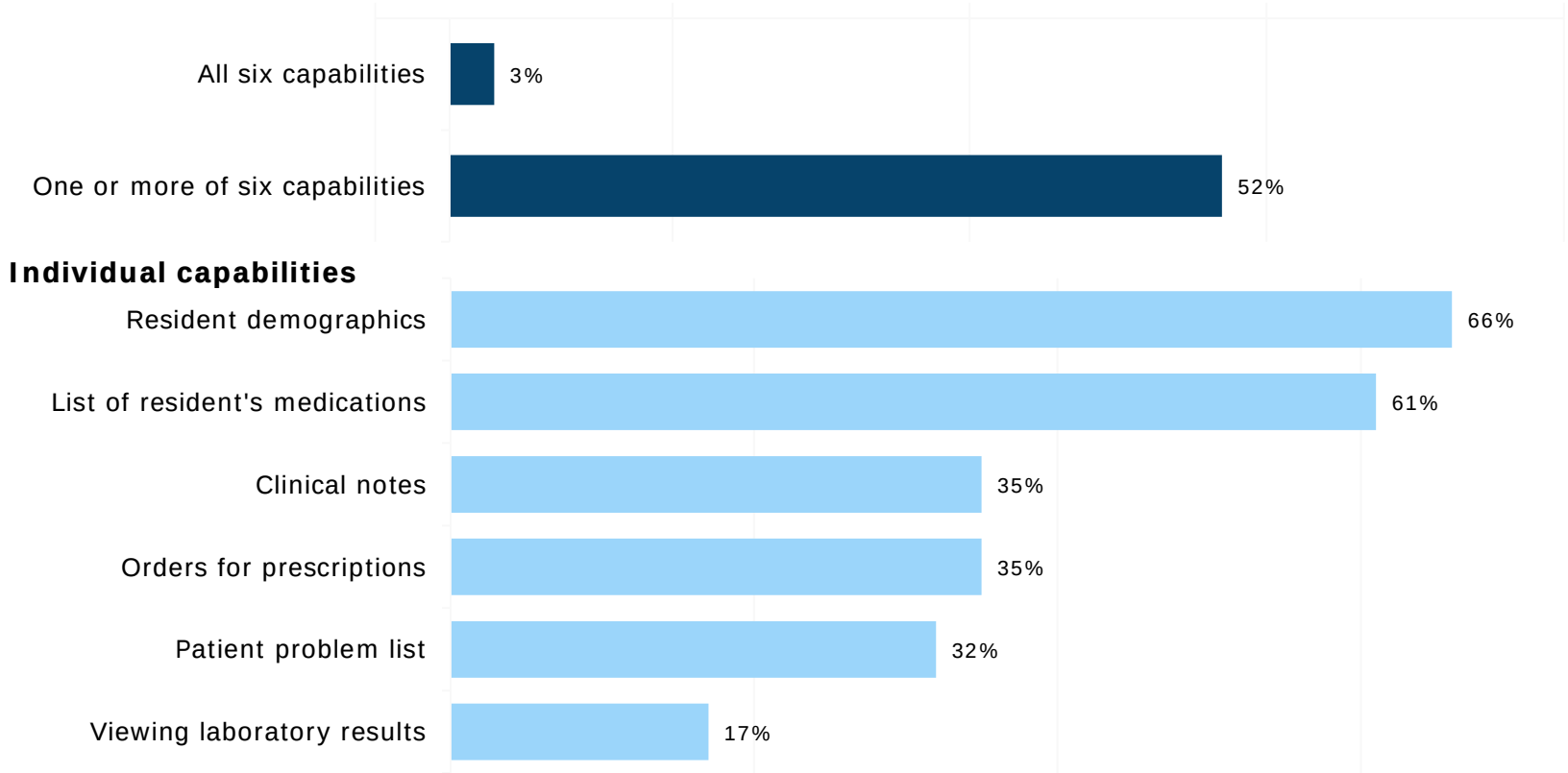
Hsiao CJ, Hing E, Socey TC, Cai B. Electronic Health Record Systems and Intent to Apply for Meaningful Use Incentives Among Office-based Physician Practices: United States, 2001-2011. NCHS Data Brief

Electronic Health Records among residential care communities (RCCs); United States, 2010



Note: The Electronic Health Records question asked the following: Other than for accounting or billing purposes, does this facility use Electronic Health Records? This is a computerized version of the resident's health and personal information used in the management of the resident's health care.
Source: National Survey of Residential Care Facilities, 2010

Computerized capabilities among residential care facilities to record and maintain health information; United States, 2010



Note: Computerized capabilities included the following functionalities: resident demographics, clinical notes, patient problem list, list of resident's medications, order for prescriptions, and view lab/imaging results.
Source: National Survey of Residential Care Facilities, 2010

EHR Readiness for Research Data Sourcing

EHRs not ready to exchange data yet

By 2015

- 85% hospitals likely ready to exchange
- Likely a similar though somewhat smaller % of medical practices
- Not enough data to predict LTC trend

Division of Health Care Statistics Position

Gain experience with electronic submission and receipt of standardized administrative & EHR data so that when its truly available we'll be ready

NHCS & NAMCS Data Collection

Year	NHCS	NAMCS
2010	• NHDS – mix of paper and non-standard electronic submission • NHAMCS - Census Field Rep abstraction, paper submission	• Census Field Rep abstraction, paper submission
2011	• **Inpatient - X12 837i healthcare claim as primary data source** • **NHAMCS - Same as 2010**	• **PC tool developed 2011**
2012	• **Inpatient – Same as 2011** • **NHAMCS – First use of PC tool** • **Pretest – NHAMCS integration into NHCS**	• **PC tool first used** • **Pilot - Field Rep abstraction vs. EHR Extraction vs. CCD**
2013	• **NHAMCS fully integrated into NHCS combined 837i and data abstractions**	• **Same as 2012** • **Expanded Pilot – same comparison**

FUTURE DIRECTIONS

NHCS

- Inpatient
  - Add CCD or other CDA documents & combine w/ existing 837i records
  - Pilot to add lab results electronically
- ED/ OPD/ ASC – CDA combined with 837i
- Follow pt. thru hospital-based episode of care
- Link to other data sets
  - ➢ CMS
  - ➢ National Death Index
  - ➢ Other

NAMCS

- CCD/ CDA combined with 837p
- Link to other data sets
  - ➢ NHCS
  - ➢ CMS
  - ➢ National Death Index
  - ➢ Other

NSLTCP

- CMS admin data on nursing homes, home health agencies and hospices
  - Provider
    - OSCAR
  - Individual
    - Hospice Claims
    - MDS
    - OASIS
- Web, Mail and CATI surveys of adult day + residential care

Data collection method and approach to data editing

Paper and pencil surveys

- Extensive manual and computer assisted editing after collection

Computer assisted data collection

- Allows for built-in data editing through real time validity and range checks.

Electronic data (claims and EHR derived)

- Volume of data requires computerized editing with minimal hands-on corrections
- Reliant on internal data quality

Analytic considerations with electronic data

Electronic data (claims and EHR derived)

- Data sets, values and formats designed for a purpose other than research -which may create bias
  - ❖ Data based on billing information may reflect diagnoses which receive higher reimbursement
  - ❖ Data based on billing information may not include variables not relevant for billing – e.g. demographic variables
- Greater number of records allows analysis of rare conditions/situations and by multiple variables

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