Update on the EHR Data Collections for the National Ambulatory Medical Care Survey (NAMCS) and the National Hospital Care Survey (NHCS)

Carol DeFrances, Ph.D.
Chief, Ambulatory and Hospital Care Statistics Branch
Division of Health Care Statistics

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Overview

Background

- NCHS' National Health Care Surveys
- Move to Electronic Health Records (EHRs)
- Leveraging the Meaningful Use Incentive Program

EHR Data Collections for NAMCS and NHCS

Lessons Learned

Moving Forward

NCHS' National Health Care Surveys

Produce accurate objective, nationally-representative statistics on health care to inform health care policy and serve a variety of research needs.

National Health Care Surveys

National Ambulatory Medical Care Survey

- Physician Offices
- Community Health Centers

National Hospital Ambulatory Medical Care Survey

- Emergency Departments
- Outpatient Departments
- Ambulatory Surgery Locations

National Hospital Care Survey

- Inpatient Departments
- Emergency Departments
- Outpatient Departments including Ambulatory Surgery

National Study of Long Term Care Providers

Examples of the Data

Patients

- Demographics
- Insurance status
- Residential zip
- Medical conditions
- Smoking history
- Personal identifiers for linkage (e.g., to the National Death Index)
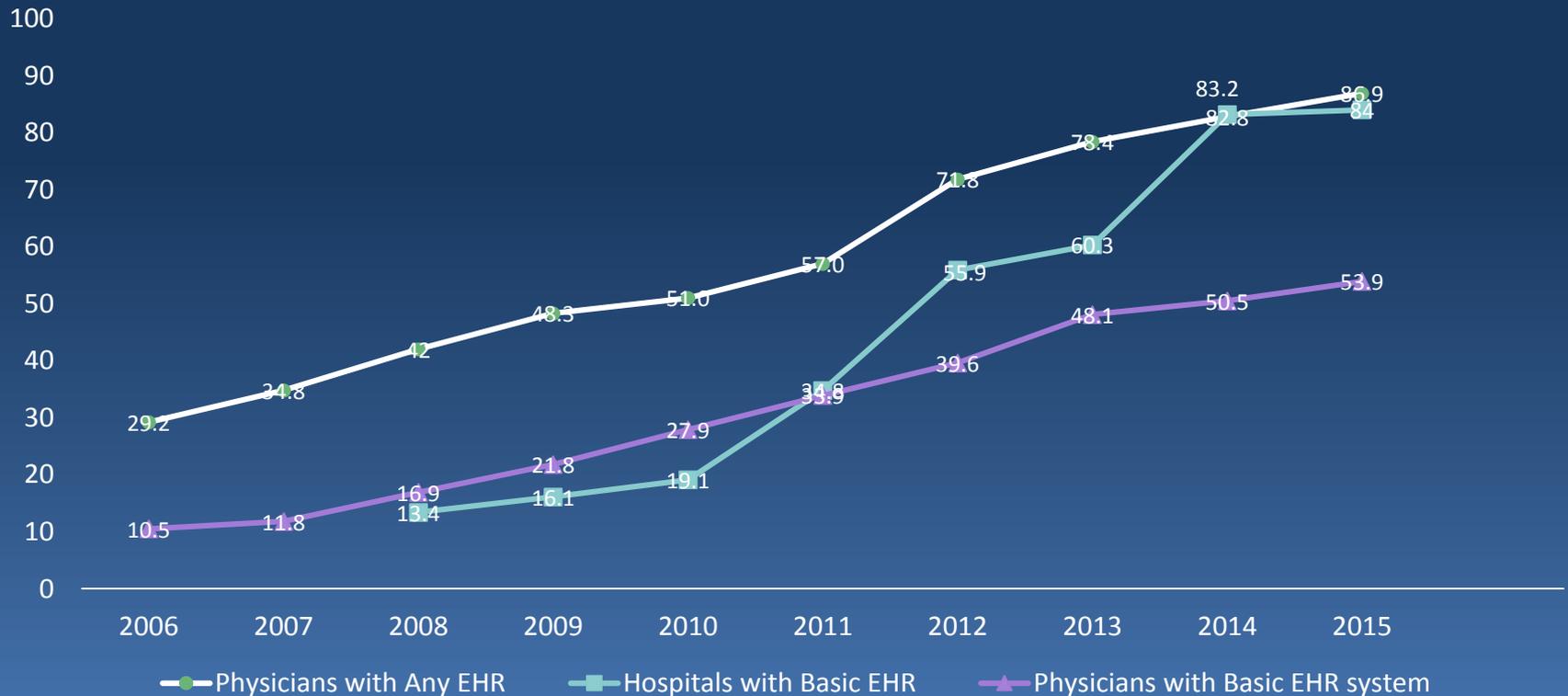
Encounters

- Reason for visit
- Diagnosis
- Procedures and services
- Medications or immunizations
- Laboratory and other diagnostic tests
- Types of providers seen

Why move to EHR data?

- Less burden on the provider

- More clinical detail and depth

- Greater volume of data
  - Linkage across hospital settings
  - Linkage to other National Death Index and Medicare and Medicaid data

Why now?

Adoption of Electronic Health Record Systems by office-based physicians and acute care hospitals: United States

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Physicians with Any EHR	29.2	34.8	42	48.3	51.0	57.0	71.8	78.4	83.2	86.9
Hospitals with Basic EHR			13.4	16.1	19.1	34.8	55.9	60.3	82.8	84
Physicians with Basic EHR system	10.5	11.8	16.9	21.8	27.9	33.9	39.6	48.1	50.5	53.9

Physicians with Any EHR   Hospitals with Basic EHR   Physicians with Basic EHR system

What will it take to move to EHR data collection?

- Research
  - Conducted several pilot studies sponsored by ASPE.
- Data Standards
  - Developed HL7 CDA Implementation Guide for the National Health Care Surveys.
- Incentives to change
  - Meet Public Health Reporting Objective in CMS Electronic Health Record Incentive Programs.
  - Named in 2015 Edition of Health IT Certification Criteria.

HL7 Implementation Guide for CDA Release 2: National Health Care Surveys (NHCS)

- Provides a standardized format to submit data to fulfill the requirements of National Health Care Surveys.

- Automates the survey process via
  - Streamlines the collection of data.
  - Enables increased sample pool allowing providers who want to participate in the surveys to do so.

- The HL7 CDA Implementation Guide (IG) is listed in the 2015 Interoperability Standards Advisory.
  - Named as the best available content/structure and standard for national health care surveys.

Leveraging Meaningful Use Incentive Program

National Health Care Surveys are included in the published final rule for Meaningful Use (MU) (October 2015)

- Eligible professionals (EPs) and eligible hospitals (EHs)/critical access hospitals (CAHs) can use submission of National Health Care Surveys data as one of their options to fulfill the public health objective for Meaningful Use Incentive Program.

Declaration of Readiness

Updated Declaration of Readiness for the National Health Care Surveys

June 30, 2017

The Merit-Based Incentive Payment System (MIPS)/EHR Incentive Programs (Meaningful Use) Stage 2/ONC 2014 Edition Health IT Certification Criterion § 170.315(f)(7) Transmission to public health agencies—health care surveys

The National Center for Health Statistics (NCHS) will accept National Health Care Surveys data from Eligible Clinicians (ECs), Eligible Professionals (EPs), Eligible Hospitals (EHs) and Critical Access Hospitals (CAHs) in fulfillment of the MIPS and Meaningful Use Stage 2 Programs Objective 10: Public Health Reporting, Measure 3: Specialized Registry Reporting.

Until December 31, 2017 one of the following formats are required to generate and transmit data to NCHS for Measure 3: Specialized Registry Reporting:

1. HL7 CDA® documents, as described by the Implementation Guide for National Health Care Surveys Release 1, DSTU Release 1.1—U.S. Realm, available from www.hl7.org.
2. A custom extract built to include data elements as specified in the National Health Care Surveys Data Elements list, available from NCHS.
3. Continuity of Care Documents (CCDs) produced by your Certified Electronic Health Record Technology (CEHRT).

MIPS/Meaningful Use Stage 3/ONC 2015 Edition Health IT Certification Criterion § 170.315(f)(7) Transmission to public health agencies—health care surveys

The National Center for Health Statistics (NCHS) will be ready to accept National Health Care Surveys data from ECs, EPs, EHs and CAHs in fulfillment of the MIPS and Meaningful Use Programs Stage 3 Objective 8: Public Health and Clinical Data Registry Reporting, Measure 4: Public Health Registry Reporting on January 1, 2018.

The format required to generate and transmit data to NCHS for Measure 4: Public Health Registry Reporting is:

HL7 CDA® documents, as described by the Implementation Guide for National Health Care Surveys Release 1, DSTU Release 1.2—U.S. Realm, available from www.hl7.org .

To register intent to submit data to NCHS, please email NCHSMUInfo@cdc.gov.

National Center for Health Statistics
National Health Care Surveys

CS266872

MU Registration Statistics: August 31, 2017

Number of eligible clinicians/
eligible professionals registered: 155,866

Number of eligible hospitals/
critical access hospitals registered: 912

Process for **NAMCS and NHCS MU EHR** Data Collections

- Registration and Onboarding

- Invitation to Testing and Validation

- Testing and Validation

- Invitation to Survey Production

- Survey Production

Meaningful Use Stage 2 EHR Data Submissions for NAMCS and NHCS

1. HL7 CDA® documents as described by the Implementation Guide for National Health Care Surveys Release 1, DSTU Release 1.1 - US Realm, available from the HL7 website.

2. A custom extract built to include data elements as specified in the National Health Care Surveys Data Elements list, available from NCHS.

3. Continuity of Care Documents (CCDs) produced by their Certified Electronic Health Record Technology (CEHRT) platform.

National Ambulatory Medical Care Survey (NAMCS)

- Produces national statistics about ambulatory care services which are used and provided by office-based physicians and various types of clinicians at community health centers (CHCs).

- Historically, data have been collected by medical record abstraction on-site at the physician's office by Census Field Representatives.

2016 NAMCS Data Collection

- Abstracted data collection performed by Census Bureau:
  - Sample of ~3200 office-based physicians and <u>sample</u> of their patient visits for a preselected week specified by NCHS
  - Collection of physician and practice characteristics
- Electronic health record (EHR) data collection conducted by NCHS:
  - Sample of ~500 office-based physicians and <u>all</u> their patient visits for a preselected week specified by NCHS
  - Collection of limited physician and practice characteristics

2016 NAMCS EHR Data Collection

- Needed to build infrastructure to test and validate EHR data and collect production data at NCHS.

- Needed to create methods and procedures to obtain data.
  - Collect physician induction information needed for weighting data.
  - Create technical assistance materials.
  - Hold technical calls with physicians or organizational contacts.

2016 NAMCS EHR Data Collection (continued)

- Testing and Validation:
  - Each participating provider was asked to provide 4 sample CCDs for testing.
  - Sample documents were validated using the CCD Schematron.
  - To date, 794 CCDs tested.

- Production:
  - To date, data processed for 93 physicians.
    - 3,541 encounters -- average of 38 per physician

NAMCS EHR Data Collection: Challenges

- CCDs are reasonable match for NAMCS requirements but not a perfect match.

- Some physician/physician groups could not go back and retrieve prior visits.

- No document tested was error free.
  - About 46% of the documents returned one or more errors regarding improperly formatted addresses.
  - Over 70% of the documents one or more errors regarding improperly formatted person names.

National Hospital Care Survey (NHCS)

- Integrates three long-standing surveys: NHDS, NHAMCS, and DAWN.

- Will provide reliable and timely healthcare utilization data for hospital-based settings.

- Link episodes of care across hospital units as well as link to other data sources such as the National Death Index and Medicare data.

- Data collection is all electronic and conducted by a contractor.

NHCS Data Collection

- Sample of 598 non-federal, non-institutional hospitals with 6 or more staffed inpatient beds:
  - Transmit Uniform Bill (UB) 04 administrative claims data, Vizient, or EHR data.
  - <u>All</u> inpatient, emergency department, and outpatient department encounters for a calendar year (Jan.-Dec.)
- Collection of limited facility information
- Collection of personally identifiable information such as name, address and Social Security number for data linkage

NHCS Recruitment Challenges

- Competing demands

- Timing of the request

- Lack of resources to devote

- Making the business case for NHCS

NHCS EHR Data Collection

- 2015:
  - Received EHR custom extract files from 8 hospitals including clinical notes for 2 hospitals.

- 2016:
  - Targeted 98 sampled hospitals that has registered for MU credit.
  - Testing and Validation:
    - 50 hospitals sent a test file
  - Production
    - 41 hospitals sent production data
      9 custom extracts
      32 C-CDA (e.g., CCD, Transfer Summary, or Discharge Summary)

NHCS EHR Data Collection: Challenges

- Custom extracts:
  - Required large time commitment by hospital staff to obtain extracted data.
  - Hard to get hospital to provide data defining codebooks or reference files to look up hospital specific codes.

- C-CDA documents:
  - Difficult to definitively determine encounter setting (e.g., ED or OPD) from CCDs.
  - For ambulatory encounters, it was sometimes difficult to determine start time and end time.

NHCS EHR Data Collection: Challenges (continued)

Integration:

Data Element	Hospital 1 Values	Hospital 2 Values	Sample Integrated Variable Values
Race	• Black • White • Asian • Native Hawaiian/Pacific Islander • American Indian • Some other race • Unknown	• African American/Black • Caucasian/White • Asian • Pacific Islander • American Indian/Native American • Other • Unknown	• White • Black or African American • American Indian or Alaska Native • Asian • Native Hawaiian or Other Pacific Islander • Other Race • Two or More Races • Unknown/Missing
Ethnicity	• Spaniard • Mexican • Central American • South American • Latin American • Puerto Rican • Cuban • Dominican • Not Hispanic or Latino	• Hispanic or Latino • Not Hispanic or Latino • Unknown	• Hispanic or Latino • Not Hispanic or Latino • Unknown/Missing
Sex	• F • M • U	• Ambiguous • Female • Male • Not applicable • Other • Unknown	• Female • Male • Other • Unknown/Missing

EHR Data Collection: Lessons Learned

- MU is a powerful incentive.

- C-CDA documents were more immediately available to be produced for both NAMCS and NHCS.

- Other data available through EHRs but not currently being collected (e.g., allergies to medication, family history, social history and alcohol use)

- Conducting NAMCS EHR data collection at NCHS was difficult but invaluable for the insights gained.

Moving Forward…

- Work with EHR vendors to build, test and improve the HL7 CDA IG.

- Continue to register ECs, EPs, EHs, and CAHs for public health reporting.

Moving Forward: NAMCS

- 2016 Data Collection:
  - Deliver 2016 EHR and abstracted data to contractor for integration and harmonization.
  - Weight integrated data and produce public use file.

- 2017 Data Collection:
  - Collect abstraction data at Census and EHR data at NCHS.
  - Continue development of infrastructure at CDC to host and warehouse EHR data

- 2018 Data Collection:
  - Abstracted data collection but no EHR.

Moving Forward: NHCS

- 2016 Data Collection:
  - Make data available to NCHS RDC.
  - Work on linking claims and EHR data to the NDI under the PCORTF project.

- 2017 Data Collection:
  - No data collection conducted.

Moving Forward: NHCS (continued)

- 2018 Data Collection:
  - Top priority is recruitment of sampled hospitals so national estimates can be made.
  - Reduce data collection to just ED and inpatient data.
  - Explore purchasing inpatient and ED data from outside organizations such as Premier and Thomson Reuters.

- Does BSC have any suggestions how to increase NHCS hospital participation?

Thank You!!