Enhancing the Identification of Opioids in the National Hospital Care Survey

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Webinar Essentials

- To preserve confidentiality of hospitals in the sample, please use your first name only when identifying yourself in the webinar discussion today.
- When you are not speaking, please mute your phone to keep background noise to a minimum.

Webinar Overview

1. Overview of the National Hospital Care Survey (NHCS)
2. Enhancing the Identification of Opioids in NHCS Data
3. NHCS Participation
4. Question & Answer

Overview of the National Hospital Care Survey (NHCS)

NHCS – Goal and Objectives

- **Goal:**
  - Provide reliable and timely healthcare utilization data for hospital-based settings.

- **Objectives:**
  - Provide national data for benchmarking.
  - Link episodes of care across hospital units as well as link to other data sources, such as the National Death Index (NDI) and Centers for Medicare & Medicaid Services (CMS) data such as the Master Beneficiary Summary File.

NHCS – Sample Design and Data Coverage

- **Sample Design:**
    - Hospitals are randomly selected and each hospital selected for the survey uniquely represents facilities of similar size, service type, and/or geographic location and cannot be replaced.
    - The 2020 NHCS sample consists of **608** non-institutional, non-federal hospitals with six or more staffed inpatient beds.
    - Participation is voluntary and there is no penalty for not participating.
- **Data coverage:**
    - All inpatient discharges and emergency department (ED) visits for up to a 12-month period.
    - Includes patient personally identifiable information (PII) so patient as well as encounter-level counts can be determined.

NHCS – Data Sources

- Electronic Health Records (EHRs)
  - For the 2020 NHCS, hospitals submitting EHR data to participate will need to transmit data using the format of the HL7 CDA® R2 Implementation Guide (IG): National Health Care Surveys, STU Release 1.2 – US Realm

- Uniform Bill (UB) -04 administrative claims

- State files

- Vizient

NHCS – Data Elements

UB-04:

- Patient PII
- Demographic information
- Encounter dates
- Diagnoses and procedures
- Revenue codes

EHR:

- Patient PII
- Demographic information
- Encounter dates
- Diagnoses and procedures
- Procedure outcomes
- Lab tests and results
- Medications
- Vital signs
- Clinical notes (for ED visits only)
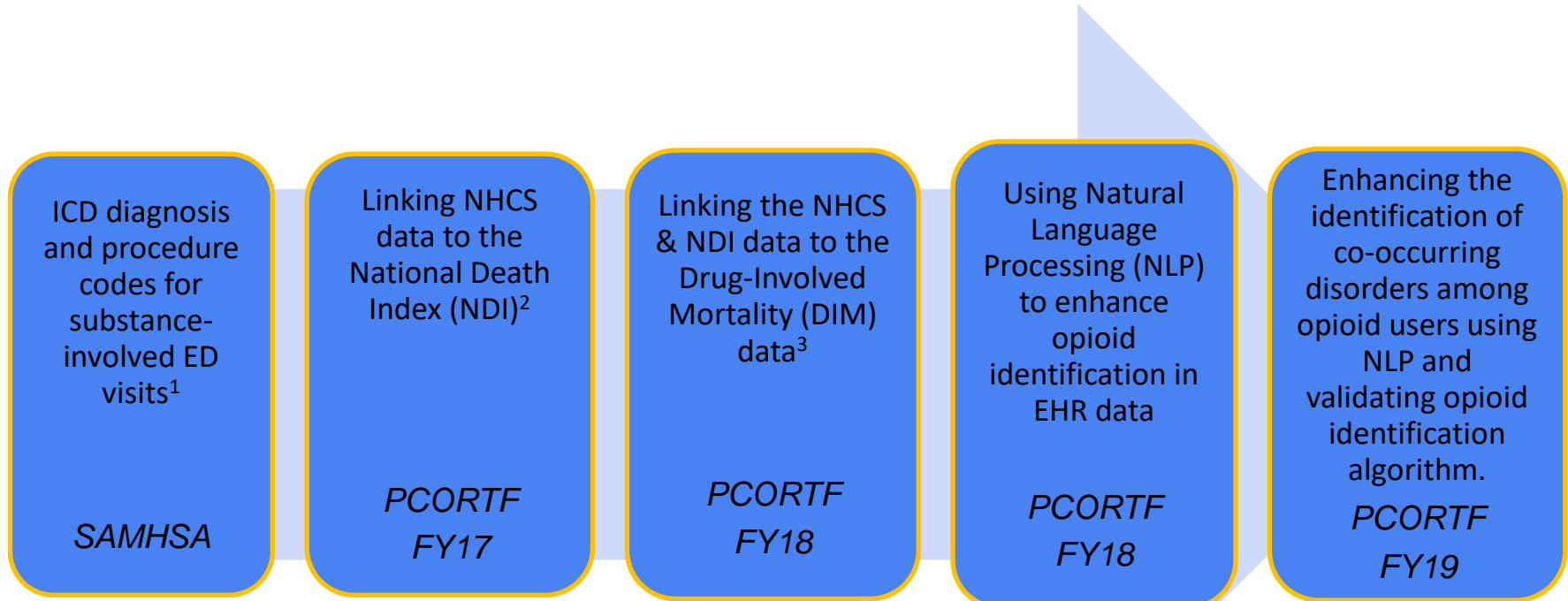
NHCS – Participation Benefits

- Improve quality of health care and other health benchmarks

- Promoting Interoperability (formerly MU) credit

- Community Health Benefit

- Continuing Education Units credits

- Access to NCHS-created reports and analytic papers

- Payment of $500 for a test file and $500 for 12 months of data

- Access to your data via the Hospital Data Reporting Portal

Enhancing the Identification of Opioids in NHCS Data

Patient-Centered Outcome Research Trust Fund

- In 2010, the Affordable Care Act authorized the expanded capacity for research that assists patients, clinicians, purchasers, and policy-makers in making informed health decisions. This established the Patient-Centered Outcome Research Trust Fund (PCORTF).

- PCORTF Projects for NHCS began in FY17 and have spanned from linking NHCS data to death records to enhancing algorithms to better identify opioid-related information in the data.

History of Opioid Identification in NHCS Data

ICD diagnosis and procedure codes for substance-involved ED visits[1]

SAMHSA

Linking NHCS data to the National Death Index (NDI)[2]

PCORTF FY17

Linking the NHCS & NDI data to the Drug-Involved Mortality (DIM) data[3]

PCORTF FY18

Using Natural Language Processing (NLP) to enhance opioid identification in EHR data

PCORTF FY18

Enhancing the identification of co-occurring disorders among opioid users using NLP and validating opioid identification algorithm.
PCORTF FY19

[1]https://www.cdc.gov/nchs/data/nhsr/nhsr114.pdf
[2]https://www.cdc.gov/nchs/data-linkage/nhcs-ndi.htm
[3]https://www.cdc.gov/rdc/data/b1/PCOR_III_data_doc.pdf

Enhanced Opioid-Identification Algorithm

- Creates a comprehensive list of opioids and selected stimulants (brand & generic names, street names).
  - Sources: Division of Vital Statistics, CDC's Enhanced State Opioid Overdose Surveillance, National Electronic Injury Surveillance System-Cooperative Adverse Drug Event Surveillance Project, and Drug Enforcement Administration
- NLP provides a complementary and efficient way to query both coded data and clinical notes for opioid involvement in EHR data.

Results of Enhanced Opioid-Identification Algorithm

- Classification of opioid-involved hospital visits and overdoses

- Identification of specific mentions of the following opioids:

  - Buprenorphine/ Norbuprenorphine
  - Codeine
  - Fentanyl/Fentanyl Analogs
  - Heroin
  - Hydrocodone
  - Hydromorphone
  - Levorphanol
  - Meperidine

  - Methadone
  - Morphine
  - Oxycodone
  - Oxymorphone
  - Tramadol
  - Unspecified Opioid
  - "Other" Opioid
  - Naltrexone
  - Naloxone

Validation Study

- We are preparing to conduct a validation study to evaluate the enhanced opioid-involved identification algorithm results to the data in actual hospital records.

- We are currently recruiting 9 hospitals that submitted 2016 or 2019 NHCS data to participate in this study.

- Approximately 100 encounters will be abstracted directly from the hospital records of each hospital in the study.

- Results of this study will help us to assess the accuracy of the opioid-involved identification algorithm.

Upcoming Data Releases Related to Opioid Research

- Soon-to-be released in the NCHS Research Data Center (RDC): update to the linked 2016 NHCS data with results from the opioid algorithm.

- Methodology report that describes the creation of the enhanced opioid-identification algorithm.

- NCHS report on the identification on opioids in NHCS and mortality data.

- PCORTF-funded call for proposals that will pay outside researchers to access the data in the RDC.

Benefits of Opioid Algorithms for Participating Hospitals

- The opioid algorithm will be run for each hospital that submits 12 months of data and results will be made available in future releases of the Annual Hospital Report portal.

- The code used in the enhanced opioid-identification algorithm will be made available and hospitals can repurpose the code to identify opioids within their own data.

- Improved identification of opioid-involved hospital visits will allow hospitals to better monitor opioid-related treatment outcomes and can provide greater insight on the impact of the opioid crisis on the participating hospital.

NHCS Participation

Why Participate in NHCS?

- Inform health policy and practice
    - Without your participation, there can be no nationally representative datasets.
    - The Nation's ability to address public health crises will be diminished unless we build the best data collection system now.
- Once fully operational, your hospital will be able to benchmark itself against the national data produced and shared related to opioid-involved hospital care delivery.

NHCS – Steps to Participate

1) Brief interview to determine eligibility

2) Electronic submission of data (EHR, claims, etc.)

- When you agree to participate, login credentials will be provided to you to facilitate submitting your data to the secure network.

3) Annual Hospital Interview

Question & Answer

Contact Information

- For more information about NHCS, please visit our website: https://www.cdc.gov/nchs/nhcs/index.htm.

- For questions, please contact:

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THANK YOU!!!