



Data Modernization Efforts for the National Ambulatory Medical Care Survey

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Agenda

- National Ambulatory Medical Care Survey (NAMCS): Brief Overview
- NAMCS Health Center (HC) Component Redesign
- NAMCS Provider Component Redesign
- Data Products from NAMCS Data Modernization Efforts
- Additional National Health Care Surveys Data Modernization Efforts
- What's Next

NAMCS: Brief Overview

National Health Care Surveys Spectrum of Care

Ambulatory and Hospital Care

- Physician/provider offices
- Health centers

National Ambulatory Medical Care Survey (NAMCS)
1973-ongoing

National Electronic Health Records Survey (NEHRS)
2008-2021, 2024

- Emergency dept.
- Outpatient dept.
- Ambulatory surgery locations

National Hospital Ambulatory Medical Care Survey (NHAMCS)
1992-2022

National Hospital Care Survey (NHCS)
2011-ongoing

- Inpatient dept.

National Hospital Discharge Survey (NHDS)
1965-2010

Post-acute and Long-term Care

- Residential care
- Adult day services
- Nursing homes
- Home health
- Hospice care

National Study of Long-Term Care Providers (NSLTCP)
2012-2018

- Plus...
- Inpatient rehab facilities
 - LTC hospitals

National Post-Acute and Long-Term Care Study (NPALS)
2020-ongoing

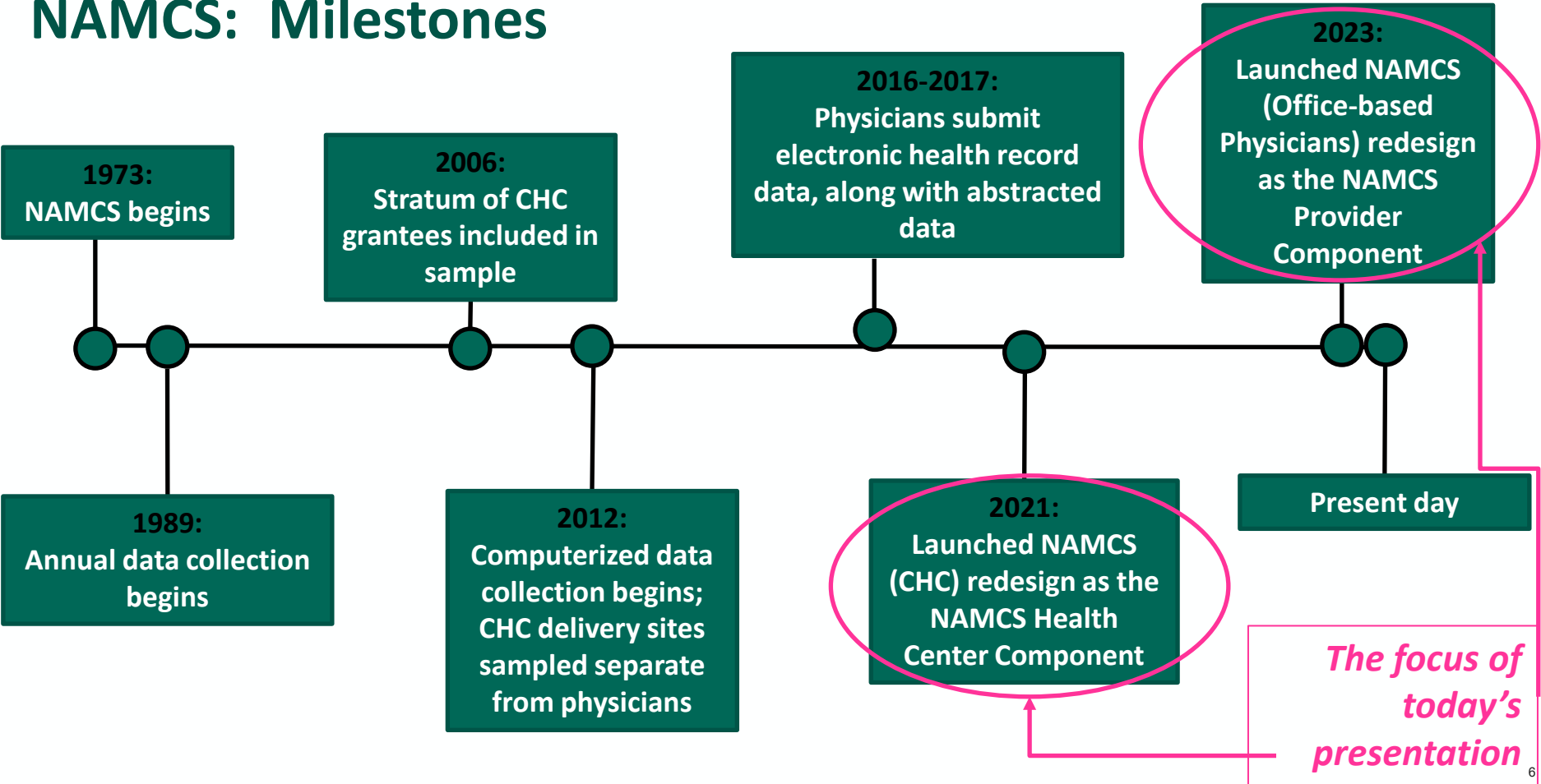
National Ambulatory Medical Care Survey (NAMCS)

- Conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS)
- Objective:
 - A nationally representative survey designed to meet the need for objective, reliable information about the provision and use of ambulatory medical care services in the United States
- Two components:
 - Provider:
 - Office-based physicians and advanced practice providers
 - Health Center
 - Visits to sampled health centers



NAMCSTM
National Ambulatory Medical Care Survey

NAMCS: Milestones



The focus of today's presentation

NAMCS Motive for Redesign and EHR Data Submission

- **Changes to ambulatory health care delivery:**
 - Providers adoption of different modes of data collection
 - “The 2021 NEHRS found that 88.2% of U.S. office-based physicians had adopted electronic health records systems.”¹
 - Inclusion of additional ambulatory care provider types and settings
- **Abstraction cost**
- **Data quality**
- **Barriers to in-person data collection**

¹NCHS. 2021 National Electronic Health Records Survey public use file national weighted estimate. National Summary Table from: <https://www.cdc.gov/nchs/data/nehrs/2021NEHRSPUF-weighted-estimates-508.pdf>.

NAMCS Health Center (HC) Component Redesign

NAMCS HC Component Redesign: Overview



- **Redesign Launched: 2021**
- **Health Center Sample:**
 - Federally Qualified Health Centers (FQHCs): Centers who participate in the Health Resources and Services Administration (HRSA) Health Center Program
 - FQHC look-alikes: Centers who meet the requirements of the HRSA Health Center Program but do not receive program funding
- **Mode:**
 - 45-minute Facility Interview Questionnaire
 - EHR visit data transmitted electronically to NCHS
 - 15-minute Set-up Fee Questionnaire
- **Number of Fully Participating Health Centers per Calendar Year:**
 - 2021: 30
 - 2022: 64
 - 2023: 93
 - 2024: sampling up to 50 more HCs
- **Incentive:**
 - Up to \$10,000

NAMCS HC Component Redesign: Data Delivered

- **Health Center Characteristics:** used to inform the weighting process
 - Center Type
 - Total Number of Visits
- **Patient Visit Data:** all health centers' ambulatory visits for a calendar year
 - Patient Demographics
 - Diagnoses
 - Immunizations
 - Vitals
 - Procedures
 - Patient Identifiers- used to track and link patients
 - *And more...*

NAMCS HC Component Redesign: Set-Up Fee Questionnaire

- A set-up fee of up to \$10,000 is available to health centers during their initial participation year.
 - Two separate payments:
 - Up to \$5,000 upon successfully passing T&V
 - Up to \$5,000 upon successfully submitting production data
- **Set-Up Fee Questionnaire Launched: 2022**
- **Questionnaire Purpose:**
 - To learn how set-up fees were utilized, and how much was necessary, in order to plan for future National Health Care Surveys and EHR data submissions
- **Questionnaire Mode:**
 - CATI- 2022 & 2023
 - Web questionnaire- 2024 *onward*

NAMCS Provider Component Redesign

NAMCS Provider Component Redesign: Overview



- **Redesign Launched: 2023**
- **Provider Sample:**
 - American Medical Association Physicians
 - American Osteopathic Association Physicians
 - American Academy of Physician Associates PAs (physician assistants/physician associates)
- **Criteria:**
 - Office-based care
 - Not federally employed
 - Not specialize radiology or pathology
 - Not an intern, resident, or fellow
 - 50 U.S. States and the District of Columbia
- **Sample Size:**
 - 5000 Physicians
 - 5000 PAs
- **Mode:**
 - Mixed-mode provider survey conducted via web or mailed paper questionnaire

NAMCS Provider Component Redesign: Overview

- **Expanded Scope:**
 - Added Anesthesiologists
 - Added Advanced Practice Providers (PAs only currently)
 - Increased sample size
- **A questionnaire to collect relevant and timely data on ambulatory care providers, beyond just physicians**
 - New questions designed by subject matter experts
 - Former NAMCS Office-based Physician Induction Interview Questions
 - National Electronic Health Records Survey Questions
 - Former NAMCS Culturally and Linguistically Appropriate Services supplement Questions
 - Former Physician Pain Management Questionnaire Questions
- **Provider Experience Data Collected:**
 - Telemedicine/telehealth
 - Health equity
 - Autonomy of advanced practice providers
 - Electronic health records use
 - Cultural/language barriers
 - Pain treatment and opioid prescription management
 - *And more...*
- **Patient visit data is no longer collected**
- **Provider Incentive:**
 - NAMCS Post-Its

Data Products from NAMCS Modernization Efforts

NAMCS Data Modernization: Post-Redesign Publicly Available Datasets

Research Data Center (RDC) Files

- Users must submit proposals, pay for access, and analyze data at a RDC location:
 - <https://www.cdc.gov/rdc/b1datatype/dt1224a.htm>
- NAMCS HC dataset includes all encounters with select database variables
- Currently Available:
 - 2021 NAMCS Health Center Component:
 - 29 of 111 FQHCs
 - 3,543,927 visits
 - 2022 NAMCS Health Center Component:
 - 64 of 255 FQHCs
 - 5,640,370 visits

Public Use Files (PUFs)

- Datasets made publicly available on the NCHS website:
 - <https://www.cdc.gov/nchs/namcs/documentation/index.html>
- NAMCS HC dataset includes 5% sample encounters
- Currently Available:
 - 2022 NAMCS Health Center Component:
 - 64 of 255 FQHCs
 - 282,017 visits

NAMCS Data Modernization: Data Linkage

- Data linkage provides robust datasets, allowing for exploration of mortality outcomes and social determinants of health (e.g., race, housing assistance program participation, etc.).
- Patient PII data collected to:
 - Link to repeat visits
 - Link to external data sources such as NDI, HUD and Medicaid data
- Upcoming NAMCS HC Component linked files:
 - 2021 NAMCS HC/NDI: expected 2024
 - 2021 NAMCS HC/HUD: expected 2024
 - 2021 NAMCS HC/T-MSIS: expected summer 2025
- To submit a RDC proposal to work with linked files: <https://www.cdc.gov/rdc/index.htm>

NAMCS Data Modernization: NAMCS HC Component Dashboard

■ Preliminary NAMCS HC Component Estimates Dashboard:

- January 2022 through June 2023- Launched 07/2024
- July 2023 through December 2023- Launched 08/2024

■ Diagnosis Dashboard:

- ICD-10-CM codes divided into chapters based on their subject

■ Maternal Health Dashboard:

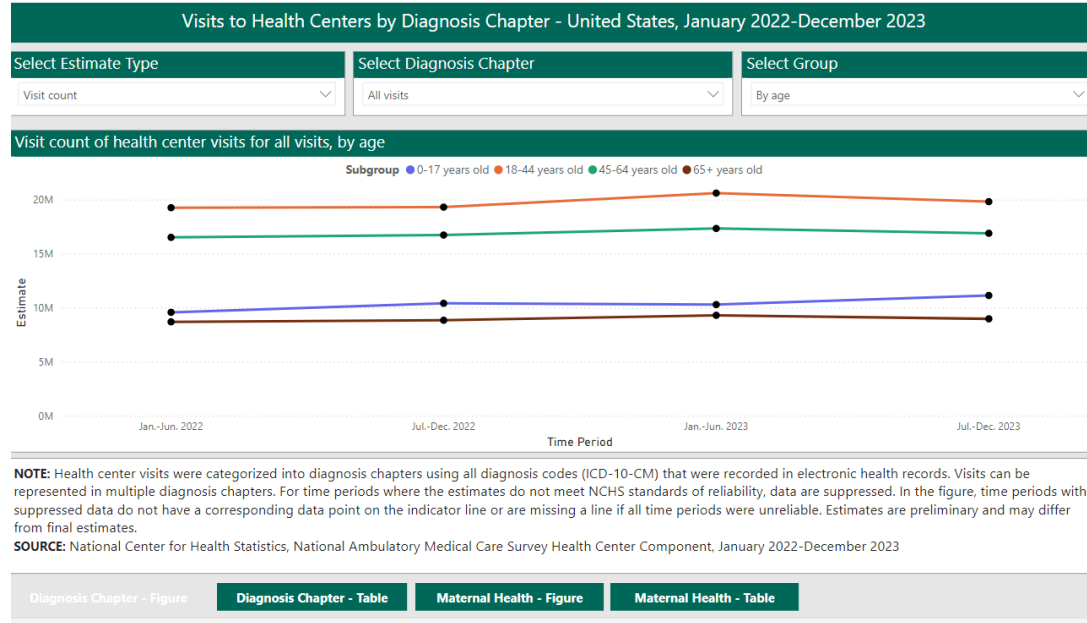
- Any reproductive and maternal health visits
- Prenatal care visits
- Postpartum care visits
- Other reproductive care visits

■ Estimate Types:

- Visit count & rates

■ Demographic Groupings:

- Age
- Sex
- Race/Ethnicity



Preliminary Estimates of Visits to Health Centers in the United States
National Center for Health Statistics. Preliminary Estimates of Visits to Health Centers in the United States. Generated interactively: August 15, 2024, from <https://www.cdc.gov/nchs/dhcs/prelim-hc-visits/index.htm>

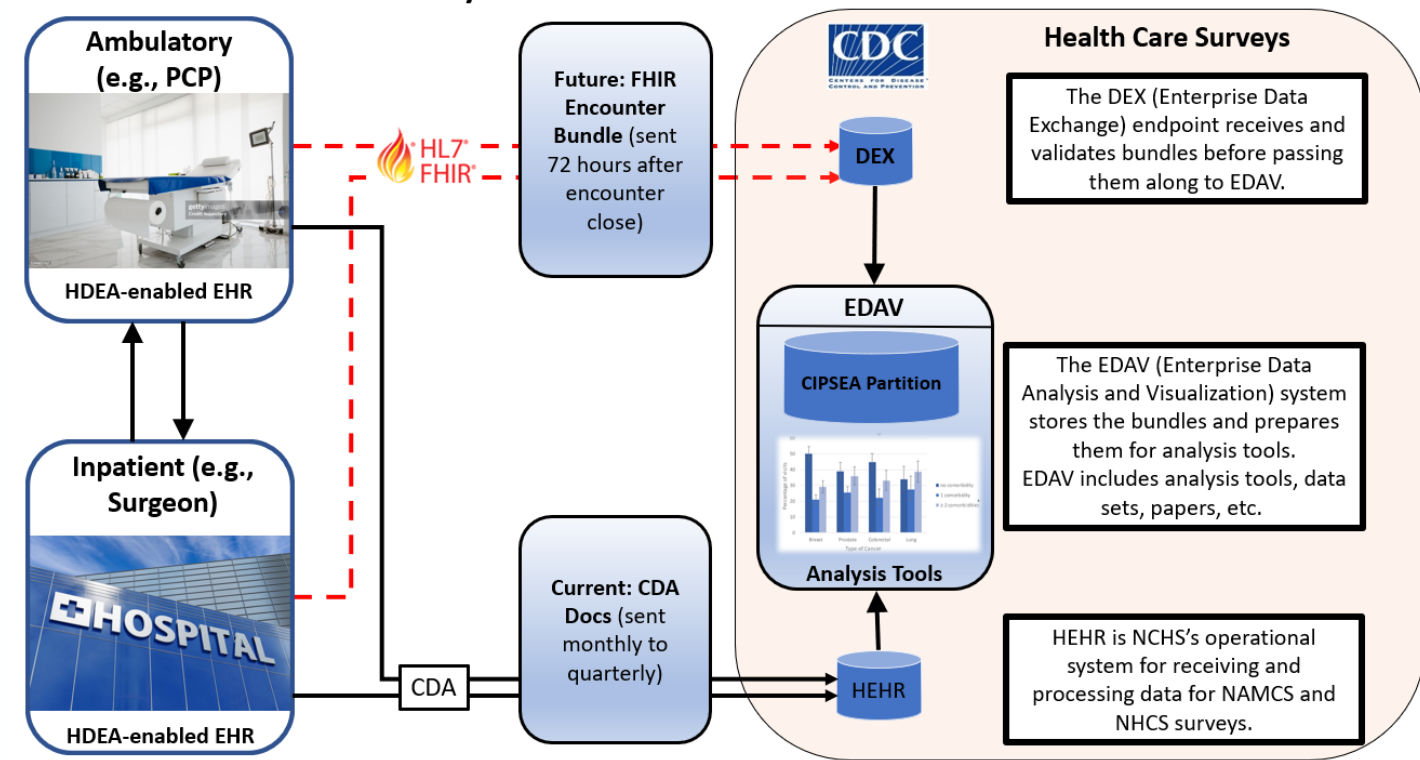
Additional National Health Care Surveys Data Modernization Efforts

National Health Care Surveys: Data Modernization Efforts

- **Build new CDC CISPEA Compliant Cloud**
 - Collect, process, analyze, and store EHR data
- **Test data submission using a Fast Healthcare Inoperability Resources (FHIR®) Implementation Guide and Open-Source App**

NCHS' First Confidential Information Protection Statistical Efficiency Act (CIPSEA) Compliant Cloud

National Health Care Surveys Data Modernization Initiative – Current and Future State



Health Care Surveys Fast Healthcare Inoperability Resources Pilot: Overview

■ Summary:

- Test the functionality and feasibility of a secure submission method for NHCS and NAMCS EHR data, via a FHIR application
- Data transmitted from clinical setting's EHR to CDC's CIPSEA compliant cloud (48-72 hours)

■ Goals:

- To gauge if automated electronic reporting of EHR data via FHIR Application Programming Interfaces (API):
 - Reduces survey participation burden for hospitals, ambulatory health care providers, and EHR vendors, in comparison to previous survey methods
 - Increases survey encounter data quality

■ Sample:

- Three clinical sites

■ FHIR Application:

- Specifies use of Health Data Exchange App inside provider's firewall
- Queries the EHR for the requested patient data and transmits it to the CDC FHIR Servers

What's Next

Moving Forward...

- 2023 NAMCS HC Component PUF- *tentative release early 2025*
- Expand NAMCS HC Component preliminary dashboard with additional topics of interest
- Continue expanding scope (provider types) for NAMCS Provider Component
- Conduct a non-response bias report on initial year of NAMCS Provider Component redesign
- Continue to migrate infrastructure and data to NCHS CIPSEA compliant cloud

Thank you!

Contact Us

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For more information on NAMCS:

<https://www.cdc.gov/nchs/namcs/about/index.html>



For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

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

