

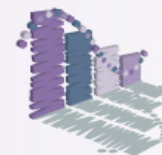
Demonstration Projects of the National Hospital Care Survey: Pneumonia

Presented by the
National Center for Health Statistics

January 30, 2019

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.



Speakers

- **Carol DeFrances, PhD**

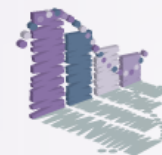
Chief

Ambulatory and Hospital Care Statistics Branch, NCHS

- **Sonja Williams, MPH**

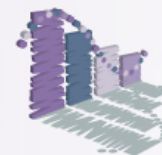
Health Scientist

Hospital Care Team, NCHS

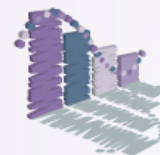


Webinar Overview

1. The National Center for Health Statistics
2. Overview of the National Hospital Care Survey (NHCS)
3. Highlights from a CDC pneumonia report
4. Participation Benefits
5. How to participate



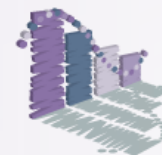
The National Center for Health Statistics



National Hospital
Care Survey

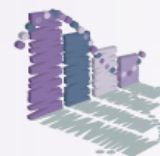
What is the National Center for Health Statistics (NCHS) ?

- NCHS is part of the Centers for Disease Control and Prevention (CDC).
- NCHS monitors the health of the Nation by providing data on:
 - Health care trends
 - Health status of the population
 - Impact of health policy decisions on programs
- NCHS collects data from health care settings, including:
 - Ambulatory care
 - Hospital-based care
 - Long-term care

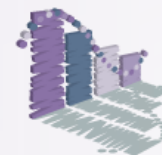


Confidentiality

- NCHS and its contractors take the protection of your hospital's data very seriously. All survey staff must complete confidentiality training annually and are governed by the rules listed on this slide. Willful unauthorized disclosure can result in fines or imprisonment.
- We will not release the name of your hospital to anyone nor will we release any data that could identify your hospital or your patients. Any data released in a public use file will only include de-identified, aggregate data.
- For more information, please visit our Confidentiality page:
 - <https://www.cdc.gov/nchs/nhcs/confidentiality.htm>



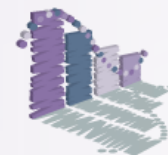
Overview of the National Hospital Care Survey (NHCS)



National Hospital
Care Survey

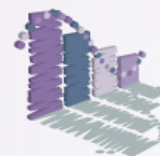
Goal and Objectives of the NHCS

- Goal:
 - Provide reliable and timely healthcare utilization data for hospital-based settings.
- Objectives:
 - Move toward electronic data collection.
 - Provide benchmark data for comparison to national data.
 - Link episodes of care across hospital units as well as link to other data sources such as the National Death Index (NDI).



NHCS Sample Design

- Hospitals are randomly selected to provide nationally representative data on hospital utilization.
- Each hospital selected for the survey uniquely represents facilities of similar size, service type, and/or geographic location and cannot be replaced.
- The 2018 NHCS sample consists of 598 non-institutional, non-federal hospitals with six or more staffed inpatient beds.
- Participation is voluntary and there is no penalty for not participating.
- The success of the study depends on the willingness of health care professionals to provide information on current health care services in the United States.



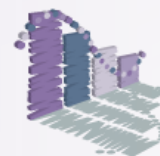
NHCS Data Coverage and Sources

Data coverage:

- All inpatient discharges and emergency department (ED) visits for up to a 12-month period.
- Outpatient department (OPD) data may be requested in future.

Data sources:

- UB-04 administrative claims
- Electronic health record (EHR) data
- State files



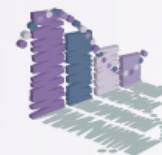
Data Elements by Source

UB-04:

- Personally identifiable information (PII)
- Demographic information
- Encounter dates
- Diagnoses and procedures
- Revenue codes

EHR:

- Personally identifiable information (PII)
- Demographic information
- Encounter dates
- Diagnoses and procedures
- Procedure outcomes
- Lab tests and results
- Medications
- Vital signs
- Clinical notes (for ED visits only)



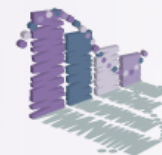
Features of NHCS Data

Data volume

- NHCS collects all patient encounters at the sampled hospital resulting in a large volume of data collected.
- In 2016, the volume of records collected was 2.5M inpatient discharges, 6.9M ED visits, and 35.6M OPD visits.
- Allows for the study of rare conditions and new procedures

Data Linkage

- The records are at the encounter-level and contain PII.
- The inclusion of PII allows users to:
 - Follow episodes of care across hospital settings;
 - Measure repeat visits; and
 - Link to external data sources such as the NDI.



Highlights from a CDC pneumonia report

Unweighted data; not nationally representative

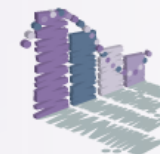
National Health Statistics Reports
Number 116 ■ August 24, 2018

**National Hospital Care Survey Demonstration Projects:
Pneumonia Inpatient Hospitalizations and
Emergency Department Visits**
by Sonja Williams, M.P.H., Sarah Gousen, and Carol DeFrances, Ph.D.

Abstract
Objective—This report demonstrates the use of the National Hospital Care Survey (NHCS) for the study of pneumonia inpatient hospitalizations and emergency department (ED) visits. The analysis is based on unweighted data of inpatient and ED encounters from the 2014 NHCS and is intended to illustrate the capabilities of the survey, including the ability to link inpatient hospitalizations or ED visits across settings and with other data sources, once hospital participation allows for nationally representative estimates.
Methods—For the 2014 NHCS data collection, 94 out of a sample of 581 hospitals provided inpatient Uniform Bill (UB)-04 administrative claims data, and 88 of the 94 hospitals that provided inpatient data provided ambulatory claims data. Analyses were conducted to study encounters with a first-listed diagnosis of pneumonia across the inpatient and ED settings, and to evaluate 30-, 60-, and 90-day mortality. Also, new data elements such as use of the intensive care unit (ICU) and diagnostic and physical services received were analyzed. The data are unweighted and are not nationally representative.
Results—Analyses were conducted to examine pneumonia encounters across inpatient and ED settings, and they highlight the analytical capabilities of NHCS not available in previous surveys. Most pneumonia inpatient hospitalizations were for those aged 65 and over, while in the ED, most pneumonia visits were for those under age 15 years. For inpatients, ICU stays increased the overall time spent in the hospitals by 50%, from 4.3 to 7.3 days. In addition, the average age of those who died within 30 days after discharge was 77.
Keywords: mortality • intensive care • National Death Index • National Hospital Care Survey

Introduction
Pneumonia is a lung infection that can be caused by bacteria, viruses, or fungi (1,2). The symptoms of pneumonia range from mild to severe, and common symptoms include cough with phlegm ("wet cough"), difficulty breathing, fever, chest pain, fatigue, and confusion (2). In 2010, the National Hospital Discharge Survey (NHDS) reported 1.1 million (3.2%) inpatient hospitalizations for pneumonia in the United States, and the National Hospital Ambulatory Medical Care Survey (NHAMCS) estimated 1.5 million emergency department (ED) visits (1.1%) for pneumonia in 2014. There were about 50,000 deaths caused by pneumonia in the United States in 2014 (3). Although pneumonia is not a leading cause of death for those aged 65 and over, an observational study of a cohort of Medicare patients showed that the mortality rates for those aged 90 and over with pneumonia (15.4%) were double that of those aged 65–89 (7.8%) (4). Pneumonia is one of the conditions listed as a potentially avoidable inpatient hospitalization, which is defined as a condition that could have been prevented or treated outside of the inpatient setting (5).
The National Hospital Care Survey (NHCS) presents unique opportunities to study how pneumonia is diagnosed and treated across the continuum of care for pneumonia patients in U.S. hospitals. Patient identifiers allow for the study of 30-, 60-, and 90-day mortality among hospital discharges and ED visits, while collection of services received (such as use of the intensive care unit [ICU] and diagnostic services) allows for analysis of hospital utilization. This report

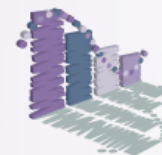
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES



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Care Survey**

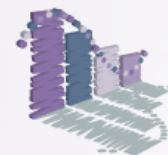
Demonstration of NHCS - pneumonia

- National Hospital Care Survey Demonstration Projects: Pneumonia Inpatient Hospitalizations and Emergency Department Visits
- Report published August 2018
- Authors: Sonja Williams, Sarah Gousen, and Carol DeFrances
- <https://www.cdc.gov/nchs/data/nhsr/nhsr116.pdf>



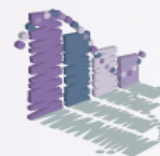
Background

- Pneumonia is:
 - an infection of the lung
 - listed as a potentially avoidable inpatient hospitalization
- 1.1M inpatient hospitalizations for pneumonia in 2010 (National Hospital Discharge Survey, 2010)
- 1.5M emergency department visits for pneumonia in 2014 (National Hospital Ambulatory Medical Care Survey, 2014)
- 50,000 deaths caused by pneumonia in the U.S. in 2014 (National Vital Statistics System, 2014)

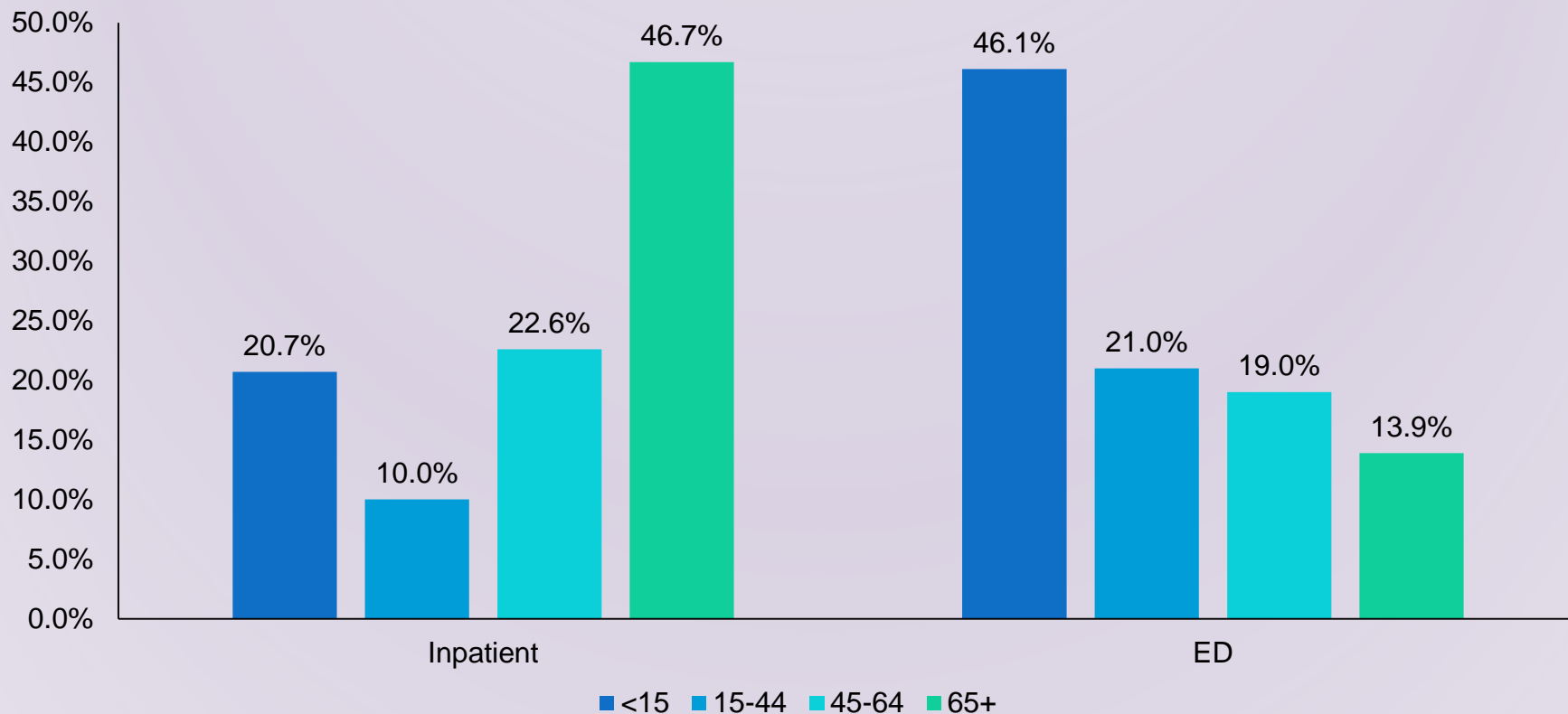


Methods

- This study analyzed 2014 NHCS data.
- 2014 NHCS data included:
 - 94 hospitals with inpatient data
 - 88 hospitals with ambulatory (emergency and outpatient department) data
- Unweighted total number of encounters in 2014:
 - 1.7M inpatient discharges
 - 4.5M ED visits
- First-listed diagnosis of pneumonia:
 - 30,705 inpatient discharges
 - 24,711 ED-only visits

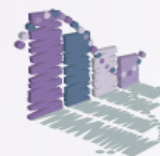


Age distribution of encounters with first-listed diagnosis of pneumonia in inpatient and emergency department settings: National Hospital Care Survey, 2014



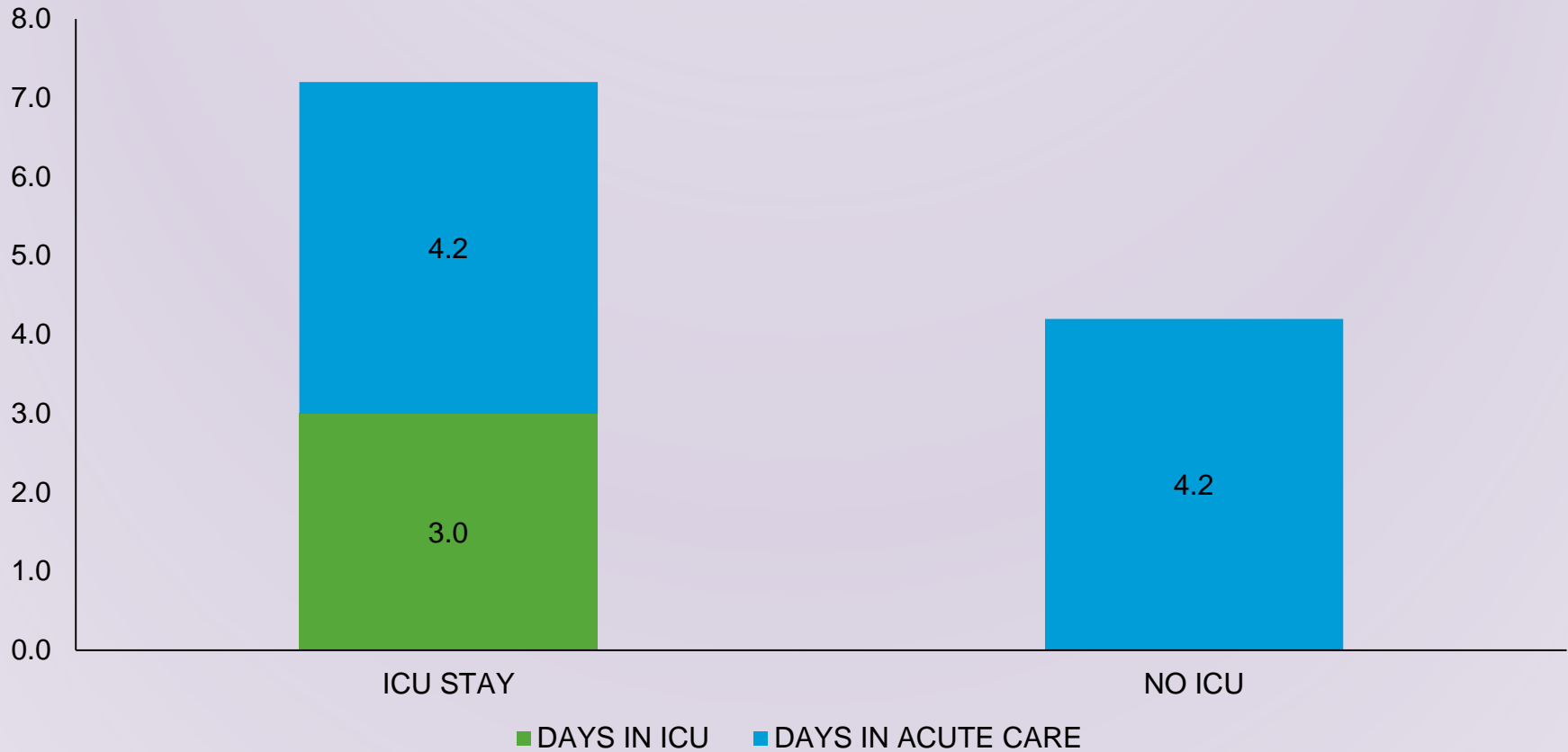
NOTE: Inpatient, n= 30,705; Emergency Department, n= 24,711. Data are not nationally representative.

SOURCE: NCHS, National Hospital Care Survey, 2014

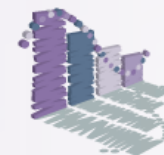


National Hospital
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Average length of stay for inpatients hospitalized with first-listed pneumonia, by ICU usage: National Hospital Care Survey, 2014

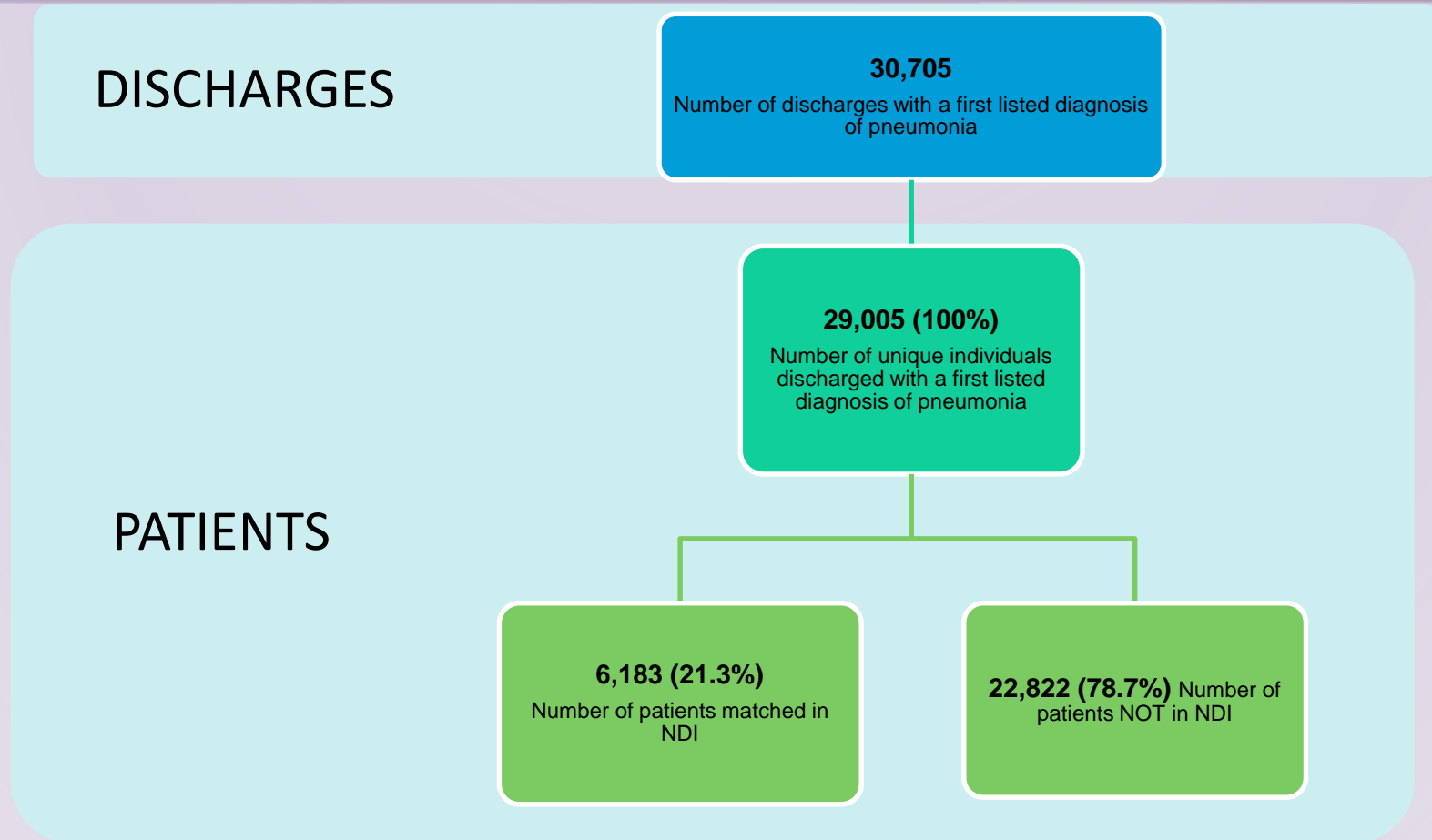


NOTE: Inpatient, n= 30,705. Data are not nationally representative.
SOURCE: NCHS, National Hospital Care Survey, 2014



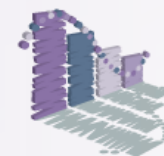
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The relationship between first-listed pneumonia inpatient discharges, first-listed pneumonia inpatient patients, and patient deaths in 2014 and 2015: National Hospital Care Survey 2014



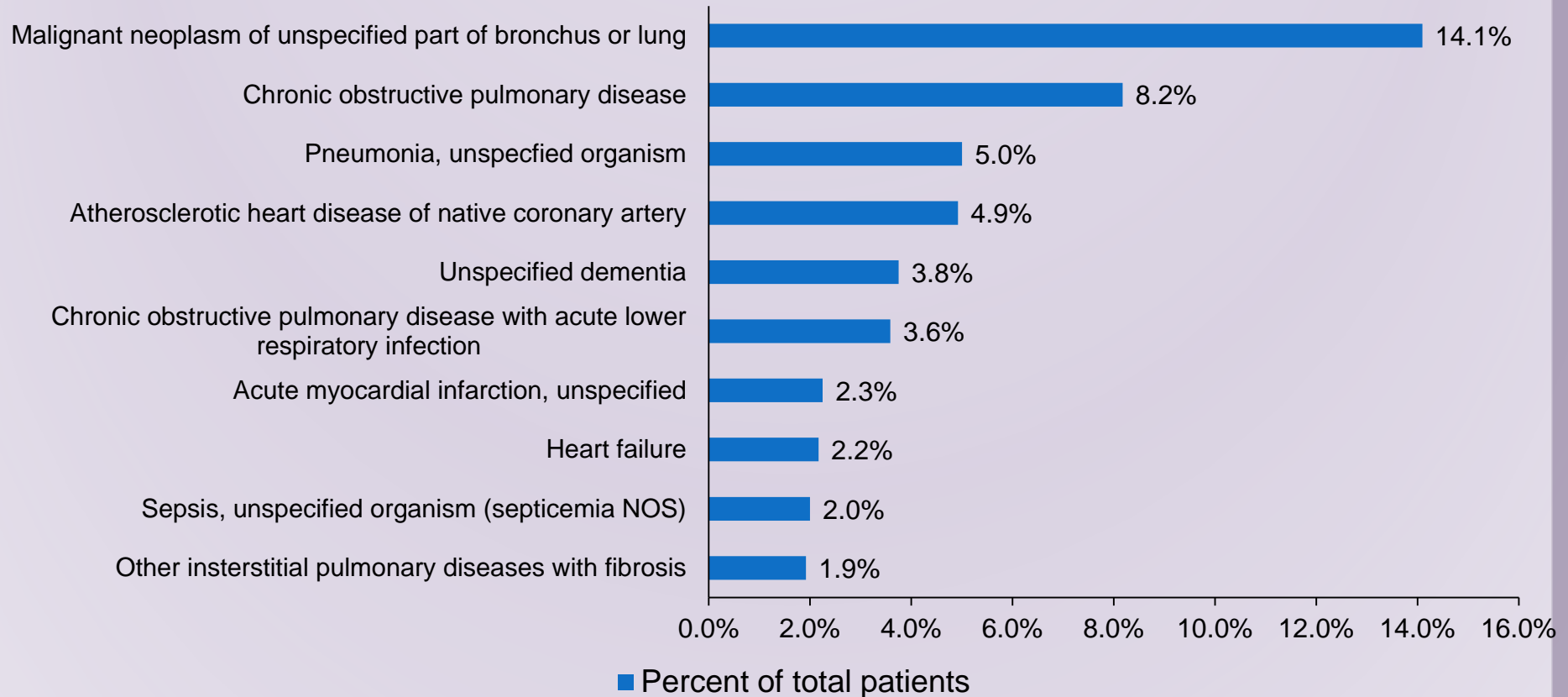
NOTES: Personally Identifiable Information (PII) is personal information that could possibly identify a person and includes variables such as social security number, first name, last name, and date of birth. Data are not nationally representative.

SOURCE: NCHS, National Hospital Care Survey, 2014; National Death Index 2014-2015



**National Hospital
Care Survey**

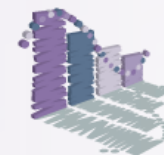
Top ten underlying causes of death for those who died within 30 days of their inpatient hospitalization for first-listed pneumonia: National Hospital Care Survey, 2014



NOTE: Inpatient (excluding those who died in the hospital), n = 1,199; Septicemia NOS is septicemia not otherwise specified.

Data are not nationally representative.

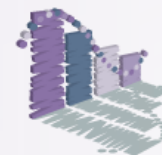
SOURCE: NCHS, National Hospital Care Survey, 2014



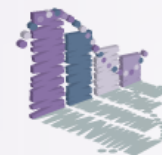
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Care Survey**

Discussion and Conclusions

- Although not yet nationally representative, the large volume of records collected through NHCS allows for unique analyses.
- Data now available on Intensive Care Unit (ICU) stays allow for deeper analyses of the sickest hospitalizations.
- Collection of PII allows for linkage to outside data sources, particularly the NDI.

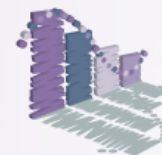


Participation Benefits

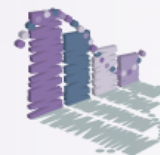


Participation Benefits

- Improve quality of care and other health benchmarks
- Access to your data via the Hospital Data Reporting Portal (coming soon)
- 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
- For more information on these benefits, please visit:
https://www.cdc.gov/nchs/nhcs/why_participate.htm



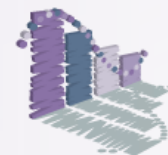
How to Participate



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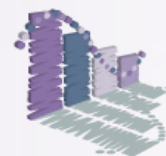
What does participation in the NHCS involve?

- Brief interview to determine eligibility
- Electronic submission of data
 - EHR, UB-04 administrative claims, or state files
- Annual Hospital Interview
- When you agree to participate, login credentials will be provided to you to facilitate submitting your data to the secure network.



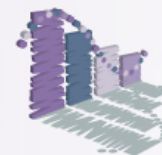
Future webinars and data availability

- Please stay tuned for additional webinars on demonstration cases of the hospital care survey (e.g., hospitalizations for stroke and for Alzheimer Disease).
- Email blast invitation with call-in information will be sent on monthly basis.
- NHCS data (and files linked to NDI data) are available in the NCHS Research Data Center. For more information on how to submit a proposal, please visit:
 - https://www.cdc.gov/nchs/nhcs/nhcs_questionnaires.htm



Stay updated

- NHCS has a listserv (NHCS-DATA@cdc.gov) for those interested in receiving updates on the availability of data files and the release of reports and presentations. To join the listserv, please visit:
 - https://www.cdc.gov/nchs/dhcs/hdas_listserv.htm
- You can also stay updated via our Data Uses page:
 - https://www.cdc.gov/nchs/nhcs/data_uses.htm



Questions?

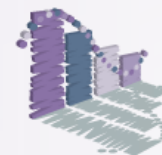
Contact Information:

For questions:

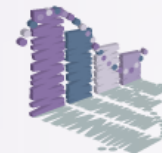
Carol DeFrances – cdefrances@cdc.gov

For a copy of the slides:

Karishma Chari – kchari@cdc.gov



THANK YOU!



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