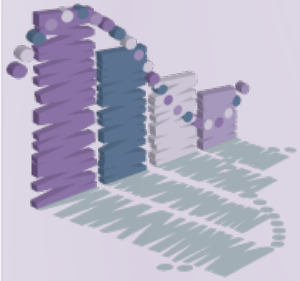


Demonstration Projects of the National Hospital Care Survey: Alzheimer Disease

Presented by the National Center for Health Statistics

March 6, 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.

National Hospital Care Survey

Speakers

- **Carol DeFrances, PhD**

  Chief

  Ambulatory and Hospital Care Statistics Branch, NCHS

- **Denys T Lau, PhD**

  Director

  Division of Health Care Statistics, NCHS

Webinar Overview

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

National Hospital Care Survey

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 and 2019 NHCS samples consist 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

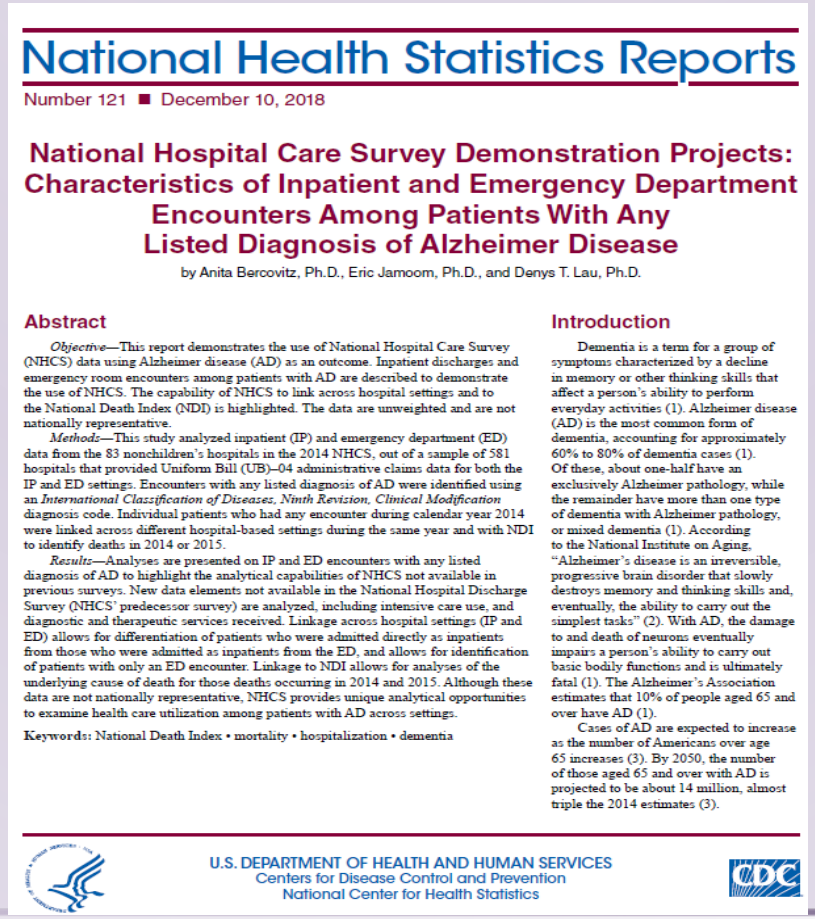
- NHCS collects all patient encounters at the sampled hospital resulting in a large volume of data collected.
- In 2016, the volume of records collected was 2.5M inpatient discharges, 7M ED visits, and 36M OPD visits.
- Allows for the study of rare conditions and new procedures.

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 Alzheimer Disease report

Unweighted data; not nationally representative



National Health Statistics Reports

Number 121 ■ December 10, 2018

National Hospital Care Survey Demonstration Projects: Characteristics of Inpatient and Emergency Department Encounters Among Patients With Any Listed Diagnosis of Alzheimer Disease

by Anita Bercovitz, Ph.D., Eric Jamoom, Ph.D., and Denys T. Lau, Ph.D.

Abstract

Objective—This report demonstrates the use of National Hospital Care Survey (NHCS) data using Alzheimer disease (AD) as an outcome. Inpatient discharges and emergency room encounters among patients with AD are described to demonstrate the use of NHCS. The capability of NHCS to link across hospital settings and to the National Death Index (NDI) is highlighted. The data are unweighted and are not nationally representative.

Methods—This study analyzed inpatient (IP) and emergency department (ED) data from the 83 nonchildren's hospitals in the 2014 NHCS, out of a sample of 581 hospitals that provided Uniform Bill (UB)–04 administrative claims data for both the IP and ED settings. Encounters with any listed diagnosis of AD were identified using an *International Classification of Diseases, Ninth Revision, Clinical Modification* diagnosis code. Individual patients who had any encounter during calendar year 2014 were linked across different hospital-based settings during the same year and with NDI to identify deaths in 2014 or 2015.

Results—Analyses are presented on IP and ED encounters with any listed diagnosis of AD to highlight the analytical capabilities of NHCS not available in previous surveys. New data elements not available in the National Hospital Discharge Survey (NHCS' predecessor survey) are analyzed, including intensive care use, and diagnostic and therapeutic services received. Linkage across hospital settings (IP and ED) allows for differentiation of patients who were admitted directly as inpatients from those who were admitted as inpatients from the ED, and allows for identification of patients with only an ED encounter. Linkage to NDI allows for analyses of the underlying cause of death for those deaths occurring in 2014 and 2015. Although these data are not nationally representative, NHCS provides unique analytical opportunities to examine health care utilization among patients with AD across settings.

Keywords: National Death Index • mortality • hospitalization • dementia

Introduction

Dementia is a term for a group of symptoms characterized by a decline in memory or other thinking skills that affect a person's ability to perform everyday activities (1). Alzheimer disease (AD) is the most common form of dementia, accounting for approximately 60% to 80% of dementia cases (1). Of these, about one-half have an exclusively Alzheimer pathology, while the remainder have more than one type of dementia with Alzheimer pathology, or mixed dementia (1). According to the National Institute on Aging, "Alzheimer's disease is an irreversible, progressive brain disorder that slowly destroys memory and thinking skills and, eventually, the ability to carry out the simplest tasks" (2). With AD, the damage to and death of neurons eventually impairs a person's ability to carry out basic bodily functions and is ultimately fatal (1). The Alzheimer's Association estimates that 10% of people aged 65 and over have AD (1).

Cases of AD are expected to increase as the number of Americans over age 65 increases (3). By 2050, the number of those aged 65 and over with AD is projected to be about 14 million, almost triple the 2014 estimates (3).

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Center for Health Statistics

National Hospital Care Survey

Demonstration of NHCS - Alzheimer Disease

- *National Hospital Care Survey Demonstration Projects: Characteristics of Inpatient and Emergency Department Encounters Among Patients With Any Listed Diagnosis of Alzheimer Disease*
- Report published December 2018
- Authors: Anita Bercovitz, PhD, Eric Jamoom, PhD, and Denys T. Lau, PhD
- https://www.cdc.gov/nchs/data/nhsr/nhsr121-508.pdf

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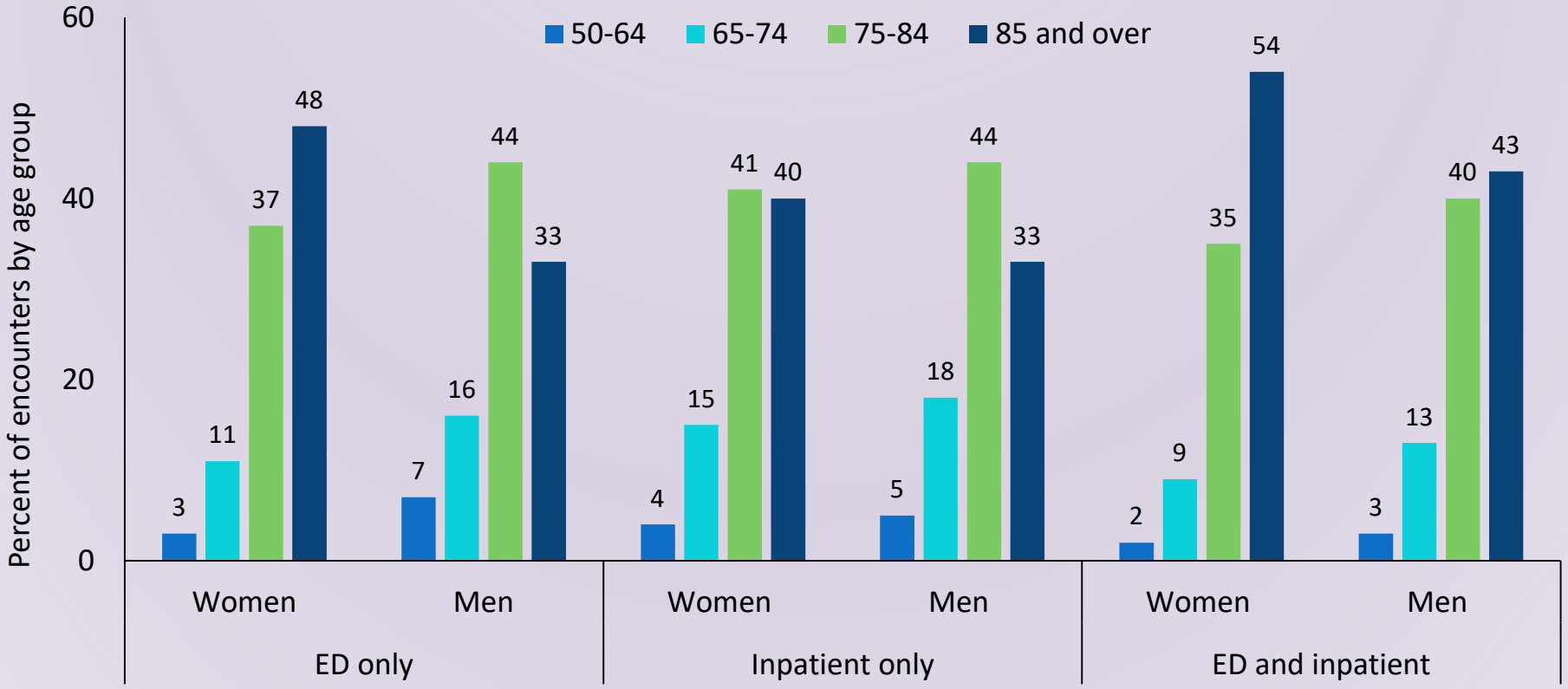
Background

- Dementia
  - Characterized by decline in memory or other thinking skills that affect a person's ability to perform everyday activities.
- Alzheimer Disease (AD)
  - Accounting for 80-90% of dementia cases.
- 10% of the U.S. population aged 65+ have AD
  - The number is expected to increase.
- Health care utilization is greater among persons with AD.
- NHCS is a unique opportunity
  - Examine patterns of care for persons with AD across hospital settings and to identify mortality.

Methods

- 2014 NHCS data from 83 non-children's hospitals that provided both inpatient and ED UB-04 claims data.
  - Sample consisted of 581 hospitals.
- Excluded
  - All encounters from children's hospitals, and
  - All encounters for patients under 50 years of age.
- AD encounter
  - Defined as any-listed diagnosis of ICD-9-CM code 331.0 in any of 25 diagnosis fields on the claim.
- Unweighted total number of AD encounters included approximately:
  - 780,000 inpatient discharges, and
  - 1.5 M ED visits.

Distribution of age, by sex and encounter type among encounters with any listed diagnosis of Alzheimer disease, 2014



NOTES: Emergency department only encounters were 4,380 by women and 2,340 by men; Inpatient only encounters were 1,450 by women and 1,010 by men; ED and inpatient encounters were 7,810 by women and 4,610 by men. Percentages may not sum to 100 due to rounding.
SOURCE: NCHS, National Hospital Care Survey, 2014

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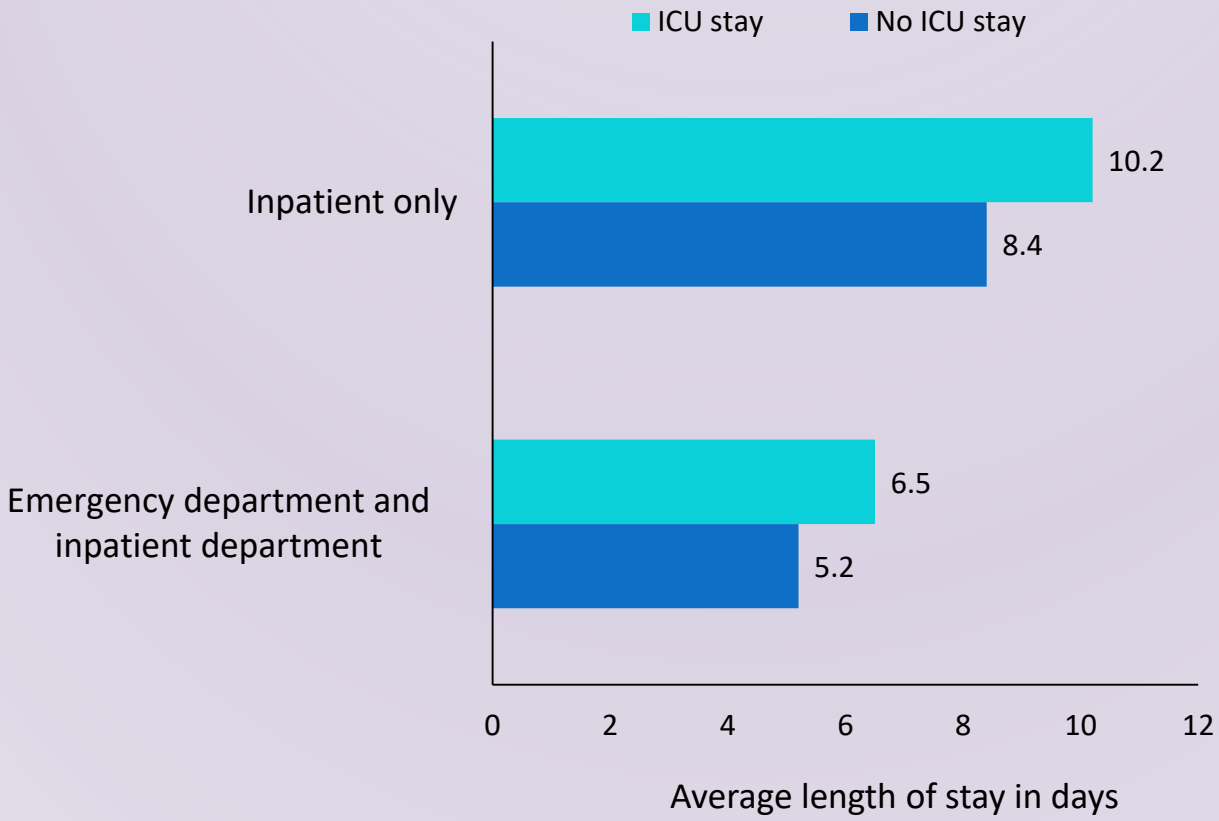
Average length of stay for inpatients hospitalized with any listed diagnosis of Alzheimer disease, by ICU usage and encounter type, 2014



NOTE: Diagnosis of Alzheimer disease is based on any mention of Alzheimer disease (International Classification of Diseases, Ninth Revision, Clinical Modification code 331.0) in any of 26 diagnosis fields, including admission. ICU is intensive care unit. Overall length of stay includes ICU length of stay. Data are not nationally representative.
SOURCE: NCHS, National Hospital Care Survey, 2014

National Hospital Care Survey

Percentage of encounters with any listed diagnosis of Alzheimer disease with receipt of selected therapeutic and diagnostic services, by encounter type

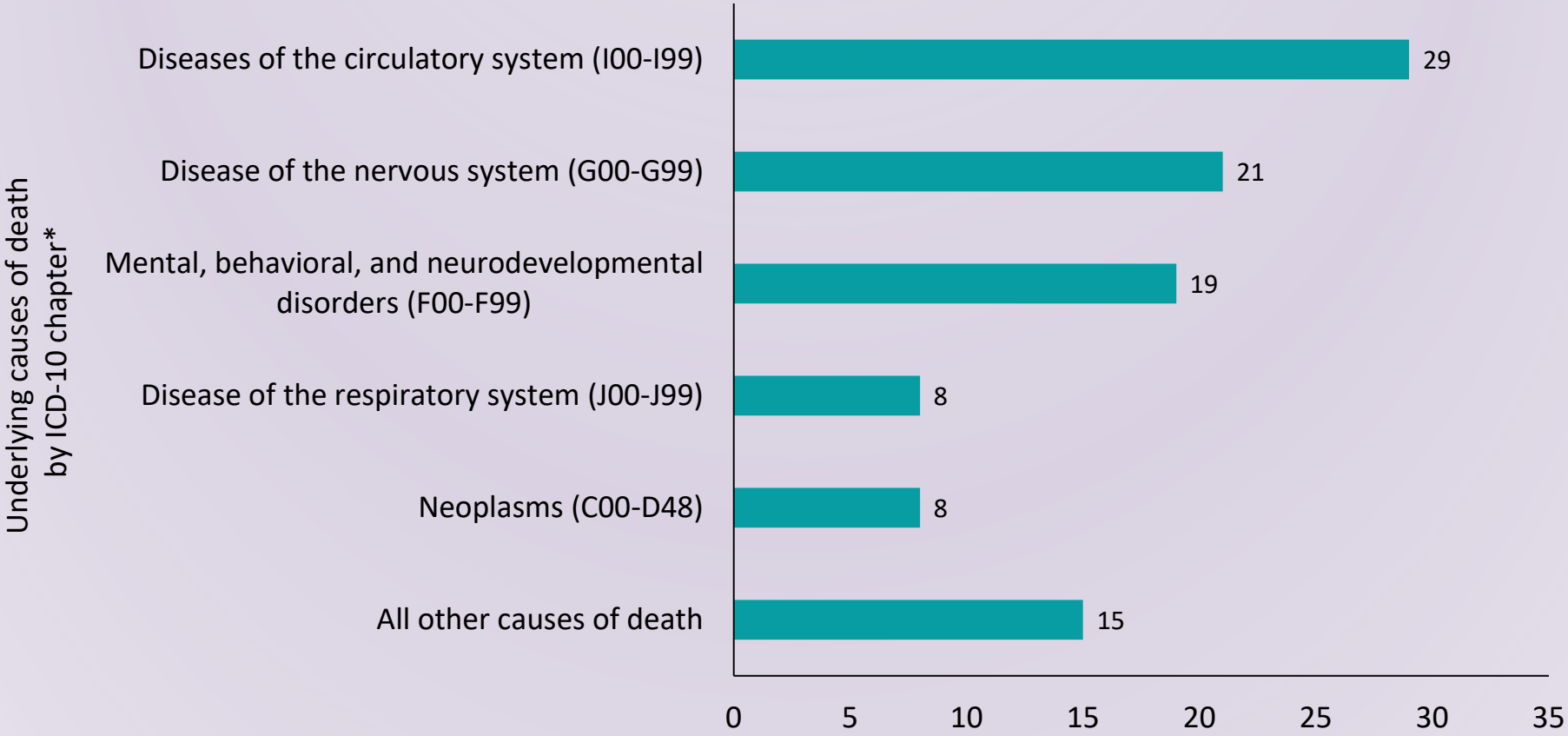
Type of service	Emergency department only *n = 6,720*	Inpatient only *n = 2,470*	Emergency department and inpatient *n = 12,430*
Therapeutic			
Pharmacy	66	**95**	**99**
Respiratory	4	23	31
Physical therapy	11	**55**	**62**
Speech therapy	2	20	28
Occupational therapy	6	37	34
IV (Intravenous) therapy	20	5	30
Diagnostic			
Laboratory	76	**94**	**100**
EEG (electroencephalogram)	2	6	8
CT (computed tomography)	**47**	**32**	**65**
MRI (magnetic resonance imaging)	3	8	11
EKG (electrocardiogram)	**50**	**46**	**83**
Cardiology	7	20	30

*Estimate does not meet NCHS standards of reliability. Encounters had fewer than 60 cases and thus, are not reported.

NOTES: A patient may have received multiple services during an encounter. Data are not nationally representative.

SOURCE: NCHS, National Hospital Care Survey, 2014

Percent distribution of selected underlying cause of death among patients who had an encounter with any listed Alzheimer disease in 2014, and died in 2014 or 2015



*Based on 7,220 deaths among 16,240 patients, who had 21,620 encounters.

NOTES: Discharge dispositions for patients with hospital-reported deaths were matched to the NDI for calendar years 2014 and 2015. The category "All other causes of death" includes all cause-of-death chapters that individually accounted for 3% or fewer of the total deaths. Percentages may not sum to the total due to rounding. Data are not nationally representative.

SOURCE: NCHS, National Hospital Care Survey, 2014, linked to the 2014 and 2015 National Death Index.

National Hospital Care Survey

Discussion and Conclusions

- Although not yet nationally representative, the large volume of records collected through NHCS allows for unique analyses.
- Data are now available on diagnostic and therapeutic services received and on intensive care unit (ICU) stays.
- Collection of PII allows for linkage across hospital settings and to outside data sources, particularly the NDI.

Participation Benefits

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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

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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.

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Future webinars and data availability

- Please stay tuned for additional webinars on demonstration cases of the hospital care survey (e.g., hospitalizations for stroke).
- Email blast invitation with call-in information will be sent.
- 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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