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National Hospital Care Survey

Comparison of Estimates From the 2020 National Hospital Care Survey and 2020 National Inpatient Sample

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Abstract

The National Hospital Care Survey (NHCS) and the National Inpatient Sample (NIS) both provide nationally representative data on inpatient hospital utilization. Selected hospitalization outcomes measures from each survey were compared to determine if any substantive differences existed between NHCS and NIS estimates. A few differences were found for counts, rates, and percentages on the selected measures, which are believed to influenced by methodological differences between the two surveys. Estimates of hospitalizations were higher for patients ages 1-17 and 18-44 when using the NHCS compared to the NIS; however, this difference for patients ages 18-44 did not appear substantive. Fewer hospitalizations were self-pay/no charge when using the NHCS compared to the NIS. However, overall, the majority of estimates compared were not statistically significantly different. When deciding to use data from either the NHCS or NIS for conducting analyses of hospitalizations, users should be aware the differences and choose the data that is best for their own analytical goals.

Introduction

The National Hospital Care Survey (NHCS), conducted by the National Center for Health Statistics (NCHS), was initiated in 2011 with the goal to provide reliable and timely health care utilization data for hospital-based settings. Since that time, the NHCS has continued to expand its data collection, and in 2020 its data were able to be used to generate nationally representative estimates for the first time. Now, both the NHCS and the National Inpatient Sample (NIS), part of the Healthcare Cost and Utilization Project (HCUP) sponsored by the Agency for Healthcare Research and Quality (AHRQ), both provide nationally representative data on inpatient hospital utilization. This paper provides a comparison of nationally representative estimates of hospitalizations (also referred to as inpatient discharges) from both the 2020 NHCS and the 2020 NIS. Outcomes of interest include estimates of hospitalizations by patient sex and age group, primary expected source of payment, discharge status, average length of stay, and selected diagnosis codes from the Clinical Classification Software Refined (CCSR) tool for *International Classification of Diseases, Tenth Revision, Clinical Modification* (ICD-10-CM).

Methods

National Hospital Care Survey (NHCS)

NHCS is a continuation of the National Hospital Discharge Survey, which collected inpatient data from 1965-2010, and the National Hospital Ambulatory Medical Care Survey, which comprised three data collection components: emergency departments (ED) (1992-2022), outpatient departments (1992-2017), and ambulatory surgery centers (2009-2017). The NHCS data sources include both Uniform Billing (UB-04) administrative claims and electronic health record (EHR) data (1). Although the NHCS began in 2011, the 2020 survey year was the first time weights were developed to produce nationally representative estimates (1).

The initial sample for NHCS was constructed in 2011 and consisted of 500 noninstitutional and nonfederal hospitals with at least six staffed inpatient beds (1). Due to the addition of newly constructed hospitals within sampled hospital systems, the 2020 sample consisted of 608 hospitals (2).

Data from inpatient hospitalizations collected for 2020 NHCS were used to produce nationally representative inpatient estimates (2). In 2020, NHCS collected over 10 million encounter records

(including over 2.7 million inpatient encounters) from 205 hospitals with a response rate of 33.7% (1). The weights were developed with a model-based weighting methodology that utilized third-party data sources to develop replicate weights that can be used to produce national estimates with variance estimates (2). A total of eight hospitals were excluded from the weighting process due to quality issues with the submitted data (2).

More detailed information on the data collection procedures and methodology used for the 2020 NHCS can be found here: https://www.cdc.gov/nchs/data/nhcs/2020-NHCS-PUF-Tech-Doc-508.pdf. The analyses presented in this paper were conducted using data from restricted-use data files. Information for accessing the restricted-use data files are available: https://www.cdc.gov/rdc/index.htm.

Healthcare Cost and Utilization Project (HCUP) National Inpatient Sample (NIS)

Since 1988, NIS has provided encounter-level inpatient hospitalization data from the United States (3). The NIS (formerly known as the Nationwide Inpatient Sample) collects hospital billing data from states participating in HCUP's State Inpatient Databases (SID), which in 2020 covered 98% of the U.S. population and 97% of inpatient discharges at community hospitals (3). The response rate for NIS is 85% (3).

In 2020, sampling of the NIS included over 6 million inpatient encounters from 4,580 hospitals from 48 U.S. states and the District of Columbia submitted to HCUP's SID (3). Hospitals included in the 2020 NIS sample were "nonfederal, short-term, general, and other specialty hospitals," excluding institutional, rehabilitation, and long-term care hospitals (3). Since 2012, NIS has used a systemic, self-weighting sample of all inpatient discharges in the sampling frame to reduce the margin of error for NIS estimates and provide estimates that are more precise than previous NIS survey years (3). For more information on the methodology used to collect data and produce national estimates from the 2020 HCUP NIS, see: https://hcup-us.ahrq.gov/db/nation/nis/NIS_Introduction_2020.jsp.

The estimates used for this report were aggregated counts of select NIS outcomes, generated March 2025, using interactive inpatient tables from HCUPnet, Healthcare Cost and Utilization Project, Agency for Healthcare Research and Quality, Rockville, MD. These interactive tables are available here: https://datatools.ahrq.gov/hcupnet.

Variable Definitions

Primary Expected Source of Payment

NHCS and NIS primary expected source of payment were categorized as Medicare, Medicaid, private, self-pay/no charge, missing, and other. The 2020 NHCS received payer information from EHR and claims data sources. Due to heterogeneity of the payer information found among hospitals who submitted data to the NHCS via EHRs, primary expected source of payment was standardized across all NHCS data sources when available. NHCS inpatients without any payer information were classified as "missing."

NHCS hospitalizations with a primary expected source of payment classified as "other" include the following payer types: auto insurance (no fault), Department of Corrections, legal liability (personal injury lawsuit), managed care (unspecified), other government (federal/state/local), worker's compensation, other (type unknown), and miscellaneous/other. NIS defines "other" as worker's compensation, TRICARE/CHAMPUS, CHAMPVA, Title V, and other government programs (4).

Discharge Status

Discharge status was standardized across all NHCS data sources to map to the following categories that are similar to the HCUPnet NIS dashboards: routine to home discharge, home health care, and deaths. Specifics on the detailed discharge status categories among the two data sources, and how they were standardized for comparison in the analyses can be found in Table 1.

Routine to home discharge in HCUPnet's NIS dashboards is defined as patients discharged to home or self-care, discharged to court/law enforcement, discharged to home or self-care with a planned acute care hospital inpatient readmission, or discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission (5). For NHCS, routine to home discharge is defined as patients discharged to home and discharged to home or self-care with a planned acute care hospital inpatient readmission.

Home health care in HCUPnet's NIS dashboards is defined as inpatients discharged/transferred to a home under care of organized home health service organization with a planned acute care hospital inpatient readmission, patients who are receiving hospice care at home, home intravenous (IV) provider, or discharged/transferred to home under care of organized home health service organization (5), while NHCS defined home health care as patients discharged/transferred to home

under care of organized home health service organization with a planned acute care hospital inpatient readmission and home under care of organized home health service.

In HCUPnet's NIS dashboards, deaths are defined as expired. In NHCS, deaths include dead, expired at home, expired in a medical facility, or expired in place unknown. The latter three are defined as discharge alive, destination unknown in the 2020 NIS and are not included in the analysis (5).

Diagnosis Codes

The NIS exclusively collects data from claims sources but the NHCS collects data from both claims and EHR sources (1). While claims diagnoses are submitted as ICD-10-CM codes, EHR data sources submit medical diagnoses in a variety of coding schemes, such as ICD-10-CM, ICD-9-CM, Systemized Nomenclature of Medicine Clinical Terms (SNOMED-CT), EHR vendor, and site-specific codes (2). When possible, diagnosis codes that were not submitted as ICD-10-CM codes were translated to an equivalent ICD-10-CM code (2). Approximately, 1.1% (95% CI: 0.3%-2.7%) of diagnosis codes that could not be translated into an equivalent ICD-10-CM code remained in their original code system and are not included in the diagnosis code analysis (2).

ICD-10-CM diagnosis codes were categorized using the Clinical Classification Software Refined (CCSR) tool, a system that aggregates 70,000 ICD-10-CM codes into over 530 clinically meaningful categories (6). Additionally, 1.1% (95% CI: 0.3% – 2.7%) of inpatient hospitalizations did not have an ICD-10-CM code that could map to a CCSR category. The top ten CCSR categories were determined based on NIS estimates, and these were then selected for comparison in this analysis.

Statistical Analysis

All analyses of the NHCS data presented in this report were conducted using SAS version 9.4 (SAS Institute, Cary, N.C.). All NIS estimates and corresponding 95% confidence intervals were taken from interactive HCUPnet tables (https://datatools.ahrq.gov/hcupnet). The 95% confidence interval for number and rates of hospitalizations with top ten CCSR diagnosis categories were not provided for the NIS in the interactive HCUPnet tables, and therefore these confidence intervals presented in Table 6 were calculated as the estimate ±1.96 * standard error. All weighted percentages and rates were rounded to the tenth decimal place. The hospitalization rates presented are defined as the number of hospitalizations per 100,000 people in 2020. Rates by age group and sex are based on estimates of the U.S. resident population for April 1, 2020 to July 1, 2021 (7).

Differences between counts, percentages, and rates for the NHCS and NIS were tested using two-tailed *t* tests at the $p < 0.05$ level (8). Estimates presented in this report were evaluated using NCHS standards for presentation of proportions and NCHS standards for presentation of rates and counts, where applicable (9,10). Estimates that did not meet the proportion standards, or the rates and counts standards, are suppressed and presented in the tables with an asterisk. Kish design effect was calculated for the total design effect during application of the rates and counts standards (10). The 95% confidence intervals for counts were calculated using the log Student's *t* method with adaptations for complex surveys (10). The 95% confidence intervals for percentages were calculated using the Korn-Graubard method (9).

Results

Comparison of Hospitalizations by Patient Sex and Age

Table 2 compares NHCS and NIS estimates for all hospitalizations by sex and six different age groups. Overall, there were a few statistically significant differences between NHCS and NIS estimates. There were no significant differences between NHCS and NIS counts, percentages, or rates for total hospitalizations, or for hospitalizations by males or females. Furthermore, there were also no significant differences in the counts, percentages, or rates of hospitalizations by patients ages <1, 45-64, and 85 and older.

There were significant differences in the counts and rates for the 1-17 and 18-44 age groups. For example, NHCS estimated counts were higher than NIS estimated counts for hospitalizations of children 1-17 (1.8 million vs. 933,000) and adults 18-44 (9.3 million vs. 7.9 million). While significant differences were found between both counts and rates among these age groups, there were no differences found between percentages.

Comparison of Hospitalizations by Primary Expected Source of Payment

Table 3 compares NHCS and NIS estimates for hospitalizations by primary expected source of payment. There were no statistically significant differences between count of percentage estimates for Medicaid, Private, or other type of payment.

There was a significant difference in the percentage of hospitalizations of patients whose primary expected source of payment was Medicare (NHCS: 32.1% vs. NIS: 39.7%); however, the number of hospitalizations for these patients was not significantly different. Significant differences were also

found for the self-pay/no charge category, where a lower number (498,000 vs. 1.5 million) and percentage (1.4% vs. 4.6%) of hospitalizations by patients with a primary expected source of payment as self-pay/no charge was estimated using the NHCS vs. NIS. The largest difference between NHCS and NIS estimates were found when comparing hospitalizations with missing payment data, where 4.4 million hospitalizations had missing payment data in the NHCS compared to 45,000 in the NIS.

Comparison of Hospitalizations by Discharge Status

Table 4 compares NHCS and NIS estimates for discharge status among hospitalizations. There were no significant differences in discharge status overall, or among hospitalizations by males. There were also no significant differences in discharge status found between NHCS and NIS estimates for patients in the age groups <1, 45-64, or 65-84.

While many comparisons were made between NHCS and NIS estimates in Table 4, only a few were significant. For hospitalizations by females, there was only one significant difference where hospitalizations that led to a home health discharge were 1.6% points lower using the NHCS compared to the NIS (12.0% vs. 13.6%). Although this percentage was different, there was no significant difference in the number of hospitalizations by females that led to a home health discharge. Another one of these differences was between the number of hospitalizations among children ages 1-17 that resulted in a routine to home discharge (NHCS: 1.6 million vs. NIS: 963,000); however, there was no percentage difference in this discharge status among hospitalizations by this age group. Another difference was between the percentage of hospitalizations among adults 18-44 that resulted in death; however, the difference was slight (NHCS: 0.5% vs. NIS: 0.6%). Furthermore, there was no difference in the number of deaths among hospitalizations by this age group. The final statistically significant difference between NHCS and NIS estimates was between the percentage of hospitalizations that led to a home health discharge by patients 85 and older, where the estimated percentage was 3.8% points lower using the NHCS compared to the NIS (24.6% vs. 28.4%). Although this percentage was significantly different, there was no significant difference in the number of hospitalizations leading to this discharge status among this age group.

Comparison of Hospitalizations by Average Length of Stay

Table 5 compares NHCS and NIS estimates for average length of stay among hospitalizations by patient sex and age group. Here the only significant difference (albeit small in magnitude) was among hospitalizations by females. Using the NHCS, there was an estimated average length of stay

of 5.0 days for hospitalizations by females, while using the NIS there was an estimated average length of stay of 4.5 days for hospitalizations by females.

Comparison of Hospitalizations by Top Ten CCSR Diagnosis Categories

Table 6 compares NHCS and NIS estimates for the top ten CCSR diagnosis categories. No significant differences were found in estimates for eight of the ten categories compared, which included: fluid and electrolyte disorders, essential hypertension, hypertension with complication and secondary hypertension, diabetes mellitus (type 2), esophageal disorders, diabetes mellitus with complication, obesity, and chronic kidney disease.

The two CCSR diagnosis categories where statistically significant differences were found between NHCS and NIS estimates for number and rates of hospitalizations were disorders of lipid metabolism and coronary atherosclerosis and other heart disease. The NHCS estimated count was lower for hospitalizations which had a diagnosis category of lipid metabolism compared to the NIS estimate (8.6 million vs. 9.8 million), and the NHCS estimated count was lower for hospitalizations which had a diagnosis category of coronary atherosclerosis and other heart disease compared to the NIS estimate (5.1 million vs. 6.0 million).

Summary

This paper provides a comparison of nationally representative estimates of hospitalizations (also known as “inpatient discharges”) between the 2020 NHCS and the 2020 NIS. Selected hospitalization estimates were compared between the two data sources by patient age and sex, primary expected source of payment, discharge status, average length of stay, and top ten diseases as categorized by CCSR. A key finding was that while a few statistically significant differences between estimates were identified in this analysis, for most comparisons there were no significant differences in the estimates of hospitalizations made using the NHCS and NIS.

Some of the more marked differences included estimates of hospitalizations that were higher for patients ages 1-17 when using the NHCS compared to the NIS. For primary source of expected source of payment, few hospitalizations were self-pay/no charge when using the NHCS compared to the NIS, and the NHCS also had a higher level of missingness for primary expected source of payment. A few differences were found between NHCS and NIS estimates for discharge status and average length of stay; however, while statistically significant, the absolute differences were

minimal. Finally, estimates from the NHCS showed fewer hospitalizations with a diagnosis in the CCSR categories of disorders of lipid metabolism and coronary atherosclerosis and other heart disease when compared to estimates using the NIS.

Methodological Differences

Methodological differences between the NHCS and NIS may account for some of the differences in estimates. Both the NHCS and NIS collect data from noninstitutional and nonfederal hospitals; however, the NHCS includes data from rehabilitation, psychiatric, and long-term care facilities while the NIS does not (3,4). In 2020, NIS collected data from approximately 6,000 hospitals in 48 U.S. states and the District of Columbia with an overall response rate of 85%, while the NHCS used a sampling strategy to collect national data from 205 hospitals with a response rate of 33.7% (1,3). In addition, the NHCS receives data from two different sources: Uniform Billing (UB)-04 claims and EHR, while the NIS collects data exclusively from claims databases at HCUP participating states (3). As administrative claims data are derived from the billing of medical encounters (11,12), this may be a source of the difference in missingness found among primary expected source of payment when comparing the NHCS and NIS. The inclusion of EHR data allows NHCS participating hospitals to submit encounter information in both standardized and non-standardized coding systems. Claims diagnosis codes are submitted as ICD-10-CM codes, whereas EHR data sources submit their diagnosis codes in ICD-10-CM or other coding system formats, resulting in some codes not having an ICD-10-CM equivalent (1). Additionally, EHR sourced data does not submit payer information for each inpatient hospitalization.

Despite these differences, the estimates compared in this report were overall more similar than different. Data users should be aware of the differences between the NHCS and NIS and select the data source that best suits their research and analytical needs.

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Table 1. Definition of select discharge statuses in the National Hospital Care Survey and National Inpatient Sample: United States, 2020

Discharge Status	National Hospital Care Survey	National Inpatient Sample
Routine to home	Discharged to home	Discharged to home or self-care
		Discharged to court/law enforcement
	Discharged to home or self-care with a planned acute care hospital inpatient readmission	Discharged to home or self-care with a planned acute care hospital inpatient readmission
		Discharged/transferred to court/law enforcement with a planned acute care hospital inpatient readmission
Home health care	Discharged/transferred to home under care of organized home health service organization with a planned acute care hospital inpatient readmission	Discharged/transferred to a home under care of organized home health service organization with a planned acute care hospital inpatient readmission
	Discharged home under care of organized home health service	Discharged home under hospice
		Home intravenous provider
		Discharged/transferred to home under care of organized home health service organization
Deaths	Dead	Expired
	Expired at home	
	Expired in a medical facility	
	Expired in place unknown	

SOURCES: National Center for Health Statistics, National Hospital Care Survey (NHCS), 2020 restricted use files. Agency for Healthcare Research and Quality, Healthcare Utilization Project National Inpatient Sample (NIS), 2020.

Table 2. Comparison of inpatient hospitalization estimates by patient sex and age using National Hospital Care Survey (NHCS) and National Inpatient Sample (NIS) data: United States, 2020

	NHCS Number (in 1,000s)		NIS Number (in 1,000s)		NHCS Percentage Distribution		NIS Percentage Distribution		NHCS Rate (per 100,000 people)		NIS Rate (per 100,000 people)	
	No.	(95% CI)	No.	(95% CI)	%	(95% CI)	%	(95% CI)	Rate	(95% CI)	Rate	(95% CI)
All hospitalizations	36,342	(32,323-40,861)	32,356	(31,798-32,914)	100.0	…	100.0	…	10,963.0	(9,750.6-12,326.2)	9,760.4	(9,592.0-9,928.8)
Sex												
Female	20,001	(17,696-22,606)	17,845	(17,521-18,169)	55.0	(54.3-55.8)	55.2	(54.9-55.4)	11,956.0	(10,578.2-13,513.4)	10,667.3	(10,473.5-10,861.1)
Male	16,301	(14,547-18,268)	14,506	(14,255-14,756)	44.9	(44.1-45.6)	44.8	(44.6-45.1)	9,926.9	(8,858.4-11,124.3)	8,833.4	(8,681.1-8,985.7)
Age group (years)												
<1	4,019	(3,376-4,786)	3,754	(3,628-3,881)	11.1	(10.0-12.2)	11.6	(11.3-11.9)	108,650.7	(91,251.9-129,367.0)	101,487.9	(98,063.8-104,912.0)
1-17 [1,2]	1,823	(1,184-2,806)	933	(832-1,034)	5.0	(3.1-7.7)	2.9	(2.6-3.2)	2,585.0	(1,679.2-3,979.3)	1,322.9	(1,180.2-1,465.6)
18-44 [1,2]	9,267	(8,130-10,562)	7,926	(7,747-8,106)	25.5	(23.8-27.2)	24.5	(24.2-24.8)	7,809.1	(6,851.6-8,900.4)	6,679.4	(6,528.1-6,830.7)
45-64	8,314	(7,424-9,311)	7,684	(7,529-7,839)	22.9	(21.8-24.0)	23.8	(23.5-24.0)	9,876.7	(8,819.1-11,061.1)	9,128.3	(8,944.1-9,312.5)
65-84 [3]	10,204	(8,899-11,699)	9,575	(9,383-9,767)	28.1	(26.7-29.5)	29.6	(29.2-29.9)	21,073.9	(18,379.5-24,163.4)	19,775.1	(19,378.8-20,171.4)
85 and older	2,684	(2,314-3,112)	2,483	(2,427-2,538)	7.4	(6.8-8.0)	7.7	(7.5-7.8)	44,577.2	(38,443.9-51,689.0)	41,239.2	(40,313.9-42,164.5)

… Category not applicable.

[1] Statistically significant difference between NHCS and NIS estimates for number of hospitalizations.

[2] Statistically significant difference between NHCS and NIS estimates for rate (per 100,000 people) of hospitalizations.

[3] Statistically significant difference between NHCS and NIS percentages.

NOTES: Estimates may not add to totals due to rounding. Percentage distributions may not add to 100.0% due to rounding. CI is confidence interval. Rates (per 100,000 people) by sex and age group are based on estimates of the U.S. resident population for April 1, 2020 to July 1, 2021 (7).

SOURCES: National Center for Health Statistics, National Hospital Care Survey (NHCS), 2020 restricted use files. Agency for Healthcare Research and Quality, Healthcare Utilization Project National Inpatient Sample (NIS), 2020.

Table 3. Comparison of inpatient hospitalization estimates by primary expected source of payment using National Hospital Care Survey (NHCS) and National Inpatient Sample (NIS) data: United States, 2020

	NHCS Number (in 1,000s)		NIS Number (in 1,000s)		NHCS Percentage Distribution		NIS Percentage Distribution	
	No.	(95% CI)	No.	(95% CI)	%	(95% CI)	%	(95% CI)
Medicare [1]	11,656	(9,555-14,220)	12,849	(12,587-13,111)	32.1	(27.9-36.5)	39.7	(39.2-40.2)
Medicaid	7,186	(4,600-11,224)	7,464	(7,261-7,667)	19.8	(12.0-29.7)	23.1	(22.6-23.6)
Private	11,329	(8,235-15,586)	9,497	(9,230-9,763)	31.2	(22.0-41.6)	29.4	(28.8-29.9)
Self-pay/no charge [1,2]	498	(276-899)	1,481	(1,417-1,544)	1.4	(0.7-2.4)	4.6	(4.4-4.8)
Other	1,282	(660-2,490)	1,021	(970-1,071)	3.5	(1.7-6.5)	3.2	(3.0-3.3)
Missing [1]	4,392	(2,378-8,112)	45	(35-54)	*	*	0.1	(0.1-0.2)

* Estimate does not meet National Center for Health Statistics standards of reliability.

[1] Statistically significant difference between NHCS and NIS percentages.

[2] Statistically significant difference between NHCS and NIS estimates for number of hospitalizations.

NOTES: Percentage distributions may not add to 100.0% due to rounding. CI is confidence interval. Based on 36.3 million (95% CI: 32.3-40.9 million) hospitalizations using the NHCS and 32.4 million (95% CI: 31.8-32.9) using the NIS.

SOURCES: National Center for Health Statistics, National Hospital Care Survey (NHCS), 2020 restricted use files. Agency for Healthcare Research and Quality, Healthcare Utilization Project National Inpatient Sample (NIS), 2020.

Table 4. Comparison of inpatient hospitalization estimates by discharge status, patient sex, and patient age using National Hospital Care Survey (NHCS) and National Inpatient Sample (NIS) data: United States, 2020

	NHCS Number (in 1,000s)		NIS Number (in 1,000s)		NHCS Percentage Distribution		NIS Percentage Distribution	
	No.	(95% CI)	No.	(95% CI)	%	(95% CI)	%	(95% CI)
All hospitalizations								
Routine to home	23,995	(21,250-27,095)	21,634	(21,228-22,040)	66.0	(63.4-68.6)	66.9	(66.5-67.3)
Home health care	4,526	(3,700-5,536)	4,511	(4,392-4,630)	12.5	(10.8-14.2)	13.9	(13.7-14.2)
Deaths	923	(769-1,108)	902	(881-922)	2.5	(2.2-2.9)	2.8	(2.8-2.8)
Sex								
Female								
Routine to home	13,670	(12,028-15,538)	12,313	(12,060-12,566)	68.3	(65.8-70.8)	69.0	(68.6-69.4)
Home health care [1]	2,406	(1,988-2,912)	2,424	(2,361-2,488)	12.0	(10.6-13.6)	13.6	(13.3-13.9)
Deaths	419	(344-509)	407	(397-416)	2.1	(1.8-2.5)	2.3	(2.2-2.3)
Male								
Routine to home	10,295	(9,148-11,586)	9,317	(9,149-9,485)	63.2	(60.3-66.0)	64.2	(63.9-64.6)
Home health care	2,119	(1,707-2,629)	2,087	(2,030-2,144)	13.0	(11.1-15.1)	14.4	(14.1-14.7)
Deaths	503	(422-601)	495	(483-506)	3.1	(2.7-3.5)	3.4	(3.4-3.5)
Age group (years)								
<1								
Routine to home	3,812	(3,194-4,550)	3,612	(3,489-3,736)	94.8	(93.2-96.2)	96.2	(95.9-96.5)
Home health care	76	(42-137)	53	(42-63)	1.9	(1.0-3.2)	1.4	(1.1-1.7)
Deaths	15	(12-20)	13	(12-14)	0.4	(0.1-0.9)	0.4	(0.3-0.4)
1-17								
Routine to home [2]	1,647	(1,059-2,564)	859	(765-953)	90.4	(86.1-93.7)	92.1	(91.6-92.6)
Home health care	59	(27-131)	23	(19-28)	*	*	2.5	(2.1-2.9)
Deaths	6	(4-8)	4	(3-5)	0.3	(<0.1-1.3)	0.4	(0.4-0.5)
18-44								
Routine to home	7,980	(6,891-9,241)	7,001	(6,836-7,166)	86.1	(83.0-88.8)	88.3	(88.0-88.6)
Home health care	304	(256-361)	297	(281-313)	3.3	(2.8-3.8)	3.7	(3.6-3.9)
Deaths[1]	49	(41-58)	50	(48-52)	0.5	(0.3-0.8)	0.6	(0.6-0.7)
45-64								
Routine to home	5,372	(4,742-6,086)	5,117	(5,013-5,222)	64.6	(61.8-67.4)	66.6	(66.3-66.9)
Home health care	1,156	(948-1,409)	1,155	(1,119-1,190)	13.9	(11.9-16.2)	15.0	(14.7-15.3)
Deaths	209	(180-244)	207	(201-213)	2.5	(2.3-2.8)	2.7	(2.6-2.8)
65-84								

Routine to home	4,543	(3,981-5,185)	4,430	(4,334-4,526)	44.5	(41.9-47.2)	46.3	(45.9-46.6)
Home health care	2,270	(1,830-2,817)	2,279	(2,220-2,338)	22.3	(19.6-25.1)	23.8	(23.5-24.1)
Deaths	459	(376-561)	447	(436-458)	4.5	(3.8-5.3)	4.7	(4.6-4.8)
85 and older								
Routine to home	616	(540-703)	613	(599-628)	23.0	(20.0-26.1)	24.7	(24.4-25.0)
Home health care [1]	659	(528-823)	705	(685-725)	24.6	(21.6-27.7)	28.4	(28.1-28.8)
Deaths	183	(139-241)	180	(175-185)	6.8	(5.1-8.8)	7.3	(7.1-7.4)

* Estimate does not meet National Center for Health Statistics standards of reliability.

[1] Statistically significant difference between NHCS and NIS percentages.

[2] Statistically significant difference between NHCS and NIS estimates for number of hospitalizations.

NOTES: Only discharge categories that are comparable are included, and therefore counts do not add up to the total discharges number of discharges and percentage distributions do not add up to 100.0%. CI is confidence interval. Based on 36.3 million (95% CI: 32.3-40.9 million) hospitalizations using the NHCS and 32.4 million (95% CI: 31.8-32.9) using the NIS.

SOURCES: National Center for Health Statistics, National Hospital Care Survey (NHCS), 2020 restricted use files. Agency for Healthcare Research and Quality, Healthcare Utilization Project National Inpatient Sample (NIS), 2020.

Table 5. Comparison of inpatient hospitalization average length of stay (in days) by patient sex and age using National Hospital Care Survey (NHCS) and National Inpatient Sample (NIS) data: United States, 2020

	NHCS		NIS	
	Average (in days)	(95% CI)	Average (in days)	(95% CI)
All hospitalizations	5.3	(4.8-5.8)	4.9	(4.9-4.9)
Sex				
Female [1]	5.0	(4.5-5.5)	4.5	(4.5-4.5)
Male	5.8	(5.3-6.3)	5.4	(5.4-5.4)
Age group (years)				
<1	4.1	(3.6-4.5)	3.9	(3.8-4.0)
1-17	6.1	(2.7-9.4)	5.0	(4.8-5.2)
18-44	4.4	(3.6-5.1)	3.9	(3.9-3.9)
45-64	6.1	(5.4-6.7)	5.6	(5.6-5.6)
65-84	6.0	(5.5-6.4)	5.6	(5.6-5.6)
85 and older	5.4	(5.1-5.7)	5.4	(5.4-5.4)

[1] Statistically significant difference between NHCS and NIS average length of stay.

NOTES: CI is confidence interval. CIs that appear equal to the corresponding estimate or each other differ by less than 0.1. Based on 36.3 million (95% CI: 32.3-40.9 million) hospitalizations using the NHCS and 32.4 million (95% CI: 31.8-32.9) using the NIS.

SOURCES: National Center for Health Statistics, National Hospital Care Survey (NHCS), 2020 restricted use files. Agency for Healthcare Research and Quality, Healthcare Utilization Project National Inpatient Sample (NIS), 2020.

Table 6. Comparison of inpatient hospitalization estimates with top ten Clinical Classification Software Revised (CCSR) diagnoses categories using National Hospital Care Survey (NHCS) and National Inpatient Sample (NIS) data: United States, 2020

	NHCS Number (in 1,000s)		NIS Number (in 1,000s)		NHCS Rate (per 100,000 people)		NIS Rate (per 100,000 people)	
CCSR category (code)	**No.**	**(95% CI)**	**No.**	**(95% CI)**	**Rate**	**(95% CI)**	**Rate**	**(95% CI)**
Disorders of lipid metabolism (END010) [1,2]	8,577	(7,530-9,771)	9,808	(9,596-10,021)	2,587.4	(2,271.3-2,947.5)	2,958.8	(2,894.7-3,022.9)
Fluid and electrolyte disorders (END011)	8,598	(7,585-9,746)	9,352	(9,170-9,533)	2,593.6	(2,288.2-2,939.8)	2,821.0	(2,766.1-2,875.9)
Essential hypertension (CIR007)	8,575	(7,561-9,725)	8,832	(8,665-8,999)	2,586.6	(2,280.8-2,933.5)	2,664.3	(2,613.9-2,714.7)
Hypertension with complications and secondary hypertension (CIR008)	7,225	(6,372-8,192)	7,795	(7,635-7,956)	2,179.5	(1,922.1-2,471.3)	2,351.6	(2,303.0-2,400.2)
Diabetes mellitus, Type 2 (END005)	6,848	(6,068-7,729)	7,514	(7,366-7,662)	2,065.8	(1,830.3-2,331.5)	2,266.5	(2,221.8-2,311.2)
Coronary atherosclerosis and other heart disease (CIR011) [1,2]	5,097	(4,445-5,844)	5,979	(5,844-6,114)	1,537.4	(1,340.8-1,762.9)	1,803.6	(1,762.8-1,844.4)
Esophageal disorders (DIG004)	4,938	(4,228-5,768)	5,570	(5,441-5,699)	1,489.7	(1,275.4-1,739.9)	1,680.2	(1,641.4-1,719.0)
Diabetes mellitus with complication (END003)	4,897	(4,352-5,509)	5,422	(5,310-5,535)	1,477.1	(1,312.9-1,661.9)	1,635.7	(1,601.8-1,669.6)
Obesity (END009)	5,009	(4,423-5,671)	5,361	(5,235-5,487)	1,510.9	(1,334.4-1,710.7)	1,617.2	(1,579.2-1,655.2)
Chronic kidney disease (GEN003)	5,164	(4,601-5,796)	5,301	(5,186-5,416)	1,557.7	(1,387.9-1,748.3)	1,599.1	(1,564.6-1,633.6)

[1] Statistically significant difference between NHCS and NIS estimates for number of hospitalizations.

[2] Statistically significant difference between NHCS and NIS estimates for rate (per 100,000 people) of hospitalizations.

NOTES: Top ten diagnosis categories of those listed by using the NIS. CI is confidence interval. Rates (per 100,000 people) based on estimates of the U.S. resident population for April 1, 2020 to July 1, 2021 (7). For NIS estimates, the corresponding 95% CIs were calculated as the estimate ± 1.96 * standard error. Based on 35.9 million (95% CI: 32.0-40.4 million) hospitalizations using the NHCS and 32.4 million (95% CI: 31.8-32.9) using the NIS.

SOURCES: National Center for Health Statistics, National Hospital Care Survey (NHCS), 2020 restricted use files. Agency for Healthcare Research and Quality, Healthcare Utilization Project National Inpatient Sample (NIS), 2020.