



AGENCY FOR HEALTHCARE RESEARCH AND QUALITY



The Healthcare Cost and Utilization Project (HCUP)

An In-Depth Exploration of the HCUP Database:
Nationwide Emergency Department Sample (NEDS)

Agency for Healthcare Research and Quality
Webinar ♦ December 2020

Webinar Overview



- **Discuss the HCUP project and the making of HCUP data**
- Introduce the HCUP Nationwide Emergency Department Sample (NEDS)
- Describe how you can use the NEDS using three use cases:
 - ▶ ED visits for all injuries
 - ▶ ED visits and admissions for potentially preventable hospital visits
 - ▶ ED visits for seasonal illnesses
- Compare NEDS to HCUPnet results
- Review the NEDS checklist
- Access the HCUP User Support (HCUP-US) website

What is HCUP?

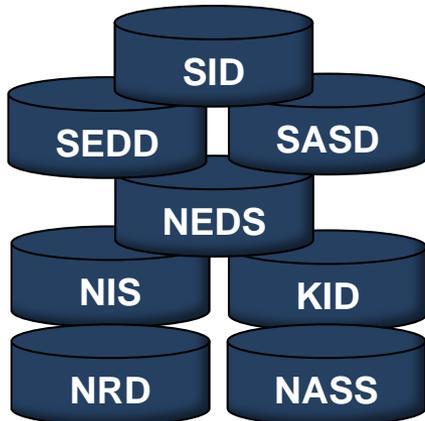
Federal-State-Private Partnership

HCUP is a comprehensive set of **publicly available all-payer** healthcare data (including self-pay and those billed as 'no charge')



Includes **multi-year** inpatient and outpatient data based on **hospital billing** records

HCUP Databases



Online Tools



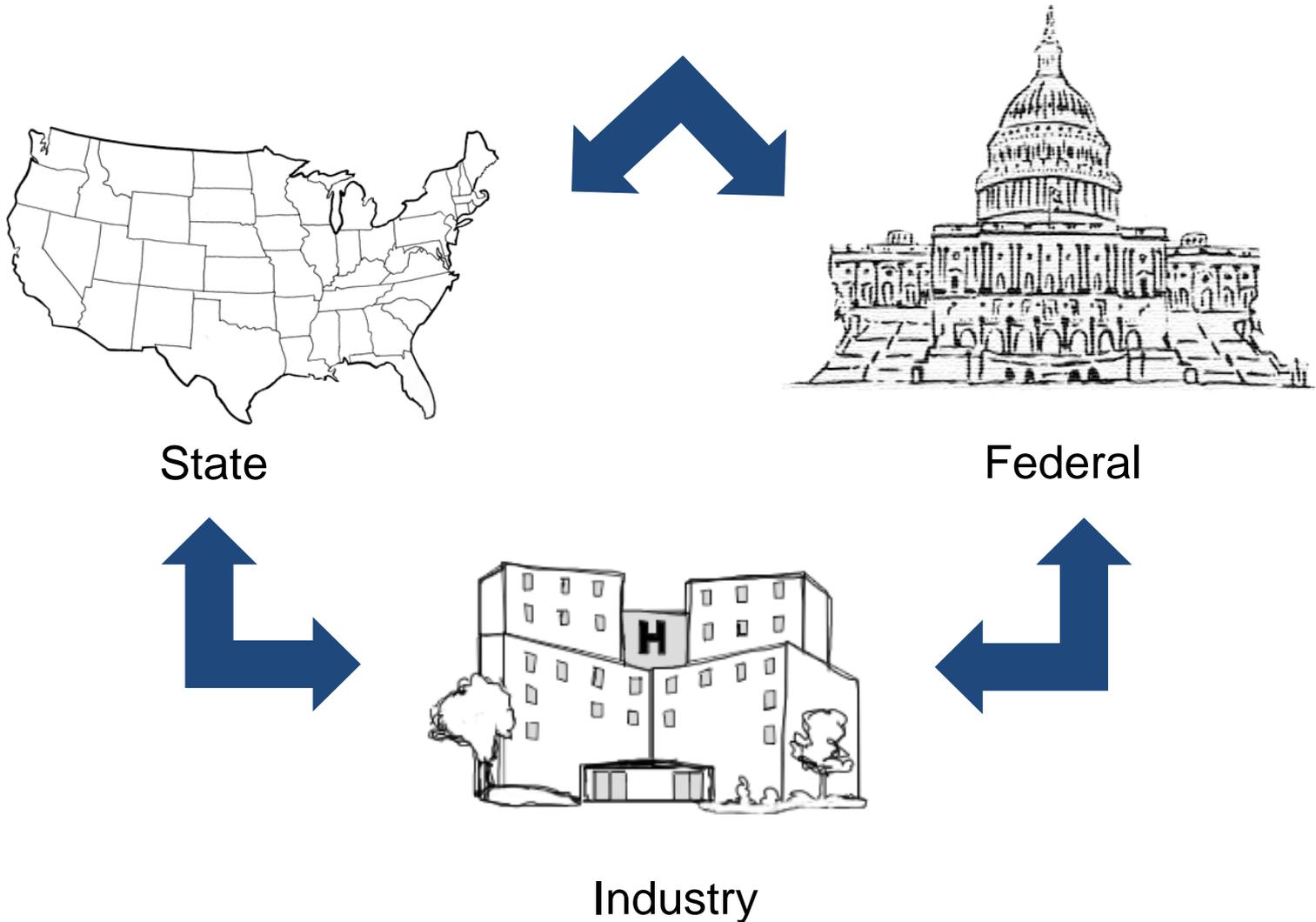
Analytics



User Support



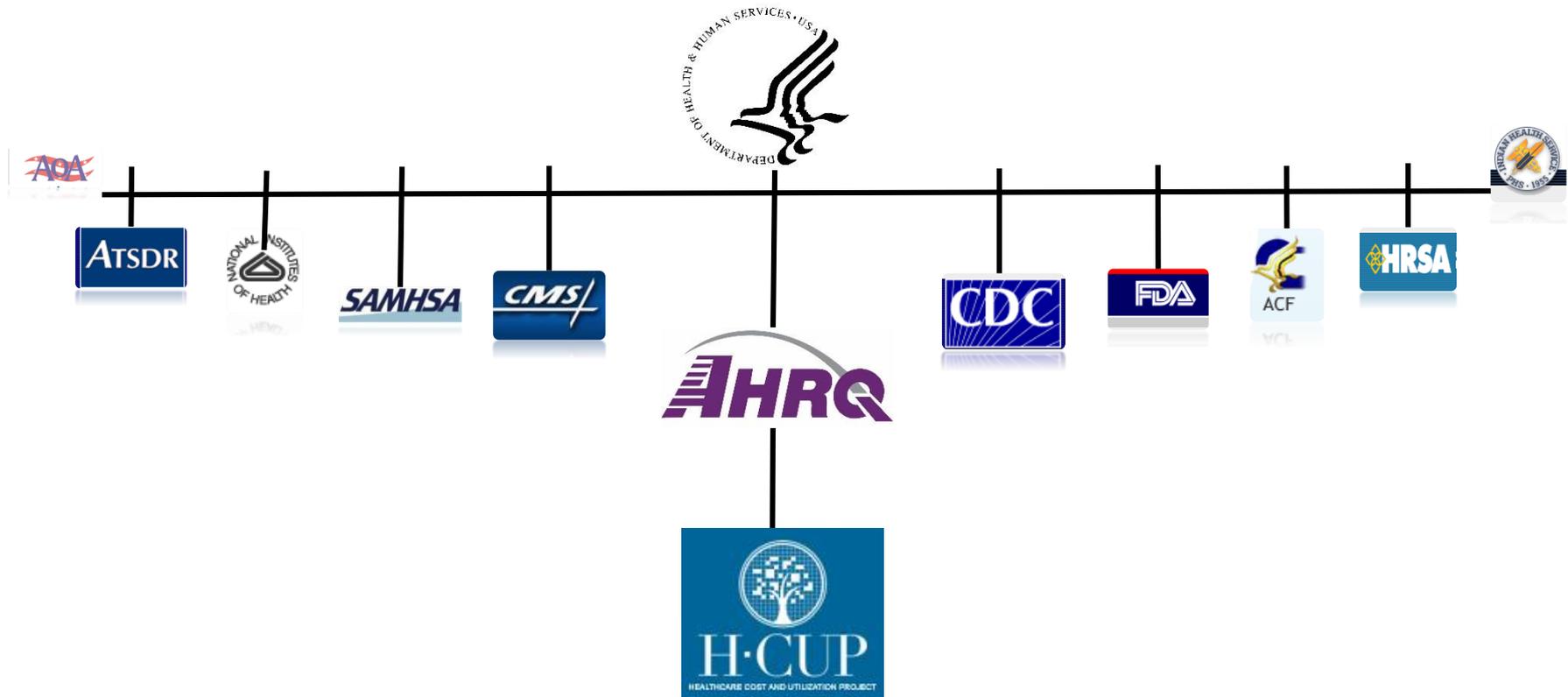
The HCUP Partnership



What is the Agency for Healthcare Research and Quality (AHRQ)?



The Agency for Healthcare Research and Quality (AHRQ) is a federal agency under the Department of Health and Human Services.



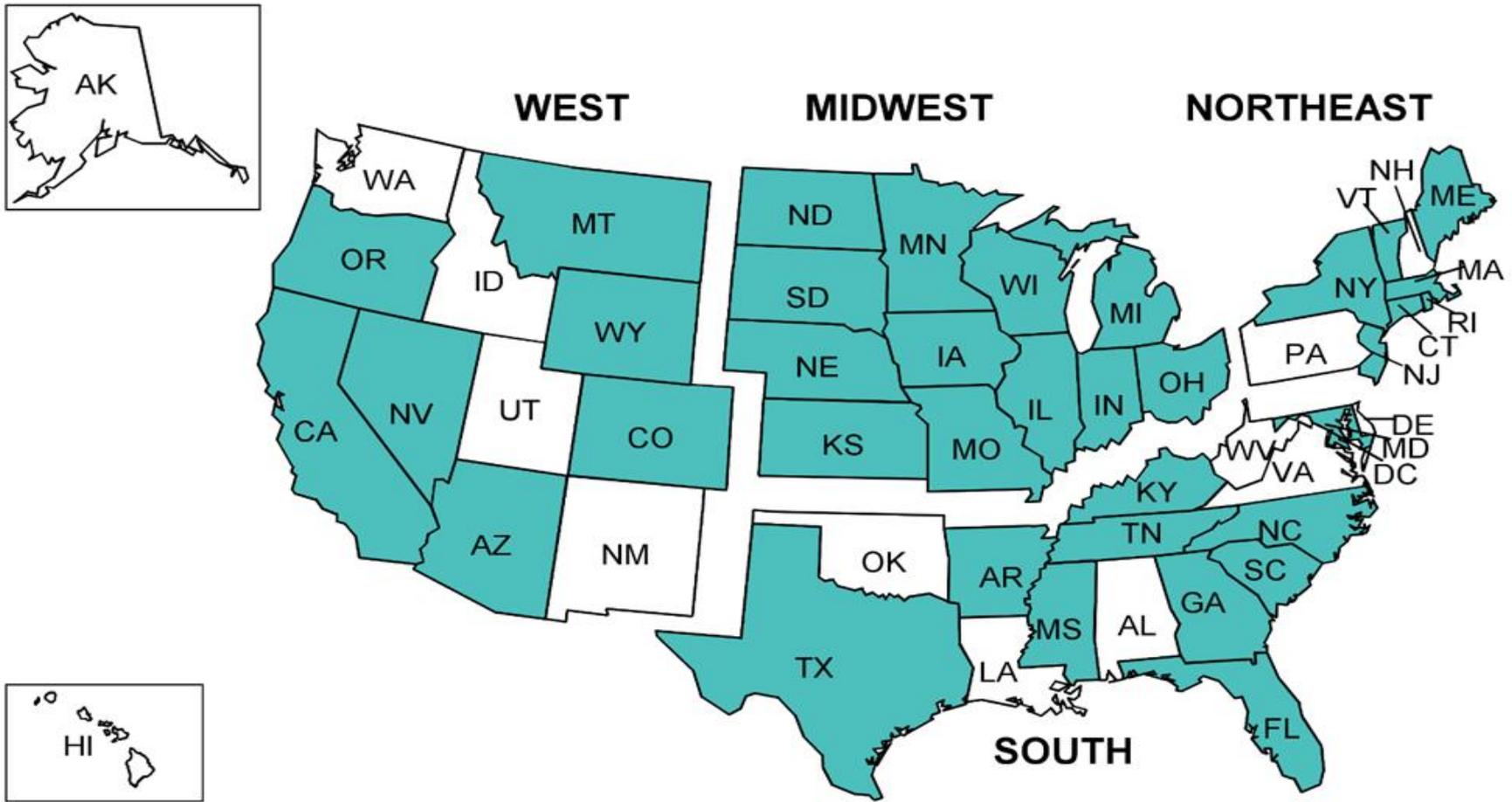
HCUP Data Partners



Alaska Department of Health and Social Services
Alaska State Hospital and Nursing Home Association
Arizona Department of Health Services
Arkansas Department of Health
California Office of Statewide Health Planning and Development
Colorado Hospital Association
Connecticut Hospital Association
Delaware Division of Public Health
District of Columbia Hospital Association
Florida Agency for Health Care Administration
Georgia Hospital Association
Hawaii Laulima Data Alliance
Hawaii University of Hawai'i at Hilo
Illinois Department of Public Health
Indiana Hospital Association
Iowa Hospital Association
Kansas Hospital Association
Kentucky Cabinet for Health and Family Services
Louisiana Department of Health
Maine Health Data Organization
Maryland Health Services Cost Review Commission
Massachusetts Center for Health Information and Analysis
Michigan Health & Hospital Association
Minnesota Hospital Association (provides data for Minnesota and North Dakota)
Mississippi State Department of Health
Missouri Hospital Industry Data Institute

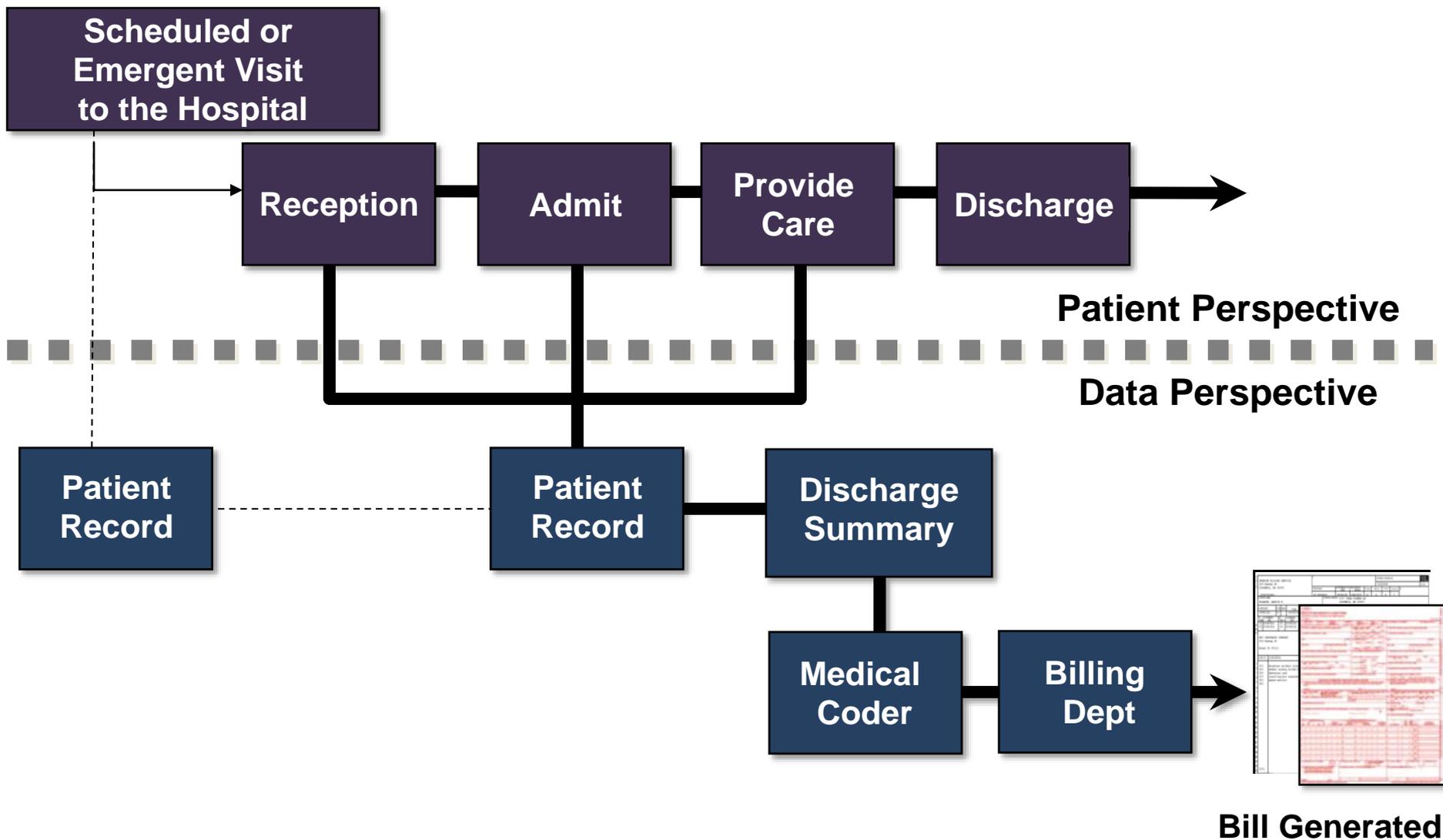
Montana Hospital Association
Nebraska Hospital Association
Nevada Department of Health and Human Services
New Hampshire Department of Health & Human Services
New Jersey Department of Health
New Mexico Department of Health
New York State Department of Health
North Carolina Department of Health and Human Services
North Dakota (data provided by the Minnesota Hospital Association)
Ohio Hospital Association
Oklahoma State Department of Health
Oregon Association of Hospitals and Health Systems
Oregon Office of Health Analytics
Pennsylvania Health Care Cost Containment Council
Rhode Island Department of Health
South Carolina Revenue and Fiscal Affairs Office
South Dakota Association of Healthcare Organizations
Tennessee Hospital Association
Texas Department of State Health Services
Utah Department of Health
Vermont Association of Hospitals and Health Systems
Virginia Health Information
Washington State Department of Health
West Virginia Department of Health and Human Resources, West Virginia Health Care Authority
Wisconsin Department of Health Services
Wyoming Hospital Association

HCUP 2018 NEDS Participation



 HCUP States in the NEDS  Not in the NEDS

From Patient Hospital Visit to Administrative Record



The Making of HCUP Data

Patient enters hospital



Billing record created



States store data in varying formats



Hospital sends billing data and any additional data elements to data organizations

AHRQ standardizes data to create uniform HCUP databases



744	98	749	2	79	257	5	290
745	25	614	4	84	541	4	549
746	66	195	1	78	669	3	523
747	43	726	3	46	211	4	970
748	81	533	6	98	83	8	40
749	51	418	4	69	496	1	613
750	16	575	2	77	571	1	995
751	2	326	4	44	638	2	958
752	63	521	4	18	217	7	721
753	38	867	4	44	446	2	71
754	50	418	0	59	216	4	799
755	22	806	3	46	573	2	994
756	94	740	6	55	247	1	218
757	36	852	8	8	289	3	559
758	63	386	1	94	838	1	613
759	17	766	8	92	799	5	612
760	54	735	3	29	556	6	503
761	5	263	4	78	125	8	997
762	48	100	3	94	484	8	206
763	23	916	6	15	556	9	327
764	11	251	4	17	125	6	192
765	30	976	1	9	561	6	39

HCUP State-Specific Databases

Inpatient State-Specific Databases



State Inpatient
Databases (**SID**)

Outpatient State-Specific Databases



State Ambulatory Surgery &
Services Databases
(**SASD**)



State Emergency Department
Databases
(**SEDD**)

HCUP Nationwide Databases

Inpatient Nationwide Databases



National
Inpatient
Sample **(NIS)**



Kids' Inpatient
Database
(KID)



Nationwide
Readmissions
Database **(NRD)**

Outpatient Nationwide Databases



Nationwide
Emergency
Department Sample
(NEDS)



Nationwide
Ambulatory Surgery
Sample
(NASS)

Webinar Overview



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Nationwide Emergency Department Sample (NEDS)



- Generates national and regional estimates of emergency department utilization, access, and quality
- Derived from HCUP State databases:
 - ▶ State Emergency Department Databases (SEDD): Capture information on ED encounters that do not result in an admission
 - ▶ State Inpatient Databases (SID): Contain information on patients initially seen in the ED and then admitted to the same hospital



NEDS Sample Design

SEDD

Treat-and-Release ED Visits

SID

Admitted ED Visits

Sampling Strata

- U.S. Region
- Urban/Rural Location
- Teaching Status
- Ownership/Control
- Trauma center

*State **not** included

~ 84% of ED visits
are treat-and-
release

NEDS

~ 16% of ED visits
result in a
hospital stay

20% stratified sample of hospital-owned EDs

Weighting the NEDS to Produce National Estimates

- The NEDS must be weighted to produce national and regional estimates of ED visits



- The NEDS must be weighted to produce national and regional *hospital* estimates



What Data Elements Are Included in the NEDS?

Data Elements:

- Patient demographics (e.g., age, sex)
- Diagnoses & procedures
- Expected payment source
- Length of stay for the inpatient stay
- Patient location: urban/rural
- Discharge status
- Injury indicators
- Trauma level
- Total charges
 - Total charges for ED services (TOTCHG_ED)
 - Total charges for ED and inpatient services (TOTCHG_IP)



Data Elements New to the 2018 NEDS



- The 2018 NEDS is now available through the HCUP Central Distributor
 - ▶ The 2006-2017 NEDS are also available
- New data elements in 2018 include:
 - ▶ Indicators of mechanism and intent of the injury based on ICD-10-CM diagnoses
 - ▶ Clinical Classifications Software Refined (CCSR) for ICD-10-CM diagnoses

Clinical Classifications Software Refined (CCSR) for ICD-10-CM Diagnoses



- The CCSR for ICD-10-CM diagnoses is organized across 21 body systems, which generally follow the structure of the ICD-10-CM diagnosis chapters
- Diagnosis codes are no longer assigned to mutually exclusive categories
- However, a mutually exclusive categorization scheme is available for the first-listed diagnosis code

CCSR for ICD-10-CM Diagnoses in the 2018 NEDS



- The 2018 NEDS includes three types of data elements located in the Diagnosis and Procedure Groups File
 - ▶ I10_DXCCSR_DEFAULT_DX1: Default CCSR for principal/first-listed ICD-10-CM diagnosis
 - ▶ I10_DXCCSR_AAAnnn: Indication that at least one ICD-10-CM diagnosis on the record is included in the CCSR category AAAnnn
 - There are over 500 CCSR categories
 - ▶ I10_DXCCSR_VERSION: Version of CCSR for ICD-10-CM

The File Structure of the 2018 NEDS



- The 2018 NEDS contains 5 files:
 - ▶ Core File
 - Patient demographics, diagnoses, expected payer, disposition from the ED, etc.
 - ▶ Supplemental ED File
 - Information specific to the ED treatment (e.g., procedures)
 - ▶ Supplemental IP File
 - Information specific to the inpatient stay (e.g., MS-DRG, procedures, disposition from the inpatient stay)
 - ▶ Hospital Weights File
 - Hospital weights and attributes (e.g., level of trauma center, urban/rural designation)
 - ▶ Diagnosis and Procedure Groups File
 - CCSR for ICD-10-CM diagnoses

What Data Elements Are *Not* Included in the HCUP Databases?

The NEDS does not include:

- State identifiers
- Geographic information for the patient or hospital
 - ZIP Code, county, city
- Unmasked hospital identifiers
 - The hospital identifiers in the NEDS do not directly identify hospitals but allow users to identify records that are associated with the same hospital-owned ED
- Patient race



Total Charges in the NEDS

- Total charges for ED services (TOTCHG_ED)
 - ▶ Includes the total charges for ED visits that did not result in an inpatient admission (from the SEDD)
 - ▶ Includes the total charges for the ED visits that resulted in an inpatient admission (from the SID)
 - ▶ Not all States provide ED charge information, resulting in about 13% of NEDS records missing ED charges
- Total charges for ED and inpatient services (TOTCHG_IP)
 - ▶ Includes the total charges for the inpatient stay, including the ED charges (from the SID)

Trauma Level

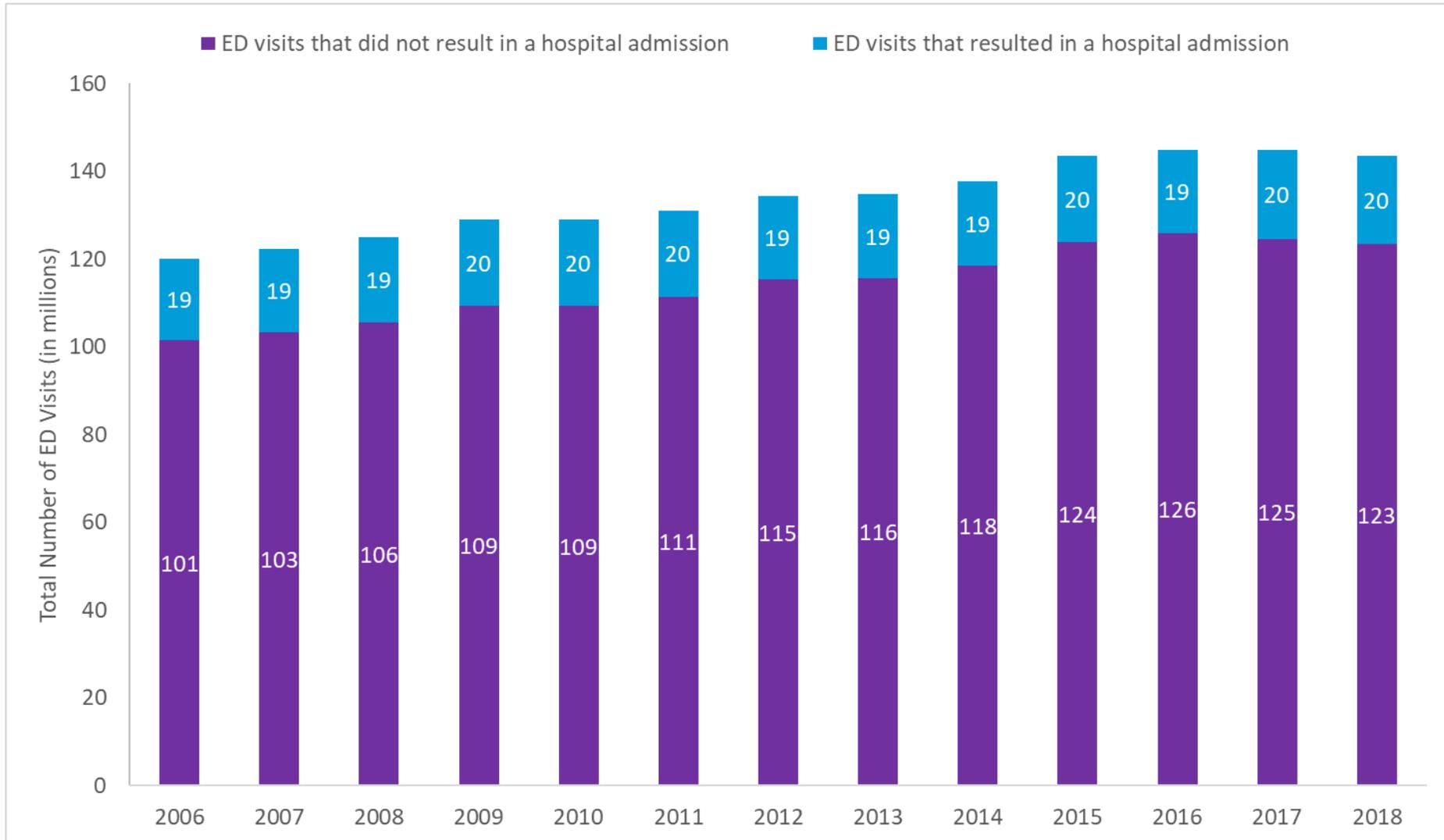
- The NEDS includes hospital trauma level information based on information from the Trauma Information Exchange Program (TIEP) database
- Trauma center levels in the NEDS are as follows:
 - ▶ Level I: Comprehensive resources; are able to care for the most severely injured; provide leadership in education and research
 - ▶ Level II: Comprehensive resources; are able to care for the most severely injured
 - ▶ Level III: Prompt assessment and resuscitation, emergency surgery and the ability to transfer to a Level I or II trauma center.

Summary of the 2018 NEDS

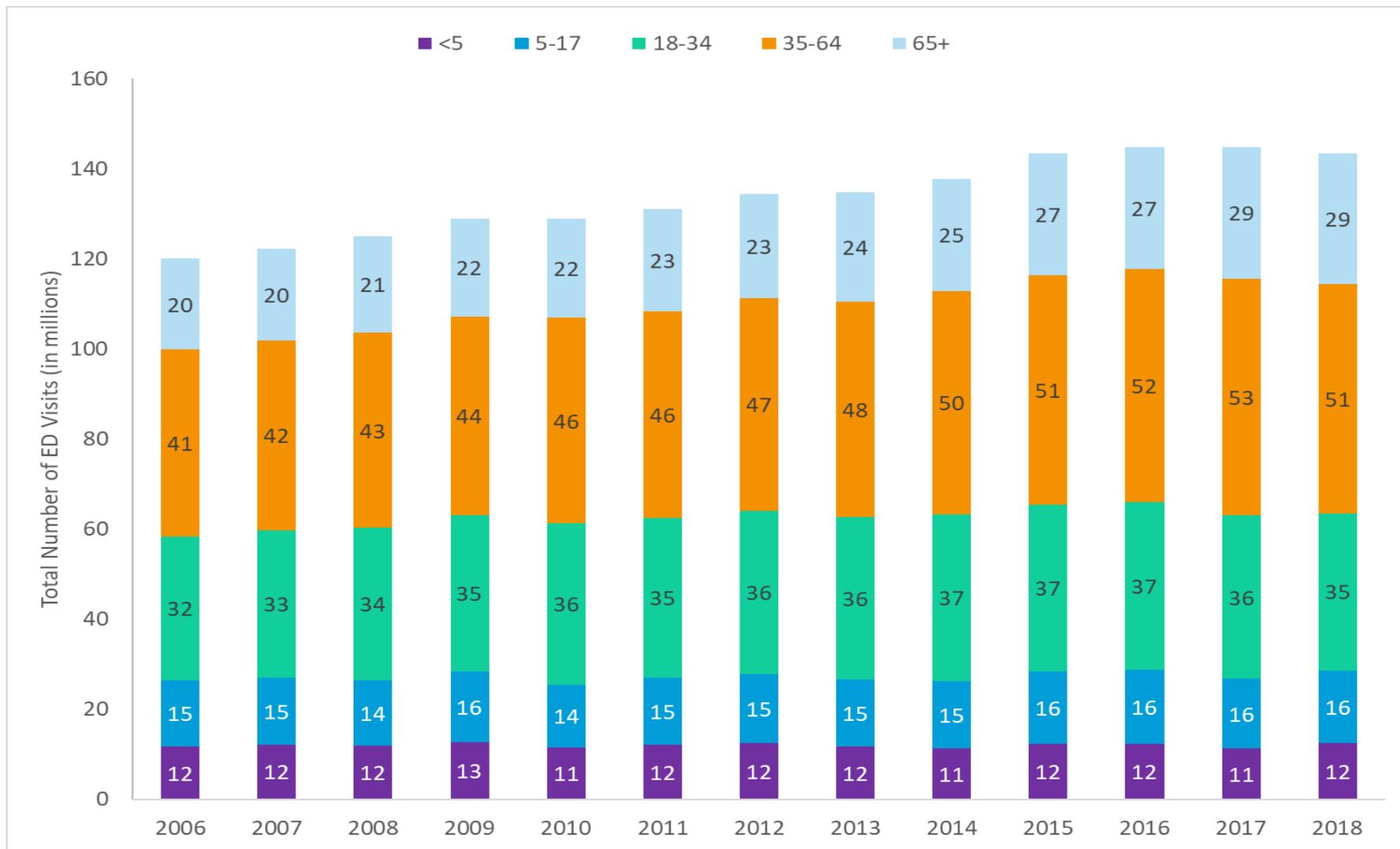


- Unweighted, the 2018 NEDS contains data for 35.8 million ED visits
 - ▶ Includes data from 36 States and the District of Columbia
 - These geographically dispersed States account for 82.8 percent of the total U.S. population and 82.2 percent of the all ED visits in the U.S.
 - ▶ The 20% sample includes 990 hospital-owned EDs
- Weighted, it represents 143 million ED visits at over 4,500 hospital-owned EDs in the United States

Trends in ED Visits Using the NEDS, 2006-2018



Trends in Overall ED Visits by Age, 2006-2018



Webinar Overview

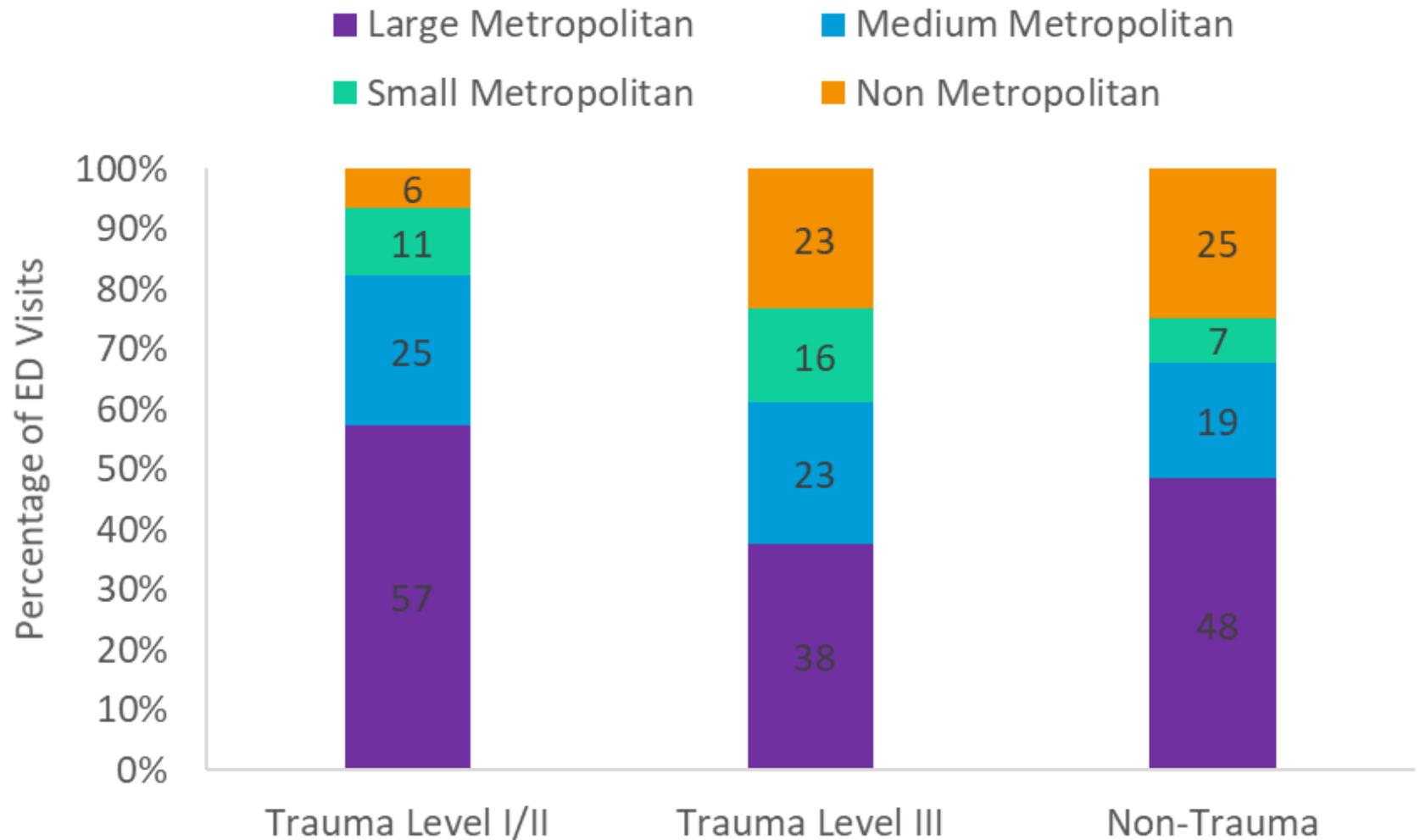
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Identify ED Visits Related to Injury in the NEDS

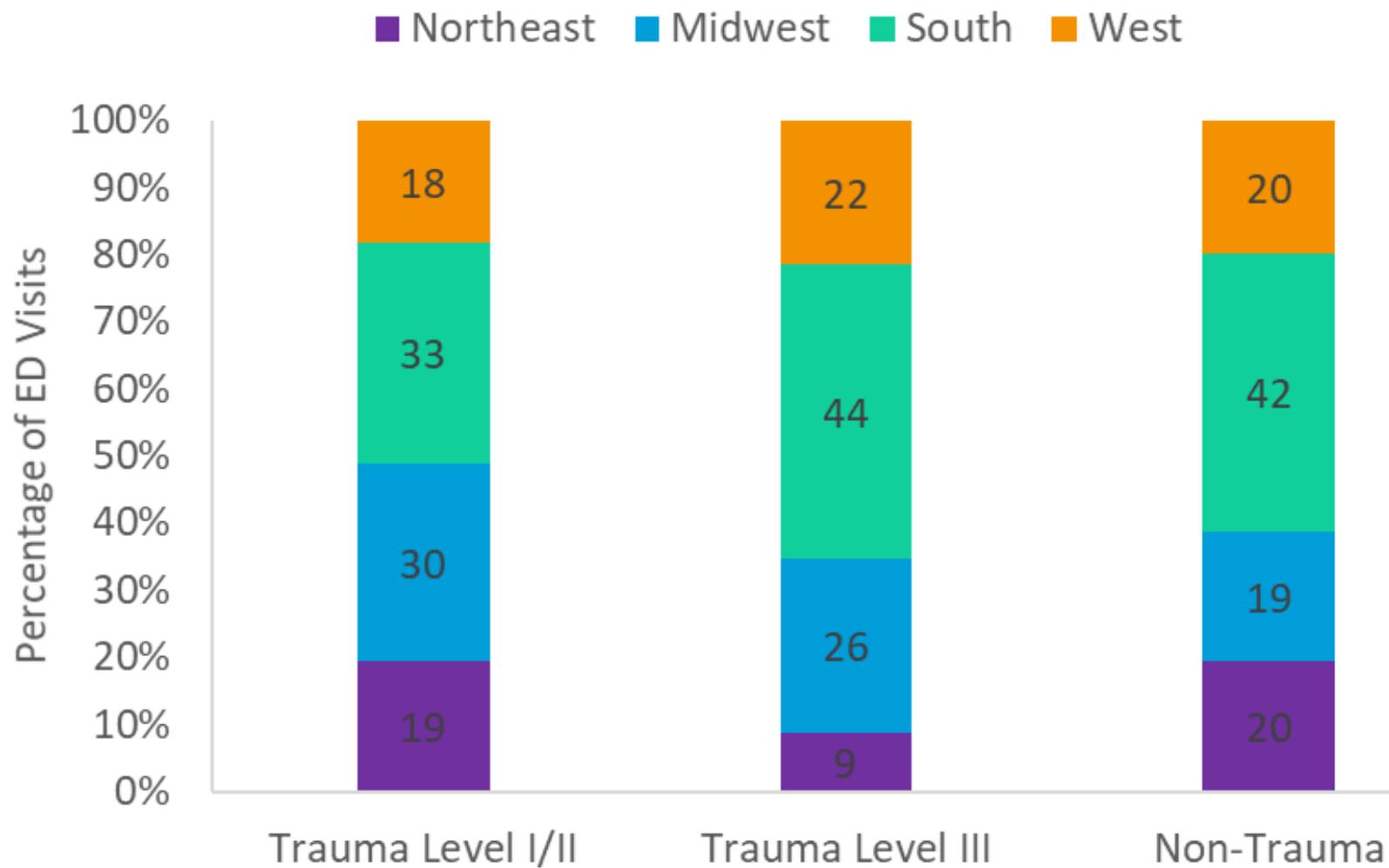


- Injury records identified by first-listed ICD-10-CM diagnosis
- Beginning in data year 2017, the NEDS includes two injury indicators for ICD-10-CM diagnoses:
 - ▶ I10_Injury
 - ▶ I10_Multinjury
- Beginning in data year 2018, the NEDS also includes 15 injury mechanism and intent indicators for ICD-10-CM diagnoses

ED Visits for All Injuries by Trauma Level and Patient Location, 2018



ED Visits for All Injuries by Trauma Level and Hospital Region, 2018

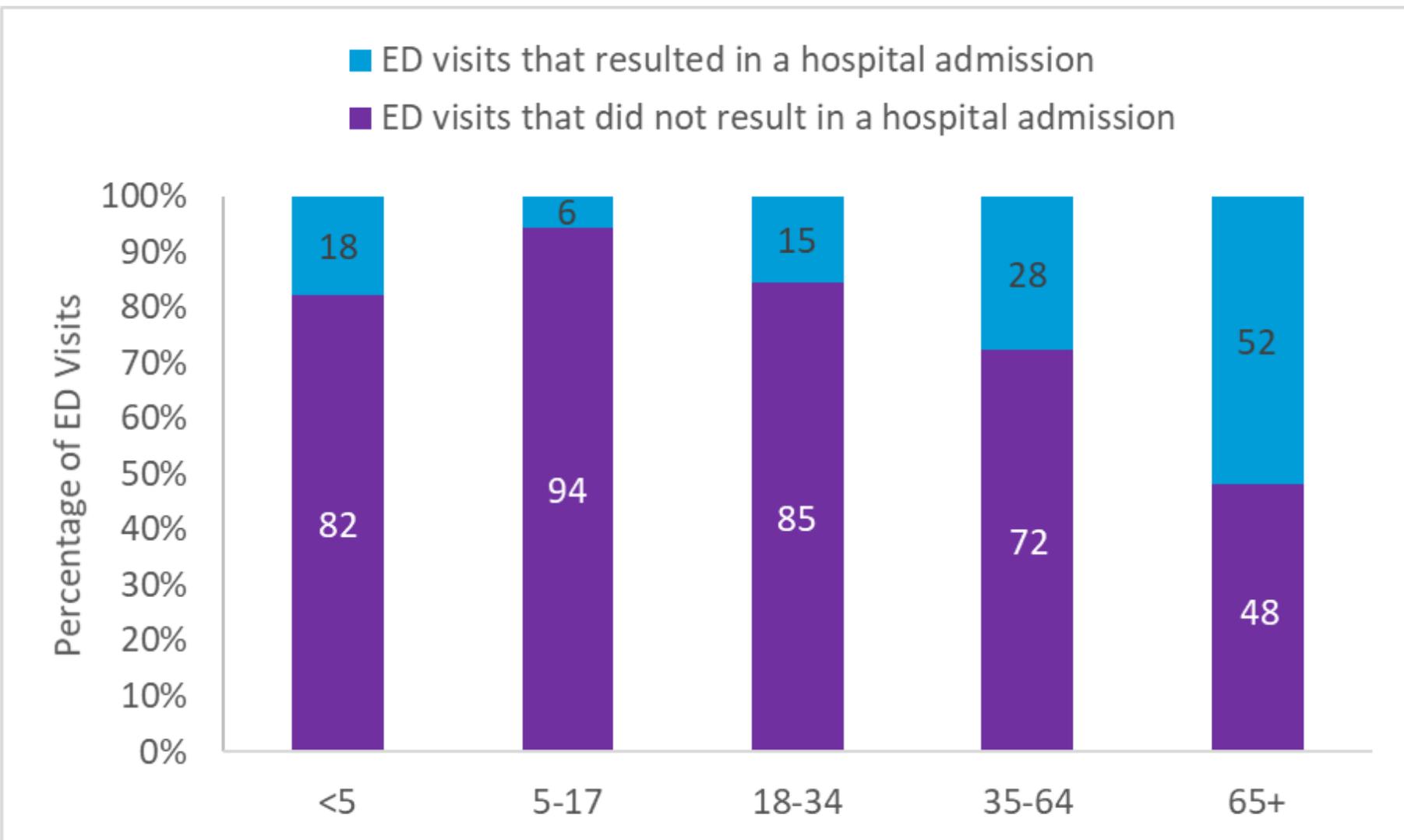


Identify Visits/Stays Related to Traumatic Brain Injury in the NEDS

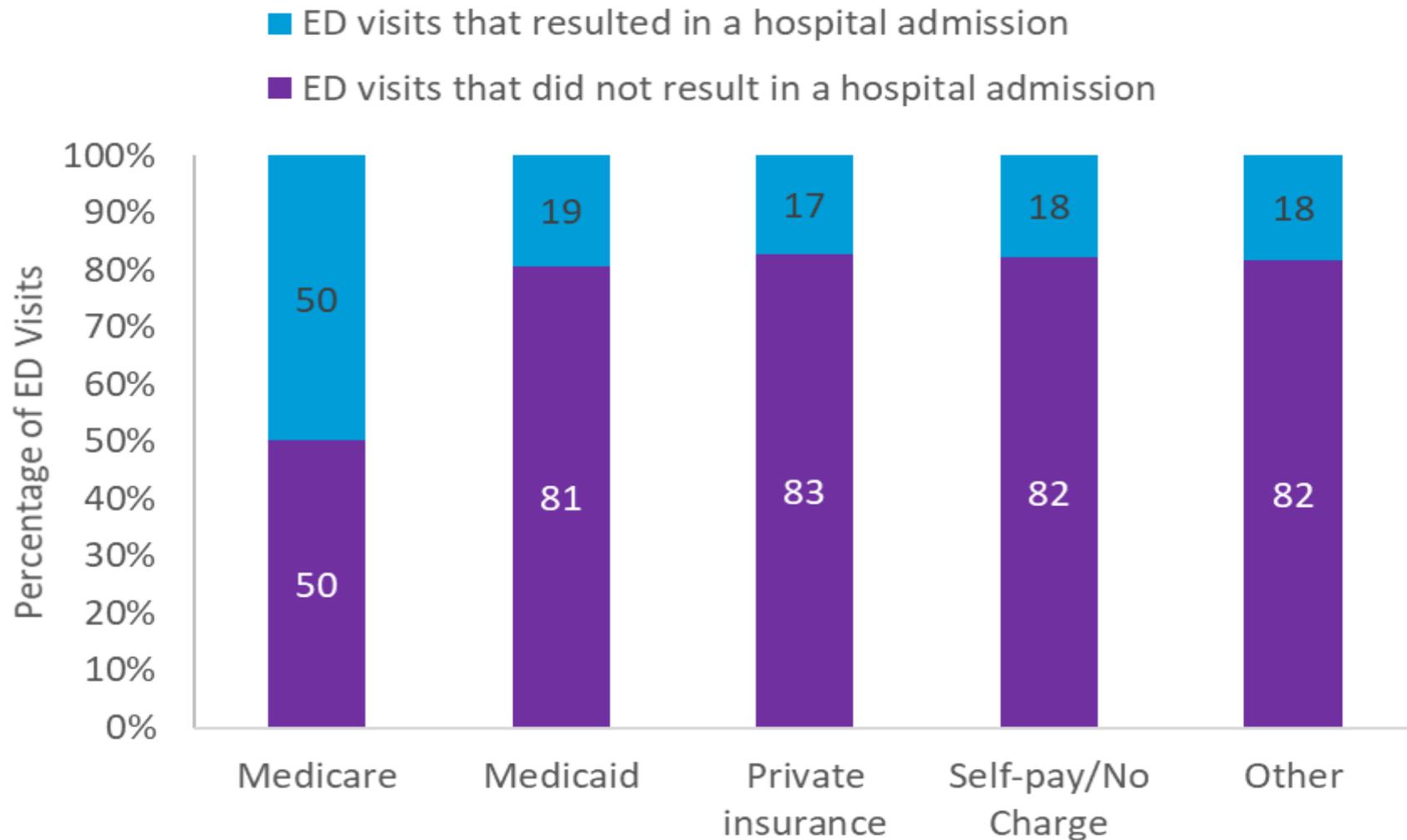


- Traumatic brain injury (TBI) was defined using the following CCSR categories:
 - ▶ INJ008: Traumatic brain injury; concussion, initial encounter
 - ▶ INJ045: Traumatic brain injury; concussion, subsequent encounter
- Identified ED visits that resulted in an inpatient admission and ED visits that did not result in an inpatient admission
 - ▶ Data element: HCUPFile

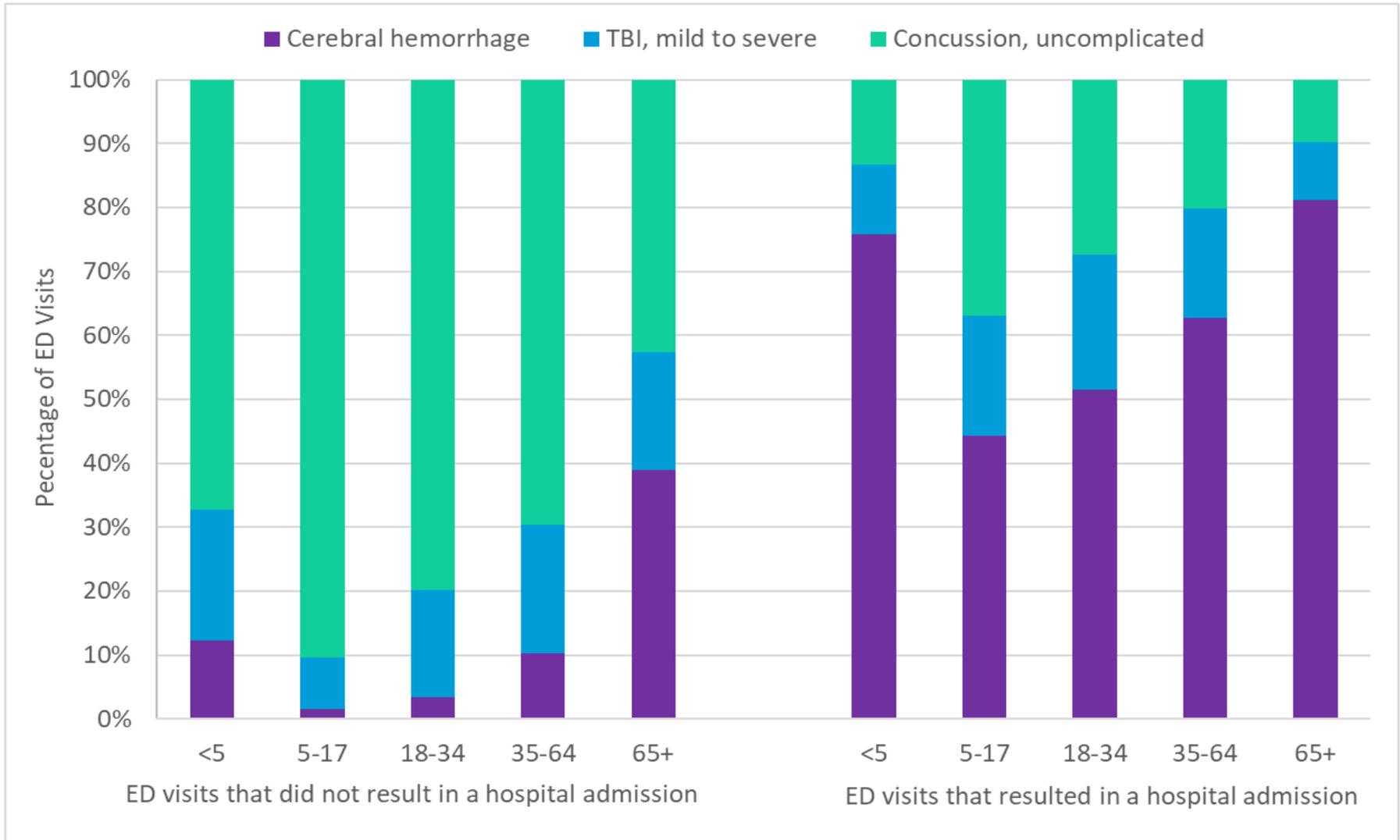
ED Visits for Acute TBI by Age, 2018



ED Visits for Acute TBI by Primary Expected Payer, 2018



TBI-related ED Visits by Head Injury Type, 2018



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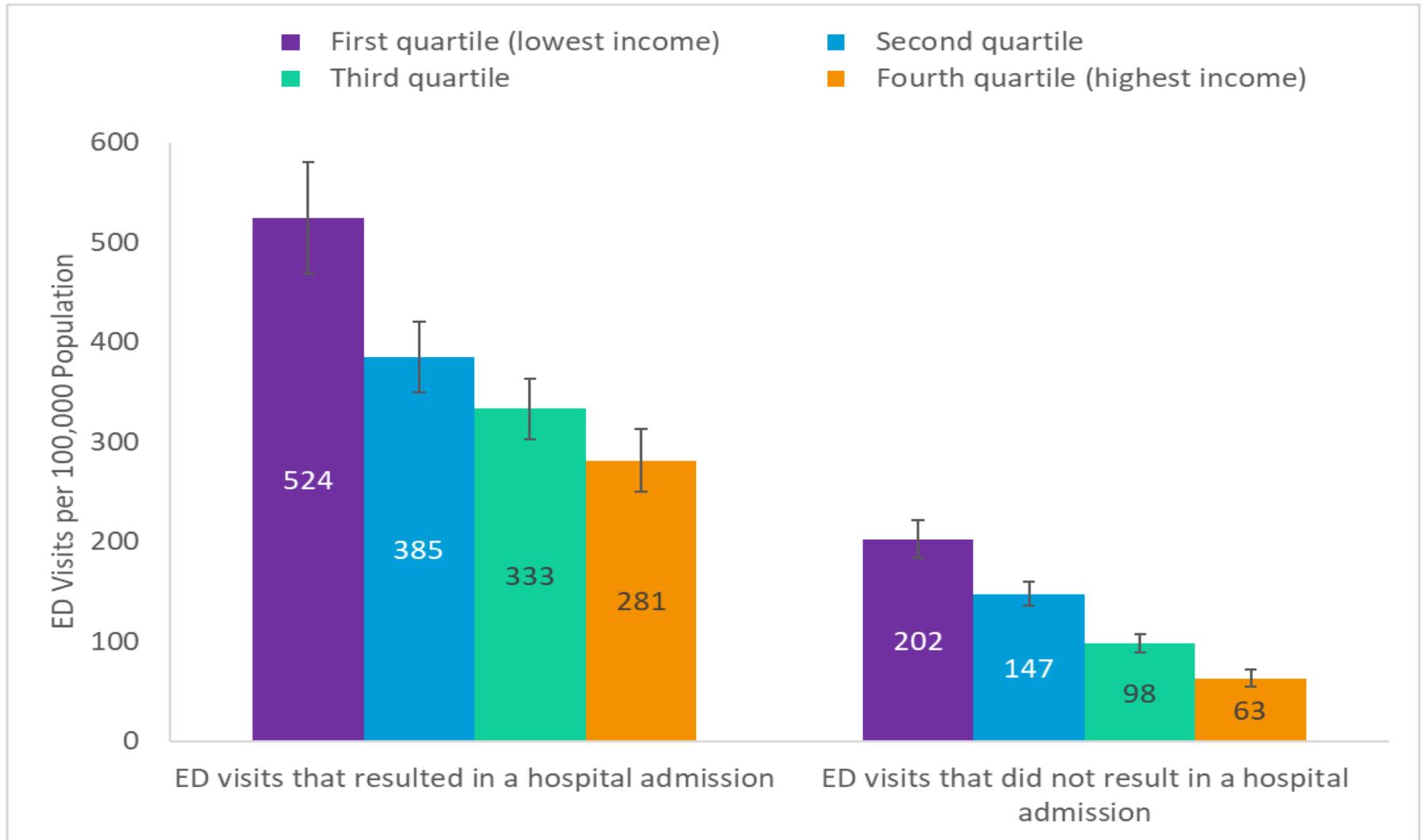
Define Heart Failure and Asthma Conditions

- Identified using the AHRQ Quality Indicators (QI)
 - ▶ Prevention Quality Indicators (PQI)
 - Population-based indicators that capture all cases of potentially preventable hospital visits that occur in a given population (in a community or region) either during a hospitalization or in a subsequent hospitalization.
 - ▶ Heart failure: PQI 08
 - ▶ Adult asthma: PQI 15

Heart Failure PQI 08

- Admissions with a principal diagnosis of heart failure per 100,000 population, ages 18 and older
 - ▶ Excludes cardiac procedure admissions, obstetric admissions, and transfers from other institutions.
- Numerator: Discharges, for patients ages 18 and older, with a principal ICD-10-CM diagnosis code of heart failure
- Denominator: Population ages 18 years and older

ED Visits for Heart Failure by Community Income, 2017



Calculating Variance in the NEDS



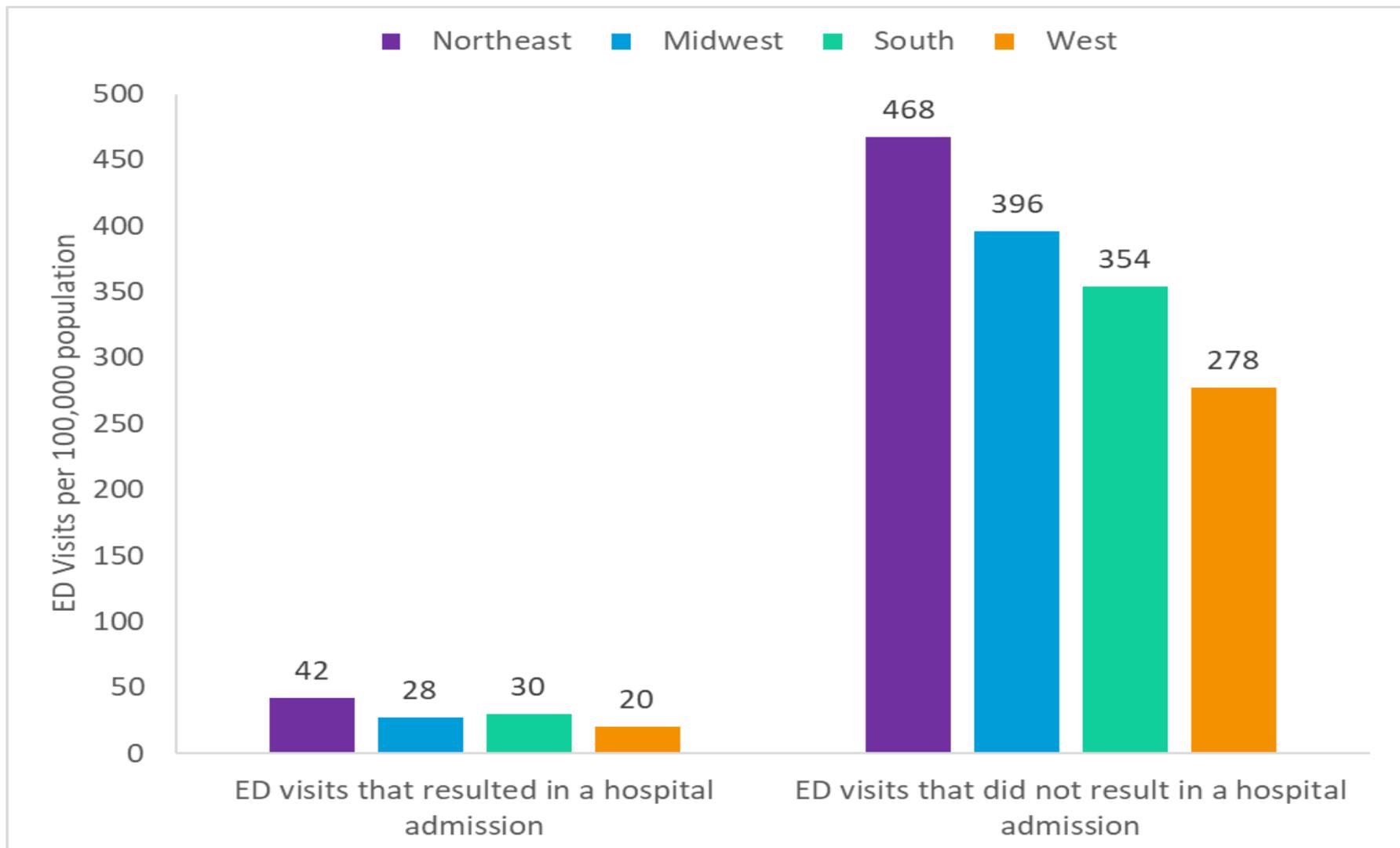
- Special consideration is needed when calculating estimates of variance
 - ▶ Need to use statistical software that can account for the sampling design of the NEDS
 - Stratified sample of hospital-owned EDs
 - Sampled data that needs to be weighted
 - Cluster of ED visits within EDs
- Users should reference the HCUP Methods Series Report, [Calculating Nationwide Inpatient Sample \(NIS\) Variances for 2011 and Earlier](#)

Asthma in Young Adults PQI 15

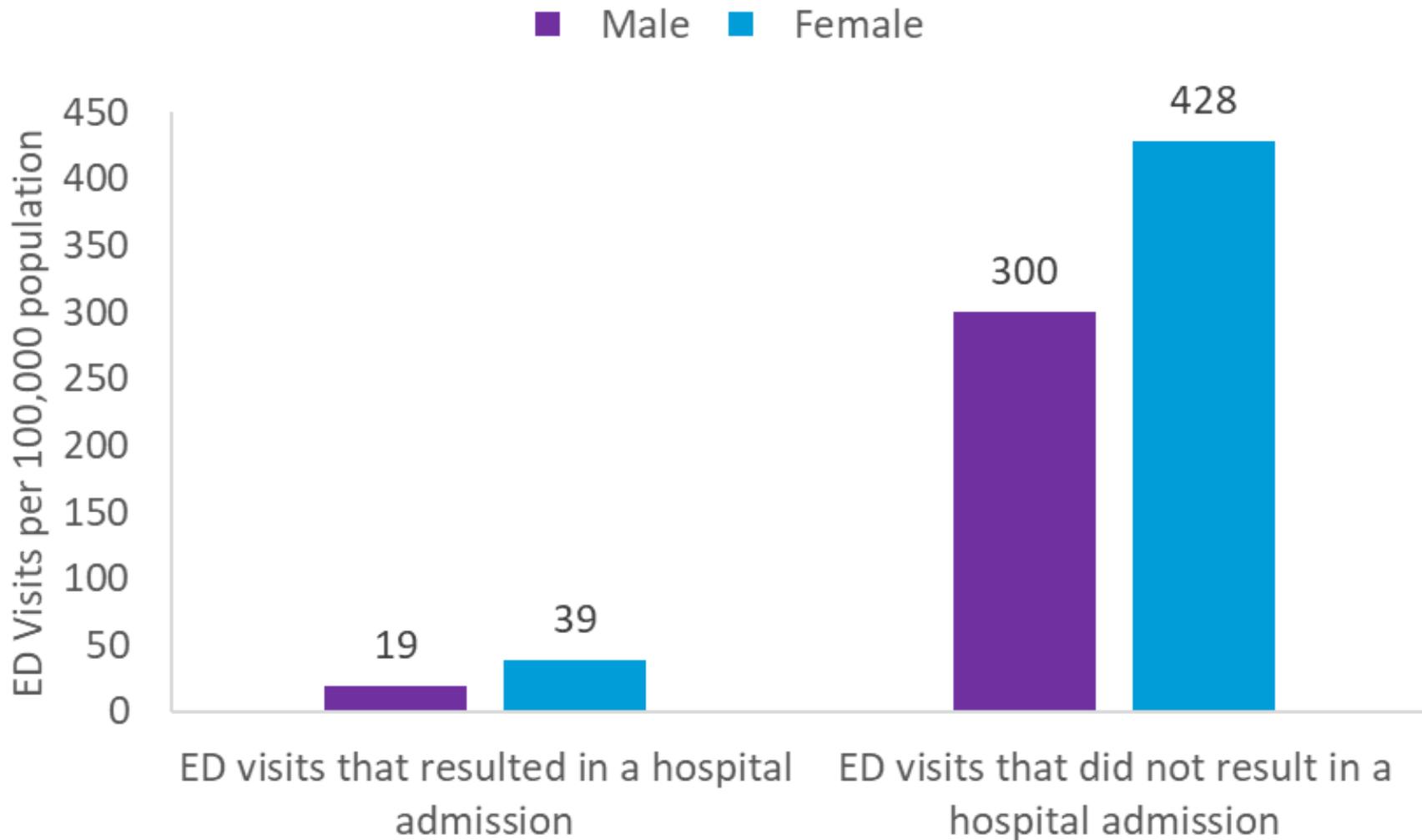


- Admissions with a principal diagnosis of asthma per 100,000 population, ages 18-39 years
 - ▶ Excludes admissions with an indication of cystic fibrosis or anomalies of the respiratory system, obstetric admissions, and transfers from other institutions
- Numerator: Discharges, for patients ages 18-39, with a principal ICD-10-CM diagnosis code for asthma
- Denominator: Population ages 18-39 years

ED Visits for Asthma in Young Adults by Hospital Region, 2017



ED Visits for Asthma in Young Adults by Sex, 2017



Webinar Overview



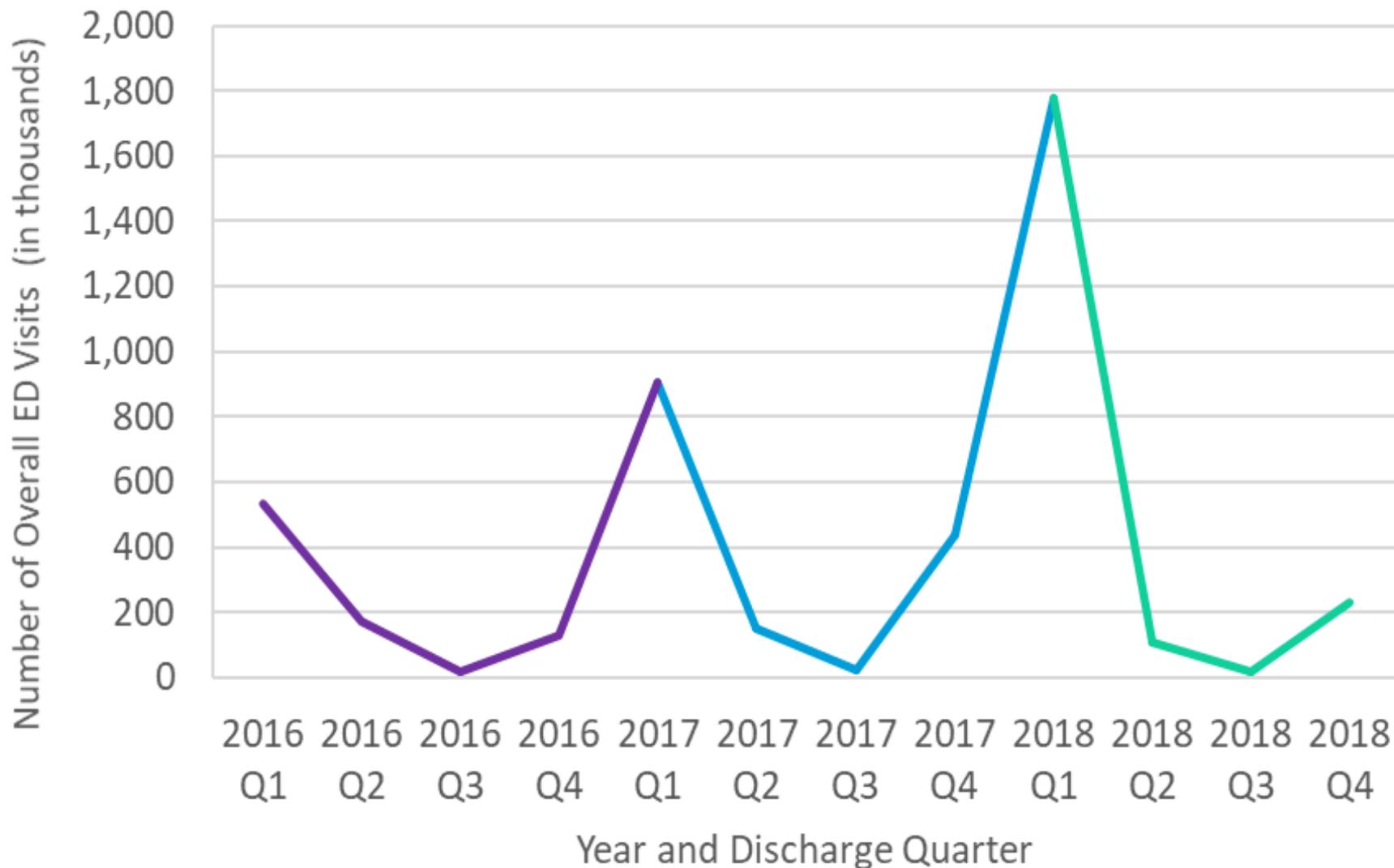
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Identify Seasonal Illnesses



- For this analysis, we looked at influenza-related ED visits by discharge quarter across three years
- Influenza-related illnesses were defined using all-listed ICD-10-CM diagnosis codes

Influenza-Related ED Visits by Year and Discharge Quarter, 2016-2018



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Statistics Using the NEDS Are Available on HCUPnet



- HCUPnet is a free online query system
- It allows users to generate tables of outcomes by diagnoses and procedures
- Statistics utilizing the NEDS from 2006 through 2016 are currently available
- Users can generate simple queries or can confirm results match runs using the full NEDS database

How Does HCUPnet Work?



- Step 1: What kind of statistics are you looking for?
- Step 2: Choose how you would like to analyze the data
- Step 3: Create your analysis
- Step 4: View and update your results in real time
- Step 5: View your results in detailed graphs and maps
- Step 6: Export your results for future use

How Does HCUPnet Work?

Analysis Setup (Steps 1 and 2)



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HCUPnet
Healthcare Cost and Utilization

Analysis Setup

Inpatient Emergency Department Ambulatory Surgery Community

Choose how you would like to analyze data.

Descriptive Statistics Trends Rank Order

Choose a year.

2016

Do you want data on a specific diagnosis or procedure?

Yes No

Choose how you want to classify diagnoses or procedures.

When a large number of diagnosis codes, procedure codes, or states are selected, queries may take a long time to process. To reduce processing time, select fewer codes and/or states.

Diagnoses--ICD-10-CM Codes (ICD10)

Results from the Influenza Query on HCUPnet

	All ED visits		Discharged from the ED		ED visits with admission to the same hospital	
	Number	Rate	Number	Rate	Number	Rate
	Total number of visits: N	Rate of Visits per 100,000 persons	Total number of visits: N	Rate of Visits per 100,000 persons	Total number of visits: N	Rate of Visits per 100,000 persons
All visits	686,435	212.4	630,332	195.1	56,103	17.4

HCUPnet Versus Full HCUP Databases

Capability	HCUPnet Can Produce...	HCUP Databases Can Produce...
Simple statistics	✓	✓
More complicated queries	X	✓
Sample size calculations	✓	✓
Trends analyses	✓	✓
Multivariate analyses	X	✓
Rank order of diagnoses and procedures	✓	✓
Z-test calculator for significance testing	✓	X
Validation of results obtained from the HCUP databases	✓	X

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Working with the NEDS: Checklist



Important items to remember when working with the NEDS	Available	Not available or not permitted
Unit of analysis	ED visit	Individual patient
Level of analysis	Nationwide estimates; Facility volume	State-level estimates; Physician-level estimates; Readmissions
Reportable level	Greater than 10	Less than or equal to 10; Ensure hospitals and individuals cannot be identified directly or indirectly

Important Aspects to Remember When Working with the NEDS



- There are differences in information collected on records for ED patients that are not admitted (SEDD records) and for patients admitted into the hospital directly from the ED (SID records)
- For patients who were directly admitted to the same hospital through the ED, it is not possible to identify whether a procedure was performed in the ED or as part of the inpatient stay
- Use the hospital weight to weight sampled hospitals to all community hospitals or the discharge weight to weight sampled discharges to the discharges from community hospitals

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The NEDS is Available for Purchase Through the Central Distributor



Purchase HCUP Data
 HCUP databases are available for purchase through the HCUP Central Distributor. This service is maintained by AHRQ through a Federal-State-Industry partnership.

HCUP Home **Databases** Tools & Software Reports Fast Stats News & Events Purchase HCUP Data Techni Assista

COVID-19 UPDATE: The HCUP Central Distributor is accepting and fulfilling orders as promptly as possible. However, on-site activities such as processing check payments and shipping HCUP State database orders may be delayed as we experience delays as we exercise appropriate caution.

We apologize for any inconvenience. Please contact HCUPDistributor@ahrq.gov with any questions.

Coming Soon: The **2018 National Inpatient Sample (NIS)** and the **Nationwide Emergency Department Sample (NEDS)** are expected to be released on Wednesday, 11/18/2020.

Requesting Data through the online HCUP Central Distributor

The HCUP Central Distributor is the entity that accepts, processes, and fulfills applications for the purchase and use of HCUP databases.



Go to the [online HCUP Central Distributor](#) to submit applications for Nationwide and State Databases, request complimentary supplemental files that augment information contained in the HCUP databases, submit data re-use and data sharing requests, and download your purchased Nationwide data.

Keep in Mind

- Information about all HCUP databases is found on the [HCUP-US Databases](#) page. Not all States make their data available through the HCUP Central Distributor, and not all data elements are available from every State. Details are provided under [Availability of HCUP Databases Across States and Years](#).
- The [Database Catalog](#) provides information on the year-by-year pricing and availability of HCUP databases and applicable supplemental files.

Database	Pricing	2018	2017	2016	2015	2014	2013	2012
NEDS	Students	\$200	\$200	\$150	\$150	\$150	\$75	\$75
NEDS	All Others	\$1,000	\$1,000	\$750	\$750	\$500	\$500	\$500

Purchase Data Online Through the HCUP Central Distributor



Step 1: Take Data Use Agreement (DUA) online training:

www.hcup-us.ahrq.gov/tech_assist/dua.jsp

Step 2: Login or register for an account:

www.hcup-us.ahrq.gov/tech_assist/centdist.jsp

Step 3: Create your profile under “My Account”

Step 4: Submit online order and complete further instructions listed on the “Thank You” page

Step 5: Download Nationwide Databases online or receive delivery of State Databases through the mail

For assistance, contact the HCUP Central Distributor:

- ▶ Phone: 866-556-HCUP (4287) toll free
- ▶ Email: HCUPDistributor@ahrq.gov

NEDS Documentation on the HCUP User Support Website



Agency for Healthcare
Research and Quality

Search



NEDS Database Documentation

The Nationwide Emergency Department Sample (NEDS) is a set of hospital-owned emergency department databases included in the HCUP. The databases are created by AHRQ through a Federal-State-Industry partnership.

- HCUP Home
- Databases**
- Tools & Software
- Reports
- Fast Stats
- News & Events
- Purchase HCUP Data
- Technical Assistance
- Data Innovations

NEDS Database Documentation

The Nationwide Emergency Department Sample (NEDS) produces national estimates about emergency department (ED) visits across the most distinctive features of the NEDS is its large sample size, which allows for analysis across hospital types and the study of

The links below provide detailed documentation for the NEDS, from a high-level Overview to all the detailed specifications, restrictions

Description of NEDS Database

- [NEDS Overview](#)
 - [HCUP Partners in the NEDS](#)
- Introduction to the NEDS
 - 2018 ([PDF](#) file, 825 KB; [HTML](#))
 - [Prior Years](#)
- [NEDS Related Reports](#)
 - [Prior Years](#)
- [Checklist for Working With the NEDS](#)

Restrictions on Use

- [HCUP Data Use Agreement Training](#)
- Data Use Agreement for the Nationwide Databases ([PDF](#) file, 85 KB; [HTML](#))
- [Requirements for Publishing with HCUP Data](#)

File Specifications and Load Programs

- [NEDS File Specifications](#)

The NEDS is Used in Many Applications



- Statistical Briefs
- Methods Series Reports
- Findings-At-A-Glance
- HCUP Publications

Reports
Healthcare Cost and Utilization Project (HCUP) reports include new findings, publications, research notes based on HCUP data, and technical reports about HCUP issues. These products are developed by the Agency for Healthcare Research and Quality (AHRQ) through a Federal-State-Industry partnership.

Search HCUP-US

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HCUP Infographics

HCUP Findings-At-A-Glance

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Research Spotlights
AHRQ Publications

ICD-10-CM/PCS Resources

HCUP Methods Series
Chronological Methods Series
Topical Methods Series

HCUP Database Reports
NIS Related Reports
KID Related Reports
NASS Related Reports
NEDS Related Reports
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SID Related Reports
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[HCUP Databases and ICD-10-CM/PCS Related Data Elements](#)
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Healthcare Cost and Utilization Project (HCUP)



H·CUP

HEALTHCARE COST AND UTILIZATION PROJECT



Questions/Comments?

**Time for Questions
and/or Comments**

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Appendix. Injury ICD-10-CM Diagnosis Codes



Injury records identified by first-listed diagnosis

ICD-10-CM

- All codes starting with S
- Codes starting with T07-T34
- Codes starting with T36 –T50 with a 6th character of 1, 2, 3, or 4 (Exceptions: T36.9, T37.9, T39.9, T41.4, T42.7, T43.9, T45.9, T47.9, and T49.9 with a 5th character of 1, 2, 3, or 4)
- Codes starting with T51-T65
- Codes starting with T66-T76
- Codes starting with T79
- Codes T84.01 and T84.02 (added May 2018)
- Codes O9A.2-O9A.5

All injuries are identified. Injuries severity CANNOT be identified under ICD-10-CM

Appendix. Types of Traumatic Brain Injury



- Types of traumatic brain injury were identified by the following values for the first through fifth digits of the ICD-10-CM codes in the TBI-related CCSR categories. If multiple codes were present, the following hierarchy was used to assign the record to only one category.
 - ▶ Cerebral hemorrhage
 - S064X: Epidural
 - S065X: Subdural
 - S066X: Subarachnoid
 - S0634, S0635, S0636: Intracerebral hemorrhage
 - ▶ TBI, mild to severe
 - S0631, S0632, or S0633: Contusion and laceration of cerebrum
 - S0637, S0638: Contusion, laceration, or hemorrhage of cerebellum or brainstem
 - S062X: Diffuse traumatic brain injury
 - S0630: Focal traumatic brain injury
 - S0681 or S0682: Injury of blood vessels of head or carotid artery
 - S061X: Traumatic cerebral edema
 - S0689 or S069X: Other intracranial injury
 - ▶ Concussion, uncomplicated
 - S060X: Concussion

Appendix. Heart Failure ICD-10-CM Diagnosis Codes



- AHRQ QI™ ICD-10-CM/PCS Specification v2020: PQI 08 Heart Failure Admission Rate

▶ www.qualityindicators.ahrq.gov

ICD-10-CM/PCS Code	Description
I0981	Rheumatic heart failure
I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure
I110	Hypertensive heart disease with heart failure
I5042	Chronic combined systolic (congestive) and diastolic (congestive) heart failure
I130	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure
I132	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease
I50810	Right heart failure, unspecified
I501	Left ventricular failure, unspecified
I50811	Acute right heart failure
I5020	Unspecified systolic (congestive) heart failure
I50812	Chronic right heart failure
I5021	Acute systolic (congestive) heart failure
I50813	Acute on chronic right heart failure
I5022	Chronic systolic (congestive) heart failure
I50814	Right heart failure due to left heart failure
I5023	Acute on chronic systolic (congestive) heart failure
I5082	Biventricular heart failure
I5030	Unspecified diastolic (congestive) heart failure
I5083	High output heart failure
I5031	Acute diastolic (congestive) heart failure
I5084	End stage heart failure
I5032	Chronic diastolic (congestive) heart failure
I5089	Other heart failure
I5033	Acute on chronic diastolic (congestive) heart failure
I509	Heart failure, unspecified
I5040	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure

Appendix. Asthma ICD-10-CM Diagnosis Codes



- AHRQ QI™ ICD-10-CM/PCS Specification v2020: PQI 15 Asthma in Younger Adults Admission Rate
 - ▶ www.qualityindicators.ahrq.gov

ICD-10-CM/PCS Code	Description
J4521	Mild intermittent asthma with (acute) exacerbation
J4552	Severe persistent asthma with status asthmaticus
J4522	Mild intermittent asthma with status asthmaticus
J45901	Unspecified asthma with (acute) exacerbation
J4531	Mild persistent asthma with (acute) exacerbation
J45902	Unspecified asthma with status asthmaticus
J4532	Mild persistent asthma with status asthmaticus
J45990	Exercise induced bronchospasm
J4541	Moderate persistent asthma with (acute) exacerbation
J45991	Cough variant asthma
J4542	Moderate persistent asthma with status asthmaticus
J45998	Other asthma
J4551	Severe persistent asthma with (acute) exacerbation

Appendix. Influenza ICD-10-CM Diagnosis Codes



ICD-10-CM code	Description
J09.X1	Influenza due to identified novel influenza A virus with pneumonia
J09.X2	Influenza due to identified novel influenza A virus with other respiratory manifestations
J09.X3	Influenza due to identified novel influenza A virus with gastrointestinal manifestations
J09.X9	Influenza due to identified novel influenza A virus with other manifestations
J10.00	Influenza due to other identified influenza virus with unspecified type of pneumonia
J10.01	Influenza due to other identified influenza virus with the same other identified influenza virus pneumonia
J10.08	Influenza due to other identified influenza virus with other specified pneumonia
J10.1	Influenza due to other identified influenza virus with other respiratory manifestations
J10.2	Influenza due to other identified influenza virus with gastrointestinal manifestations
J10.81	Influenza due to other identified influenza virus with encephalopathy
J10.82	Influenza due to other identified influenza virus with myocarditis
J10.83	Influenza due to other identified influenza virus with otitis media
J10.89	Influenza due to other identified influenza virus with other manifestations
J11.00	Influenza due to unidentified influenza virus with unspecified type of pneumonia
J11.08	Influenza due to unidentified influenza virus with specified pneumonia
J11.1	Influenza due to unidentified influenza virus with other respiratory manifestations
J11.2	Influenza due to unidentified influenza virus with gastrointestinal manifestations
J11.81	Influenza due to unidentified influenza virus with encephalopathy
J11.82	Influenza due to unidentified influenza virus with myocarditis
J11.83	Influenza due to unidentified influenza virus with otitis media
J11.89	Influenza due to unidentified influenza virus with other manifestations