



**2015 HEALTHCARE COST AND UTILIZATION PROJECT (HCUP)
NATIONWIDE EMERGENCY DEPARTMENT SAMPLE: CHANGE IN
STRUCTURE AND DATA ELEMENTS CAUSED BY TRANSITION TO
ICD-10-CM/PCS**

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INTRODUCTION

This document provides an overview of how the Healthcare Cost and Utilization Project (HCUP) 2015 Nationwide Emergency Department Sample (NEDS) has changed in file structure as a result of the introduction of ICD-10-CM/PCS.¹ On October 1, 2015 (the beginning of the fiscal year 2016), the United States transitioned from using ICD-9-CM to ICD-10-CM/PCS code sets for reporting clinical diagnoses and inpatient procedures. ICD-10-CM/PCS consists of two parts:

- ICD-10-CM: diagnosis coding on inpatient and outpatient data
- ICD-10-PCS: procedure coding on inpatient data.

The NEDS was designed to produce national and regional estimates about emergency department (ED) visits across the country. Information includes geographic characteristics, hospital characteristics, patient characteristics, and the nature of visits (e.g., common reasons for ED visits, acute and chronic conditions, and injuries). The NEDS was constructed using the HCUP State Emergency Department Databases (SEDD) and the State Inpatient Databases (SID). The SEDD capture discharge information on ED visits that do not result in an admission (i.e., treat-and-release visits and transfers to another hospital). The SID contain information on patients initially seen in the emergency room and then admitted to the same hospital. The NEDS data files are annual, calendar-year files. The introduction of ICD-10-CM/PCS on October 1 means that the calendar year 2015 NEDS includes a combination of codes:

- Nine months of the calendar year data with ICD-9-CM codes (January 1, 2015 to September 30, 2015)
- Three months of calendar year data with ICD-10-CM/PCS codes (October 1, 2015 to December 31, 2015).

To alert users to this change in the ICD coding scheme, the file structure of the 2015 NEDS differs from the annual files for other data years. In the 2015 NEDS, the first three quarters of data (with ICD-9-CM codes) are stored separately from the fourth quarter of data (with ICD-10-CM/PCS codes). In addition, the names of diagnosis- and procedure-related data elements under ICD-10-CM/PCS have been changed to identify the coding scheme. **Data elements based on the HCUP Tools that are derived from ICD-10-CM/PCS codes are not included in the fourth quarter data, but a beta version of the programs to assign the HCUP Tools are available for download on the [HCUP Tools & Software](#) section of the HCUP-US Web site.**

This document outlines the revised file structure of the HCUP NEDS in 2015, describes the changes to diagnosis- and procedure-related data elements under ICD-10-CM/PCS, and

¹ ICD-9-CM: International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM/PCS: International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System

provides resources to aid HCUP data users in using these files and data elements based on ICD-9-CM and ICD-10-CM/PCS codes.

REVISED FILE STRUCTURE OF THE 2015 NATIONWIDE READMISSIONS DATABASE

Because of the transition to ICD-10-CM/PCS on October 1, 2015 (the beginning of the fiscal year 2016), the file structure and the location of many of the data elements within the files that comprise the 2015 NEDS have changed.

- The **Core File** continues to be a single file containing commonly used data elements (e.g., age, expected primary payer, total charges for ED services). The difference in 2015 is that diagnoses and procedures, and related data elements have been moved out of the Core File and into the Supplemental ED and Inpatient Files.
- The **Supplemental ED File** has been split into two files.
 - Nine months of the calendar year 2015 data (ED visits discharged from January 1, 2015 – September 30, 2015) are in the Supplemental ED File labeled Q1–Q3.
 - The Q1–Q3 file includes *ICD-9-CM diagnosis codes* and related data elements such as the injury flags, Clinical Classification Software (CCS) categories, and other data elements derived from AHRQ software tools.
 - The Q1–Q3 file includes Healthcare Common Procedure Coding System (HCPCS) Current Procedural Terminology (*CPT® procedure codes*) and related data elements. The inclusion of ICD-9-CM procedure codes in the Supplemental ED file was discontinued in 2015 because that coding scheme is rarely used to report procedures on outpatient records.
 - Three months of calendar year 2015 data (ED visits discharged from October 1, 2015 –December 31, 2015) are in the Supplemental ED File labeled Q4.
 - The Q4 file includes the *ICD-10-CM diagnosis codes* in data elements with the prefix “I10_”. Injury flags and data elements derived from the AHRQ software tools are not available in the Q4 file because the ICD-10-CM versions are still under development.
 - The Q4 file includes *CPT procedure codes* and related data elements.
- The **Supplemental Inpatient File** has been split into two files.
 - Nine months of the calendar year 2015 data (ED admissions from January 1, 2015 – September 30, 2015) are in the Supplemental Inpatient File labeled Q1–Q3.
 - The Q1–Q3 file includes *ICD-9-CM diagnosis and procedure codes*, and related data elements such as the injury flags, CCS categories, and other data elements derived from AHRQ software tools.
 - Three months of calendar year 2015 data (ED admissions from October 1, 2015 – December 31, 2015) are in the Supplemental Inpatient File labeled Q4.
 - The Q4 file includes the *ICD-10-CM diagnosis and ICD-10-PCS procedure codes* in data elements with the prefix “I10_”. Injury flags and

data elements derived from the AHRQ software tools are not available in the Q4 file because the ICD-10-CM versions are still under development.

- The **Hospital Weights file** continues to have hospital characteristics.

DATA ELEMENTS IN THE 2015 NEDS RELATED TO ICD-9-CM AND ICD-10-CM/PCS CODES

Almost all of the diagnosis- and procedure-related data elements that are based on ICD-10-CM/PCS data have different data element names than the ICD-9-CM version. Exceptions include data elements that are based on third-party proprietary software such as Diagnosis-Related Groups (DRGs).

No data elements related to diagnosis and procedure codes are included in the 2015 NEDS Core or Hospital Files. Diagnoses and procedures, and related data elements have been moved out of these files and into the Supplemental ED and Inpatient Files. A list of data element names based on the ICD-9-CM and ICD-10-CM/PCS coding systems and their file location in the 2015 NEDS are included in the following tables:

- Table 1 includes all data elements based on *diagnosis codes* in the Supplemental ED File. Procedure-related data elements are not included in this table because they are based solely on CPT codes and, therefore, are not impacted by the transition to ICD-10-PCS.
- Table 2 includes all data elements based on *diagnosis and procedure codes* in the Supplemental Inpatient File.

Complete documentation of the 2015 NEDS can be found on the [HCUP User Support \(HCUP-US\) Web site](#).

Table 1. Names of Data Elements Based on Diagnosis Codes in the Supplemental ED Files, Q1–Q3 with ICD-9-CM Codes and Q4 with ICD-10-CM Codes

Please note that this table does not include information on procedure codes. Procedure-related data elements in the Supplemental ED file are based solely on CPT codes and, therefore, are not impacted by the transition to ICD-10-PCS.

HCUP Data Element Description ^a	ICD-9-CM Data Element Included in the Q1–Q3 Supplemental ED File	ICD-10-CM Data Element Included in the Q4 Supplemental ED File
Data Elements based on Diagnoses Only		
Diagnoses	DX1-DX30	I10_DX1-I10_DX30
Number of diagnoses	NDX	I10_NDX
CCS for diagnoses	DXCCS1-DXCCS30	Not available ^b
Chronic flag	CHRON1-CHRON30	Not available ^b
External cause diagnoses	ECODE1-ECODE4 (External cause of injury codes)	I10_ECAUSE1- I10_ECAUSE4 (External cause of morbidity codes)
Number of E codes	NECODE	I10_NECause
CCS for external cause	E_CCS1-E_CCS4	Not available ^b
Injury diagnosis	INJURY	Not available ^c
Multiple injuries	MULTINJURY	Not available ^c
Injury severity	INJURY_SEVERITY	Not available ^c
Intent of injury	INTENT_SELF_HARM, INTENT_UNINTENTIONAL, INTENT_ASSAULT	Not available ^c
Mechanism for injury	INJURY_CUT, INJURY_DROWN, INJURY_FALL, INJURY_FIRE, INJURY_FIREARM, INJURY_MACHINERY, INJURY_MVT, INJURY_NATURE, INJURY_POISON, INJURY_STRUCK, INJURY_SUFFOCATION	Not available ^c

Abbreviations: CCS, Clinical Classifications Software; HCUP, Healthcare Cost and Utilization Project; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

^a Detailed descriptions of the HCUP data elements are available on the HCUP User Support Web site under [NEDS database documentation](#).

^b Data elements derived from HCUP software tools are not available on the Q4 file because the ICD-10-CM/PCS versions are under development. If an ICD-10-CM/PCS version of AHRQ software tools are needed, please refer to the [HCUP Tools and Software](#) section of the HCUP-US Web site.

^c HCUP identified injuries based on a ICD-9-CM scheme developed by the *State and Territorial Injury Prevention Directors Association (STIPDA)*. The ICD-10-CM version was not finalized at the time the 2015 NEDS was constructed.

Table 2. Names of Data Elements Based on Diagnosis and Procedure Codes in the Supplemental Inpatient Files, Q1–Q3 with ICD-9-CM Codes and Q4 with ICD-10-CM/PCS Codes

HCUP Data Element Description^a	ICD-9-CM Data Element Included in the Q1–Q3 Supplemental Inpatient File	ICD-10-CM/PCS Data Element Included in the Q4 Supplemental Inpatient File
Data Elements based on Diagnoses Only		
Diagnoses	DX1-DX30	I10_DX1-I10_DX30
Number of diagnoses	NDX	I10_NDX
CCS for diagnoses	DXCCS1-DXCCS30	Not available ^b
Chronic flag	CHRON1-CHRON30	Not available ^b
External cause diagnoses	ECODE1-ECODE4 (External cause of injury codes)	I10_ECAUSE1- I10_ECAUSE4 (External cause of morbidity codes)
Number of E codes	NECODE	I10_NECause
CCS for external cause	E_CCS1-E_CCS4	Not available ^b
Injury diagnosis	INJURY	Not available ^c
Multiple injuries	MULTINJURY	Not available ^c
Injury severity	INJURY_SEVERITY	Not available ^c
Intent of injury	INTENT_SELF_HARM, INTENT_UNINTENTIONAL, INTENT_ASSAULT	Not available ^c
Mechanism for injury	INJURY_CUT, INJURY_DROWN, INJURY_FALL, INJURY_FIRE, INJURY_FIREARM, INJURY_MACHINERY, INJURY_MVT, INJURY_NATURE, INJURY_POISON, INJURY_STRUCK, INJURY_SUFFOCATION	Not available ^c
Data Elements based on Procedures Only		
Procedure vector	PR_IP1-PR_IP9	I10_PR1-I10_PR9
Number of procedures	NPR_IP	I10_NPR
CCS for procedures	PRCCS_IP1-PRCCS_IP9	Not available ^b
Procedure class	PCLASS_IP1-PCLASS_IP9	Not available ^b
Data Elements based on Both Diagnoses and Procedures		
DRG version	DRGVER	DRGVER
DRG in use on discharge date	DRG	DRG

HCUP Data Element Description ^a	ICD-9-CM Data Element Included in the Q1–Q3 Supplemental Inpatient File	ICD-10-CM/PCS Data Element Included in the Q4 Supplemental Inpatient File
DRG in use on discharge date, calculated without POA	DRG_NoPOA	DRG_NoPOA
MDC in effect on discharge date	MDC	MDC
MDC in use on discharge date, calculated without POA	MDC_NoPOA	MDC_NoPOA

Abbreviations: CCS, Clinical Classifications Software; DRG, diagnosis-related group; HCUP, Healthcare Cost and Utilization Project; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification; MDC, major diagnostic category.

^a Detailed descriptions of the HCUP data elements are available on the HCUP User Support Web site under [NEDS database documentation](#).

^b Data elements derived from HCUP software tools are not available on the Q4 file because the ICD-10-CM/PCS versions are under development. If an ICD-10-CM/PCS version of AHRQ software tools are needed, please refer to the [HCUP Tools and Software](#) section of the HCUP-US Web site.

^c HCUP identified injuries based on a ICD-9-CM scheme developed by the *State and Territorial Injury Prevention Directors Association (STIPDA)*. The ICD-10-CM version was not finalized at the time the 2015 NEDS was constructed.

RESOURCES FOR USING ADMINISTRATIVE DATA WITH ICD-10-CM/PCS DIAGNOSIS AND PROCEDURE CODES

The HCUP-US Web site has a section on [ICD-10-CM/PCS Resources](#) that summarizes key issues for researchers using HCUP and other administrative databases that include ICD-9-CM and ICD-10-CM/PCS coding.

If you are unfamiliar with ICD-10-CM/PCS coding, please refer to the following two documents available on the Web page:

- [A brief introduction to the ICD-10-CM/PCS coding system.](#)
- HCUP Methods Series Report on the [Impact of ICD-10-CM/PCS on Research Using Administrative Databases.](#)

If you are considering using the NEDS to examine clinical conditions that will be defined using both ICD-9-CM and ICD-10-CM diagnosis coding, please refer to the following important resource:

- [HCUP recommendations for reporting trends using ICD-9-CM and ICD-10-CM/PCS data.](#)

These recommendations apply to calendar year 2015 data (which includes both ICD-9-CM and ICD-10-CM/PCS codes), as well as reporting trends that span the October 1, 2015 transition date (before and after the introduction of ICD10-CM/PCS).

The HCUP [ICD-10-CM/PCS Resources](#) Web page also includes the following short reports with new documents added periodically:

- Examination of trends between ICD-9-CM and ICD-10-CM/PCS for key data elements such as number of diagnoses/procedures and Clinical Classification Software categories.
- Examination of coding for opioid use under ICD-9-CM and ICD-10-CM/PCS.
- Other Federal and State Web resources with information on ICD-10-CM/PCS.