HCUP Method Series

Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the 2019 National Healthcare Quality and Disparities Report (QDR)

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INTRODUCTION

The Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QIs) were applied to the Healthcare Cost and Utilization Project (HCUP) hospital discharge data for selected measures in the National Healthcare Quality and Disparities Report (NHQDR). The report measures and tracks trends in quality and disparities in terms of patient safety, person-centered care, care coordination, effective treatment, healthy living, and care affordability — and access to health care. A focus on priority populations summarizes quality and disparities in care for populations at elevated risk for receiving poor health care, which includes HCUP-based measures related to racial, ethnic, and socioeconomic factors for priority populations, including changes over time and across the urban-rural continuum. The NHQDR provides a comprehensive overview of the quality of health care received by the general population and disparities in care experienced by different racial, ethnic, and socioeconomic groups.

This document describes the preparation of the 2017 HCUP data for the 2019 NHQDR, the steps taken to apply the AHRQ QIs to the HCUP data, and other analyses based on HCUP data that are not specific to the QIs but are developed for use in the NHQDR.

AHRQ QUALITY INDICATORS

The AHRQ QIs are measures of quality associated with processes of care that occur in an outpatient or an inpatient setting. The QIs rely solely on hospital inpatient administrative data and, for this reason, are screens for examining quality that may indicate the need for more in-depth studies. The AHRQ QIs include four sets of measures:

- Prevention Quality Indicators (PQIs) — or ambulatory care sensitive conditions — identify hospital admissions that evidence suggests could have been avoided, at least in part, through high-quality outpatient care (AHRQ, 2019).

- Inpatient Quality Indicators (IQIs) reflect quality of care inside hospitals and include measures of utilization of procedures for which there are questions of overuse, underuse, or misuse (AHRQ, 2019).

- Patient Safety Indicators (PSIs) reflect quality of care inside hospitals, by focusing on surgical complications and other iatrogenic events (AHRQ, 2019).

- Pediatric Quality Indicators (PDIs) reflect quality of care inside hospitals and identify potentially avoidable hospitalizations among children (AHRQ, 2019).

Prior to the 2018 NHQDR, the reports included longitudinal reporting of QI trends based on ICD-9-CM[1] coding. Because of the transition from ICD-9-CM to ICD-10-CM/PCS[2] on October 1, 2015, the 2019 and 2018 NHQDR includes QI estimates only for 2017 and 2016, respectively, and does not report on trends. Longitudinal trends may be reported in future NHQDR releases.

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[1] ICD-9-CM: International Classification of Diseases, Ninth Revision, Clinical Modification.
[2] ICD-10-CM/PCS: International Classification of Diseases, Tenth Revision, Clinical Modification and Procedure Coding System.

The following national and State-level QI estimates were constructed from the HCUP databases for the NHQDR:

- National inpatient rates by QI, overall and by subpopulations including community income, expected primary payer, and race/ethnicity
- State-level inpatient rates by QI, overall and by subpopulations including community income, expected primary payer, and race/ethnicity, for HCUP Partner organizations that agreed to participate in the NHQDR
- National rates for selected PQIs and PDIs in the emergency department (ED) setting.

The AHRQ QI measures generated for possible inclusion in the NHQDR are described in Table 1 at the end of this methods report.

PREPARATION OF HCUP DATABASES

The Healthcare Cost and Utilization Project (HCUP) is a family of healthcare databases and related software tools and products developed through a Federal-State-Industry partnership and sponsored by AHRQ. HCUP databases are derived from administrative data and contain encounter-level, clinical and nonclinical information including all-listed diagnoses and procedures, discharge status, patient demographics, and charges for all patients, regardless of payer (e.g., Medicare, Medicaid, private insurance, uninsured), beginning in 1988. These databases enable research on a broad range of health policy issues, including cost and quality of health services, medical practice patterns, patient safety, access to health care programs, and outcomes of treatments at the national, State and local market levels.

The following HCUP databases were used as the source of data for the NHQDR:

- The HCUP State Inpatient Databases (SID), including all inpatient stays regardless of payer from most, if not all, hospitals from participating HCUP Partner organizations in data year 2017 (47 States and the District of Columbia)
- The HCUP National Inpatient Sample (NIS), a nationally stratified sample of discharges from all hospitals in States that contributed data to HCUP in data year 2017.
- The HCUP Nationwide Emergency Department Sample (NEDS), a nationally stratified sample of hospital-based emergency departments (EDs) (with information for both treat-and-release visits and those resulting in a hospital admission) in data year 2017.

The list of HCUP Partner organizations that contribute to the HCUP databases is provided in Table 2.

HCUP Data on Race/Ethnicity

HCUP coding includes race and ethnicity in one data element (RACE). Because of variability in the collection of race and ethnicity information in the State data, HCUP maintains a uniform set of categories based on race definitions used in the 1977 Office of Management and Budget (OMB) Directive 15 using the combined race-ethnicity format (separate categories for Hispanic and five Non-Hispanic racial groups – White, Black, Asian or Pacific Islander, American Indian or Alaska Native (AIAN), and Other).

When a State and its hospitals collect Hispanic ethnicity *separately* from race, HCUP assigns the data to the combined race/ethnicity categorization and uses Hispanic ethnicity to override any other race category to create uniform coding across States.

There is limited reporting of AIAN in the HCUP data. In addition, in some areas of the country, care for the AIAN population is provided in Indian Health Service (IHS) hospitals which are not included in HCUP. For these reasons, AIAN discharges were combined with "Other" races for the NHQDR analyses.

The resulting NHQDR reporting categories for the HCUP data include: White Non-Hispanic; African American Non-Hispanic; Asian/Pacific Islander Non-Hispanic; Other Non-Hispanic; and Hispanic (of any race).

Modifications to the HCUP Data

In preparation for the NHQDR and its derivative products, the HCUP databases needed to be customized as indicated below:

1. The HCUP databases were augmented as necessary for the NHQDR analyses:

    *   *Impute for Missing Characteristics*. For missing age, sex, race/ethnicity, ZIP Code, and expected primary payer data that occurred on a small proportion of discharge records, we used a "hot deck" imputation method (which draws donors from strata of similar hospitals and patients) to assign values while preserving the variance within the data.

    *   *Assign Additional Measures for Reporting*. We assigned median household income quartile by linking Claritas ZIP Code demographic data to patient's ZIP Code in the SID. Income quartiles were defined annually based on the distribution of the population in the United States.

2. Essential data elements were edited prior to use to determine if the SID had good quality data, and later informed which records and States could be used for national and State-level reporting in the NHQDR:

    *   *Race/Ethnicity*. Race/ethnicity is an important reporting category for the NHQDR. Race/ethnicity edits were performed at the hospital-level using the HCUP data element RACE and include the following: (1) all discharges in the hospital (100 percent) had RACE coded as White and the hospital had more 2,500 discharges in the year; (2) more than 30 percent of the discharges in the hospital had the race reported as Other; (3) more than 50 percent of the discharges in the hospital had no information on the race/ethnicity of the patient (i.e., RACE was missing or invalid); and (4) no discharges in the hospital were coded as Black, Hispanic, Asian/Pacific Islander, or AI/AN. Table 3 lists the percent of records in the 48 SID in 2017 that failed any race/ethnicity edit checks.

    *   *Indicators that Diagnoses are Present on Admission (POA)*. Present on admission (POA) data are required for the PSI module software. Edit flags for POA were already included on the SID. There are three hospital-level and two discharge-level edits. The three hospital-level edits include: (1) POA is reported as "yes/present" on all diagnoses on all discharges in the hospital; (2) POA is reported as missing on all non-Medicare discharges in the hospital; and (3) POA is reported as missing on all nonexempt diagnoses[3] for 15 percent or more of the discharges in the hospital. The two discharge-level edits include: (1) discharge is missing POA on all nonexempt diagnoses; and (2) Discharge is missing POA on all nonexempt secondary diagnoses. Table 3 lists the percent of records in the 48 SID in 2017 that failed any POA edit checks.

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[3] Some diagnoses are exempt from having POA reported.

Creation of Analysis Files Derived from the HCUP Databases

A nationally weighted NHQDR analysis file based on a subset of the 48 SID in 2017 was used for reporting national QI estimates. Because the PSI module software requires the use of POA and day of the procedure, three criteria were used to select SID for national reporting: (1) less than 10 percent of records failed POA edits; (2) the SID included information on day of principal and secondary procedure days; and (3) the SID included race/ethnicity data (Table 3). SID from 34 States qualified for use in the nationally weighted NHQDR analysis file. After records and hospitals that failed the POA and race/ethnicity edits were excluded, all remaining discharges in the 36 SID were weighted to the universe of community hospitals[4] in the United States, excluding rehabilitation and long-term acute care (LTAC) facilities. This approach differs from prior years in which the nationally weighted NHQDR analysis file was a 40 percent sample of hospitals. A comparison of the nationally weighted NHQDR analysis file to external data is provided in Appendix A.

The editing of the race/ethnicity and POA data informed which records and States could be used for State-level reporting in the NHQDR. States were excluded from race/ethnicity reporting if more than 10 percent of the SID records failed the race/ethnicity edits. States were not used for reporting PSIs if more than 10 percent of SID records failed the POA edits or the SID did not include information on day of procedures. Of the 48 SID in 2017, 36 States met the criteria for both race/ethnicity and POA reporting, three States met the criteria for POA reporting, seven States met the criteria for race/ethnicity reporting, and two States cannot be used for either type of reporting (Table 3). The HCUP SID were modified to create analytic files consistent across States.

- *Subset to Community Hospitals.* For the SID, we selected community hospitals and eliminated rehabilitation and LTAC hospitals.

- *Weight for Missing Hospitals.* Because some statewide data organizations do not report data for all community hospitals in the State, we weighted hospitals in the SID to the State's universe of hospitals in the American Hospital Association (AHA) Annual Survey Database based on hospital characteristics (teaching status, control, urban/rural location, and bed size).

- *Weight for Missing Quarters.* Discharges from hospitals operating for the entire year but not contributing data for one or more quarters were weighted up to annual estimates for that institution in the SID.

Weighting also accounted for all any discharges or hospitals excluded because of edit check on race/ethnicity and/ POA.

The NEDS were used to calculate PQIs and PDIs in the ED setting. A description of the data preparation and methods used for national QI estimates from the NEDS is included in Appendix B.

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[4] Community hospitals are defined by the AHA as "all non-Federal, short-term, general, and other specialty hospitals, excluding hospital units of institutions open to the public." Specialty hospitals included in the AHA definition of "community hospitals" are: obstetrics-gynecology, ear-nose-throat, short-term rehabilitation, orthopedic, and pediatric institutions. Community hospitals can include rehabilitation and long-term acute care (LTAC) facilities. These facilities can provide acute care services to patients who need long term hospitalization). Excluded from the AHA definition of "community hospitals" are long-term non-acute care hospitals, psychiatric hospitals, and alcoholism/chemical dependency treatment facilities.

STEPS TAKEN TO APPLY AHRQ QUALITY INDICATORS TO THE HCUP DATA

To apply the AHRQ Quality Indicators to HCUP hospital discharge data for the NHQDR, several steps were taken:

  (1) QI software review and modification

  (2) Acquisition of population-based data

  (3) Assignment of QIs to the HCUP databases

  (4) Identification of statistical methods.

Review and Modify the AHRQ QI Software

We used Version 2019.01 AHRQ QI software that features ICD-10-CM/PCS coding. The Version 2019.01 AHRQ QI software calculates risk-adjusted rates for a subset of hospital measures and all area-based measures. Therefore, the 2019 NHQDR includes risk-adjusted QI estimates as available in the software.

The QI software was modified for the 2019 NHQDR in several ways.
- The AHRQ QI software was designed to produce rates at various levels including hospital, local area (county or Metropolitan/Micropolitan Statistical Areas), and State. The QI software was revised to produce *national rates* for the NHQDR using weighted discharge data.
- The AHRQ QI software was limited to reporting rates by age, sex, and race/ethnicity. The NHQDR included additional patient categories (community income level of the patient's ZIP Code, primary expected payer, and location) and hospital characteristics (region, ownership, teaching status, location, and bed size).
- The AHRQ QI software was designed to produce standard errors for unweighted data. For the NHQDR, we needed to produce statistics for *weighted data* from the stratified sample of discharges in the nationally weighted analysis files and test for significant differences.
- At AHRQ's request, we added two area-based QIs particularly relevant to the structure of the NHQDR, measuring immunization-preventable pneumococcal pneumonia and immunization-preventable influenza for patients aged 65 years and older.

Acquire Population-Based Data for Denominators

The next step was to acquire data for the numerator and denominator populations for the QIs. The AHRQ QIs measure an event that occurs in a hospital, requiring a numerator count of the event of interest and a denominator count of the population (within a hospital or geographic area) to which the event relates.

For the numerator counts of the AHRQ QIs, we used the HCUP databases. For the denominator counts, we identified two sources for all reporting categories.

- For QIs that related to *providers,* the HCUP data were used for national and State-level discharge denominator counts.

- For QIs that related to *geographic areas,* population ZIP-Code-level counts from demographic update data provided by Claritas (a vendor that compiles and adds value to the U.S. Bureau of Census data) were used for denominator counts. Claritas uses intra-census methods to estimate household and demographic statistics for geographic areas (Claritas).

Assign QI Indicators to the HCUP Databases

The four AHRQ QI program modules were applied to the prepared SID data using all available diagnoses and procedures reported by each State.

Adapt Statistical Methods to HCUP Data

Several statistical issues needed to be addressed when applying the AHRQ QI software to the HCUP data for the NHQDR, including the derivation of standard errors for weighted data and appropriate hypothesis tests.

- *Standard Errors and Hypothesis Tests*. Standard error calculations needed to take into account cluster and stratification aspects of the weighted analysis files. Standard errors were calculated for the NHQDR as described in the HCUP report entitled *Inferences with HCUP State Databases Final Report* (Houchens, et al., 2010). Using this method, we were able to calculate appropriate statistics for both national and State-level AHRQ QIs using the Statistical Analysis System (SAS) procedure called PROC SURVEYMEANS.

- *Area-Based Measures Risk Adjustment Methodology.* The risk adjustment methodology in the QI software was developed for county-level reporting. As in prior years', Watson Health applied a direct standardization method for risk adjustment to the area-based measures (using by 18 5-year age groups and sex) to allow for the reporting by patient characteristics not included in the QI software such as community income quartile and the urban/rural location of the patient's residence.

- *Masking Rates for Statistical Reliability, Data Quality, and Confidentiality.* QI estimates were included in the NHQDR if they reached a threshold defined by a relative standard error less than 30% and at least 100 weighted cases in the denominator. Estimates that did not meet this threshold were suppressed. Statistical calculations are explained in Appendix C to this report.

Some caution should be used in interpreting the QI statistics presented in the NHQDR. Appendix D details how these caveats relate to inter-State differences in data collection and other more general issues.

SPECIAL ANALYSES

National Inpatient Hospital Costs Associated with Quality Indicators

The NHQDR includes total national costs for the select PQIs and PDIs including the composites and ambulatory care sensitive conditions such as heart failure, diabetes, and asthma. Total national costs associated with these PQIs and PDIs were calculated overall and by community income quartile and race/ethnicity.

Total charges were converted to costs using the hospital-level HCUP Cost-to-Charge Ratio Files (CCR Files) based on Hospital Cost Report data from the Centers for Medicare & Medicaid Services (CMS).[5] Costs reflect the actual costs of production, while charges represent what the hospital billed for the stay. Hospital charges reflect the amount the hospital charged for the entire hospital stay and do not include professional (physician) fees. To account for records

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[5] HCUP Cost-to-Charge Ratio Files. Healthcare Cost and Utilization Project (HCUP). December 2019. Agency for Healthcare Research and Quality, Rockville, MD. Available: www.hcup-us.ahrq.gov/db/state/costtocharge.jsp.

with missing total charges and costs in the aggregate, the average cost for the QI was used to impute the missing values for that QI. This approach compensates for stays for which charges (and thus estimated costs) are not available.

Benchmarks for State Performance for the Quality Indicators

Based on a recommendation from the Institute of Medicine's report on *Future Directions for the National Healthcare Quality and Disparities Reports*, benchmarks based on a straight average of the top 10 percent of reporting States were determined. For a benchmark to be calculated, rates for at least 30 States needed to be available.

Medicaid and Uninsured Inpatient Stays and Aggregate Hospital Costs in the United States

Information on Medicaid and uninsured inpatient stays and aggregate hospital costs in the United States for 2012–2017 were developed using the HCUP National Inpatient Sample (NIS). Medicaid and uninsured discharges were identified based on the expected primary payer of Medicaid, self-pay, no charge, and charity. Discharge counts and aggregate hospital costs were reported as a percentage of the total U.S and by hospital characteristics including region, ownership, teaching status, urban-rural location, and size of the hospital based on the number of beds.

National Rates for Inpatient Stays for Select Maternal Conditions

The nationally weighted NHQDR analysis file was used to examine differences in inpatient stays for select maternal conditions. Rates for the following measures were calculated for inpatient stays for women aged 12-55 years with any delivery diagnosis, procedure, or DRG, excluding those with any indication of abortion:

- Inpatient stays for severe maternal morbidity per 1,000 delivery hospitalizations. Severe maternal morbidity conditions were defined by the Center for Disease Control and Prevention. Information on the coding criteria is available at: www.cdc.gov/reproductivehealth/maternalinfanthealth/smm/severe-morbidity-ICD.htm. Rates were not risk-adjusted.

- Inpatient stays for venous thromboembolism or pulmonary embolism per 1,000 delivery hospitalizations. Any diagnosis was used to identify venous thromboembolism or pulmonary embolism (see Appendix E for detailed measures specifications). Rates were not risk-adjusted.

- Inpatient stays for postpartum hemorrhage per 1,000 delivery hospitalizations. Any diagnosis was used to identify postpartum hemorrhage (see Appendix E for detailed measures specifications). Rates were not risk-adjusted.

- Inpatient stays for eclampsia or preeclampsia per 1,000 delivery hospitalizations. Any diagnosis was used to eclampsia or preeclampsia (see Appendix E for detailed measures specifications). Rates were not risk-adjusted.

National Estimates of Emergency Department Utilization

The NEDS was used to examine national and regional differences in ED use for selected ambulatory care sensitive conditions

- ED visits for mental illness, substance use, and co-occurring mental illness and substance use. ED visits were identified by having a first-listed diagnosis related to mental illness, substance use, or co-occurring mental illness and alcohol or substance use (See Appendix B for detailed measures specifications). Claritas population data was used to calculate rates per 100,000 residents by age, sex, community income, urban-rural location of patient residence, and region of the United States. Rates were not risk-adjusted.

- ED visits for dental conditions. ED visits were identified by an ICD-10-CM principal diagnosis related to a dental condition (See Appendix B for detailed measures specifications). Claritas population data was used to calculate rates per 100,000 residents by age, sex, community income, and urban-rural location of patient residence. Rates were not risk-adjusted.

- ED visits for injuries. ED utilization for injuries was reported by trauma level and by age, sex, community income, urban-rural location of patient residence, and region of the United States (See Appendix B for detailed measures specifications). Rates were not risk-adjusted.

- ED visits for asthma for adults based on PQI 15 and for pediatrics based on PDI 14.

- ED visits for heart failure based on PQI 8.

- ED visits for dementia. ED visits in the U.S. for patients aged 65 years or older were identified by any ICD-10-CM diagnosis related to dementia (See Appendix B for detailed measure specifications). Rates for per ED visits and per 100,000 population aged 65 years and older were not risk-adjusted. Claritas population data was used to calculate rates per 100,000 population aged 65 years and older.

Additional details on the use of the NEDS for reporting are provided in Appendix B.

TABLES

Table 1. AHRQ QIs Applied to the HCUP Data for the NHQDR

This table includes the includes the list of all version 2019.01 AHRQ QIs calculated using 2017 HCUP inpatient data under the NHQDR task. Not all of the AHRQ QIs listed below were included in the NHQDR.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
Inpatient Quality Indicators			
IQI08	Deaths per 1,000 hospital admissions with esophageal resection for cancer,[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, exclusions include obstetric admissions and transfers to another hospital.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI09	Deaths per 1,000 hospital admissions with pancreatic resection,[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, exclusions include obstetric admissions, acute pancreatitis admissions, and transfers to another hospital.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI11	Deaths per 1,000 hospital admissions with abdominal aortic aneurysm (AAA) repair,[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, exclusions include obstetric admissions and transfers to another hospital.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI12	Deaths per 1,000 hospital admissions with coronary artery bypass graft (CABG),[a,b] age 40 and over	[a] Consistent with the AHRQ IQI software, exclusions include obstetric admissions and transfers to another hospital.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI15	Deaths per 1,000 hospital admissions with acute myocardial infarction (AMI),[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, AMI must be the principal diagnosis and the following cases are excluded: obstetric admissions and transfers to another hospital.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI16	Deaths per 1,000 hospital admissions with heart failure (HF),[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, HF must be the principal diagnosis and the following cases are excluded: heart transplant procedures, obstetric admissions, transfers to another hospital, and patients in hospice care at admission.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI17	Deaths per 1,000 hospital admissions with acute stroke,[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, stroke must be the principal diagnosis and the following cases are excluded: obstetric admissions, transfers to another hospital, and patients in hospice care at admission.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI18	Deaths per 1,000 hospital admissions with gastrointestinal hemorrhage,[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, gastrointestinal hemorrhage must be the principal diagnosis and the following cases are excluded: obstetric admissions, transfers to another hospital, and patients in hospice care at admission.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI19	Deaths per 1,000 hospital admissions with hip fracture,[a,b] age 65 and over	[a] Consistent with the AHRQ IQI software, hip fracture must be the principal diagnosis and the following cases are excluded: periprosthetic fractures, obstetric admissions, transfers to another hospital, and patients in hospice care at admission.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI20	Deaths per 1,000 hospital admissions with pneumonia,[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, pneumonia must be the principal diagnosis and the following cases are excluded: obstetric admissions, transfers to another hospital, and patients in hospice care at admission.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI21	Cesarean deliveries per 1,000 deliveries[a,b]	[a] Consistent with the AHRQ IQI software, exclusions include deliveries for preterm or multiple infants, deliveries with abnormal presentations or breech procedures, and deliveries resulting in fetal death.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI22	Vaginal birth after cesarean (VBAC) per 1,000 women with previous cesarean deliveries[a,b]	[a] Consistent with the AHRQ IQI software, exclusions include deliveries for preterm or multiple infants, deliveries with abnormal presentations or breech procedures, and deliveries resulting in fetal death.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
IQI30	Deaths per 1,000 hospital admissions with percutaneous coronary intervention (PCI),[a,b] age 40 and over	[a] Consistent with the AHRQ IQI software, exclusions include obstetric admissions and transfers to another hospital.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI31	Deaths per 1,000 hospital admissions with carotid endarterectomy (CEA),[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, exclusions include obstetric admissions and transfers to another hospital.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI32	Deaths per 1,000 hospital admissions with acute myocardial infarction (AMI),[a,b] age 18 and over	[a] Consistent with the AHRQ IQI software, AMI must be the principal diagnosis and the following cases are excluded: obstetric admissions, transfers to and from another hospital, and patients in hospice care at admission.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI33	First-time cesarean deliveries (identified by no previous cesarean delivery diagnosis on the record) per 1,000 deliveries[a,b]	[a] Consistent with the AHRQ IQI software, exclusions include previous cesarean delivery, deliveries for preterm or multiple infants, deliveries with abnormal presentations or breech procedures, and deliveries resulting in fetal death.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
IQI34	Vaginal birth after cesarean (VBAC) per 1,000 women with previous cesarean deliveries[a,b]	[a] Consistent with the AHRQ IQI software, there are no exclusions.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
Pediatric Quality Indicators			
NQI03	Admissions with blood stream infection per 1,000 medical and surgical discharges of length 2 or more days, newborns[a,b]	[a] The AHRQ PDI software requires that the blood stream infection be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, newborn admissions include babies born outside the hospital and then admitted; infants with a birth weight of 500 to 1,499 grams or with gestational age between 24 and 30 weeks; and newborns with a birth weight greater than or equal to 1,500 grams, only if the infant experienced death in-hospital, major surgery, mechanical ventilation, or transferring from another hospital within two days of birth. Exclusions include newborns weighing less than 500 grams, cases with a principal diagnosis of sepsis or infection or with a length of stay less than 2 days.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI01	Accidental puncture or laceration during a procedure per 1,000 medical and surgical admissions,[a,b] age less than 18 years	[a] The AHRQ PDI software requires that the accidental puncture or laceration be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, the following cases are excluded: obstetric cases, admissions involving spinal surgery, normal newborns, and neonates with a birth weight less than 500 grams.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI05	Admissions with iatrogenic pneumothorax per 1,000 medical and surgical admissions,[a,b] age less than 18 years	[a] The AHRQ PDI software requires that the iatrogenic pneumothorax be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, the following cases are excluded: obstetric cases, normal newborns, neonates with a birth weight less than 500 grams, and admissions with chest trauma, pleural effusion, thoracic surgery, lung or pleural biopsy, diaphragmatic surgery repair, or cardiac surgery.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI08	Perioperative hemorrhage or hematoma with surgical drainage or evacuation per 1,000 elective surgical admissions,[a,b] age less than 18 years	[a] The AHRQ PDI software requires that the hemorrhage or hematoma complicating procedure be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, the following cases are excluded: obstetric cases, admissions with neonates with a birth weight less than 500 grams, and admissions in which the control of the hemorrhage or hematoma is the only operating room procedure.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
PDI09	Postoperative respiratory failure, prolonged mechanical ventilation, or reintubation per 1,000 elective-surgery admissions,[a,b] age less than 18 years	[a] The AHRQ PDI software requires that the respiratory failure be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, the following cases are excluded: admissions with acute respiratory failure, respiratory or circulatory disease, craniofacial anomalies, neuromuscular disorders, or degenerative neurological disorder; obstetric cases; admissions in which the tracheostomy is the only operating room procedure or occurs before the first operating room procedure; and admissions with a procedure for esophageal resection, lung cancer/transplant, or the nose, mouth, and pharynx.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI10	Postoperative sepsis per 1,000 surgery admissions,[a,b] age less than 18 years	[a] The AHRQ PDI software requires that the sepsis be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, the following cases are excluded: admissions with a principal diagnosis of infection; admissions with a surgical class 4 procedure for appendicitis, infectious or parasitic diseases, or postoperative infections; obstetric cases; and neonates.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI12	Admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days,[a,b] age less than 18 years	[a] The AHRQ PDI software requires that the central venous catheter-related bloodstream infection be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PDI software, the following cases are excluded: normal newborns, neonates with a birth weight less than 500 grams, obstetric cases, and admissions with stays of less than 2 days.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI14	Admissions for asthma[a,b] per 100,000 population, ages 2-17	[a] Consistent with the AHRQ PDI software, asthma must be the principal diagnosis and the following cases are excluded: admissions with cystic fibrosis or anomalies of the respiratory system, transfers from other institutions, and obstetric admissions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI15	Admissions with diabetes with short-term complications[a,b] per 100,000 population, ages 6-17	[a] Consistent with the AHRQ PDI software, diabetes must be the principal diagnosis and short-term complications include ketoacidosis, hyperosmolarity, or coma. Transfers from other institutions and obstetric admissions are excluded.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI16	Admissions for pediatric gastroenteritis[a,b] per 100,000 population, ages 3 months to 17 years	[a] Consistent with the AHRQ PDI software, gastroenteritis must be the principal diagnosis or a secondary diagnosis with a principal diagnosis of dehydration. Exclusions include admissions with gastrointestinal abnormalities or bacterial gastroenteritis, transfers from other institutions, neonates if age in days is missing, and obstetric admissions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI18	Admissions for urinary tract infection (UTI)[a,b] per 100,000 population, ages 3 months to 17 years	[a] Consistent with the AHRQ PDI software, UTI must be the principal diagnosis and the following cases are excluded: kidney or urinary tract disorders; admissions with a high- or intermediate-risk immunocompromised state including hepatic failure and transplant; obstetric cases, and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI90	AHRQ overall Pediatric Quality Indicator (PDI) composite[a,b] per 100,000 population, ages 6-17	[a] Consistent with the AHRQ PDI software, the overall composite is based on the four PDIs for asthma, diabetes, gastroenteritis, and urinary tract infection.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PDI91	AHRQ acute Pediatric Quality Indicator (PDI) composite[a,b] per 100,000 population, ages 6-17	[a] Consistent with the AHRQ PDI software, the acute composite is based on the two PDIs for gastroenteritis and urinary tract infection.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
PDI92	AHRQ chronic Pediatric Quality Indicator (PQI) composite[a,b] per 100,000 population, ages 6-17	[a] Consistent with the AHRQ PDI software, the chronic composite is based on the two PDIs for asthma and diabetes.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
	Prevention Quality Indicators		
PQI01	Admissions with diabetes with short-term complications[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, diabetes must be the principal diagnosis and short-term complications include ketoacidosis, hyperosmolarity, or coma. Transfers from other institutions are excluded.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI03	Admissions with diabetes with long-term complications[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, diabetes must be the principal diagnosis and long-term complications include renal, eye, neurological, circulatory, or other unspecified complications. Transfers from other institutions are excluded.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI05	Admissions with chronic obstructive pulmonary disease (COPD)[a,b] or asthma per 100,000 population, age 40 and over	[a] Consistent with the AHRQ PQI software, the principal diagnosis must be COPD, asthma, or acute bronchitis with COPD as a secondary diagnosis. Transfers from other institutions are excluded.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI07	Admissions with hypertension[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, hypertension must be the principal diagnosis and exclusions include the following: admissions with kidney disease with dialysis access procedures, admissions with cardiac procedures, and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI08	Admissions for heart failure (HF)[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, HF must be the principal diagnosis and exclusions include the following: admissions with cardiac procedures and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI11	Admissions for community-acquired pneumonia[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, community-acquired pneumonia must be the principal diagnosis and exclusions include the following: admissions for sickle cell disease or hemoglobin-S disease, admissions in an immunocompromised state, and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI12	Admissions for urinary tract infection (UTI)[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, UTI must be the principal diagnosis and exclusions include the following: admissions with kidney or urinary tract disorders, admissions in an immunocompromised state, and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI14	Admissions for uncontrolled diabetes without complications[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, diabetes without short- or long-term complications must be the principal diagnosis and exclusions include transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI15	Admissions for asthma[a,b] per 100,000 population, age 18 to 39	[a] Consistent with the AHRQ PQI software, asthma must be the principal diagnosis on admissions ages 18 to 39 years old, and exclusions include the following: admissions with cystic fibrosis or anomalies of the respiratory system and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI16	Lower extremity amputations among admissions for diabetes[a,b] per 100,000 population, age 18 and over	[a] Consistent with the AHRQ PQI software, a procedure code for lower-extremity amputation and a diagnosis of diabetes must be present. Exclusions include admissions for toe amputation or traumatic amputations of the lower extremity, obstetric discharges, and transfers from other institutions.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI17	Admissions for immunization-preventable pneumococcal pneumonia[a,b] per 100,000 population, age 65 and over	[a] Immunization-preventable pneumococcal pneumonia may be reported as either the principal diagnosis or a secondary diagnosis. Exclusions include transfers from other institutions.	[b] Measure developed specifically for use in the NHQDR, and is not part of the AHRQ QIs. Population-based risk adjustment is available for this measure.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
PQI18	Admissions for immunization-preventable influenza[a,b] per 100,000 population, age 65 and over	[a] Immunization-preventable influenza may be reported as either the principal diagnosis or a secondary diagnosis. Exclusions include transfers from other institutions.	[b] Measure developed specifically for use in the NHQDR, and is not part of the AHRQ QIs. Population-based risk adjustment is available for this measure.
PQI90	AHRQ overall Prevention Quality Indicator (PQI) composite[a,b] per 100,000 population, age 18 and over	[a] Based on eleven AHRQ PQIs for asthma, community-acquired pneumonia, chronic obstructive pulmonary disease, dehydration, diabetes, heart failure, hypertension, and urinary tract infection.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI91	AHRQ acute Prevention Quality Indicator (PQI) composite[a,b] per 100,000 population, age 18 and over	[a] Based on three AHRQ PQIs for community-acquired pneumonia, dehydration, and urinary tract infection.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI92	AHRQ chronic Prevention Quality Indicator (PQI) composite[a,b] per 100,000 population, age 18 and over	[a] Based on eight AHRQ PQIs for asthma, chronic obstructive pulmonary disease, heart failure, diabetes, and hypertension.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PQI93	AHRQ diabetes Prevention Quality Indicator (PQI) composite[a,b] per 100,000 population, age 18 and over	[a] Based on four AHRQ PQIs for short-term diabetes complications, long-term diabetes complications, uncontrolled diabetes, and lower-extremity amputation among patients with diabetes.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
Patient Safety Indicators			
PSI02	Deaths per 1,000 hospital admissions with expected low-mortality,[a,b] age 18 and over or obstetric admissions	[a] Consistent with the AHRQ PSI software, admissions with expected low-mortality are identified by Medicare Severity Diagnosis Related Group (MS-DRG) or Diagnosis Related Group (DRG), depending on the date of discharge. Exclusions include admissions with cancer, admissions in an immunocompromised state, admissions involving a traumatic injury, and transfers to an acute care facility.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI03	Admissions with pressure ulcers per 1,000 medical and surgical discharges of length 3 or more days,[a,b] age18 and over	[a] The AHRQ PSI software requires that the pressure ulcers be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: admissions with a principal diagnosis of pressure ulcer stage III or IV or unstageable; admissions involving severe burns or exfoliative disorders; obstetric cases; and admissions with stays of less than 3 days.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI04	Deaths per 1,000 elective-surgery admissions having developed serious treatable complications of care during hospitalization,[a,b] ages 18-89 or obstetric admissions	[a] Consistent with the AHRQ PSI software, complications of care include acute ulcer, cardiac arrest, deep vein thrombosis, gastrointestinal hemorrhage, pulmonary embolism, pneumonia, sepsis, and shock with the following exclusions: transfers to another hospital and patients in hospice care at admission.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI05	Count of retained surgical items or unretrieved device fragments among medical and surgical admissions,[a,b] age 18 and over or obstetric admissions	[a] The AHRQ PSI software requires that the retained surgical item or unretrieved device fragment be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, there are no exclusions.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI06	Admissions with iatrogenic pneumothorax per 1,000 medical and surgical admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the iatrogenic pneumothorax be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: obstetric admissions and admissions with chest trauma, pleural effusion, thoracic surgery, lung or pleural biopsy, diaphragmatic surgery repair, and cardiac surgery.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
PSI07	Admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days,[a,b] age 18 and over or obstetric admissions	[a] The AHRQ PSI software requires that the central venous catheter-related bloodstream infection be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: admissions with a diagnosis of cancer or in an immunocompromised state.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI08	Postoperative hip fracture per 1,000 surgical admissions who were not susceptible to falling,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the hip fracture be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: obstetric cases; admissions for anoxic brain injury, cardiac arrest, coma, delirium and other psychoses, poisoning, seizure, stroke, syncope, trauma; and cases associated with bone malignancy, lymphoid malignancy, or metastatic cancer.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI10	Perioperative hemorrhage or hematoma with surgical drainage or evacuation per 1,000 surgical admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the hemorrhage or hematoma complicating procedure be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: obstetric cases, cases with a coagulation disorder, and admissions in which the control of the hemorrhage or hematoma is the only operating room procedure.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI11	Postoperative acute kidney injury requiring dialysis per 1,000 elective-surgery admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the postoperative kidney failure be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission or reported before or on the same day as the first operating procedure. Consistent with the AHRQ PSI software, the following cases are excluded: obstetric cases; admissions with acute renal failure, cardiac arrest, cardiac shock, chronic kidney failure, and severe cardiac dysrhythmia; and principal diagnosis of urinary tract obstruction.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI12	Postoperative respiratory failure, prolonged mechanical ventilation, or reintubation per 1,000 elective-surgery admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the respiratory failure be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: admissions with acute respiratory failure, respiratory or circulatory disease, craniofacial anomalies, neuromuscular disorders, or degenerative neurological disorder; obstetric cases; admissions in which the tracheostomy is the only operating room procedure; and admissions with a procedure for esophageal resection, lung cancer/transplant, or the nose, mouth, and pharynx.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI13	Postoperative pulmonary embolism (PE) or deep vein thrombosis (DVT) per 1,000 surgical admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the PE or DVT be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: obstetric conditions and admissions in which the interruption of vena cava is the only operating room procedure.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI14	Postoperative sepsis per 1,000 elective-surgery admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the sepsis be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission. Consistent with the AHRQ PSI software, the following cases are excluded: admissions with a principal diagnosis of infection and obstetric cases.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.

QI	QI Label	Definition Footnote	Risk Adjustment Footnote
PSI15	Reclosure of postoperative abdominal wound dehiscence per 1,000 abdominopelvic-surgery admissions of length 2 or more days,[a,b] age 18 and over	[a] Consistent with the AHRQ PSI software, the following cases are excluded: admissions in which the abdominal wall reclosure occurs on or before the day of the first abdominopelvic surgery; obstetric cases; admissions in an immunocompromised state; and admissions with stays of less than 2 days.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI17	Accidental puncture or laceration during a procedure per 1,000 medical and surgical admissions,[a,b] age 18 and over	[a] The AHRQ PSI software requires that the accidental puncture or laceration be reported as a secondary diagnosis (rather than the principal diagnosis) not present on admission, with the second abdominopelvic procedure occurring one or more days after the index event. Consistent with the AHRQ PSI software, obstetric cases are excluded.	[b] Risk adjustment available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI18	Birth trauma - injury to neonate per 1,000 live births[a,b]	[a] Consistent with the AHRQ PSI software, the following cases are excluded: preterm infants weighing less than 2,000 grams and newborns with osteogenesis imperfecta.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI19	Obstetric trauma[a,b] per 1,000 instrument-assisted vaginal deliveries	[a] Consistent with the AHRQ PSI software, obstetric trauma must involve 3rd or 4th degree lacerations. Cases without instrument assistance are excluded.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.
PSI20	Obstetric trauma[a,b] per 1,000 vaginal deliveries without instrument assistance	[a] Consistent with the AHRQ PSI software, obstetric trauma must involve 3rd or 4th degree lacerations. Cases with instrument assistance are excluded.	[b] Risk adjustment not available for this measure in Version 2019.01 of the AHRQ QI Software.

Table 2. Sources of 2017 HCUP Inpatient Data for the NHQDR

Sponsored by the Agency for Healthcare Research and Quality (AHRQ), HCUP is a family of databases, software tools, and products developed through the collaboration of State data organizations, hospital associations, private data organizations, and the Federal government. HCUP would not be possible without the contributions of the following data collection Partners from across the United States.

The reporting of State-Specific information in the National Healthcare Quality and Disparities Report (NHQDR) is dependent on the permission from the HCUP Partner. Use of the State Inpatient Databases (SID) in the nationally weighted NHQDR analysis file is dependent on the availability of essential data elements. The States that met the inclusion criteria for developing the national-level weights in the final NHQDR analysis file are noted below.

HCUP Partner Organizations	Inclusion in the 2017 NHQDR National File
Alaska Department of Health and Social Services **and** State Hospital and Nursing Home Association	Yes
Arizona Department of Health Services	Yes
Arkansas Department of Health	Yes
California Office of Statewide Health Planning & Development	Yes
Colorado Hospital Association	Yes
Connecticut Hospital Association	No
Delaware Division of Public Health	No
District of Columbia Hospital Association	Yes
Florida Agency for Health Care Administration	Yes
Georgia Hospital Association	Yes
Hawaii Health Information Corporation	Yes
Illinois Department of Public Health	Yes
Indiana Hospital Association	Yes
Iowa Hospital Association	No
Kansas Hospital Association	Yes
Kentucky Cabinet for Health and Family Services	Yes
Louisiana Department of Health	Yes
Maine Health Data Organization	Yes
Maryland Health Services Cost Review Commission	Yes
Massachusetts Center for Health Information and Analysis	Yes
Michigan Health & Hospital Association	Yes
Minnesota Hospital Association	Yes
Mississippi Department of Health	Yes

HCUP Partner Organizations	Inclusion in the 2017 NHQDR National File
Missouri Hospital Industry Data Institute	Yes
Montana Hospital Association	Yes
Nebraska Hospital Association	No
Nevada Department of Health and Human Services	Yes
New Hampshire Department of Health & Human Services	No
New Jersey Department of Health	Yes
New Mexico Department of Health	Yes
New York State Department of Health	Yes
North Carolina Department of Health and Human Services	Yes
North Dakota (data provided by the Minnesota Hospital Association)	No
Ohio Hospital Association	Yes
Oklahoma State Department of Health	No
Oregon Association of Hospitals and Health Systems	Yes
Pennsylvania Health Care Cost Containment Council	Yes
Rhode Island Department of Health	Yes
South Carolina Revenue and Fiscal Affairs Office	Yes
South Dakota Association of Healthcare Organizations	No
Tennessee Hospital Association	Yes
Texas Department of State Health Services	Yes
Utah Department of Health	No
Vermont Association of Hospitals and Health Systems	No
Virginia Health Information	Yes
Washington State Department of Health	Yes
West Virginia Department of Health and Human Resources, West Virginia Health Care Authority	No
Wisconsin Department of Health Services	No
Wyoming Hospital Association	No

Table 3. Editing Essential Data Elements for State-Level and National Reporting of QIs in the NHQDR

State	Edits for Reporting Race/Ethnicity	Edits for Reporting PSIs	
	Used for reporting by race/ethnicity?	Have procedure days?	Used for reporting by PSIs?
AK	Yes	Yes	Yes
AR	Yes	Yes	Yes
AZ	Yes	Yes	Yes
CA	Yes	Yes	Yes
CO	Yes	Yes	Yes
CT	Yes	Yes	No
DC	Yes	Yes	Yes
DE	Yes	Yes	No
FL	Yes	Yes	Yes
GA	Yes	Yes	Yes
HI	Yes	Yes	Yes
IA	Yes	Yes	No
IL	Yes	Yes	Yes
IN	Yes	Yes	Yes
KS	Yes	Yes	Yes
KY	Yes	Yes	Yes
LA	Yes	Yes	Yes
MA	Yes	Yes	Yes
MD	Yes	Yes	Yes
ME	Yes	Yes	Yes
MI	Yes	Yes	Yes
MN	Yes	Yes	Yes
MO	Yes	Yes	Yes
MS	Yes	Yes	Yes
MT	Yes	Yes	Yes
NC	Yes	Yes	Yes
ND	No	Yes	Yes
NE	N/A	Yes	Yes
NJ	Yes	Yes	Yes
NM	Yes	Yes	Yes
NV	Yes	Yes	Yes
NY	Yes	Yes	Yes
OH	Yes	Yes	Yes
OK	Yes	No	No
OR	Yes	Yes	Yes
PA	Yes	Yes	Yes
RI	Yes	Yes	Yes
SC	Yes	Yes	Yes
SD	Yes	Yes	No
TN	Yes	Yes	Yes
TX	Yes	Yes	Yes
UT	N/A	Yes	Yes
VA	Yes	Yes	Yes

State	Edits for Reporting Race/Ethnicity	Edits for Reporting PSIs	
	Used for reporting by race/ethnicity?	Have procedure days?	Used for reporting by PSIs?
VT	Yes	Yes	No
WA	Yes	Yes	Yes
WI	Yes	No	No
WV	No	No	No
WY	No	Yes	No

* N/A indicates that edit checks were not applicable because the SID did not include the HCUP data element RACE or provide POA.

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APPENDICES

APPENDIX A: NATIONALLY WEIGHTED ANALYSIS FILES FOR THE NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT

The nationally weighted NHQDR analysis file was based on a subset of the 48 SID in 2017. Because the PSI software requires the use of both POA and information on the day of the procedure, two criteria were used to select SID that could be used for PSI reporting: (1) less than 10 percent of records failed POA edits and (2) the SID included information on day of principal and secondary procedure days. Of the 38 eligible SID, two SID did not have race/ethnicity data. All records from the remaining 36 SID were used to create the nationally weighted NHQDR analysis file, after records and hospitals that failed the POA and race/ethnicity edits were excluded (Figure A-1). This differs from prior years in which the nationally weighted NHQDR analysis file was a 40 percent sample of hospitals.

Figure A-1. States Used for 2017 National QI Estimates

Legend:
- States not in HCUP
- Other HCUP States
- States used for QDR national rates in 2017
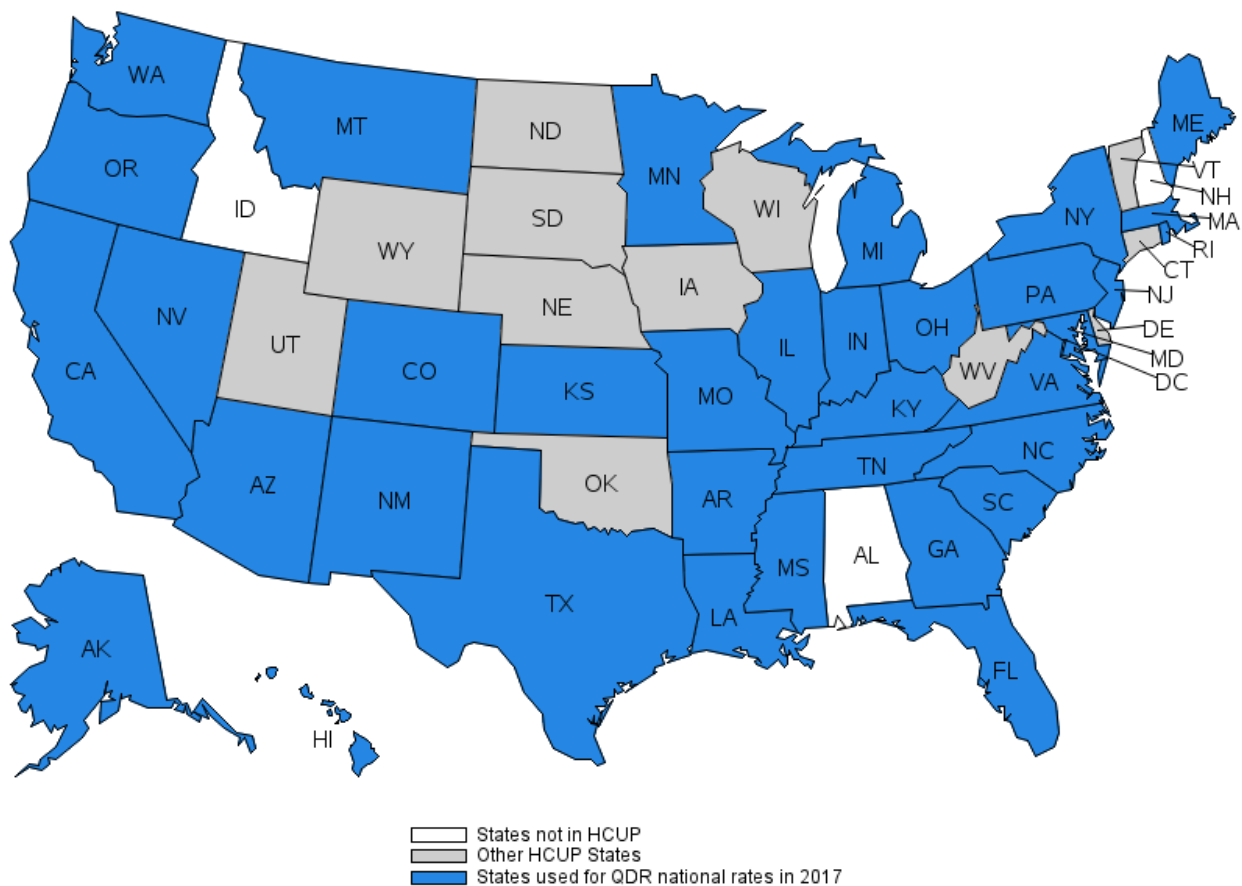
Evaluating the 2017 Nationally Weighted NHQDR Analysis File

Table A-1 demonstrates the representation of the 36 States by U.S. Census region. The 36 States represent 58 to 78 percent of the States in each region.

Table A-1. Geographic Representation of the NHQDR Analysis File, 2017

Census Region	Number of States in the nationally weighted analysis file	Number of States in the region	Percent of States included in the nationally weighted analysis file
Northeast	7	9	78%
Midwest	7	12	58%
South	11	16+ District of Columbia	59%
West	11	13	78%
Total	36	50 + District of Columbia	69%

Table A-2 compares aggregated totals of various measures for the 36 States as a percent of the national measure. In 2017, the 36 SID, after exclusions for race and POA, accounted for more than 80 percent of U.S. hospital discharges (based on the AHA Annual Survey Database). They accounted for over 85 percent of Whites, African Americans, Asian/Pacific Islanders, and Hispanics in the nation (based on 2017 Claritas demographic data).

Table A-2. Population Representation of the NHQDR Analysis File, 2017

Measure	Percent of national population represented by the 36 HCUP States
Hospital discharges	86%
Total resident population	89%
Population by race/ethnicity:	
White	86%*
African American	93%*
Asian/Pacific Islander	95%*
Hispanic	95%*
Population by age:	
Population under age 18	89%*
Population age 18-64	89%*
Population over age 64	89%*
Population by income:	
Population with income under the Federal poverty level	89%**

Calculated using 2017 Claritas data and 1977 OMB Directive 15 race definitions (e.g. no option for selecting "two or more races").

**Calculated using Kaiser Family Foundation, statehealthfacts.org. Data Source: Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on the Census Bureau's March 2018 Current Population Survey (CPS: Annual Social and Economic Supplements), accessed December 11, 2019.*

To further evaluate the reliability of national estimates produced by the nationally weighted NHQDR analysis file it is compare to the 2017 National Inpatient Sample (NIS). Tables A.3–A.10 contain the distribution of discharges in both files by key demographic and clinical data

elements. Based on these analyses, the 2017 nationally weighted analysis file appears to provide reliable national estimates when compared with the 2017 NIS.

Table A-3. Comparison of Census Region, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

CENSUS REGION	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
1: Northeast	6,946,791	18.8	6,571,470	18.4
2: Midwest	8,178,572	22.1	7,982,265	22.3
3: South	14573307	39.4	14063640	39.3
4: West	7,263,740	19.7	7,181,078	20.1

Table A-4. Comparison of Patient Age in Years at Admission, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

AGE	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
.: Missing	-	-	435	0.0
.A: Invalid	-	-	10	0.0
.C: Inconsistent	-	-	1,265	0.0
0-17	5,483,363	14.8	5,375,836	15.0
18-44	8,839,108	23.9	8,569,789	23.9
45-64	9,030,248	24.4	8,721,412	24.4
65+	13,609,691	36.8	13,129,706	36.7

Note: AGE was imputed when missing in the SID for the NHQDR analysis file.

Table A-5. Comparison of Patient Sex, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

SEX	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
.: Missing	-	-	2,650	0.0
.A: Invalid	-	-	5	0.0
.C: Inconsistent	-	-	2,095	0.0
0: Male	16,104,435	43.6	15,607,453	43.6
1: Female	20,857,975	56.4	20,186,250	56.4

Note: SEX was imputed when missing in the SID for the NHQDR analysis file.

Table A-6. Comparison of Expected Primary Payer, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

PAY1	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
.: Missing	-	-	63,835	0.2
.A: Invalid	-	-	830	0.0
1: Medicare	15,066,247	40.8	14,513,926	40.5
2: Medicaid	8,544,323	23.1	8,270,728	23.1
3: Private Insurance	10,722,119	29.0	10,448,044	29.2
4: Self-pay	1,497,751	4.1	1,398,840	3.9
5: No Charge	112,746	0.3	104,305	0.3
6: Other	1,019,223	2.8	997,945	2.8

Note: PAY1 was imputed when missing in the SID for the NHQDR analysis file.

Table A-7. Comparison of Community Income Quartile Based on the Patient's ZIP Code, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

ZIPINC_QRTL	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
.: Missing	-	-	579,364	1.6
.A: Invalid	-	-	2,245	0.0
1: First Quartile (lowest income)	11,478,660	31.1	10,680,030	29.8
2: Second Quartile	9,616,261	26.0	9,312,561	26.0
3: Third Quartile	8,475,693	22.9	8,277,359	23.1
4: Fourth Quartile (highest income)	7,391,795	20.0	6,946,894	19.4

Note: ZIPINC_QRTL was imputed when missing in the SID for the NHQDR analysis file.

Table A-8. Comparison of Patient Race/Ethnicity, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

RACE	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
.: Missing	-	-	1,531,208	4.3
.A: Invalid	-	-	450	0.0
1: White	24,019,592	65.0	22,225,090	62.1
2: Black	5,786,688	15.7	5,249,742	14.7
3: Hispanic	4,666,020	12.6	4,280,848	12.0
4: Asian/Pacific Islander	1,160,902	3.1	1,068,493	3.0
5: Native American	205,816	0.6	221,530	0.6
6: Other	1,123,392	3.0	1,221,092	3.4

Note: RACE was imputed when missing in the SID for the NHQDR analysis file.

Table A-9. Comparison of Location of Patient Residence, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

PL_NCHS	2017 NHQDR Analysis File		2017 NIS	
	Frequency	Percent	Frequency	Percent
.: Missing	-	-	165,790	0.5
1: Large central metropolitan	11,466,287	31.0	10,700,675	29.9
2: Large fringe metropolitan	9,576,294	25.9	8,607,933	24.1
3: Medium metropolitan	7,109,633	19.2	7,359,153	20.6
4: Small metropolitan	3,102,847	8.4	3,274,419	9.2
5: Micropolitan (nonmetropolitan)	3,283,403	8.9	3,253,852	9.1
6: Noncore (nonmetropolitan)	2,423,946	6.6	2,436,632	6.8

Note: PL_NCHS was imputed when missing in the SID for the NHQDR analysis file.

Table A-10. Comparison of Length of Stay, Number of Diagnoses and Procedures on the Record, Total Charges, and Total Cost, NHQDR Analysis File and HCUP National Inpatient Sample, 2017

Variable/Label	2017 NHQDR Analysis File			2017 NIS		
	MIN	MAX	MEAN	MIN	MAX	MEAN
LOS: Length of stay (cleaned)	0	365	4.61	0	365	4.62
NDX: Number of diagnoses on this record	0	111	11.38	0	104	11.32
NPR: Number of procedures on this record	0	100	1.61	0	100	1.6
TOTCHG: Total charges (cleaned)	$100.00	$9,999,999.00	$49,966.04	$100.00	$9,999,999.00	$49,787.58
Total cost (using Intramural CCRs)	$11.28	$3,856,704.77	$12,009.92	$15.42	$3,504,974.00	$12,168.00

APPENDIX B: EMERGENCY DEPARTMENT RATES FOR SELECTED AHRQ QUALITY INDICATORS

The HCUP Nationwide Emergency Department Sample (NEDS) was used to examine national and regional differences in emergency department (ED) rates for selected AHRQ Prevention Quality Indicators (PQIs) and related Pediatric Quality Indicators (PDIs). The PQIs are measures of quality associated with processes and outcomes of care that occurred in an outpatient or an inpatient setting. The PQIs rely solely on hospital administrative data and, for this reason, are screens for examining quality that may indicate the need for more in-depth studies. Experts have suggested that using both inpatient and emergency room data may give a more accurate picture of avoidable visits/admissions for some ambulatory care sensitive conditions which can be identified by certain PQIs and PDIs.

The NEDS contains approximately 30 million ED events from about 950 hospital-based EDs. The NEDS includes information on ED visits that do not result in an admission (i.e., treat-and-release visits and transfers to another hospital) as well as discharge information on patients initially seen in the ED and then admitted to the same hospital. The NEDS was drawn from the SID and the State Emergency Department Databases (SEDD). Discharge-level weights included with the NEDS are used to produce national estimates. Several steps were taken to prepare the NEDS: (1) QI software review and modification, (2) acquisition of population-based data, (3) handling of missing data, and (4) identification of statistical methods.

1. *QI Software Review.* The Version 2019.01 PQIs and PDIs were developed for use with hospital inpatient discharge data. No guidelines for applying the AHRQ QIs to emergency department data were available when this analysis began. About 15 percent of records in the NEDS represent an ED admission. The selected QIs rely on the first-listed diagnosis code (DX1) to identify cases with the outcome of interest. For ED admissions, DX1 is the principal diagnosis code and reflects the condition established to be chiefly responsible for a patients' admission to the hospital. Unfortunately, principal diagnosis is not clearly discernible for ED visits that do not result in admission. Coding instructions for outpatient data specify that the first-listed diagnosis is supposed to be the "reason for visit," which is different than the principal diagnosis. Even though DX1 in ED data is not necessarily the principal diagnosis, using DX1 preserves the concept from the PQI algorithm that the first code has higher priority than others. Therefore, this analysis used the first-listed diagnosis in the NEDS.

2. *Acquisition of Population-Based Data.* Similar to the development of the PQI and PDI rates based on the HCUP inpatient data, Claritas population data was used for the population denominators of the selected PQIs and PDIs.

3. *Preparation of HCUP Data.* Next, a "hot deck" imputation method (which draws donors from strata of similar hospitals and patients) was used to assign missing values of patient age and sex. Patient age and sex are missing on less than 0.02 percent of the records in the 2017 NEDS.

4. *Masking Rates for Statistical Reliability, Data Quality, and Confidentiality.* PQI and PDI estimates were included in this analysis if they reached a threshold defined by a relative standard error less than 30 percent and at least 100 weighted cases in the denominator. Estimates that did not meet this threshold were suppressed and the corresponding table cell was marked with an asterisk.

Additionally, the NEDS was used to examine national and regional differences in emergency department (ED) visit rates for additional condition categories: mental illness, substance use, and co-occurring mental illness and substance use; dental conditions; injuries, and dementia. The complete list of ICD-10-CM diagnosis codes for these analyses are listed below.

<u>Mental Illness and Substance Use ICD-10-CM Diagnosis Codes</u>

Table B-1. Mental Illness ICD-10-CM Diagnosis Codes

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F064'	Anxiety disorder due to known physiological condition
'F4000'	Agoraphobia, unspecified
'F4001'	Agoraphobia with panic disorder
'F4002'	Agoraphobia without panic disorder
'F4010'	Social phobia, unspecified
'F4011'	Social phobia, generalized
'F40210'	Arachnophobia
'F40218'	Other animal type phobia
'F40220'	Fear of thunderstorms
'F40228'	Other natural environment type phobia
'F40230'	Fear of blood
'F40231'	Fear of injections and transfusions
'F40232'	Fear of other medical care
'F40233'	Fear of injury
'F40240'	Claustrophobia
'F40241'	Acrophobia
'F40242'	Fear of bridges
'F40243'	Fear of flying
'F40248'	Other situational type phobia
'F40290'	Androphobia
'F40291'	Gynephobia
'F40298'	Other specified phobia
'F408'	Other phobic anxiety disorders
'F409'	Phobic anxiety disorder, unspecified
'F410'	Panic disorder [episodic paroxysmal anxiety]
'F411'	Generalized anxiety disorder
'F413'	Other mixed anxiety disorders
'F418'	Other specified anxiety disorders
'F419'	Anxiety disorder, unspecified
'F422'	Mixed obsessional thoughts and acts
'F423'	Hoarding disorder
'F424'	Excoriation (skin-picking) disorder
'F428'	Other obsessive-compulsive disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F429'	Obsessive-compulsive disorder, unspecified
'F4311'	Post-traumatic stress disorder, acute
'F4312'	Post-traumatic stress disorder, chronic
'F930'	Separation anxiety disorder of childhood
'F940'	Selective mutism
'R466'	Undue concern and preoccupation with stressful events
'F0633'	Mood disorder due to known physiol cond w manic features
'F0634'	Mood disorder due to known physiol cond w mixed features
'F3010'	Manic episode without psychotic symptoms, unspecified
'F3011'	Manic episode without psychotic symptoms, mild
'F3012'	Manic episode without psychotic symptoms, moderate
'F3013'	Manic episode, severe, without psychotic symptoms
'F302'	Manic episode, severe with psychotic symptoms
'F303'	Manic episode in partial remission
'F308'	Other manic episodes
'F309'	Manic episode, unspecified
'F310'	Bipolar disorder, current episode hypomanic
'F3110'	Bipolar disord, crnt episode manic w/o psych features, unsp
'F3111'	Bipolar disord, crnt episode manic w/o psych features, mild
'F3112'	Bipolar disord, crnt episode manic w/o psych features, mod
'F3113'	Bipolar disord, crnt epsd manic w/o psych features, severe
'F312'	Bipolar disord, crnt episode manic severe w psych features
'F3130'	Bipolar disord, crnt epsd depress, mild or mod severt, unsp
'F3131'	Bipolar disorder, current episode depressed, mild
'F3132'	Bipolar disorder, current episode depressed, moderate
'F314'	Bipolar disord, crnt epsd depress, sev, w/o psych features
'F315'	Bipolar disord, crnt epsd depress, severe, w psych features
'F3160'	Bipolar disorder, current episode mixed, unspecified
'F3161'	Bipolar disorder, current episode mixed, mild
'F3162'	Bipolar disorder, current episode mixed, moderate
'F3163'	Bipolar disord, crnt epsd mixed, severe, w/o psych features
'F3164'	Bipolar disord, crnt episode mixed, severe, w psych features
'F3171'	Bipolar disord, in partial remis, most recent epsd hypomanic
'F3173'	Bipolar disord, in partial remis, most recent episode manic
'F3175'	Bipolar disord, in partial remis, most recent epsd depress
'F3177'	Bipolar disord, in partial remis, most recent episode mixed
'F3181'	Bipolar II disorder
'F3189'	Other bipolar disorder
'F319'	Bipolar disorder, unspecified
'F340'	Cyclothymic disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F0630'	Mood disorder due to known physiological condition, unsp
'F0631'	Mood disorder due to known physiol cond w depressv features
'F0632'	Mood disord d/t physiol cond w major depressive-like epsd
'F320'	Major depressive disorder, single episode, mild
'F321'	Major depressive disorder, single episode, moderate
'F322'	Major depressv disord, single epsd, sev w/o psych features
'F323'	Major depressv disord, single epsd, severe w psych features
'F324'	Major depressv disorder, single episode, in partial remis
'F328'	Other depressive episodes
'F3281'	Premenstrual dysphoric disorder
'F3289'	Other specified depressive episodes
'F329'	Major depressive disorder, single episode, unspecified
'F330'	Major depressive disorder, recurrent, mild
'F331'	Major depressive disorder, recurrent, moderate
'F332'	Major depressv disorder, recurrent severe w/o psych features
'F333'	Major depressv disorder, recurrent, severe w psych symptoms
'F3341'	Major depressive disorder, recurrent, in partial remission
'F338'	Other recurrent depressive disorders
'F339'	Major depressive disorder, recurrent, unspecified
'F341'	Dysthymic disorder
'F348'	Other persistent mood [affective] disorders
'F3481'	Disruptive mood dysregulation disorder
'F3489'	Other specified persistent mood disorders
'F349'	Persistent mood [affective] disorder, unspecified
'F39'	Unspecified mood [affective] disorder
'O906'	Postpartum mood disturbance
'F631'	Pyromania
'F632'	Kleptomania
'F6381'	Intermittent explosive disorder
'F6389'	Other impulse disorders
'F639'	Impulse disorder, unspecified
'F910'	Conduct disorder confined to family context
'F911'	Conduct disorder, childhood-onset type
'F912'	Conduct disorder, adolescent-onset type
'F913'	Oppositional defiant disorder
'F918'	Other conduct disorders
'F919'	Conduct disorder, unspecified
'F440'	Dissociative amnesia
'F441'	Dissociative fugue
'F442'	Dissociative stupor

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F4481'	Dissociative identity disorder
'F4489'	Other dissociative and conversion disorders
'F449'	Dissociative and conversion disorder, unspecified
'F481'	Depersonalization-derealization syndrome
'F5000'	Anorexia nervosa, unspecified
'F5001'	Anorexia nervosa, restricting type
'F5002'	Anorexia nervosa, binge eating/purging type
'F502'	Bulimia nervosa
'F508'	Other eating disorders
'F5081'	Binge eating disorder
'F5082'	Avoidant/restrictive food intake disorder
'F5089'	Other specified eating disorder
'F509'	Eating disorder, unspecified
'F9821'	Rumination disorder of infancy
'F9829'	Other feeding disorders of infancy and early childhood
'F983'	Pica of infancy and childhood
'F980'	Enuresis not due to a substance or known physiol condition
'F981'	Encopresis not due to a substance or known physiol condition
'F641'	Dual role transvestism
'F642'	Gender identity disorder of childhood
'F648'	Other sex identity disorders
'F649'	Gender identity disorder, unspecified
'F938'	Other childhood emotional disorders
'R45850'	Homicidal ideations
'F0150'	Vascular dementia without behavioral disturbance
'F0151'	Vascular dementia with behavioral disturbance
'F0280'	Dementia in oth diseases classd elswhr w/o behavrl disturb
'F0281'	Dementia in oth diseases classd elswhr w behavioral disturb
'F0390'	Unspecified dementia without behavioral disturbance
'F0391'	Unspecified dementia with behavioral disturbance
'F04'	Amnestic disorder due to known physiological condition
'F05'	Delirium due to known physiological condition
'F0781'	Postconcussional syndrome
'F0789'	Oth personality & behavrl disord due to known physiol cond
'F079'	Unsp personality & behavrl disord due to known physiol cond
'F482'	Pseudobulbar affect
'G300'	Alzheimer's disease with early onset
'G301'	Alzheimer's disease with late onset
'G308'	Other Alzheimer's disease
'G309'	Alzheimer's disease, unspecified

ICD-10-CM DIAGNOSIS	DESCRIPTION
'G3101'	Pick's disease
'G3109'	Other frontotemporal dementia
'G311'	Senile degeneration of brain, not elsewhere classified
'G3183'	Dementia with Lewy bodies
'R4181'	Age-related cognitive decline
'R54'	Age-related physical debility
'F70'	Mild intellectual disabilities
'F71'	Moderate intellectual disabilities
'F72'	Severe intellectual disabilities
'F73'	Profound intellectual disabilities
'F78'	Other intellectual disabilities
'F79'	Unspecified intellectual disabilities
'F800'	Phonological disorder
'F801'	Expressive language disorder
'F802'	Mixed receptive-expressive language disorder
'F804'	Speech and language development delay due to hearing loss
'F8081'	Childhood onset fluency disorder
'F8082'	Social pragmatic communication disorder
'F8089'	Other developmental disorders of speech and language
'F809'	Developmental disorder of speech and language, unspecified
'F810'	Specific reading disorder
'F812'	Mathematics disorder
'F8181'	Disorder of written expression
'F8189'	Other developmental disorders of scholastic skills
'F819'	Developmental disorder of scholastic skills, unspecified
'F82'	Specific developmental disorder of motor function
'F840'	Autistic disorder
'F842'	Rett's syndrome
'F843'	Other childhood disintegrative disorder
'F845'	Asperger's syndrome
'F848'	Other pervasive developmental disorders
'F849'	Pervasive developmental disorder, unspecified
'F88'	Other disorders of psychological development
'F89'	Unspecified disorder of psychological development
'F900'	Attn-defct hyperactivity disorder, predom inattentive type
'F901'	Attn-defct hyperactivity disorder, predom hyperactive type
'F902'	Attention-deficit hyperactivity disorder, combined type
'F908'	Attention-deficit hyperactivity disorder, other type
'F909'	Attention-deficit hyperactivity disorder, unspecified type
'F948'	Other childhood disorders of social functioning

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F949'	Childhood disorder of social functioning, unspecified
'F950'	Transient tic disorder
'F951'	Chronic motor or vocal tic disorder
'F952'	Tourette's disorder
'F958'	Other tic disorders
'F959'	Tic disorder, unspecified
'F984'	Stereotyped movement disorders
'F985'	Adult onset fluency disorder
'R480'	Dyslexia and alexia
'F42'	Obsessive-compulsive disorder
'F4521'	Hypochondriasis
'F4522'	Body dysmorphic disorder
'F633'	Trichotillomania
'R4681'	Obsessive-compulsive behavior
'F068'	Oth mental disorders due to known physiological condition
'F09'	Unsp mental disorder due to known physiological condition
'F488'	Other specified nonpsychotic mental disorders
'F489'	Nonpsychotic mental disorder, unspecified
'F939'	Childhood emotional disorder, unspecified
'F99'	Mental disorder, not otherwise specified
'F650'	Fetishism
'F651'	Transvestic fetishism
'F652'	Exhibitionism
'F653'	Voyeurism
'F654'	Pedophilia
'F6551'	Sexual masochism
'F6552'	Sexual sadism
'F6581'	Frotteurism
'F6589'	Other paraphilias
'F659'	Paraphilia, unspecified
'F070'	Personality change due to known physiological condition
'F21'	Schizotypal disorder
'F600'	Paranoid personality disorder
'F601'	Schizoid personality disorder
'F602'	Antisocial personality disorder
'F603'	Borderline personality disorder
'F604'	Histrionic personality disorder
'F605'	Obsessive-compulsive personality disorder
'F606'	Avoidant personality disorder
'F607'	Dependent personality disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F6081'	Narcissistic personality disorder
'F6089'	Other specific personality disorders
'F609'	Personality disorder, unspecified
'F6811'	Factitious disorder w predom psych signs and symptoms
'F6812'	Factitious disorder w predom physical signs and symptoms
'F6813'	Factitious disord w comb psych and physcl signs and symptoms
'F688'	Other specified disorders of adult personality and behavior
'F69'	Unspecified disorder of adult personality and behavior
'F060'	Psychotic disorder w hallucin due to known physiol condition
'F061'	Catatonic disorder due to known physiological condition
'F062'	Psychotic disorder w delusions due to known physiol cond
'F200'	Paranoid schizophrenia
'F201'	Disorganized schizophrenia
'F202'	Catatonic schizophrenia
'F203'	Undifferentiated schizophrenia
'F205'	Residual schizophrenia
'F2081'	Schizophreniform disorder
'F2089'	Other schizophrenia
'F209'	Schizophrenia, unspecified
'F22'	Delusional disorders
'F23'	Brief psychotic disorder
'F24'	Shared psychotic disorder
'F250'	Schizoaffective disorder, bipolar type
'F251'	Schizoaffective disorder, depressive type
'F258'	Other schizoaffective disorders
'F259'	Schizoaffective disorder, unspecified
'F28'	Oth psych disorder not due to a sub or known physiol cond
'F29'	Unsp psychosis not due to a substance or known physiol cond
'F520'	Hypoactive sexual desire disorder
'F521'	Sexual aversion disorder
'F5221'	Male erectile disorder
'F5222'	Female sexual arousal disorder
'F5231'	Female orgasmic disorder
'F5232'	Male orgasmic disorder
'F524'	Premature ejaculation
'F525'	Vaginismus not due to a substance or known physiol condition
'F526'	Dyspareunia not due to a substance or known physiol cond
'F528'	Oth sexual dysfnct not due to a sub or known physiol cond
'F529'	Unsp sexual dysfnct not due to a sub or known physiol cond
'F53'	Puerperal psychosis

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F640'	Transsexualism
'F6550'	Sadomasochism, unspecified
'F66'	Other sexual disorders
'R37'	Sexual dysfunction, unspecified
'F5101'	Primary insomnia
'F5102'	Adjustment insomnia
'F5103'	Paradoxical insomnia
'F5104'	Psychophysiologic insomnia
'F5105'	Insomnia due to other mental disorder
'F5109'	Oth insomnia not due to a substance or known physiol cond
'F5111'	Primary hypersomnia
'F5112'	Insufficient sleep syndrome
'F5113'	Hypersomnia due to other mental disorder
'F5119'	Oth hypersomnia not due to a substance or known physiol cond
'F513'	Sleepwalking [somnambulism]
'F514'	Sleep terrors [night terrors]
'F515'	Nightmare disorder
'F518'	Oth sleep disord not due to a sub or known physiol cond
'F519'	Sleep disorder not due to a sub or known physiol cond, unsp
'F444'	Conversion disorder with motor symptom or deficit
'F445'	Conversion disorder with seizures or convulsions
'F446'	Conversion disorder with sensory symptom or deficit
'F447'	Conversion disorder with mixed symptom presentation
'F450'	Somatization disorder
'F451'	Undifferentiated somatoform disorder
'F4520'	Hypochondriacal disorder, unspecified
'F4529'	Other hypochondriacal disorders
'F4541'	Pain disorder exclusively related to psychological factors
'F4542'	Pain disorder with related psychological factors
'F458'	Other somatoform disorders
'F459'	Somatoform disorder, unspecified
'F54'	Psych & behavrl factors assoc w disord or dis classd elswhr
'F6810'	Factitious disorder, unspecified
'R45851'	Suicidal ideations
'T1491'	Suicide attempt (through FY 2017)
'T1491XA'	Suicide attempt, initial encounter
'T360X2A'	Poisoning by penicillins, intentional self-harm, init encntr
'T361X2A'	Poisn by cephalospor/oth beta-lactm antibiot, slf-hrm, init
'T362X2A'	Poisoning by chloramphenicol group, self-harm, init
'T363X2A'	Poisoning by macrolides, intentional self-harm, init encntr

ICD-10-CM DIAGNOSIS	DESCRIPTION
'T364X2A'	Poisoning by tetracyclines, intentional self-harm, init
'T365X2A'	Poisoning by aminoglycosides, intentional self-harm, init
'T366X2A'	Poisoning by rifampicins, intentional self-harm, init encntr
'T367X2A'	Poisoning by antifungal antibiot, sys used, self-harm, init
'T368X2A'	Poisoning by oth systemic antibiotics, self-harm, init
'T3692XA'	Poisoning by unsp systemic antibiotic, self-harm, init
'T370X2A'	Poisoning by sulfonamides, intentional self-harm, init
'T371X2A'	Poisoning by antimycobacterial drugs, self-harm, init
'T372X2A'	Poisn by antimalari/drugs act on bld protzoa, slf-hrm, init
'T373X2A'	Poisoning by oth antiprotozoal drugs, self-harm, init
'T374X2A'	Poisoning by anthelminthics, intentional self-harm, init
'T375X2A'	Poisoning by antiviral drugs, intentional self-harm, init
'T378X2A'	Poisn by oth systemic anti-infect/parasit, self-harm, init
'T3792XA'	Poisn by unsp sys anti-infect and antiparastc, slf-hrm, init
'T380X2A'	Poisoning by glucocort/synth analog, self-harm, init
'T381X2A'	Poisoning by thyroid hormones and sub, self-harm, init
'T382X2A'	Poisoning by antithyroid drugs, intentional self-harm, init
'T383X2A'	Poisn by insulin and oral hypoglycemic drugs, slf-hrm, init
'T384X2A'	Poisoning by oral contraceptives, self-harm, init
'T385X2A'	Poisoning by oth estrogens and progestogens, self-harm, init
'T386X2A'	Poisn by antigonadtr/antiestr/antiandrg, NEC, slf-hrm, init
'T387X2A'	Poisn by androgens and anabolic congeners, self-harm, init
'T38802A'	Poisn by unsp hormones and synthetic sub, self-harm, init
'T38812A'	Poisoning by anterior pituitary hormones, self-harm, init
'T38892A'	Poisoning by oth hormones and synthetic sub, self-harm, init
'T38902A'	Poisoning by unsp hormone antagonists, self-harm, init
'T38992A'	Poisoning by oth hormone antagonists, self-harm, init
'T39012A'	Poisoning by aspirin, intentional self-harm, init encntr
'T39092A'	Poisoning by salicylates, intentional self-harm, init encntr
'T391X2A'	Poisoning by 4-Aminophenol derivatives, self-harm, init
'T392X2A'	Poisoning by pyrazolone derivatives, self-harm, init
'T39312A'	Poisoning by propionic acid derivatives, self-harm, init
'T39392A'	Poisn by oth nonsteroid anti-inflam drugs, self-harm, init
'T394X2A'	Poisoning by antirheumatics, NEC, self-harm, init
'T398X2A'	Poisn by oth nonopio analges/antipyret, NEC, self-harm, init
'T3992XA'	Poisn by unsp nonopi analgs/antipyr/antirheu, slf-hrm, init
'T405X2A'	Poisoning by cocaine, intentional self-harm, init encntr
'T407X2A'	Poisoning by cannabis (derivatives), self-harm, init
'T408X2A'	Poisoning by lysergide, intentional self-harm, init encntr
'T40902A'	Poisoning by unsp psychodysleptics, self-harm, init

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'T40992A'	Poisoning by oth psychodysleptics, self-harm, init
'T410X2A'	Poisoning by inhaled anesthetics, self-harm, init
'T411X2A'	Poisoning by intravenous anesthetics, self-harm, init
'T41202A'	Poisoning by unsp general anesthetics, self-harm, init
'T41292A'	Poisoning by oth general anesthetics, self-harm, init
'T413X2A'	Poisoning by local anesthetics, intentional self-harm, init
'T4142XA'	Poisoning by unsp anesthetic, intentional self-harm, init
'T415X2A'	Poisoning by therapeutic gases, intentional self-harm, init
'T420X2A'	Poisoning by hydantoin derivatives, self-harm, init
'T421X2A'	Poisoning by iminostilbenes, intentional self-harm, init
'T422X2A'	Poisn by succinimides and oxazolidinediones, self-harm, init
'T423X2A'	Poisoning by barbiturates, intentional self-harm, init
'T424X2A'	Poisoning by benzodiazepines, intentional self-harm, init
'T425X2A'	Poisoning by mixed antiepileptics, self-harm, init
'T426X2A'	Poisn by oth antieplptc and sed-hypntc drugs, slf-hrm, init
'T4272XA'	Poisn by unsp antieplptc and sed-hypntc drugs, slf-hrm, init
'T428X2A'	Poisn by antiparkns drug/centr musc-tone depr, slf-hrm, init
'T43012A'	Poisoning by tricyclic antidepressants, self-harm, init
'T43022A'	Poisoning by tetracyclic antidepressants, self-harm, init
'T431X2A'	Poisoning by MAO inhib antidepressants, self-harm, init
'T43202A'	Poisoning by unsp antidepressants, self-harm, init
'T43212A'	Poisn by slctv seroton/norepineph reup inhibtr,slf-hrm, init
'T43222A'	Poisn by slctv serotonin reuptake inhibtr, self-harm, init
'T43292A'	Poisoning by oth antidepressants, self-harm, init
'T433X2A'	Poisn by phenothiaz antipsychot/neurolept, self-harm, init
'T434X2A'	Poisn by butyrophen/thiothixen neuroleptc, self-harm, init
'T43502A'	Poisoning by unsp antipsychot/neurolept, self-harm, init
'T43592A'	Poisoning by oth antipsychot/neurolept, self-harm, init
'T43602A'	Poisoning by unsp psychostimulants, self-harm, init
'T43612A'	Poisoning by caffeine, intentional self-harm, init encntr
'T43622A'	Poisoning by amphetamines, intentional self-harm, init
'T43632A'	Poisoning by methylphenidate, intentional self-harm, init
'T43692A'	Poisoning by oth psychostimulants, self-harm, init
'T438X2A'	Poisoning by oth psychotropic drugs, self-harm, init
'T4392XA'	Poisoning by unsp psychotropic drug, self-harm, init
'T440X2A'	Poisoning by anticholinesterase agents, self-harm, init
'T441X2A'	Poisoning by oth parasympathomimetics, self-harm, init
'T442X2A'	Poisoning by ganglionic blocking drugs, self-harm, init
'T443X2A'	Poisn by oth parasympath and spasmolytics, self-harm, init
'T444X2A'	Poisn by predom alpha-adrenocpt agonists, self-harm, init

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'T445X2A'	Poisoning by predom beta-adrenocpt agonists, self-harm, init
'T446X2A'	Poisoning by alpha-adrenocpt antagonists, self-harm, init
'T447X2A'	Poisoning by beta-adrenocpt antagonists, self-harm, init
'T448X2A'	Poisn by centr-acting/adren-neurn-block agnt, slf-hrm, init
'T44902A'	Poisn by unsp drugs aff the autonm nrv sys, slf-hrm, init
'T44992A'	Poisn by oth drug aff the autonm nervous sys, slf-hrm, init
'T450X2A'	Poisoning by antiallerg/antiemetic, self-harm, init
'T451X2A'	Poisoning by antineopl and immunosup drugs, self-harm, init
'T452X2A'	Poisoning by vitamins, intentional self-harm, init encntr
'T453X2A'	Poisoning by enzymes, intentional self-harm, init encntr
'T454X2A'	Poisoning by iron and its compounds, self-harm, init
'T45512A'	Poisoning by anticoagulants, intentional self-harm, init
'T45522A'	Poisoning by antithrombotic drugs, self-harm, init
'T45602A'	Poisoning by unsp fibrin-affct drugs, self-harm, init
'T45612A'	Poisoning by thrombolytic drug, intentional self-harm, init
'T45622A'	Poisoning by hemostatic drug, intentional self-harm, init
'T45692A'	Poisoning by oth fibrin-affct drugs, self-harm, init
'T457X2A'	Poisn by anticoag antag, vit K and oth coag, slf-hrm, init
'T458X2A'	Poisn by oth prim sys and hematolog agents, slf-hrm, init
'T4592XA'	Poisn by unsp prim sys and hematolog agent, slf-hrm, init
'T460X2A'	Poisn by cardi-stim glycos/drug simlar act, self-harm, init
'T461X2A'	Poisoning by calcium-channel blockers, self-harm, init
'T462X2A'	Poisoning by oth antidysrhythmic drugs, self-harm, init
'T463X2A'	Poisoning by coronary vasodilators, self-harm, init
'T464X2A'	Poisn by angiotens-convert-enzyme inhibtr, self-harm, init
'T465X2A'	Poisoning by oth antihypertensive drugs, self-harm, init
'T466X2A'	Poisn by antihyperlip and antiarterio drugs, self-harm, init
'T467X2A'	Poisoning by peripheral vasodilators, self-harm, init
'T468X2A'	Poisn by antivaric drugs, inc scler agents, self-harm, init
'T46902A'	Poisn by unsp agents aff the cardiovasc sys, self-harm, init
'T46992A'	Poisn by oth agents aff the cardiovasc sys, self-harm, init
'T470X2A'	Poisoning by histamine H2-receptor blockers, self-harm, init
'T471X2A'	Poisn by oth antacids & anti-gstrc-sec drugs, slf-hrm, init
'T472X2A'	Poisoning by stimulant laxatives, self-harm, init
'T473X2A'	Poisoning by saline and osmotic laxatives, self-harm, init
'T474X2A'	Poisoning by oth laxatives, intentional self-harm, init
'T475X2A'	Poisoning by digestants, intentional self-harm, init encntr
'T476X2A'	Poisoning by antidiarrheal drugs, self-harm, init
'T477X2A'	Poisoning by emetics, intentional self-harm, init encntr
'T478X2A'	Poisoning by oth agents aff GI sys, self-harm, init

ICD-10-CM DIAGNOSIS	DESCRIPTION
'T4792XA'	Poisoning by unsp agents aff the GI sys, self-harm, init
'T480X2A'	Poisoning by oxytocic drugs, intentional self-harm, init
'T481X2A'	Poisoning by skeletal muscle relaxants, self-harm, init
'T48202A'	Poisoning by unsp drugs acting on muscles, self-harm, init
'T48292A'	Poisoning by oth drugs acting on muscles, self-harm, init
'T483X2A'	Poisoning by antitussives, intentional self-harm, init
'T484X2A'	Poisoning by expectorants, intentional self-harm, init
'T485X2A'	Poisoning by oth anti-common-cold drugs, self-harm, init
'T486X2A'	Poisoning by antiasthmatics, intentional self-harm, init
'T48902A'	Poisn by unsp agents prim act on the resp sys, slf-hrm, init
'T48992A'	Poisn by oth agents prim act on the resp sys, slf-hrm, init
'T490X2A'	Poisn by local antifung/infect/inflamm drugs, slf-hrm, init
'T491X2A'	Poisoning by antipruritics, intentional self-harm, init
'T492X2A'	Poisoning by local astringents/detergents, self-harm, init
'T493X2A'	Poisn by emollients, demulcents and protect, self-harm, init
'T494X2A'	Poisn by keratolyt/keratplst/hair trmt drug, self-harm, init
'T495X2A'	Poisoning by opth drugs and preparations, self-harm, init
'T496X2A'	Poisoning by otorhino drugs and prep, self-harm, init
'T497X2A'	Poisn by dental drugs, topically applied, self-harm, init
'T498X2A'	Poisoning by oth topical agents, intentional self-harm, init
'T4992XA'	Poisoning by unsp topical agent, intentional self-harm, init
'T500X2A'	Poisoning by mineralocorticoids and antag, self-harm, init
'T501X2A'	Poisoning by loop diuretics, intentional self-harm, init
'T502X2A'	Poisn by crbnc-anhydr inhibtr,benzo/oth diuretc,slf-hrm,init
'T503X2A'	Poisn by electrolytic/caloric/wtr-bal agnt, self-harm, init
'T504X2A'	Poisoning by drugs aff uric acid metab, self-harm, init
'T505X2A'	Poisoning by appetite depressants, self-harm, init
'T506X2A'	Poisoning by antidotes and chelating agents, self-harm, init
'T507X2A'	Poisn by analeptics and opioid receptor antag, slf-hrm, init
'T508X2A'	Poisoning by diagnostic agents, intentional self-harm, init
'T50902A'	Poisoning by unsp drug/meds/biol subst, self-harm, init
'T50992A'	Poisoning by oth drug/meds/biol subst, self-harm, init
'T50A12A'	Poisn by pertuss vaccn, inc combin w pertuss, slf-hrm, init
'T50A22A'	Poisn by mixed bact vaccines w/o a pertuss, self-harm, init
'T50A92A'	Poisoning by oth bacterial vaccines, self-harm, init
'T50B12A'	Poisoning by smallpox vaccines, intentional self-harm, init
'T50B92A'	Poisoning by oth viral vaccines, intentional self-harm, init
'T50Z12A'	Poisoning by immunoglobulin, intentional self-harm, init
'T50Z92A'	Poisoning by oth vaccines and biolg substnc, self-harm, init
'T510X2A'	Toxic effect of ethanol, intentional self-harm, init encntr

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'T511X2A'	Toxic effect of methanol, intentional self-harm, init encntr
'T512X2A'	Toxic effect of 2-Propanol, intentional self-harm, init
'T513X2A'	Toxic effect of fusel oil, intentional self-harm, init
'T518X2A'	Toxic effect of oth alcohols, intentional self-harm, init
'T5192XA'	Toxic effect of unsp alcohol, intentional self-harm, init
'T520X2A'	Toxic effect of petroleum products, self-harm, init
'T521X2A'	Toxic effect of benzene, intentional self-harm, init encntr
'T522X2A'	Toxic effect of homologues of benzene, self-harm, init
'T523X2A'	Toxic effect of glycols, intentional self-harm, init encntr
'T524X2A'	Toxic effect of ketones, intentional self-harm, init encntr
'T528X2A'	Toxic effect of organic solvents, self-harm, init
'T5292XA'	Toxic effect of unsp organic solvent, self-harm, init
'T530X2A'	Toxic effect of carbon tetrachloride, self-harm, init
'T531X2A'	Toxic effect of chloroform, intentional self-harm, init
'T532X2A'	Toxic effect of trichloroethylene, self-harm, init
'T533X2A'	Toxic effect of tetrachloroethylene, self-harm, init
'T534X2A'	Toxic effect of dichloromethane, intentional self-harm, init
'T535X2A'	Toxic effect of chlorofluorocarbons, self-harm, init
'T536X2A'	Tox eff of halgn deriv of aliphatic hydrocrb, slf-hrm, init
'T537X2A'	Tox eff of halgn deriv of aromatic hydrocrb, slf-hrm, init
'T5392XA'	Tox eff of unsp halgn deriv of aromat hydrocrb,slf-hrm, init
'T540X2A'	Toxic effect of phenol and phenol homolog, self-harm, init
'T541X2A'	Toxic effect of corrosive organic compounds, self-harm, init
'T542X2A'	Tox eff of corrosv acids & acid-like substnc, slf-hrm, init
'T543X2A'	Tox eff of corrosv alkalis & alk-like substnc, slf-hrm, init
'T5492XA'	Toxic effect of unsp corrosive substance, self-harm, init
'T550X2A'	Toxic effect of soaps, intentional self-harm, init encntr
'T551X2A'	Toxic effect of detergents, intentional self-harm, init
'T560X2A'	Toxic effect of lead and its compounds, self-harm, init
'T561X2A'	Toxic effect of mercury and its compounds, self-harm, init
'T562X2A'	Toxic effect of chromium and its compounds, self-harm, init
'T563X2A'	Toxic effect of cadmium and its compounds, self-harm, init
'T564X2A'	Toxic effect of copper and its compounds, self-harm, init
'T565X2A'	Toxic effect of zinc and its compounds, self-harm, init
'T566X2A'	Toxic effect of tin and its compounds, self-harm, init
'T567X2A'	Toxic effect of beryllium and its compounds, self-harm, init
'T56812A'	Toxic effect of thallium, intentional self-harm, init encntr
'T56892A'	Toxic effect of oth metals, intentional self-harm, init
'T5692XA'	Toxic effect of unsp metal, intentional self-harm, init
'T570X2A'	Toxic effect of arsenic and its compounds, self-harm, init

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'T571X2A'	Toxic effect of phosphorus and its compnd, self-harm, init
'T572X2A'	Toxic effect of manganese and its compounds, self-harm, init
'T573X2A'	Toxic effect of hydrogen cyanide, self-harm, init
'T578X2A'	Toxic effect of inorganic substances, self-harm, init
'T5792XA'	Toxic effect of unsp inorganic substance, self-harm, init
'T5802XA'	Toxic eff of carb monx from mtr veh exhaust, slf-hrm, init
'T5812XA'	Toxic effect of carb monx from utility gas, self-harm, init
'T582X2A'	Tox eff of carb monx fr incmpl combst dmst fuel,slf-hrm,init
'T588X2A'	Toxic effect of carb monx from oth source, self-harm, init
'T5892XA'	Toxic effect of carb monx from unsp source, self-harm, init
'T590X2A'	Toxic effect of nitrogen oxides, intentional self-harm, init
'T591X2A'	Toxic effect of sulfur dioxide, intentional self-harm, init
'T592X2A'	Toxic effect of formaldehyde, intentional self-harm, init
'T593X2A'	Toxic effect of lacrimogenic gas, self-harm, init
'T594X2A'	Toxic effect of chlorine gas, intentional self-harm, init
'T595X2A'	Tox eff of fluorine gas and hydrogen fluoride, slf-hrm, init
'T596X2A'	Toxic effect of hydrogen sulfide, self-harm, init
'T597X2A'	Toxic effect of carbon dioxide, intentional self-harm, init
'T59812A'	Toxic effect of smoke, intentional self-harm, init encntr
'T59892A'	Toxic effect of gases, fumes and vapors, self-harm, init
'T5992XA'	Toxic effect of unsp gases, fumes and vapors, slf-hrm, init
'T600X2A'	Toxic eff of organophos and carbamate insect, slf-hrm, init
'T601X2A'	Toxic effect of halogenated insecticides, self-harm, init
'T602X2A'	Toxic effect of insecticides, intentional self-harm, init
'T603X2A'	Toxic effect of herbicides and fungicides, self-harm, init
'T604X2A'	Toxic effect of rodenticides, intentional self-harm, init
'T608X2A'	Toxic effect of oth pesticides, intentional self-harm, init
'T6092XA'	Toxic effect of unsp pesticide, intentional self-harm, init
'T6102XA'	Ciguatera fish poisoning, intentional self-harm, init encntr
'T6112XA'	Scombroid fish poisoning, intentional self-harm, init encntr
'T61772A'	Other fish poisoning, intentional self-harm, init encntr
'T61782A'	Oth shellfish poisoning, intentional self-harm, init encntr
'T618X2A'	Toxic effect of oth seafood, intentional self-harm, init
'T6192XA'	Toxic effect of unsp seafood, intentional self-harm, init
'T620X2A'	Toxic effect of ingested mushrooms, self-harm, init
'T621X2A'	Toxic effect of ingested berries, self-harm, init
'T622X2A'	Toxic effect of ingested (parts of) plant(s), slf-hrm, init
'T628X2A'	Toxic effect of noxious substnc eaten as food, slf-hrm, init
'T6292XA'	Toxic eff of unsp noxious sub eaten as food, slf-hrm, init
'T63002A'	Toxic effect of unsp snake venom, self-harm, init

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'T63012A'	Toxic effect of rattlesnake venom, self-harm, init
'T63022A'	Toxic effect of coral snake venom, self-harm, init
'T63032A'	Toxic effect of taipan venom, intentional self-harm, init
'T63042A'	Toxic effect of cobra venom, intentional self-harm, init
'T63062A'	Toxic effect of venom of N & S American snake, slf-hrm, init
'T63072A'	Toxic effect of venom of Australian snake, self-harm, init
'T63082A'	Toxic eff of venom of African and Asian snake, slf-hrm, init
'T63092A'	Toxic effect of venom of snake, intentional self-harm, init
'T63112A'	Toxic effect of venom of gila monster, self-harm, init
'T63122A'	Toxic effect of venom of venomous lizard, self-harm, init
'T63192A'	Toxic effect of venom of reptiles, self-harm, init
'T632X2A'	Toxic effect of venom of scorpion, self-harm, init
'T63302A'	Toxic effect of unsp spider venom, self-harm, init
'T63312A'	Toxic effect of venom of black widow spider, self-harm, init
'T63322A'	Toxic effect of venom of tarantula, self-harm, init
'T63332A'	Toxic effect of venom of brown recluse spider, slf-hrm, init
'T63392A'	Toxic effect of venom of spider, intentional self-harm, init
'T63412A'	Toxic effect of venom of centipede/millipede, slf-hrm, init
'T63422A'	Toxic effect of venom of ants, intentional self-harm, init
'T63432A'	Toxic effect of venom of caterpillars, self-harm, init
'T63442A'	Toxic effect of venom of bees, intentional self-harm, init
'T63452A'	Toxic effect of venom of hornets, self-harm, init
'T63462A'	Toxic effect of venom of wasps, intentional self-harm, init
'T63482A'	Toxic effect of venom of arthropod, self-harm, init
'T63512A'	Toxic effect of contact w stingray, self-harm, init
'T63592A'	Toxic effect of contact w oth venomous fish, self-harm, init
'T63612A'	Toxic effect of contact w Portugese Man-o-war, slf-hrm, init
'T63622A'	Toxic effect of contact w oth jellyfish, self-harm, init
'T63632A'	Toxic effect of contact w sea anemone, self-harm, init
'T63692A'	Toxic eff of cntct w oth venom marine animals, slf-hrm, init
'T63712A'	Toxic effect of contact w venom marine plant, slf-hrm, init
'T63792A'	Toxic effect of contact w oth venomous plant, slf-hrm, init
'T63812A'	Toxic effect of contact w venomous frog, self-harm, init
'T63822A'	Toxic effect of contact w venomous toad, self-harm, init
'T63832A'	Toxic effect of contact w oth venomous amphib, slf-hrm, init
'T63892A'	Toxic effect of contact w oth venom animals, slf-hrm, init
'T6392XA'	Toxic effect of contact w unsp venom animal, slf-hrm, init
'T6402XA'	Toxic effect of aflatoxin, intentional self-harm, init
'T6482XA'	Toxic effect of mycotoxin food contaminants, self-harm, init
'T650X2A'	Toxic effect of cyanides, intentional self-harm, init encntr

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'T651X2A'	Toxic effect of strychnine and its salts, self-harm, init
'T65212A'	Toxic effect of chewing tobacco, intentional self-harm, init
'T65222A'	Toxic effect of tobacco cigarettes, self-harm, init
'T65292A'	Toxic effect of tobacco and nicotine, self-harm, init
'T653X2A'	Tox eff of nitrodrv/aminodrv of benzn/homolog, slf-hrm, init
'T654X2A'	Toxic effect of carbon disulfide, self-harm, init
'T655X2A'	Tox eff of nitro & oth nitric acids & esters, slf-hrm, init
'T656X2A'	Toxic effect of paints and dyes, NEC, self-harm, init
'T65812A'	Toxic effect of latex, intentional self-harm, init encntr
'T65822A'	Toxic eff of harmful algae and algae toxins, slf-hrm, init
'T65832A'	Toxic effect of fiberglass, intentional self-harm, init
'T65892A'	Toxic effect of oth substances, intentional self-harm, init
'T6592XA'	Toxic effect of unsp substance, intentional self-harm, init
'T71112A'	Asphyxiation due to smothering under pillow, self-harm, init
'T71122A'	Asphyxiation due to plastic bag, intentional self-harm, init
'T71132A'	Asphyx due to being trapped in bed linens, self-harm, init
'T71152A'	Asphyxiation due to smothering in furniture, self-harm, init
'T71162A'	Asphyxiation due to hanging, intentional self-harm, init
'T71192A'	Asphyx d/t mech thrt to breathe d/t oth cause, slf-hrm, init
'T71222A'	Asphyx due to being trapped in a car trunk, self-harm, init
'T71232A'	Asphyx d/t being trap in a (discarded) refrig, slf-hrm, init
'X710XXA'	Intentional self-harm by drown while in bathtub, init
'X711XXA'	Intentional self-harm by drown while in swimming pool, init
'X712XXA'	Self-harm by drown after jump into swimming pool, init
'X713XXA'	Intentional self-harm by drown in natural water, init
'X718XXA'	Oth intentional self-harm by drowning and submersion, init
'X719XXA'	Intentional self-harm by drowning and submersion, unsp, init
'X72XXXA'	Intentional self-harm by handgun discharge, init encntr
'X730XXA'	Intentional self-harm by shotgun discharge, init encntr
'X731XXA'	Intentional self-harm by hunting rifle discharge, init
'X732XXA'	Intentional self-harm by machine gun discharge, init encntr
'X738XXA'	Intentional self-harm by oth larger firearm discharge, init
'X739XXA'	Intentional self-harm by unsp larger firearm discharge, init
'X7401XA'	Intentional self-harm by airgun, initial encounter
'X7402XA'	Intentional self-harm by paintball gun, initial encounter
'X7409XA'	Self-harm by oth gas, air or spring-operated gun, init
'X748XXA'	Intentional self-harm by oth firearm discharge, init encntr
'X749XXA'	Intentional self-harm by unsp firearm discharge, init encntr
'X75XXXA'	Intentional self-harm by explosive material, init encntr
'X76XXXA'	Intentional self-harm by smoke, fire and flames, init encntr

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'X770XXA'	Intentional self-harm by steam or hot vapors, init encntr
'X771XXA'	Intentional self-harm by hot tap water, initial encounter
'X772XXA'	Intentional self-harm by other hot fluids, initial encounter
'X773XXA'	Intentional self-harm by hot household appliances, init
'X778XXA'	Intentional self-harm by other hot objects, init encntr
'X779XXA'	Intentional self-harm by unsp hot objects, init encntr
'X780XXA'	Intentional self-harm by sharp glass, initial encounter
'X781XXA'	Intentional self-harm by knife, initial encounter
'X782XXA'	Intentional self-harm by sword or dagger, initial encounter
'X788XXA'	Intentional self-harm by other sharp object, init encntr
'X789XXA'	Intentional self-harm by unsp sharp object, init encntr
'X79XXXA'	Intentional self-harm by blunt object, initial encounter
'X80XXXA'	Intentional self-harm by jumping from a high place, init
'X810XXA'	Self-harm by jumping or lying in front of mtr veh, init
'X811XXA'	Slf-hrm by jumping or lying in front of (subway) train, init
'X818XXA'	Slf-hrm by jumping or lying in front of moving object, init
'X820XXA'	Intentional collision of motor vehicle w mtr veh, init
'X821XXA'	Intentional collision of motor vehicle w train, init encntr
'X822XXA'	Intentional collision of motor vehicle w tree, init encntr
'X828XXA'	Oth intentional self-harm by crashing of motor vehicle, init
'X830XXA'	Intentional self-harm by crashing of aircraft, init encntr
'X831XXA'	Intentional self-harm by electrocution, initial encounter
'X832XXA'	Intentional self-harm by exposure to extremes of cold, init
'X838XXA'	Intentional self-harm by other specified means, init encntr
'F59'	Unsp behavrl synd assoc w physiol disturb and physcl factors
'F988'	Oth behav/emotn disord w onset usly occur in chldhd and adol
'F989'	Unsp behav/emotn disord w onst usly occur in chldhd and adol
'R452'	Unhappiness
'R453'	Demoralization and apathy
'R454'	Irritability and anger
'R455'	Hostility
'R456'	Violent behavior
'R457'	State of emotional shock and stress, unspecified
'R4581'	Low self-esteem
'R4582'	Worries
'R4583'	Excessive crying of child, adolescent or adult
'R4584'	Anhedonia
'R4586'	Emotional lability
'R4589'	Other symptoms and signs involving emotional state
'R460'	Very low level of personal hygiene

ICD-10-CM DIAGNOSIS	DESCRIPTION
'R461'	Bizarre personal appearance
'R462'	Strange and inexplicable behavior
'R463'	Overactivity
'R464'	Slowness and poor responsiveness
'R465'	Suspiciousness and marked evasiveness
'R467'	Verbosity and circumstantial detail obscuring rsn for cntct
'R4689'	Other symptoms and signs involving appearance and behavior
'F430'	Acute stress reaction
'F4310'	Post-traumatic stress disorder, unspecified
'F4320'	Adjustment disorder, unspecified
'F4321'	Adjustment disorder with depressed mood
'F4322'	Adjustment disorder with anxiety
'F4323'	Adjustment disorder with mixed anxiety and depressed mood
'F4324'	Adjustment disorder with disturbance of conduct
'F4325'	Adjustment disorder w mixed disturb of emotions and conduct
'F4329'	Adjustment disorder with other symptoms
'F438'	Other reactions to severe stress
'F439'	Reaction to severe stress, unspecified
'F941'	Reactive attachment disorder of childhood
'F942'	Disinhibited attachment disorder of childhood

Table B-2: Substance Use ICD-10-CMS Diagnosis Codes

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F1010'	Alcohol abuse, uncomplicated
'F10120'	Alcohol abuse with intoxication, uncomplicated
'F10121'	Alcohol abuse with intoxication delirium
'F10129'	Alcohol abuse with intoxication, unspecified
'F1014'	Alcohol abuse with alcohol-induced mood disorder
'F10150'	Alcohol abuse w alcoh-induce psychotic disorder w delusions
'F10151'	Alcohol abuse w alcoh-induce psychotic disorder w hallucin
'F10159'	Alcohol abuse with alcohol-induced psychotic disorder, unsp
'F10180'	Alcohol abuse with alcohol-induced anxiety disorder
'F10181'	Alcohol abuse with alcohol-induced sexual dysfunction
'F10182'	Alcohol abuse with alcohol-induced sleep disorder
'F10188'	Alcohol abuse with other alcohol-induced disorder
'F1019'	Alcohol abuse with unspecified alcohol-induced disorder
'F1020'	Alcohol dependence, uncomplicated
'F10220'	Alcohol dependence with intoxication, uncomplicated
'F10221'	Alcohol dependence with intoxication delirium
'F10229'	Alcohol dependence with intoxication, unspecified

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F10230'	Alcohol dependence with withdrawal, uncomplicated
'F10231'	Alcohol dependence with withdrawal delirium
'F10232'	Alcohol dependence w withdrawal with perceptual disturbance
'F10239'	Alcohol dependence with withdrawal, unspecified
'F1024'	Alcohol dependence with alcohol-induced mood disorder
'F10250'	Alcohol depend w alcoh-induce psychotic disorder w delusions
'F10251'	Alcohol depend w alcoh-induce psychotic disorder w hallucin
'F10259'	Alcohol dependence w alcoh-induce psychotic disorder, unsp
'F1026'	Alcohol depend w alcoh-induce persisting amnestic disorder
'F1027'	Alcohol dependence with alcohol-induced persisting dementia
'F10280'	Alcohol dependence with alcohol-induced anxiety disorder
'F10281'	Alcohol dependence with alcohol-induced sexual dysfunction
'F10282'	Alcohol dependence with alcohol-induced sleep disorder
'F10288'	Alcohol dependence with other alcohol-induced disorder
'F1029'	Alcohol dependence with unspecified alcohol-induced disorder
'F10920'	Alcohol use, unspecified with intoxication, uncomplicated
'F10921'	Alcohol use, unspecified with intoxication delirium
'F10929'	Alcohol use, unspecified with intoxication, unspecified
'F1094'	Alcohol use, unspecified with alcohol-induced mood disorder
'F10950'	Alcohol use, unsp w alcoh-induce psych disorder w delusions
'F10951'	Alcohol use, unsp w alcoh-induce psych disorder w hallucin
'F10959'	Alcohol use, unsp w alcohol-induced psychotic disorder, unsp
'F1096'	Alcohol use, unsp w alcoh-induce persist amnestic disorder
'F1097'	Alcohol use, unsp with alcohol-induced persisting dementia
'F10980'	Alcohol use, unsp with alcohol-induced anxiety disorder
'F10981'	Alcohol use, unsp with alcohol-induced sexual dysfunction
'F10982'	Alcohol use, unspecified with alcohol-induced sleep disorder
'F10988'	Alcohol use, unspecified with other alcohol-induced disorder
'F1099'	Alcohol use, unsp with unspecified alcohol-induced disorder
'G621'	Alcoholic polyneuropathy
'I426'	Alcoholic cardiomyopathy
'K2920'	Alcoholic gastritis without bleeding
'K2921'	Alcoholic gastritis with bleeding
'K700'	Alcoholic fatty liver
'K7010'	Alcoholic hepatitis without ascites
'K7011'	Alcoholic hepatitis with ascites
'K702'	Alcoholic fibrosis and sclerosis of liver
'K7030'	Alcoholic cirrhosis of liver without ascites
'K7031'	Alcoholic cirrhosis of liver with ascites
'K7040'	Alcoholic hepatic failure without coma

ICD-10-CM DIAGNOSIS	DESCRIPTION
'K709'	Alcoholic liver disease, unspecified
'O99310'	Alcohol use complicating pregnancy, unspecified trimester
'O99311'	Alcohol use complicating pregnancy, first trimester
'O99312'	Alcohol use complicating pregnancy, second trimester
'O99313'	Alcohol use complicating pregnancy, third trimester
'O99314'	Alcohol use complicating childbirth
'O99315'	Alcohol use complicating the puerperium
'P043'	Newborn affected by maternal use of alcohol
'Q860'	Fetal alcohol syndrome (dysmorphic)
'F1210'	Cannabis abuse, uncomplicated
'F12120'	Cannabis abuse with intoxication, uncomplicated
'F12121'	Cannabis abuse with intoxication delirium
'F12122'	Cannabis abuse with intoxication with perceptual disturbance
'F12129'	Cannabis abuse with intoxication, unspecified
'F12150'	Cannabis abuse with psychotic disorder with delusions
'F12151'	Cannabis abuse with psychotic disorder with hallucinations
'F12159'	Cannabis abuse with psychotic disorder, unspecified
'F12180'	Cannabis abuse with cannabis-induced anxiety disorder
'F12188'	Cannabis abuse with other cannabis-induced disorder
'F1219'	Cannabis abuse with unspecified cannabis-induced disorder
'F1220'	Cannabis dependence, uncomplicated
'F12220'	Cannabis dependence with intoxication, uncomplicated
'F12221'	Cannabis dependence with intoxication delirium
'F12222'	Cannabis dependence w intoxication w perceptual disturbance
'F12229'	Cannabis dependence with intoxication, unspecified
'F12250'	Cannabis dependence with psychotic disorder with delusions
'F12251'	Cannabis dependence w psychotic disorder with hallucinations
'F12259'	Cannabis dependence with psychotic disorder, unspecified
'F12280'	Cannabis dependence with cannabis-induced anxiety disorder
'F12288'	Cannabis dependence with other cannabis-induced disorder
'F1229'	Cannabis dependence with unsp cannabis-induced disorder
'F1290'	Cannabis use, unspecified, uncomplicated
'F12920'	Cannabis use, unspecified with intoxication, uncomplicated
'F12921'	Cannabis use, unspecified with intoxication delirium
'F12922'	Cannabis use, unsp w intoxication w perceptual disturbance
'F12929'	Cannabis use, unspecified with intoxication, unspecified
'F12950'	Cannabis use, unsp with psychotic disorder with delusions
'F12951'	Cannabis use, unsp w psychotic disorder with hallucinations
'F12959'	Cannabis use, unsp with psychotic disorder, unspecified
'F12980'	Cannabis use, unspecified with anxiety disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F12988'	Cannabis use, unsp with other cannabis-induced disorder
'F1299'	Cannabis use, unsp with unsp cannabis-induced disorder
'T407X1A'	Poisoning by cannabis (derivatives), accidental, init
'T407X3A'	Poisoning by cannabis (derivatives), assault, init encntr
'T407X4A'	Poisoning by cannabis (derivatives), undetermined, init
'T407X5A'	Adverse effect of cannabis (derivatives), initial encounter
'F1610'	Hallucinogen abuse, uncomplicated
'F16120'	Hallucinogen abuse with intoxication, uncomplicated
'F16121'	Hallucinogen abuse with intoxication with delirium
'F16122'	Hallucinogen abuse w intoxication w perceptual disturbance
'F16129'	Hallucinogen abuse with intoxication, unspecified
'F1614'	Hallucinogen abuse with hallucinogen-induced mood disorder
'F16150'	Hallucinogen abuse w psychotic disorder w delusions
'F16151'	Hallucinogen abuse w psychotic disorder w hallucinations
'F16159'	Hallucinogen abuse w psychotic disorder, unsp
'F16180'	Hallucinogen abuse w hallucinogen-induced anxiety disorder
'F16183'	Hallucign abuse w hallucign persisting perception disorder
'F16188'	Hallucinogen abuse with other hallucinogen-induced disorder
'F1619'	Hallucinogen abuse with unsp hallucinogen-induced disorder
'F1620'	Hallucinogen dependence, uncomplicated
'F16220'	Hallucinogen dependence with intoxication, uncomplicated
'F16221'	Hallucinogen dependence with intoxication with delirium
'F16229'	Hallucinogen dependence with intoxication, unspecified
'F1624'	Hallucinogen dependence w hallucinogen-induced mood disorder
'F16250'	Hallucinogen dependence w psychotic disorder w delusions
'F16251'	Hallucinogen dependence w psychotic disorder w hallucin
'F16259'	Hallucinogen dependence w psychotic disorder, unsp
'F16280'	Hallucinogen dependence w anxiety disorder
'F16283'	Hallucign depend w hallucign persisting perception disorder
'F16288'	Hallucinogen dependence w oth hallucinogen-induced disorder
'F1629'	Hallucinogen dependence w unsp hallucinogen-induced disorder
'F1690'	Hallucinogen use, unspecified, uncomplicated
'F16920'	Hallucinogen use, unsp with intoxication, uncomplicated
'F16921'	Hallucinogen use, unsp with intoxication with delirium
'F16929'	Hallucinogen use, unspecified with intoxication, unspecified
'F1694'	Hallucinogen use, unsp w hallucinogen-induced mood disorder
'F16950'	Hallucinogen use, unsp w psychotic disorder w delusions
'F16951'	Hallucinogen use, unsp w psychotic disorder w hallucinations
'F16959'	Hallucinogen use, unsp w psychotic disorder, unsp
'F16980'	Hallucinogen use, unsp w anxiety disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F16983'	Hallucign use, unsp w hallucign persist perception disorder
'F16988'	Hallucinogen use, unsp w oth hallucinogen-induced disorder
'F1699'	Hallucinogen use, unsp w unsp hallucinogen-induced disorder
'T408X1A'	Poisoning by lysergide, accidental (unintentional), init
'T408X3A'	Poisoning by lysergide [LSD], assault, initial encounter
'T408X4A'	Poisoning by lysergide, undetermined, initial encounter
'T408X5A'	Adverse effect of lysergide [LSD] initial encounter
'T40901A'	Poisoning by unsp psychodyslept, accidental, init
'T40903A'	Poisoning by unsp psychodysleptics, assault, init encntr
'T40904A'	Poisoning by unsp psychodysleptics, undetermined, init
'T40905A'	Adverse effect of unspecified psychodysleptics, init encntr
'T40991A'	Poisoning by oth psychodyslept, accidental, init
'T40993A'	Poisoning by other psychodysleptics, assault, init encntr
'T40994A'	Poisoning by oth psychodysleptics, undetermined, init encntr
'T40995A'	Adverse effect of other psychodysleptics, initial encounter
'F1810'	Inhalant abuse, uncomplicated
'F18120'	Inhalant abuse with intoxication, uncomplicated
'F18121'	Inhalant abuse with intoxication delirium
'F18129'	Inhalant abuse with intoxication, unspecified
'F1814'	Inhalant abuse with inhalant-induced mood disorder
'F18150'	Inhalant abuse w inhalnt-induce psych disorder w delusions
'F18151'	Inhalant abuse w inhalnt-induce psych disorder w hallucin
'F18159'	Inhalant abuse w inhalant-induced psychotic disorder, unsp
'F1817'	Inhalant abuse with inhalant-induced dementia
'F18180'	Inhalant abuse with inhalant-induced anxiety disorder
'F18188'	Inhalant abuse with other inhalant-induced disorder
'F1819'	Inhalant abuse with unspecified inhalant-induced disorder
'F1820'	Inhalant dependence, uncomplicated
'F18220'	Inhalant dependence with intoxication, uncomplicated
'F18221'	Inhalant dependence with intoxication delirium
'F18229'	Inhalant dependence with intoxication, unspecified
'F1824'	Inhalant dependence with inhalant-induced mood disorder
'F18250'	Inhalant depend w inhalnt-induce psych disorder w delusions
'F18251'	Inhalant depend w inhalnt-induce psych disorder w hallucin
'F18259'	Inhalant depend w inhalnt-induce psychotic disorder, unsp
'F1827'	Inhalant dependence with inhalant-induced dementia
'F18280'	Inhalant dependence with inhalant-induced anxiety disorder
'F18288'	Inhalant dependence with other inhalant-induced disorder
'F1829'	Inhalant dependence with unsp inhalant-induced disorder
'F1890'	Inhalant use, unspecified, uncomplicated

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F18920'	Inhalant use, unspecified with intoxication, uncomplicated
'F18921'	Inhalant use, unspecified with intoxication with delirium
'F18929'	Inhalant use, unspecified with intoxication, unspecified
'F1894'	Inhalant use, unsp with inhalant-induced mood disorder
'F18950'	Inhalant use, unsp w inhalnt-induce psych disord w delusions
'F18951'	Inhalant use, unsp w inhalnt-induce psych disord w hallucin
'F18959'	Inhalant use, unsp w inhalnt-induce psychotic disorder, unsp
'F1897'	Inhalant use, unsp with inhalant-induced persisting dementia
'F18980'	Inhalant use, unsp with inhalant-induced anxiety disorder
'F18988'	Inhalant use, unsp with other inhalant-induced disorder
'F1899'	Inhalant use, unsp with unsp inhalant-induced disorder
'F1110'	Opioid abuse, uncomplicated
'F11120'	Opioid abuse with intoxication, uncomplicated
'F11121'	Opioid abuse with intoxication delirium
'F11122'	Opioid abuse with intoxication with perceptual disturbance
'F11129'	Opioid abuse with intoxication, unspecified
'F1114'	Opioid abuse with opioid-induced mood disorder
'F11150'	Opioid abuse w opioid-induced psychotic disorder w delusions
'F11151'	Opioid abuse w opioid-induced psychotic disorder w hallucin
'F11159'	Opioid abuse with opioid-induced psychotic disorder, unsp
'F11181'	Opioid abuse with opioid-induced sexual dysfunction
'F11182'	Opioid abuse with opioid-induced sleep disorder
'F11188'	Opioid abuse with other opioid-induced disorder
'F1119'	Opioid abuse with unspecified opioid-induced disorder
'F1120'	Opioid dependence, uncomplicated
'F11220'	Opioid dependence with intoxication, uncomplicated
'F11221'	Opioid dependence with intoxication delirium
'F11222'	Opioid dependence w intoxication with perceptual disturbance
'F11229'	Opioid dependence with intoxication, unspecified
'F1123'	Opioid dependence with withdrawal
'F1124'	Opioid dependence with opioid-induced mood disorder
'F11250'	Opioid depend w opioid-induc psychotic disorder w delusions
'F11251'	Opioid depend w opioid-induc psychotic disorder w hallucin
'F11259'	Opioid dependence w opioid-induced psychotic disorder, unsp
'F11281'	Opioid dependence with opioid-induced sexual dysfunction
'F11282'	Opioid dependence with opioid-induced sleep disorder
'F11288'	Opioid dependence with other opioid-induced disorder
'F1129'	Opioid dependence with unspecified opioid-induced disorder
'F1190'	Opioid use, unspecified, uncomplicated
'F11920'	Opioid use, unspecified with intoxication, uncomplicated

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F11921'	Opioid use, unspecified with intoxication delirium
'F11922'	Opioid use, unsp w intoxication with perceptual disturbance
'F11929'	Opioid use, unspecified with intoxication, unspecified
'F1193'	Opioid use, unspecified with withdrawal
'F1194'	Opioid use, unspecified with opioid-induced mood disorder
'F11950'	Opioid use, unsp w opioid-induc psych disorder w delusions
'F11951'	Opioid use, unsp w opioid-induc psych disorder w hallucin
'F11959'	Opioid use, unsp w opioid-induced psychotic disorder, unsp
'F11981'	Opioid use, unsp with opioid-induced sexual dysfunction
'F11982'	Opioid use, unspecified with opioid-induced sleep disorder
'F11988'	Opioid use, unspecified with other opioid-induced disorder
'F1199'	Opioid use, unsp with unspecified opioid-induced disorder
'P961'	Neonatal w/drawal symp from matern use of drugs of addiction
'T400X1A'	Poisoning by opium, accidental (unintentional), init encntr
'T400X2A'	Poisoning by opium, intentional self-harm, initial encounter
'T400X3A'	Poisoning by opium, assault, initial encounter
'T400X4A'	Poisoning by opium, undetermined, initial encounter
'T400X5A'	Adverse effect of opium, initial encounter
'T401X1A'	Poisoning by heroin, accidental (unintentional), init encntr
'T401X2A'	Poisoning by heroin, intentional self-harm, init encntr
'T401X3A'	Poisoning by heroin, assault, initial encounter
'T401X4A'	Poisoning by heroin, undetermined, initial encounter
'T401X5A'	Adverse effect of heroin initial encounter
'T402X2A'	Poisoning by oth opioids, intentional self-harm, init encntr
'T403X2A'	Poisoning by methadone, intentional self-harm, init encntr
'T404X2A'	Poisoning by oth synthetic narcotics, self-harm, init
'T40602A'	Poisoning by unsp narcotics, intentional self-harm, init
'T40692A'	Poisoning by oth narcotics, intentional self-harm, init
'F1910'	Other psychoactive substance abuse, uncomplicated
'F19120'	Oth psychoactive substance abuse w intoxication, uncomp
'F19121'	Oth psychoactive substance abuse with intoxication delirium
'F19122'	Oth psychoactv substance abuse w intox w perceptual disturb
'F19129'	Other psychoactive substance abuse with intoxication, unsp
'F1914'	Oth psychoactive substance abuse w mood disorder
'F19150'	Oth psychoactv substance abuse w psych disorder w delusions
'F19151'	Oth psychoactv substance abuse w psych disorder w hallucin
'F19159'	Oth psychoactive substance abuse w psychotic disorder, unsp
'F1916'	Oth psychoactv substance abuse w persist amnestic disorder
'F1917'	Oth psychoactive substance abuse w persisting dementia
'F19180'	Oth psychoactive substance abuse w anxiety disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F19181'	Oth psychoactive substance abuse w sexual dysfunction
'F19182'	Oth psychoactive substance abuse w sleep disorder
'F19188'	Oth psychoactive substance abuse w oth disorder
'F1919'	Oth psychoactive substance abuse w unsp disorder
'F1920'	Other psychoactive substance dependence, uncomplicated
'F19220'	Oth psychoactive substance dependence w intoxication, uncomp
'F19221'	Oth psychoactive substance dependence w intox delirium
'F19222'	Oth psychoactv substance depend w intox w perceptual disturb
'F19229'	Oth psychoactive substance dependence w intoxication, unsp
'F19230'	Oth psychoactive substance dependence w withdrawal, uncomp
'F19231'	Oth psychoactive substance dependence w withdrawal delirium
'F19232'	Oth psychoactv sub depend w w/drawal w perceptl disturb
'F19239'	Oth psychoactive substance dependence with withdrawal, unsp
'F1924'	Oth psychoactive substance dependence w mood disorder
'F19250'	Oth psychoactv substance depend w psych disorder w delusions
'F19251'	Oth psychoactv substance depend w psych disorder w hallucin
'F19259'	Oth psychoactv substance depend w psychotic disorder, unsp
'F1926'	Oth psychoactv substance depend w persist amnestic disorder
'F1927'	Oth psychoactive substance dependence w persisting dementia
'F19280'	Oth psychoactive substance dependence w anxiety disorder
'F19281'	Oth psychoactive substance dependence w sexual dysfunction
'F19282'	Oth psychoactive substance dependence w sleep disorder
'F19288'	Oth psychoactive substance dependence w oth disorder
'F1929'	Oth psychoactive substance dependence w unsp disorder
'F1990'	Other psychoactive substance use, unspecified, uncomplicated
'F19920'	Oth psychoactive substance use, unsp w intoxication, uncomp
'F19921'	Oth psychoactive substance use, unsp w intox w delirium
'F19922'	Oth psychoactv sub use, unsp w intox w perceptl disturb
'F19929'	Oth psychoactive substance use, unsp with intoxication, unsp
'F19930'	Oth psychoactive substance use, unsp w withdrawal, uncomp
'F19931'	Oth psychoactive substance use, unsp w withdrawal delirium
'F19932'	Oth psychoactv sub use, unsp w w/drawal w perceptl disturb
'F19939'	Other psychoactive substance use, unsp with withdrawal, unsp
'F1994'	Oth psychoactive substance use, unsp w mood disorder
'F19950'	Oth psychoactv sub use, unsp w psych disorder w delusions
'F19951'	Oth psychoactv sub use, unsp w psych disorder w hallucin
'F19959'	Oth psychoactv substance use, unsp w psych disorder, unsp
'F1996'	Oth psychoactv sub use, unsp w persist amnestic disorder
'F1997'	Oth psychoactive substance use, unsp w persisting dementia
'F19980'	Oth psychoactive substance use, unsp w anxiety disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F19981'	Oth psychoactive substance use, unsp w sexual dysfunction
'F19982'	Oth psychoactive substance use, unsp w sleep disorder
'F19988'	Oth psychoactive substance use, unsp w oth disorder
'F1999'	Oth psychoactive substance use, unsp w unsp disorder
'F550'	Abuse of antacids
'F551'	Abuse of herbal or folk remedies
'F552'	Abuse of laxatives
'F553'	Abuse of steroids or hormones
'F554'	Abuse of vitamins
'F558'	Abuse of other non-psychoactive substances
'F630'	Pathological gambling
'O355XX0'	Maternal care for (suspected) damage to fetus by drugs, unsp
'O355XX1'	Maternal care for damage to fetus by drugs, fetus 1
'O355XX2'	Maternal care for damage to fetus by drugs, fetus 2
'O355XX3'	Maternal care for damage to fetus by drugs, fetus 3
'O355XX4'	Maternal care for damage to fetus by drugs, fetus 4
'O355XX5'	Maternal care for damage to fetus by drugs, fetus 5
'O355XX9'	Maternal care for (suspected) damage to fetus by drugs, oth
'O99320'	Drug use complicating pregnancy, unspecified trimester
'O99321'	Drug use complicating pregnancy, first trimester
'O99322'	Drug use complicating pregnancy, second trimester
'O99323'	Drug use complicating pregnancy, third trimester
'O99324'	Drug use complicating childbirth
'O99325'	Drug use complicating the puerperium
'P0449'	Newborn affected by maternal use of other drugs of addiction
'P962'	Withdrawal symptoms from therapeutic use of drugs in newborn
'F1310'	Sedative, hypnotic or anxiolytic abuse, uncomplicated
'F13120'	Sedatv/hyp/anxiolytc abuse w intoxication, uncomplicated
'F13121'	Sedatv/hyp/anxiolytc abuse w intoxication delirium
'F13129'	Sedative, hypnotic or anxiolytic abuse w intoxication, unsp
'F1314'	Sedative, hypnotic or anxiolytic abuse w mood disorder
'F13150'	Sedatv/hyp/anxiolytc abuse w psychotic disorder w delusions
'F13151'	Sedatv/hyp/anxiolytc abuse w psychotic disorder w hallucin
'F13159'	Sedatv/hyp/anxiolytc abuse w psychotic disorder, unsp
'F13180'	Sedative, hypnotic or anxiolytic abuse w anxiety disorder
'F13181'	Sedative, hypnotic or anxiolytic abuse w sexual dysfunction
'F13182'	Sedative, hypnotic or anxiolytic abuse w sleep disorder
'F13188'	Sedative, hypnotic or anxiolytic abuse w oth disorder
'F1319'	Sedative, hypnotic or anxiolytic abuse w unsp disorder
'F1320'	Sedative, hypnotic or anxiolytic dependence, uncomplicated

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F13220'	Sedatv/hyp/anxiolytc dependence w intoxication, uncomp
'F13221'	Sedatv/hyp/anxiolytc dependence w intoxication delirium
'F13229'	Sedatv/hyp/anxiolytc dependence w intoxication, unsp
'F13230'	Sedatv/hyp/anxiolytc dependence w withdrawal, uncomplicated
'F13231'	Sedatv/hyp/anxiolytc dependence w withdrawal delirium
'F13232'	Sedatv/hyp/anxiolytc depend w w/drawal w perceptual disturb
'F13239'	Sedatv/hyp/anxiolytc dependence w withdrawal, unsp
'F1324'	Sedative, hypnotic or anxiolytic dependence w mood disorder
'F13250'	Sedatv/hyp/anxiolytc depend w psychotic disorder w delusions
'F13251'	Sedatv/hyp/anxiolytc depend w psychotic disorder w hallucin
'F13259'	Sedatv/hyp/anxiolytc dependence w psychotic disorder, unsp
'F1326'	Sedatv/hyp/anxiolytc depend w persisting amnestic disorder
'F1327'	Sedatv/hyp/anxiolytc dependence w persisting dementia
'F13280'	Sedatv/hyp/anxiolytc dependence w anxiety disorder
'F13281'	Sedatv/hyp/anxiolytc dependence w sexual dysfunction
'F13282'	Sedative, hypnotic or anxiolytic dependence w sleep disorder
'F13288'	Sedative, hypnotic or anxiolytic dependence w oth disorder
'F1329'	Sedative, hypnotic or anxiolytic dependence w unsp disorder
'F1390'	Sedative, hypnotic, or anxiolytic use, unsp, uncomplicated
'F13920'	Sedatv/hyp/anxiolytc use, unsp w intoxication, uncomplicated
'F13921'	Sedatv/hyp/anxiolytc use, unsp w intoxication delirium
'F13929'	Sedatv/hyp/anxiolytc use, unsp w intoxication, unsp
'F13930'	Sedatv/hyp/anxiolytc use, unsp w withdrawal, uncomplicated
'F13931'	Sedatv/hyp/anxiolytc use, unsp w withdrawal delirium
'F13932'	Sedatv/hyp/anxiolytc use, unsp w w/drawal w perceptl disturb
'F13939'	Sedatv/hyp/anxiolytc use, unsp w withdrawal, unsp
'F1394'	Sedative, hypnotic or anxiolytic use, unsp w mood disorder
'F13950'	Sedatv/hyp/anxiolytc use, unsp w psych disorder w delusions
'F13951'	Sedatv/hyp/anxiolytc use, unsp w psych disorder w hallucin
'F13959'	Sedatv/hyp/anxiolytc use, unsp w psychotic disorder, unsp
'F1396'	Sedatv/hyp/anxiolytc use, unsp w persist amnestic disorder
'F1397'	Sedatv/hyp/anxiolytc use, unsp w persisting dementia
'F13980'	Sedatv/hyp/anxiolytc use, unsp w anxiety disorder
'F13981'	Sedatv/hyp/anxiolytc use, unsp w sexual dysfunction
'F13982'	Sedative, hypnotic or anxiolytic use, unsp w sleep disorder
'F13988'	Sedative, hypnotic or anxiolytic use, unsp w oth disorder
'F1399'	Sedative, hypnotic or anxiolytic use, unsp w unsp disorder
'F1410'	Cocaine abuse, uncomplicated
'F14120'	Cocaine abuse with intoxication, uncomplicated
'F14121'	Cocaine abuse with intoxication with delirium

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F14122'	Cocaine abuse with intoxication with perceptual disturbance
'F14129'	Cocaine abuse with intoxication, unspecified
'F1414'	Cocaine abuse with cocaine-induced mood disorder
'F14150'	Cocaine abuse w cocaine-induc psychotic disorder w delusions
'F14151'	Cocaine abuse w cocaine-induc psychotic disorder w hallucin
'F14159'	Cocaine abuse with cocaine-induced psychotic disorder, unsp
'F14180'	Cocaine abuse with cocaine-induced anxiety disorder
'F14181'	Cocaine abuse with cocaine-induced sexual dysfunction
'F14182'	Cocaine abuse with cocaine-induced sleep disorder
'F14188'	Cocaine abuse with other cocaine-induced disorder
'F1419'	Cocaine abuse with unspecified cocaine-induced disorder
'F1420'	Cocaine dependence, uncomplicated
'F14220'	Cocaine dependence with intoxication, uncomplicated
'F14221'	Cocaine dependence with intoxication delirium
'F14222'	Cocaine dependence w intoxication w perceptual disturbance
'F14229'	Cocaine dependence with intoxication, unspecified
'F1423'	Cocaine dependence with withdrawal
'F1424'	Cocaine dependence with cocaine-induced mood disorder
'F14250'	Cocaine depend w cocaine-induc psych disorder w delusions
'F14251'	Cocaine depend w cocaine-induc psychotic disorder w hallucin
'F14259'	Cocaine dependence w cocaine-induc psychotic disorder, unsp
'F14280'	Cocaine dependence with cocaine-induced anxiety disorder
'F14281'	Cocaine dependence with cocaine-induced sexual dysfunction
'F14282'	Cocaine dependence with cocaine-induced sleep disorder
'F14288'	Cocaine dependence with other cocaine-induced disorder
'F1429'	Cocaine dependence with unspecified cocaine-induced disorder
'F1490'	Cocaine use, unspecified, uncomplicated
'F14920'	Cocaine use, unspecified with intoxication, uncomplicated
'F14921'	Cocaine use, unspecified with intoxication delirium
'F14922'	Cocaine use, unsp w intoxication with perceptual disturbance
'F14929'	Cocaine use, unspecified with intoxication, unspecified
'F1494'	Cocaine use, unspecified with cocaine-induced mood disorder
'F14950'	Cocaine use, unsp w cocaine-induc psych disorder w delusions
'F14951'	Cocaine use, unsp w cocaine-induc psych disorder w hallucin
'F14959'	Cocaine use, unsp w cocaine-induced psychotic disorder, unsp
'F14980'	Cocaine use, unsp with cocaine-induced anxiety disorder
'F14981'	Cocaine use, unsp with cocaine-induced sexual dysfunction
'F14982'	Cocaine use, unspecified with cocaine-induced sleep disorder
'F14988'	Cocaine use, unspecified with other cocaine-induced disorder
'F1499'	Cocaine use, unsp with unspecified cocaine-induced disorder

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F1510'	Other stimulant abuse, uncomplicated
'F15120'	Other stimulant abuse with intoxication, uncomplicated
'F15121'	Other stimulant abuse with intoxication delirium
'F15122'	Oth stimulant abuse w intoxication w perceptual disturbance
'F15129'	Other stimulant abuse with intoxication, unspecified
'F1514'	Other stimulant abuse with stimulant-induced mood disorder
'F15150'	Oth stimulant abuse w stim-induce psych disorder w delusions
'F15151'	Oth stimulant abuse w stim-induce psych disorder w hallucin
'F15159'	Oth stimulant abuse w stim-induce psychotic disorder, unsp
'F15180'	Oth stimulant abuse with stimulant-induced anxiety disorder
'F15181'	Oth stimulant abuse w stimulant-induced sexual dysfunction
'F15182'	Other stimulant abuse with stimulant-induced sleep disorder
'F15188'	Other stimulant abuse with other stimulant-induced disorder
'F1519'	Other stimulant abuse with unsp stimulant-induced disorder
'F1520'	Other stimulant dependence, uncomplicated
'F15220'	Other stimulant dependence with intoxication, uncomplicated
'F15221'	Other stimulant dependence with intoxication delirium
'F15222'	Oth stimulant dependence w intox w perceptual disturbance
'F15229'	Other stimulant dependence with intoxication, unspecified
'F1523'	Other stimulant dependence with withdrawal
'F1524'	Oth stimulant dependence w stimulant-induced mood disorder
'F15250'	Oth stim depend w stim-induce psych disorder w delusions
'F15251'	Oth stimulant depend w stim-induce psych disorder w hallucin
'F15259'	Oth stimulant depend w stim-induce psychotic disorder, unsp
'F15280'	Oth stimulant dependence w stim-induce anxiety disorder
'F15281'	Oth stimulant dependence w stim-induce sexual dysfunction
'F15282'	Oth stimulant dependence w stimulant-induced sleep disorder
'F15288'	Oth stimulant dependence with oth stimulant-induced disorder
'F1529'	Oth stimulant dependence w unsp stimulant-induced disorder
'F1590'	Other stimulant use, unspecified, uncomplicated
'F15920'	Other stimulant use, unsp with intoxication, uncomplicated
'F15921'	Other stimulant use, unspecified with intoxication delirium
'F15922'	Oth stimulant use, unsp w intox w perceptual disturbance
'F15929'	Other stimulant use, unsp with intoxication, unspecified
'F1594'	Oth stimulant use, unsp with stimulant-induced mood disorder
'F15950'	Oth stim use, unsp w stim-induce psych disorder w delusions
'F15951'	Oth stim use, unsp w stim-induce psych disorder w hallucin
'F15959'	Oth stimulant use, unsp w stim-induce psych disorder, unsp
'F15980'	Oth stimulant use, unsp w stimulant-induced anxiety disorder
'F15981'	Oth stimulant use, unsp w stim-induce sexual dysfunction

ICD-10-CM DIAGNOSIS	DESCRIPTION
'F15982'	Oth stimulant use, unsp w stimulant-induced sleep disorder
'F15988'	Oth stimulant use, unsp with oth stimulant-induced disorder
'F1599'	Oth stimulant use, unsp with unsp stimulant-induced disorder
'P0441'	Newborn affected by maternal use of cocaine
'T405X1A'	Poisoning by cocaine, accidental (unintentional), init
'T405X3A'	Poisoning by cocaine, assault, initial encounter
'T405X4A'	Poisoning by cocaine, undetermined, initial encounter
'T405X5A'	Adverse effect of cocaine, initial encounter

Dental Conditions ICD-10-CM Diagnosis Codes

K000, K001, K002, K003, K004, K005, K006, K007, K008, K009, K010, K011, K023, K0251, K0252, K0253, K0261, K0262, K0263, K027, K029, K030, K031, K032, K033, K034, K035, K036, K037, K0381, K0389, K039, K0401, K0402, K041, K042, K043, K044, K045, K046, K047, K048, K0490, K0499, K0500, K0501, K0510, K0511, K0520, K05211, K05212, K05213, K05219, K05221, K05222, K05223, K05229, K0530, K05311, K05312, K05313, K05319, K05321, K05322, K05323, K05329, K054, K055, K056, K06010, K06011, K06012, K06013, K06020, K06021, K06022, K06023, K061, K062, K063, K068, K069.

Injury ICD-10-CM Diagnosis Codes

S00-S99; T07-T34; T36-T50 with a 6th character of 1,2, 3, or 4 (except 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); T51-T65; T66-T76; T79; T84.01; T84.02; and O9A.2-O9A.5.
Dementia Diagnosis Codes

Dementia ICD-10-CM Diagnosis Codes

Table B-3: Dementia ICD-10-CM Diagnosis Codes

ICD-10-CM DIAGONSIS	DESCRIPTION
Vascular dementia	
F0150	Vascular dementia without behavioral disturbance
F0151	Vascular dementia with behavioral disturbance
Dementia in other diseases classified elsewhere	
F0280	Dementia in other diseases classified elsewhere without behavioral disturbance
F0281	Dementia in other diseases classified elsewhere with behavioral disturbance
Unspecified dementia	
F0390	Unspecified dementia without behavioral disturbance
F0391	Unspecified dementia with behavioral disturbance
Delirium, not induced by alcohol and other psychoactive substances	
F05	Delirium due to known physiological condition
Alzheimer's disease	
G300	Alzheimer's disease with early onset
G301	Alzheimer's disease with late onset

ICD-10-CM DIAGONSIS	DESCRIPTION
G308	Other Alzheimer's disease
G309	Alzheimer's disease, unspecified

APPENDIX C: STATISTICAL METHODS

This appendix explains the statistical methods and gives formulas for the calculations of standard errors and hypothesis tests. These statistics are derived from weighted SID and demographic population data provided by Claritas (a vendor that compiles and adds value to Bureau of Census data). Standard error calculations for the rates were based on the HCUP report entitled *Inferences with HCUP State Databases Final Report* (Houchens, et al., 2010). We will refer to this report simply as the SID Variance Report throughout this appendix. This method takes into account the cluster and stratification aspects when calculating these statistics on weighted data using the SAS procedure PROC SURVEYMEANS. For population counts based on Claritas data, there is no sampling error.

Even though the SID databases contain nearly all discharges from nearly all hospitals in the State, we treat the files as though they were drawn from an infinite population. We do not employ finite population correction factors in estimating standard errors. We take this approach because we view the outcomes as a result of myriad processes that go into treatment decisions rather than being the result of specific, fixed processes generating outcomes for a specific population and a specific year. We consider the SID to be samples from a "super-population" for purposes of variance estimation. Further, we assume the counts (of QI events) to be binomial.

1. Standard Error Estimates for Weighted Discharge Rates per 100,000 Population Using the 2017 Claritas Population Data for Area-Based QIs

The observed rate was calculated as follows:

$$R = 100{,}000 \cdot \frac{\sum_{i=1}^{n} w_i x_i}{N} = 100{,}000 \cdot \frac{S}{N}. \quad (2.1)$$

w_i and x_i, respectively, are the weight and variable of interest for patient i in the NHQDR analysis file or SID. To obtain the estimate of S and its standard error, SE_S, we followed instructions in the SID Variance Report.

The population count in the denominator is a constant. Consequently, the standard error of the rate R was calculated as:

$$SE_R = 100{,}000 * SE_S / N. \quad (2.2)$$

Standard Error Estimates for Inpatient Rates per 1,000 Discharges Using Weighted Discharge Counts in Both the Numerator and the Denominator for Provider-based QIs

We calculated the observed rate as follows:

$$R = 1{,}000 \cdot \frac{\sum_{i=1}^{n} w_i x_i}{\sum_{i=1}^{n} w_i} = 1{,}000 \cdot \frac{S}{N}. \quad (2.6)$$

Following instructions in the HCUP SID Variance Report, we used PROC SURVEYMEANS to obtain estimates of the weighted mean, *S/N*, and the standard error of the weighted mean, $SE_{S/N}$. We multiplied this standard error by 1,000.

2. Significance Tests

Let R_1 and R_2 be either observed or adjusted rates calculated for comparison groups 1 and 2, respectively. Let SE_1 and SE_2 be the corresponding standard errors for the two rates. We calculated the test statistic and (two-sided) p-value:

$$t = \frac{R_1 - R_2}{\sqrt{SE_1^2 + SE_2^2}}$$

$$(2.10)$$

$$p = 2 * \text{Prob}(Z > |t|)$$

where *Z* is a standard normal variate.

Note: the following functions calculate *p* in SAS and EXCEL:

SAS: p = 2 * (1 - PROBNORM(ABS(t)));

EXCEL: = 2*(1- NORMDIST(ABS(t),0,1,TRUE))

APPENDIX D: CAVEATS TO THE INTREPRETATION OF HCUP-BASED QI ESTIMATES REPORTED IN THE NHQDR

Some caution should be used in interpreting the QI statistics presented in the NHQDR. These caveats relate to inter-State differences in data collection and other more general issues.

State-Specific Rates

Organizations that collect statewide data generally collect data using the Uniform Billing formats (UB-92 or UB-04). However, not every statewide data organization collects all data elements nor codes them the same way. Uneven availability of a few data elements can underlie HCUP estimates, as noted next.

Number of Clinical Fields

One data collection issue relates to the number of fields that statewide data organizations permit for reporting patient diagnoses and procedures during the hospitalization. The mean number of diagnosis codes across all records in the 2017 SID used for the NHQDR was 11.33, while the mean number of procedure codes across all records was 1.61. Across the 2017 SID used for the NHQDR, there was a maximum of 111 diagnosis and 100 procedure fields.

Non-Resident Discharges

HCUP databases include discharges from all hospitals in a State, and may include non-residents, including foreign patients, which can bias the results for QIs using area-based denominators (State populations). We had no way to adjust the HCUP data to consistently exclude the non-resident discharges and include discharges for residents hospitalized in other States. Therefore, non-resident discharges were retained in the SID databases for the NHQDR analyses. Based on an analysis performed with the 2016 SID, the overall percentage of non-resident discharges within a State is 4 percent with a range from 1 percent to 45 percent. Most States were below 10 percent, but six States (MO, ND, SD, TN, VT, WV) and the District of Columbia had more than 10 percent of discharges in the SID that were for non-residents. The proportion of non-resident discharges and range across States in the 2016 SID is similar to that observed in prior years. This analysis was not repeated for States in the 2017 SID.

APPENDIX E: INPATIENT RATES FOR DELIVERY MEASURES

Table E-1: Delivery and Abortion ICD-10-CM diagnoses, ICD-10-PCS procedures, and DRGs

Any Indication of Delivery
Any diagnosis of Z37X: Z370, Z371, Z372, Z373, Z374, Z3750, Z3751, Z3752, Z3753, Z3754, Z3759, Z3760, Z3761, Z3762, Z3763, Z3764, Z3769, Z377, Z379
Any diagnosis of O80 (vaginal delivery)
Any diagnosis of O82, O7582 (C-section)
Any procedure code of 10D00Z0-10D00Z2, 10D07Z3-0D07Z8, 10E0XZZ
Any delivery DRG: 765-768 or 774-775
Excluding an Indication of Abortion
Any diagnosis of 'O00', 'O01', 'O02', 'O03', 'O04', 'O07', 'O08'
Any procedure starting with '10A0' ('10A00ZZ', '10A03ZZ', '10A04ZZ', '10A07Z6', '10A07ZW', '10A07ZX', '10A07ZZ', '10A08ZZ')

Table E-2: Pulmonary Embolism or Deep Vein Thrombosis ICD-10-CM Diagnosis Codes

ICD-10-CM Diagnosis Codes
I2602 =Saddle embolus of pulmonary artery with acute corpulmonale
I2609 =Other pulmonary embolism with acute corpulmonale
I2692 =Saddle embolus of pulmonary artery without acute corpulmonale
I2699 =Other pulmonary embolism without acute corpulmonale
I8010 =Phlebitis and thrombophlebitis of unspecified femoral vein
I8011 =Phlebitis and thrombophlebitis of right femoral vein
I8012 =Phlebitis and thrombophlebitis of left femoral vein
I8013 =Phlebitis and thrombophlebitis of femoral vein, bilateral
I80201 =Phlebitis and thrombophlebitis of unspecified deep vessels of right lower extremity
I80202 =Phlebitis and thrombophlebitis of unspecified deep vessels of left lower extremity
I80203 =Phlebitis and thrombophlebitis of unspecified deep vessels of lower extremities, bilateral
I80209 =Phlebitis and thrombophlebitis of unspecified deep vessels of unspecified lower extremity
I80211 =Phlebitis and thrombophlebitis of right iliac vein
I80212 =Phlebitis and thrombophlebitis of left iliac vein
I80213 =Phlebitis and thrombophlebitis of iliac vein, bilateral
I80219 =Phlebitis and thrombophlebitis of unspecified iliac vein
I80221 =Phlebitis and thrombophlebitis of right popliteal vein
I80222 =Phlebitis and thrombophlebitis of left popliteal vein
I80223 =Phlebitis and thrombophlebitis of popliteal vein, bilateral
I80229 =Phlebitis and thrombophlebitis of unspecified popliteal vein
I80231 =Phlebitis and thrombophlebitis of right tibial vein
I80232 =Phlebitis and thrombophlebitis of left tibial vein
I80233 =Phlebitis and thrombophlebitis of tibial vein, bilateral
I80239 =Phlebitis and thrombophlebitis of unspecified tibial vein

ICD-10-CM Diagnosis Codes
I80291 =Phlebitis and thrombophlebitis of other deep vessels of right lower extremity
I80292 =Phlebitis and thrombophlebitis of other deep vessels of left lower extremity
I80293 =Phlebitis and thrombophlebitis of other deep vessels of lower extremity, bilateral
I80299 =Phlebitis and thrombophlebitis of other deep vessels of unspecified lower extremity
I82401 =Acute embolism and thrombosis of unspecified deep veins of right lower extremity
I82402 =Acute embolism and thrombosis of unspecified deep veins of left lower extremity
I82403 =Acute embolism and thrombosis of unspecified deep veins of lower extremity, bilateral
I82409 =Acute embolism and thrombosis of unspecified deep veins of unspecified lower extremity
I82411 =Acute embolism and thrombosis of right femoral vein
I82412 =Acute embolism and thrombosis of left femoral vein
I82413 =Acute embolism and thrombosis of femoral vein, bilateral
I82419 =Acute embolism and thrombosis of unspecified femoral vein
I82421 =Acute embolism and thrombosis of right iliac vein
I82422 =Acute embolism and thrombosis of left iliac vein
I82423 =Acute embolism and thrombosis of iliac vein, bilateral
I82429 =Acute embolism and thrombosis of unspecified iliac vein
I82431 =Acute embolism and thrombosis of right popliteal vein
I82432 =Acute embolism and thrombosis of left popliteal vein
I82433 =Acute embolism and thrombosis of popliteal vein, bilateral
I82439 =Acute embolism and thrombosis of unspecified popliteal vein
I824Y1 =Acute embolism and thrombosis of unspecified deep veins of right proximal lower extremity
I824Y2 =Acute embolism and thrombosis of unspecified deep veins of left proximal lower extremity
I824Y3 =Acute embolism and thrombosis of unspecified deep veins of proximal lower extremity, bilateral
I824Y9 =Acute embolism and thrombosis of unspecified deep veins of unspecified proximal lower extremity

Table E-3: Postpartum Hemorrhage ICD-10-CM Diagnosis Codes

ICD-10-CM Code	Description
O43.212	Placenta accreta, second trimester
O43.213	Placenta accreta, third trimester
O43.219	Placenta accreta, unspecified trimester
O43.222	Placenta increta, second trimester
O43.223	Placenta increta, third trimester
O43.229	Placenta increta, unspecified trimester
O43.232	Placenta percreta, second trimester
O43.233	Placenta percreta, third trimester
O43.239	Placenta percreta, unspecified trimester
O72.0	Third-stage hemorrhage
O72.1	Other immediate postpartum hemorrhage
O72.2	Delayed and secondary postpartum hemorrhage
O72.3	Postpartum coagulation defects

Table E-4: Eclampsia or Preeclampsia ICD-10-CM Diagnosis Codes

ICD-10-CM Diagnosis Codes
Any diagnosis starting with 'O14' for pre-eclampsia
Any diagnosis starting with 'O15' for eclampsia
Any diagnosis starting with 'O11' for pre-existing hypertension with pre-eclampsia