

# **Hospital Inpatient Prevention Quality Indicators (PQI) for Adult Discharges by County/Zip (SPARCS): Beginning 2009**

## **OVERVIEW**

New York State Department of Health  
Office of Health Services Quality and Analytics  
Center for Applied Research and Evaluation

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**Health Data NY**



## **General Description:**

The Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs) are a set of population-based measures that can be used with hospital inpatient discharge data to identify ambulatory care sensitive conditions. These are conditions where 1) the need for hospitalization is potentially preventable with appropriate outpatient care, or 2) conditions that could be less severe if treated early and appropriately. All PQIs apply only to adult populations (ages 18 and older).

An overview of the PQIs may be found on the AHRQ website at:

[https://qualityindicators.ahrq.gov/measures/pgi\\_overview](https://qualityindicators.ahrq.gov/measures/pgi_overview)

The software is available on the AHRQ website at:

[https://qualityindicators.ahrq.gov/measures/pgi\\_resources](https://qualityindicators.ahrq.gov/measures/pgi_resources)

The results of this data can be used to provide insight into the population health and the quality of the health care system outside of the hospital setting. Observed (crude) and expected rates are presented at the county and zip code level to allow comparison with the state average, thereby identifying geographical variation.

The table below provides detail on the PQIs presented in these datasets.

<b>PQI Number</b>	<b>PQI Name</b>	<b>PQI Description</b>
PQI_01	Diabetes Short-term Complications	Hospitalizations for a principal diagnosis of diabetes with short-term complications (ketoacidosis, hyperosmolarity, or coma) per 100,000 population, ages 18 years and older. Excludes obstetric hospitalizations and transfers from other institutions.
PQI_03	Diabetes Long-term Complications	Hospitalizations for a principal diagnosis of diabetes with long-term complications (renal, eye, neurological, circulatory, other specified, or unspecified) per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions.
PQI_05	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults	Hospitalizations with a principal diagnosis of chronic obstructive pulmonary disease (COPD) or asthma per 100,000 population, ages 40 years and older. Excludes hospitalizations with cystic fibrosis and anomalies of the respiratory system, obstetric hospitalizations, and transfers from other institutions.
PQI_07	Hypertension	Hospitalizations with a principal diagnosis of hypertension per 100,000 population, ages 18 years and older. Excludes hospitalizations with stage 1-4 or unspecified chronic kidney disease combined with a dialysis access procedure, hospitalizations for cardiac procedure, obstetric hospitalizations, and transfers from other institutions.
PQI_08	Heart Failure	Hospitalizations with a principal diagnosis of heart failure per 100,000 population, ages 18 years and older. Excludes

PQI Number	PQI Name	PQI Description
		hospitalizations with cardiac procedure, obstetric hospitalizations, and transfers from other institutions.
<b>PQI_10**</b>	<b>Dehydration**</b>	Hospitalizations with a principal diagnosis of dehydration per 100,000 population, ages 18 years and older. Excludes obstetric admissions and transfers from other institutions. <b>(Not Available in Version 2019 and later, starting from calendar year 2018 data).</b>
PQI_11	Bacterial Pneumonia	Hospitalizations with a principal diagnosis of community acquired bacterial pneumonia per 100,000 population, ages 18 years or older. Excludes hospitalizations with sickle cell, hemoglobin-S disease admissions, other indications of immunocompromised state, obstetric hospitalizations, and transfers from other institutions.
PQI_12	Urinary Tract Infection	Hospitalizations with a principal diagnosis of urinary tract infection per 100,000 population, ages 18 years and older. Excludes hospitalizations with a kidney or urinary tract disorder, hospitalizations with other indications of immunocompromised state, obstetric hospitalizations, and transfers from other institutions.
<b>PQI_13*</b>	<b>Angina Without Procedure*</b>	Hospitalizations with a principal diagnosis of angina without a cardiac procedure per 100,000 population, ages 18 years and older. Excludes cardiac procedure admissions, obstetric admissions, and transfers from other institutions. <b>(Not Available in Version 6.0 and later, starting from calendar year 2015 data – See Limitations Section).</b>
PQI_14	Uncontrolled Diabetes	Hospitalizations for a principal diagnosis of uncontrolled diabetes without mention of short-term (ketoacidosis, hyperosmolarity, or coma) or long-term (renal, eye, neurological, circulatory, other specified, or unspecified) complications per 100,000 population, ages 18 years and older. Excludes obstetric hospitalizations and transfers from other institutions.
PQI_15	Asthma in Younger Adults	Hospitalizations for a principal diagnosis of asthma per 100,000 population, ages 18 to 39 years. Excludes hospitalizations with cystic fibrosis or anomalies of the respiratory system, obstetric hospitalizations, and transfers from other institutions.
PQI_16	Lower-Extremity Amputation among Patients with Diabetes	Hospitalizations for diabetes and a procedure of lower-extremity amputation (except toe amputations) per 100,000 population, ages 18 years and older. Excludes traumatic lower-extremity amputation hospitalizations, obstetric hospitalizations, and transfers from other institutions.
PQI_90	Prevention Quality Overall Composite	Prevention Quality Indicators (PQI) overall composite per 100,000 population, ages 18 years and older. Includes hospitalizations for one of the following conditions: diabetes with short-term complications, diabetes with long-term complications,

PQI Number	PQI Name	PQI Description
		uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, heart failure, and <b>angina without a cardiac procedure*</b> , <b>dehydration**</b> , bacterial pneumonia, or urinary tract infection.
PQI_91	Prevention Quality Acute Composite	Prevention Quality Indicators (PQI) composite of acute conditions per 100,000 population, ages 18 years and older. Includes hospitalizations with a principal diagnosis of one of the following conditions: bacterial pneumonia or urinary tract infection.
PQI_92	Prevention Quality Chronic Composite	Prevention Quality Indicators (PQI) composite of chronic conditions per 100,000 population, ages 18 years and older. Includes hospitalizations for one of the following conditions: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, or heart failure without a cardiac procedure.
PQI_S01	Prevention Quality All Diabetes Composite	A composite of PQI_01 (Diabetes Short-Term Complications), PQI_03 (Long-Term Complications), PQI_14 (Uncontrolled), PQI_16 (Lower-Extremity Amputation)
PQI_S02	Prevention Quality All Circulatory Composite	A composite of PQI_07 (Hypertension), PQI_08 (Heart Failure), <b>PQI_13 (Angina Without Procedure)*</b>
PQI_S03	Prevention Quality All Respiratory Composite	A composite of PQI_05 (Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults), PQI_15 (Asthma in Younger Adults)

\* - **PQI\_13 - Angina Without Procedure** - is retired from the Version 6.0 and later, starting with calendar year 2015 data.

\*\* - **PQI\_10 - Dehydration** - is retired from the Version 2019 and later, starting with calendar year 2018 data.

#### AHRQ Quality Indicators™ Software Version

Analysis Year	Discharge Time Period	PQI Software Version
2009	January 1 – December 31, 2009	Version 4.5
2010	January 1 – December 31, 2010	Version 4.5
2011	January 1 – December 31, 2011	Version 4.5
2012	January 1 – December 31, 2012	Version 4.5
2013	January 1 – December 31, 2013	Version 4.5
2014	January 1 – December 31, 2014	Version 5.0
2015*	2014 (Oct 1-Dec 31) – 2015 (Jan 1 – Sep 30)	Version 5.0



Analysis Year	Discharge Time Period	PQI Software Version
2016	January 1 – December 31, 2016	Version 7.0
2017	January 1 – December 31, 2017	Version 2018
2018	January 1 – December 31, 2018	Version 2021
2019	January 1 – December 31, 2019	Version 2021
2020	January 1 – December 31, 2020	Version 2022
2021	January 1 – December 31, 2021	Version 2023

**Note: For 2015 Analysis Year please refer to the Limitations of Use Section.**

### **How to Interpret the Rates**

For these indicators, lower rates represent better results. The Observed Rate (per 100,000 people) is the number of PQI discharges divided by the population, multiplied by 100,000. The Expected Rate (per 100,000 people) is the number of PQI discharges adjusted by age group, gender and race/ethnicity divided by the population, multiplied by 100,000.

Hospital discharges that did not have an accurate New York State zip code were excluded from the zip code analysis dataset. Hospital discharges that did not have an accurate New York State county were excluded from the county analysis dataset. Due to this nuance, the statewide rates differ slightly between the zip code and county datasets.

Individual zip codes for which the PQI population denominator is less than 20 are removed from the zip code analysis dataset to mitigate potential instability and invalidity of observed and risk adjusted rates for these zip codes. PQI discharges in these zip codes are still included in the statewide and county level rates.

### **Data Methodology:**

SPARCS Article 28 inpatient discharge records were used to identify PQI hospital admissions. SPARCS is a comprehensive data reporting system established in 1979 as a result of cooperation between the health care industry and government. Initially created to collect information on discharges from hospitals, SPARCS currently collects patient level detail on patient characteristics, diagnoses and treatments, services, and charges for every hospital discharge, ambulatory surgery and emergency department visit in New York State.

The enabling legislation and regulations for SPARCS are located under Section 28.16 of the Public Health Law (PHL), Section 400.18 of Title 10 (Health) of the Official Compilation of Codes, Rules, and Regulations of the State of New York (NYCRR).

Article 28 hospital services, ambulatory surgery services, emergency department services or outpatient services are required to submit data to SPARCS. More information on how SPARCS data is collected may be found at the following direct link: [http://www.health.ny.gov/statistics/sparcs/data\\_collection.htm](http://www.health.ny.gov/statistics/sparcs/data_collection.htm)



More information on SPARCS may be found on the New York State Department of Health's website at the following direct link: <http://www.health.ny.gov/statistics/sparcs/>

## **Limitations of Use:**

**COVID-19:** As recommended by AHRQ, in PQI version 2022 (Analysis Year 2020) all discharges with a COVID-19 diagnosis were excluded from measure calculations. This exclusion was removed starting in PQI version 2023 (Analysis year 2021). Comparisons across years should be interpreted with caution.

**Version Changes:** There may be modifications of the quality indicator logic incorporated into version changes of the PQI software. Therefore, trends in rates must be interpreted with caution when completing longitudinal analysis across years that utilize different versions of the PQI software.

**De-Identified Data Use Limitations:** The PQI datasets contain patient's zip code or county and observed, expected and risk adjusted PQI rates by measure by year. It does not contain data that is protected health information (PHI) under HIPAA. The health information is not individually identifiable.

**Transition from ICD-9-CM to ICD-10-CM Coding System:** To mitigate the impact of ICD-10 compliance and PQI software version changes, as well as to facilitate trending of the PQI data, a staggered 12-month analysis period was used to represent 2015 PQI data. This included all discharge data from October 1, 2014 to September 30, 2015. All other PQI analysis years represent the calendar year.

**Additional Data Sets:** To provide quality indicators for a complete calendar year (CY) 2015 of hospital inpatient discharges, AHRQ version 6 software for ICD-9-CM coding system was run on the first three quarters of 2015 and AHRQ version 6 for ICD-10-CM coding system was run on the last quarter of 2015. While these quality metrics were run using the same version of the AHRQ grouper (version 6), the discharges at risk (denominators) and PQIs (nominators) were identified using both coding systems: ICD-9-CM and ICD-10-CM. Therefore, PQI rates calculated for CY 2015 discharges should be treated with caution as they might reflect the change in the coding system and not the trends in PQI rates. **These data sets covering hospital inpatient discharges from January 1, 2015 through December 31, 2015 will be posted as a separate set.**

### **Data is Subject to Change**

The current data set is a provisional data set and could be updated in the future. For more information about compliance and applicable reporting requirements visit: <https://www.health.ny.gov/statistics/sparcs/>.



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