



Prevention Quality Indicators Technical Report

2022 Data

Health Care Quality Assessment

Health Care Quality and Informatics Office of Population Health

* For inquiries, contact Markos Ezra, PhD, by phone at (609) 984-7334 or by email at Markos.Ezra@doh.nj.gov.

Executive Summary

The Office of Health Care Quality Assessment (HCQA) of the New Jersey Department of Health (NJDOH) assesses health care quality using quantitative data reported mainly by hospitals to support performance monitoring related to patient care and safety. Specifically, HCQA produces consumer reports on cardiac surgery, hospital performance, healthcare quality indicators; reviews confidential reports and root cause analyses of reportable medical errors; and maintains several databases to support licensure requirements. To enrich the information the Department provides to the public on hospital care, HCQA staff routinely evaluate healthcare quality in the State by applying statistical tools developed by the Federal Agency for Healthcare Research and Quality (AHRQ) on the New Jersey Hospital Discharge Data Collection System (NJDDCS) commonly known as Uniform Billing (UB) data.

This report presents findings resulting from the application of a statistical tool known as the Prevention Quality Indicators (PQIs) module to the 2022 NJ UB data on inpatient hospital discharge information. The module primarily calculates potentially preventable hospitalizations. Evidence has shown that early intervention to prevent complications and address exacerbations of ambulatory care-sensitive conditions, such as diabetes, chronic obstructive pulmonary disease (COPD), asthma, and congestive heart failure (CHF), through good primary care may prevent the need for hospitalization. More specifically, the PQIs measure outcomes of preventive care for both acute illnesses and chronic conditions, reflecting two important components of the quality of preventive care: efficacy and timeliness. The indicators identify hospital admissions in geographic areas that, according to AHRQ's specifications, would be considered avoidable if patients had access to high quality outpatient care.

The purpose of this report is to provide hospitals, community leaders, and policy makers with information that would help them identify community-level health care needs to target resources and track the impact of programmatic and policy interventions. PQIs have been applied at the national level, in the National Healthcare Quality and Disparities Reports (NHQDR).

The report presents volume of preventable hospitalizations derived from the 2022 UB data in each of the 21 counties. Observed, expected and risk-adjusted rates along with their 95% confidence intervals for each of the 14 evaluated indicators (i.e., ten individual and four composite) are presented to help assess the quality of preventive health care in each county. Moreover, statewide, and national estimates are provided for comparison purposes. The 2022 data shows that there are substantial variations in hospitalizations rates by county. Some counties exhibit significantly higher hospitalization rates than others when compared to the statewide average rates.

Some Highlights

- Based on AHRQ's specifications of a 'preventable hospitalization', there were about 78,000 potentially preventable hospitalizations for treatment of medical conditions in NJ hospitals, in 2022.
- Hospitalization cost estimates derived from application of the Hospitalization Cost and Utilization Project (HCUP) cost-to-charge ratio (CCR) estimators indicate that preventing the 78,000 potentially avoidable hospitalizations of these conditions through better health care management would have saved approximately 1.1 billion dollars (\$1,075,233,363) in 2022 (Table 14).
- In 2022, there were 4,583 hospital admissions for diabetes with short-term complications in NJ for a statewide risk-adjusted rate of 64.1 per 100,000 in the population age 18 and over. Hospital

admission rates for diabetes with short-term complications in Atlantic, Camden, Cumberland, Essex, Mercer, Passaic, and Salem were statistically significantly higher than the statewide average. By comparison, hospitalization rates for Bergen, Gloucester, Hudson, Hunterdon, Middlesex, Morris, Somerset, and Sussex were statistically significantly lower than the statewide average (Table 1).

- Statewide, there were 11,233 preventable hospital admissions for chronic obstructive pulmonary disease (COPD) in adults aged 40 and over in 2022, for a risk-adjusted rate of 312.9 per 100,000. Admission rates for COPD ranged from 124.3 per 100,000 in Hunterdon County to 1,158.3 per 100,000 in Cumberland County (Table 3).
- Statewide, there were 4,522 preventable hospital admissions for hypertension treatment in 2022, for a risk-adjusted rate of 65.5 per 100,000 in the population aged 18 and older. Rates of hospital admission for hypertension ranged from a low of 27.7 per 100,000 in Somerset County to a high of 162.0 per 100,000 in Cumberland County (Table 4).
- Statewide, there were 27,758 preventable heart failure (HF) hospital admissions for a risk-adjusted average rate of 393.1 per 100,000 adults aged 18 or older. Eight counties (Atlantic, Camden, Cape May, Cumberland, Essex, Mercer, Ocean, and Warren) had significantly higher HF admission rates than the statewide rate. By comparison, six counties (Bergen, Gloucester, Hunterdon, Middlesex, Morris, and Somerset) had rates that were significantly lower than the statewide HF admission rate (Table 5).
- Similar variations are observed in other PQIs among the 21 counties, which suggest that these indicators may be used as important baseline indicators to help examine determinants that led to variations in preventable hospital admissions.
- Table 13 displays New Jersey's hospitalization rates in comparison to the national benchmark data for the years 2018 and 2020. Note that total hospitalizations (PQI 90) in 2020 are lower compared to other years, not necessarily due to health care improvements, but possibly due to the COVID-19 pandemic. For most of 2020, hospitals were overwhelmed with COVID-19 patients making it difficult for other patients to be admitted to hospitals. Additionally, individuals were reluctant to go to hospitals due to fear of COVID-19 infections, as well as the lockdown environment at the time. You can see that NJ hospitalizations in 2022 went back to 1,137.1 per 100,000.

Introduction

The Office of Health Care Quality Assessment (HCQA) of the New Jersey Department of Health (NJDOH) assesses health care quality using quantitative data reported mainly by hospitals to support performance monitoring related to patient care and safety. Specifically, HCQA produces consumer reports on cardiac surgery, hospital performance, hospital quality indicators; reviews confidential reports and root-cause analyses of reportable medical errors; and maintains several databases to support licensure requirements. To enhance the information that the Department provides to the public on hospital care, HCQA staff routinely apply statistical tools developed by the Federal Agency for Healthcare Research and Quality (AHRQ) on the New Jersey hospital discharge data (i.e., the NJ Uniform Billing (UB) data).

The AHRQ quality indicators (QIs) are a set of quality indicators organized into four modules, each of which measures quality associated with patient care in outpatient or inpatient settings. These four modules are: Prevention Quality Indicators (PQIs); Inpatient Quality Indicators (IQIs); Patient Safety Indicators (PSIs); and Pediatric Quality Indicators (PDIs). Background information on the development of these modules and the primary purpose they are designed to serve can be found at: qualityindicators.ahrq.gov/measures/qi_resources. It is important to note that the modules are regularly updated with new and enhanced information to improve the reliability of the quality indicator measurements.

This report presents findings from the application of the latest Prevention Quality Indicator (PQI) module (Version 2023) to the 2022 NJ UB data. The report is organized into sections. The description of the Prevention Quality Indicators module and the interpretation of the PQI measures, including definitions of individual indicators presented in subsequent sections are, largely excerpted from AHRQ's guide and software documentation to Prevention Quality Indicators. These sources are provided in the reference section. The PQIs report also serves as a supplement to the Department other quality indicator reports such as the Inpatient Quality Indicators report, Patient Safety Indicators report, the Hospital Performance report, the Cardiac Surgery report, and the Patient Safety Reporting System summary report.

The 2022 NJ data shows that there are substantial variations in potentially preventable hospital admission rates by county. Some counties exhibit significantly higher rates (i.e., hospital admission rates) than the corresponding statewide rates while others have significantly lower rates.

The Prevention Quality Indicators (PQIs) Module

The Prevention Quality Indicators (PQIs) are a set of measures that can be used with hospital inpatient discharge data to identify "ambulatory care sensitive conditions" (ACSCs). ACSCs are conditions for which good outpatient care can potentially prevent the need for hospitalization, or for which early intervention can prevent complications or progression to more severe disease. The PQIs are of most interest to comprehensive health care delivery systems, such as health maintenance organizations (HMOs), or public health agencies.

Although other factors outside the direct control of the health care system, such as poor environmental conditions, lack of patient adherence to treatment recommendations, and other social determinants of health can result in hospitalization, PQIs provide a good starting point for assessing quality of health services in the community. Because PQIs are calculated using readily available hospital administrative

data, they provide an easy-to-use and inexpensive regional screening tool. They can be used to provide a window into the community: to identify unmet community health care needs, to monitor how well complications from some common diseases are being avoided in the outpatient setting, and to compare performance of local health care systems across communities.

These indicators measure outcomes of preventive care for both acute illnesses and chronic conditions, reflecting two important components of the quality of preventive care: efficacy and timeliness. For example, hospital admissions for hypertension can be prevented with outpatient medication management. The incidence of COPD hospitalizations can be reduced with accurate diagnosis and timely access to medical treatments that prevent exacerbation and treat breathlessness. Thus, the PQI module, which focuses on preventive care services, represents the current state of the art in assessing quality of health services in local communities using inpatient discharge data. It is a valuable tool for identifying potential health care quality problems in outpatient care so that they get timely attention for a more in-depth investigation.

PQIs are used to assess the quality of the whole health care system including the quality of ambulatory care, in preventing medical complications. That is why these measures are of greater value when reported at the population level. Such information is valuable for public health groups, state data organizations, and others concerned with community-wide health problems. Most importantly, policy makers and health care providers can use PQIs to answer questions such as: Does the admission rate for diabetes complications in my community suggest a problem in the provision of appropriate outpatient care to this population? How does the admission rate for heart failure vary over time and from one county to another?

Both researchers and policy makers agree that UB data offers useful information on the quality of preventive care in the community. The goal is for hospitals, community leaders, and policy makers to use such readily available data to identify community-level health care needs, target resources, and track the impact of programmatic and policy interventions. The PQIs module is intended to facilitate such an effort, and has already been applied, at the national level, in the National Healthcare Quality and Disparities Report (NHQDR).

The PQIs consist of the following 14 indicators that measure hospital admissions for ACSCs across geographic areas. AHRQ developed these indicators after a comprehensive literature review, analysis of the International Classification of Diseases, 9th Revision, Clinical Modification and Procedure Coding System, (ICD-09-CM/PCS) codes, review by a clinician panel, implementation of risk adjustment, and empirical analyses. The latest PQIs module (Version 2023) is based on the most current ICD-10-CM/PCS). The 14 PQIs included in latest version of the module are as follows:

- PQI 01 - Diabetes short-term complications admission rate
- PQI 03 - Diabetes long-term complications admission rate
- PQI 05 - Chronic obstructive pulmonary disease (COPD) or asthma in older adults
- PQI 07 - Hypertension admission rate
- PQI 08 - Heart failure (HF) admission rate
- PQI 11 - Community-acquired pneumonia admission rate
- PQI 12 - Urinary tract infection (UTI) admission rate
- PQI 14 - Uncontrolled diabetes admission rate
- PQI 15 - Asthma in younger adults' admission rate
- PQI 16 - Lower-extremity amputation among patients with diabetes rate

- PQI 90 - Prevention quality - overall composite
- PQI 91 - Prevention quality - acute composite
- PQI 92 – Prevention quality - chronic composite
- PQI 93 – Prevention quality - diabetes composite

How Are PQI Rates Calculated?

The PQIs software produces county-level volume of admissions as well as observed, expected, and risk-adjusted rates for each of the 14 indicators. This report presents these data generated by Version 2023 of the AHRQ's SAS Software program. Interpretations and guidelines on when to use the observed, expected, and risk adjusted rates as well as composite scores are discussed below. However, that there are no “correct or perfect hospital admission rates” for these conditions and that nuance should be considered when evaluating these data. ‘Very low’ rates could signal inappropriate underutilization of health care resources while ‘very high’ rates could indicate potential overuse of hospital care. Therefore, hospital admission for ACSCs is not a measure of hospital quality but a potential indicator of outpatient and community health care needs at the county level. For example, if an area has a relatively high hospital admission rate for diabetes complications, local health care providers should work with the community to identify reasons and strategies to address the problem.

Observed rates: The observed rate, which is defined as the number of events of interest (numerator) divided by the population at risk (denominator), is the raw rate generated by the software from the data under analysis. In other words, observed rates are the number of hospitalizations for the condition of interest divided by the number of individuals who live in that area who are at risk for the condition. The population at risk (the denominator for calculating a PQI rate) is derived from census population figures defined by county.

The observed rate is primarily used to help identify cases for further follow-up and quality improvement. Counties or communities needing improvement can be identified by the magnitude of the observed rate by comparing the rate to available benchmarks and/or by the number of patients impacted. In this case, the national and statewide rates would be benchmarks for comparison.

Another approach to identify areas that need more attention for focus is to compare the *observed and expected rates*.

Expected rates: The expected rate is the rate the county would have if it had the same patient case-mix (i.e., by age, gender, diagnosis related group (DRG), and comorbidity categories) as the reference population. It is the rate that would be predicted if the expected level of care observed in the reference population (national database) and estimated with risk-adjustment regression models were applied to the mix of patients with demographic and comorbidity distributions observed in the Statewide dataset. The expected rate answers the question, “What rate of hospitalization for a given indicator would we expect to see if this area/county has provided the average level of care observed in the reference population?”. In short, expected rates are predicted for each area using risk-adjustment model coefficients that summarize the age and sex distribution of the area's population and optionally, the poverty decile within which the area's poverty rate falls.

When the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than expected for that

specific indicator. And when the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population.

Risk-adjusted rates: Risk-adjusted rates are derived from applying to the observed rates, the average case-mix of a baseline data called State Inpatient Data (SID) that represents national average patient mix for that year. Healthcare Cost and Utilization Project (HCUP) compiles and provides the SID dataset to users at no cost. The County-level risk-adjusted admission rates reflect the age, sex, DRG, and comorbidity distribution of the data in the baseline file rather than the distributions of patients in the user's data. The risk-adjusted rate is the rate the county would have if it had the same patient case-mix as the reference population. Alternatively, a risk-adjusted rate is defined as the estimated performance of a county on the PQI assuming that the county has the case-mix of the reference population.

Thus, risk-adjusted rate is a comparative rate that incorporates information about the observed rate, expected rate, and a reference population that is not part of the input dataset. The risk adjusted rate is the ratio of the observed rate and expected rate multiplied by the reference population observed rate. Therefore, it answers the same question as the ratio of the observed and expected: "How does the rate of hospitalization for this area or county compare with the rate we would expect to see if it has provided the average level of care observed in the reference population?" If a county's risk-adjusted rate for a given indicator is significantly higher than the reference rate (i.e., statewide average rate), then the county is performing worse than the statewide average in its community level achievement of preventable hospitalizations. In short, readers may use the statewide risk-adjusted rate as a benchmark to compare county-level risk-adjusted admission rates.

Interpretation of PQI Measures

- PQIs are not intended to be used as definitive quality measures, but they are a useful, low-cost measure that can potentially illuminate differences across geographic areas that hospitals serve by assessing hospital admission rates for ambulatory care sensitive conditions (ACSCs).
- Performance on a single PQI cannot reliably show actual quality differences. For this reason, some indicators have been developed as measure sets. For instance, four indicators evaluated are related to diabetes –diabetes with short-term complications, (PQI 01) diabetes with long-term complications (PQI 03), uncontrolled diabetes (PQI 14) and lower-extremity amputation among patients with diabetes (PQI 16). Examining these indicators together is likely to produce a more complete picture of overall quality of care for this condition which led AHRQ to develop a new indicator named diabetes composite (PQI 93) in later versions.
- Since there are no "correct or perfect admission rates" established for most indicators, it is often better to compare county-level rates with other similar areas. These "peer groups" would ideally be as similar as possible in potentially important factors, such as socioeconomic status of the population, and urban or rural location. However, the most applied approach, is to compare a county's risk-adjusted rate with the statewide risk-adjusted rate.

- A county's performance is measured by comparing its confidence interval to the statewide risk-adjusted rate to see if the 95% confidence interval for its risk-adjusted estimate contains within its lower and upper limits, the statewide risk-adjusted estimate for a given indicator.
- If a county's confidence interval for its rate contains the statewide risk-adjusted rate, then the county's risk-adjusted rate is not statistically significantly different from the statewide rate.
- If a county's confidence interval for its rate falls entirely below the statewide risk-adjusted rate, then the county's risk-adjusted rate is significantly lower than the statewide rate. In the tables, these rates are marked by single asterisk (*). Note that lower rates imply better performance.
- If a county's confidence interval falls entirely above the statewide risk-adjusted rate, then the county's risk-adjusted rate is significantly higher than the statewide rate. In the tables, these rates are marked by double asterisks (**).
- This report is only a guide for consumers and should not be used by itself to draw a conclusion about a county's overall performance in population health.
- Readers can also compare a county's risk-adjusted rate with its own observed and expected rates. The difference will indicate the impact of risk-adjustment or the impact of differences in case-mix on the indicator.
- It should be noted that lower rates (*) imply better performance while higher rates (**) imply worse performance – rates being measures of avoidable hospitalizations by keeping good community level health care quality.

Strengths and Limitations of PQIs

- Even though these indicators are based on hospital inpatient data, they also provide insight into the quality of the health care system outside the hospital setting. Patients with diabetes may be hospitalized for diabetic complications if their conditions are not adequately monitored or if they do not receive the patient education needed for appropriate self-management. Patients may be hospitalized for asthma if primary care providers fail to adhere to practice guidelines or to prescribe appropriate treatments. Patients with long-term diabetes and poor foot care who do not have proper and continued treatment and glucose control may end up having to go for lower-extremity amputation. Thus, the PQIs are measures of the impact of preventive care for both acute illnesses and chronic conditions, reflecting two important components of the quality of preventive care - efficacy and timeliness. In short, the PQIs module is a valuable tool to help flag potential health care quality problem areas that need further investigation. Moreover, the indicators can provide a quick check on access to health care or outpatient services in a community by using patient data found in a typical hospital discharge abstract.

- Despite the strengths, however, there are several issues that should be considered when using these indicators. For some PQIs, the effects of social determinants of health can be difficult control for in the analysis of data. Differences in socioeconomic status have been shown to explain a substantial part of the variation in rates across counties. The complexity of the relationship between socioeconomic status and PQI rates makes it difficult to delineate how much of the observed relationships are due to true access to care in potentially underserved populations, or due to other patient characteristics, unrelated to quality of care. In addition, environmental conditions that are not under the direct control of the health care system can substantially influence some of the PQIs. For example, COPD and asthma admission rates are likely to be higher in areas with poorer air quality.
- The other issue is that not many studies have directly addressed the question of whether effective treatments in outpatient settings would reduce the overall incidence of hospitalizations. The extent to which the reporting of admission rates for ambulatory care sensitive conditions (ACSCs) may lead to changes in ambulatory care practices and admission rates is still unknown. Providers may admit patients who do not clinically require inpatient care, or they may do the opposite - fail to hospitalize patients who would benefit from inpatient care.

PQI Measures for New Jersey

This section presents county-level PQI estimates for New Jersey in 2022. First, the definition of the indicator is provided. Then a summary table showing the number of hospital admissions among residents of the county, the corresponding observed and expected admission rates, and the risk-adjusted rates along with their respective 95% confidence intervals is presented. In this section, county-level performance assessments will be made using risk-adjusted rates.

Unless otherwise stated, all rates are calculated in populations of NJ adults, defined as those 18 years of age and older. Some of the PQIs evaluate only subsets of this population (e.g., PQI 15 “asthma in younger adults”) and the population age range is included in the description and analysis.

The national rates for all 14 PQIs presented here as benchmarks for comparison purposes, are based on the 2020 HCUP - State Inpatient Data (SID) reported in the AHRQ PQI documentation - see Benchmark Data Tables via this link: [Prevention Quality Indicators \(PQI\) Benchmark Data Tables, v2023](#)

Comparison of a specific county-level PQI rate to the statewide average for the same indicator is one appropriate way to see how well a county does among its peers. Following the recommendation of AHRQ, we have compared county rates against statewide rates. However, one may equally compare the county rates against the national rates since the risk-adjustment was based on national parameters.

PQI 01 – Diabetes with short-term complications

“Diabetes with short-term complications” is an indicator of an avoidable hospitalization or ambulatory care sensitive condition (ACSC). This indicator is not a measure of hospital quality, but rather a measure of outpatient care and other health care not related to hospitalizations. Short-term complications of diabetes are defined as acute complications that can be resolved with immediate care, such as dehydration, hypo or hyperglycemia, diabetic ketoacidosis (DKA), and hyperosmolar hyperglycemic state (HHS) which can lead to coma. These life-threatening emergencies arise when a patient develops heightened blood sugar (glucose) in excess of what their body can regulate (hyperglycemia) or abnormally low levels of blood glucose (hypoglycemia). Diabetic ketoacidosis occurs when there is insufficient insulin in the body to allow for proper use of glucose, leading to a buildup of compounds in the blood called ketones, which are acidic and toxic at high concentrations. Other short-term complications of diabetes can include infection and poor wound healing.

Hospital admission for “diabetes with short-term complications” is a PQI that would be of most interest to comprehensive health care delivery systems. The assumption is that proper outpatient treatment and adherence to care may reduce the incidence of these events resulting in lower admission rates, which implies better quality of care. The rate is defined as admissions for “diabetes with short-term complications” per 100,000 adults in each county. The indicator includes all non-maternal/non-neonatal discharges of age 18 years and older with ICD-10-CM/PCS codes for diabetes with short-term complications (ketoacidosis, hyperosmolarity, coma); excluding transfers from another institution and those with maternal specific primary codes Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium) and MDC 15 (newborn and other neonates).

Table 1 shows the number of hospital admissions for “diabetes with short-term complications” by county along with observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- Statewide, there were 4,583 hospital admissions for “diabetes with short-term complications” in 2022 for a risk-adjusted rate of 64.1 per 100,000 adult population. The national hospital admission rate for diabetes with short-term complications was 81.8 per 100,000 in 2020.
- County-level risk-adjusted rates can be conveniently compared to the statewide risk-adjusted rate to see if there is statistical significance in the difference. For example, the risk-adjusted hospital admission rate for “diabetes with short-term complications” among the adult population of Atlantic County is 126.1 per 100,000 with a 95% confidence interval of 113.9 to 138.3. The statewide risk-adjusted rate of 64.1 per 100,000 is far below the lower limit of the confidence interval - showing that the hospital’s admission rate of this PQI in Atlantic County, which is 126.1 is statistically significantly higher than that of the statewide average. This can be used as a signal for policy makers to do further investigation into the health care provisions for diabetic patients in the county. In another example, the risk-adjusted rate of 25.6 per 100,000 in Morris County is statistically significantly lower than the statewide average (i.e., the statewide rate of 64.1 is higher than the upper limit of the 95% confidence interval of Morris’s rate) – suggesting that Morris County performed better on this indicator compared to the statewide average. See Tables 16, 17 and 18 for variations by patient’s demographic characteristics.

Table 1. Hospital admissions for diabetes with short-term complications
(per 100,000 county population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	4,583	63.1	81.2	64.1	62.0 - 66.2
Atlantic	268	122.5	80.1	126.1 **	113.9 - 138.3
Bergen	220	29.1	80.6	29.8 *	23.2 - 36.3
Burlington	241	64.9	80.7	66.4	57.0 - 75.7
Camden	436	107.2	81.3	108.8 **	99.9 - 117.7
Cape May	51	64.2	76.1	69.6	48.8 - 90.3
Cumberland	231	200.8	82.0	202.0 **	185.4 - 218.6
Essex	580	89.0	82.3	89.2 **	82.2 - 96.1
Gloucester	123	50.8	81.6	51.3 *	39.8 - 62.8
Hudson	270	47.9	83.7	47.2 *	39.7 - 54.6
Hunterdon	32	30.3	79.4	31.5 *	13.9 - 49.2
Mercer	256	85.6	81.9	86.2 **	75.9 - 96.5
Middlesex	378	55.7	82.0	56.0 *	49.2 - 62.9
Monmouth	312	60.9	80.1	62.6	54.7 - 70.6
Morris	102	25.0	80.6	25.6 *	16.7 - 34.5
Ocean	267	54.0	78.2	57.0	48.7 - 65.2
Passaic	305	77.5	81.9	78.0 **	69.0 - 87.0
Salem	48	94.1	80.1	96.9 **	71.6 - 122.1
Somerset	77	28.0	81.0	28.5 *	17.7 - 39.4
Sussex	49	41.5	80.5	42.5 *	25.9 - 59.1
Union	278	63.5	81.9	63.9	55.4 - 72.5
Warren	59	65.7	80.1	67.6	48.5 - 86.6

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 03 – Diabetes with long-term complications

Area-level hospital admission rate for “diabetes with long-term complications” is a good indicator of an avoidable hospitalization or ambulatory care sensitive condition (ACSC). This indicator is not a measure of hospital quality, but rather a measure of outpatient care and other health care issues not related to hospitalizations. Long-term complications of diabetes include heart disease, stroke, and damage to the kidneys, eyes, nerves, and circulatory system.

Hospital admission for “diabetes with long-term complications” is a PQI that would be of most interest to comprehensive health care delivery systems. Long-term complications of diabetes can arise from sustained chronic poor control of diabetes, a condition that can be managed with sufficient outpatient oversight. Intensive treatment programs have been shown to decrease the incidence of long-term complications in both type 1 and type 2 diabetes. The indicator relates to quality because research shows that proper outpatient treatment and adherence to care reduces the incidence of diabetic long-term complications, and that lower rates suggest better quality of care. The rate is defined as hospital admissions for diabetic long-term complications per 100,000 in the adult population for each county. The indicator includes all discharges age 18 years and older with ICD-10-CM/PCS codes for “long-term complications of diabetes.”

Table 2 shows the number of hospital admissions in New Jersey hospitals in 2022 for “diabetes with long-term complications” by county along with observed, expected and risk- adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- Statewide, there were 8,726 hospital admissions in 2022 for “diabetes with long-term complications.” The statewide average risk-adjusted hospital admission rate for diabetes with long-term complications is 122.7 per 100,000. Table 13 shows New Jersey rates in comparisons National rates.

Table 2. Hospital admissions for diabetes with long term complications
(per 100,000 county population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	8,726	120.1	107.6	122.7	120.3 - 125.2
Atlantic	379	173.3	112.9	168.9 **	155.2 - 182.6
Bergen	596	78.8	111.1	78.0 *	70.6 - 85.4
Burlington	511	137.6	110.6	136.9 **	126.3 - 147.6
Camden	710	174.6	104.7	183.5 **	173.0 - 193.9
Cape May	93	117.1	130.6	98.7 *	77.5 - 119.8
Cumberland	332	288.6	105.0	302.4 **	282.8 - 322.0
Essex	983	150.9	100.1	165.9 **	157.4 - 174.3
Gloucester	201	83.0	106.3	85.9 *	72.5 - 99.3
Hudson	746	132.3	90.1	161.5 **	151.9 - 171.0
Hunterdon	116	110.0	121.2	99.8 *	80.8 - 118.8
Mercer	389	130.0	105.0	136.2 **	124.1 - 148.4
Middlesex	730	107.6	104.4	113.4 *	105.3 - 121.4
Monmouth	511	99.7	115.1	95.3 *	86.4 - 104.1
Morris	295	72.4	112.8	70.6 *	60.6 - 80.7
Ocean	686	138.8	118.0	129.4	120.5 - 138.3
Passaic	450	114.3	103.5	121.4	110.8 - 132.1
Salem	38	74.5	113.2	72.4 *	44.1 - 100.8
Somerset	197	71.7	111.1	71.0 *	58.7 - 83.3
Sussex	146	123.6	116.6	116.6	98.3 - 135.0
Union	498	113.8	105.0	119.2	109.2 - 129.3
Warren	119	132.4	116.2	125.4	104.3 - 146.5

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 05 – Chronic obstructive pulmonary disease (COPD) or asthma in older adults

“Chronic obstructive pulmonary disease (COPD) or asthma in older adults” includes three primary diseases that cause respiratory dysfunction - asthma, emphysema, and chronic bronchitis - each with distinct etiologies, treatments, and outcomes. This indicator examines these conditions in older adults, defined as adults aged 40 and over. Asthma in younger adults is discussed separately in PQI 15. “COPD or asthma in older adults” can often be controlled in an outpatient setting. Admissions for this indicator include exacerbations of COPD, respiratory failure, and, in rare cases, lung volume reduction surgery or lung transplantation.

With appropriate outpatient treatment and compliance, hospitalizations for exacerbations of COPD and decline in lung function could be minimized. Counties may wish to use chart reviews to understand more clearly whether admissions are a result of poor health care quality or other factors, such as issues of access or social determinants of health that health care facilities cannot control for. Counties may also wish to identify hospitals that contribute the most to the overall area rate for this indicator. Proper outpatient treatment may reduce admissions for COPD, and lower rates suggest better quality of care. According to evidence established by AHRQ, hospital admission rate for COPD is a good indicator of avoidable hospitalization or ambulatory care sensitive condition (ACSC). The rate is defined as admissions for COPD per 100,000 adults 40+ in each county. In other words, all non-maternal discharges age 40 and older with ICD-10-CM/PCS codes for COPD excluding maternal specific codes under MDC 14 (pregnancy, childbirth, and puerperium) and MDC 15 (newborn and other neonates), are included in the rate calculation.

Table 3 shows the number of hospital admissions for “chronic obstructive pulmonary disease (COPD) or asthma in older adults” by county along with their observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- In New Jersey, there were 11,233 hospital admissions for “COPD or asthma in older adults” in 2022. The statewide risk-adjusted hospital admissions rate for this PQI was 312.9 per 100,000 with a 95% confidence interval of 307.4 to 318.5.
- County-level rates range from a low of 124.3 (Hunterdon County) to a high of 1,158.3 (Cumberland County) per 100,000 population ages 18 and older.

Table 3. Hospital admissions for COPD or asthma in older adults
(per 100,000 county population, age 40+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	11,233	240.5	223.0	312.9	307.4 - 318.5
Atlantic	397	274.5	235.8	337.8	307.0 - 368.5
Bergen	721	142.3	222.6	185.5 *	168.6 - 202.4
Burlington	761	311.4	226.5	399.0 **	374.8 - 423.1
Camden	1,025	402.3	221.9	526.0 **	502.1 - 549.9
Cape May	210	357.3	264.5	391.8 **	346.3 - 437.4
Cumberland	634	881.1	220.7	1,158.3 **	1,113.2 - 1,203.3
Essex	1,202	300.3	209.2	416.3 **	396.7 - 436.0
Gloucester	251	163.3	221.9	213.5 *	182.7 - 244.2
Hudson	832	277.0	205.1	391.9 **	369.0 - 414.8
Hunterdon	75	99.8	232.9	124.3 *	81.4 - 167.2
Mercer	394	207.9	218.2	276.4 *	248.5 - 304.3
Middlesex	889	209.2	216.3	280.5 *	261.8 - 299.2
Monmouth	911	260.4	229.6	329.0	308.9 - 349.0
Morris	305	111.3	224.8	143.7 *	120.8 - 166.5
Ocean	1,263	373.6	253.1	428.3 **	408.9 - 447.7
Passaic	314	128.9	220.3	169.7 *	145.2 - 194.2
Salem	77	226.0	230.6	284.3	220.2 - 348.3
Somerset	242	131.2	218.4	174.2 *	145.9 - 202.5
Sussex	144	178.9	227.3	228.4 *	186.4 - 270.3
Union	452	161.6	211.8	221.4 *	198.1 - 244.7
Warren	134	219.0	230.9	275.2	227.4 - 322.9

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 07 – Hypertension

Hypertension, or high blood pressure, is a chronic cardiovascular condition in which systemic blood vessel pressure is elevated. Hypertension hospitalizations are a good indicator of those that are considered avoidable. It is a chronic condition that is often controllable in an outpatient setting with appropriate use of drug therapy. Hospital admission for hypertension is a PQI that would be of most interest to comprehensive health care delivery systems. Counties may wish to identify hospitals that contribute the most to the overall county rate for this indicator. As a PQI, hypertension is not a measure of hospital quality, but rather one measure of outpatient health care. Providers may reduce admission rates without necessarily improving quality by shifting care to an outpatient setting. Proper outpatient treatment may reduce admissions for hypertension, and lower admission rates represent better quality of community health care. The rate is defined as admissions for hypertension per 100,000 adults in each county. The indicator includes all non-maternal discharges age 18 or older with ICD- 10-CM/PCS codes for hypertension but excludes transfers from another institution and patients with primary discharge codes of MDC 14 (pregnancy, childbirth, and puerperium), MDC 15 (newborn and other neonates) and cases with cardiac procedure codes in any field.

Table 4 shows the number of hospital admissions for hypertension by county along with their observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- Statewide, there were 4,522 potentially preventable hospital admissions for hypertension treatment in 2022, for a risk-adjusted rate of 65.5 per 100,000 adults. Rates of hospital admission for hypertension ranged from as low as 27.7 per 100,000 (Somerset County) to as high as 162.0 in (Cumberland County).
- Five counties (Atlantic, Camden, Cumberland, Essex, Mercer, and Monmouth) have statistically significantly higher admission rates for hypertension compared to the statewide average.

Table 4. Hospital admissions for hypertension
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	4,522	62.2	54.5	65.5	63.8 - 67.3
Atlantic	231	105.6	56.2	108.0 **	97.9 - 118.2
Bergen	237	31.3	56.6	31.8 *	26.4 - 37.2
Burlington	231	62.2	56.1	63.8	56.0 - 71.6
Camden	387	95.2	53.2	102.7 **	95.0 - 110.3
Cape May	67	84.4	65.7	73.8	58.2 - 89.4
Cumberland	172	149.5	53.0	162.0 **	147.6 - 176.4
Essex	652	100.1	51.3	112.1 **	105.9 - 118.2
Gloucester	108	44.6	52.8	48.5 *	38.6 - 58.5
Hudson	310	55.0	46.6	67.7	60.8 - 74.6
Hunterdon	32	30.3	59.4	29.3 *	15.1 - 43.5
Mercer	239	79.9	53.2	86.3 **	77.4 - 95.3
Middlesex	381	56.2	52.5	61.5	55.5 - 67.4
Monmouth	412	80.4	57.3	80.6 **	74.0 - 87.1
Morris	124	30.4	57.0	30.7 *	23.3 - 38.1
Ocean	345	69.8	61.8	64.9	58.5 - 71.3
Passaic	189	48.0	52.7	52.4 *	44.6 - 60.2
Salem	17	33.3	56.9	33.7 *	12.8 - 54.6
Somerset	74	26.9	56.0	27.7 *	18.6 - 36.7
Sussex	43	36.4	56.1	37.3 *	23.5 - 51.1
Union	235	53.7	53.1	58.1	50.7 - 65.5
Warren	36	40.1	57.4	40.1 *	24.4 - 55.8

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 08 – Heart failure

Heart failure, sometimes referred to as congestive heart failure (CHF) leads to about 1 million annual hospital admissions and is the most common reason for admission for patients 65 and older. It is estimated that about half of the people who developed heart failure die within 5 years of diagnosis. It is also estimated that heart disease costs more than \$30 billion a year at a national level, which includes the cost of health care services, medicines to treat heart failure, and missed days of work. The most common causes of HF are coronary artery disease (CAD), high blood pressure, and diabetes ([PQI 08 Heart Failure Admission Rate.xlsx](#)).

Usually, CHF can be controlled in an outpatient setting. However, the disease is a chronic progressive disorder for which some hospitalizations are appropriate. CHF relates to quality because research shows that proper outpatient treatment reduces admissions for CHF, which in turn lowers admission rates, suggesting a better quality of care. CHF is a PQI that would be of most interest to comprehensive health care delivery systems. As the causes for CHF admissions may include poor quality of care, lack of patient compliance, or problems of access to care, counties may wish to review CHF patient records to identify precipitating causes and potential targets for intervention. As a prevention quality indicator, CHF is not a measure of hospital quality, but rather a measure of outpatient care and other community level health conditions. The rate is defined as admissions with a principal diagnosis of heart failure per 100,000 adults in each county. The measure excludes cardiac procedure admissions, obstetric admissions, and transfers from other institutions.

Table 5 shows the number of hospital admissions for heart failure by county along with their observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- Statewide, there were 27,758 hospital admissions for *heart failure* in 2022. The risk-adjusted hospital admissions rate for *heart failure* was 393.1 per 100,000, age 18 and above.
- Admission rates for HF ranged from a low of 255.4 per 100,000 in Morris to a high of 1,068.2 per 100,000 in Cumberland.

Table 5. Hospital admissions for heart failure
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	27,758	381.3	394.4	393.1	388.4 - 397.8
Atlantic	1,104	503.9	421.0	486.7 **	460.7 - 512.8
Bergen	2,179	287.8	416.6	280.9 *	266.8 - 295.0
Burlington	1,429	384.3	411.7	379.5	359.3 - 399.7
Camden	1,990	488.2	377.8	525.5 **	505.3 - 545.6
Cape May	478	600.2	547.2	446.0 **	408.1 - 483.9
Cumberland	1,163	1005.9	382.9	1,068.2 **	1030.5 - 1105.8
Essex	2,787	427.2	348.8	498.0 **	481.4 - 514.6
Gloucester	631	260.2	372.8	283.9 *	257.5 - 310.2
Hudson	1,730	306.4	302.1	412.5	393.3 - 431.6
Hunterdon	318	300.9	451.8	270.8 *	234.6 - 307.0
Mercer	1,239	413.6	379.0	443.7 **	420.2 - 467.2
Middlesex	2,301	338.7	370.1	372.2 *	356.4 - 388.0
Monmouth	2,040	397.2	426.2	378.9	362.0 - 395.8
Morris	1,081	265.0	421.9	255.4 *	236.3 - 274.5
Ocean	2,577	519.7	500.0	422.7 **	406.8 - 438.6
Passaic	1,362	345.5	374.5	375.1	354.5 - 395.8
Salem	183	358.5	421.6	345.8	291.8 - 399.7
Somerset	774	281.4	403.2	283.7 *	260.0 - 307.5
Sussex	434	366.8	408.4	365.2	329.2 - 401.2
Union	1,502	342.7	368.7	378.0	358.3 - 397.7
Warren	456	506.0	428.4	480.2 **	439.9 - 520.5

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 11 – Community acquired pneumonia

Community-acquired pneumonia (CAP) formerly listed as “PQI 11 bacterial pneumonia,” is a relatively common acute condition, frequently treatable with antibiotics when caused by a bacterial infection. Other infectious agents that can cause CAP include viruses (seasonal respiratory viruses like influenza and SARS-CoV-2) as well as fungal infections. The name of the PQI was updated to reflect the fact that not all CAP infections are caused by bacteria. If left untreated, susceptible individuals at higher risk for poor outcomes due to respiratory infection, such as the elderly or immunocompromised, infectious pneumonia can lead to death. Proper outpatient treatment may reduce admissions for CAP in non-susceptible individuals, and lower admission rates represent better quality of care at the community level. CAP is a good indicator of an avoidable hospitalization or ambulatory care sensitive condition (ACSC). High admission rates are often a reflection of large number of inappropriate admissions or low-quality treatment with antibiotics when not clinically indicated or effective against the etiology for the infection. As a PQI, admission for CAP is not a measure of hospital quality, but rather a measure of outpatient care and other community-level health care issues.

The elderly population is particularly susceptible to pneumonia, and in this population, a vaccine is suggested to prevent one of the leading causes of bacterial pneumonias frequently transmitted in community settings: pneumococcus pneumonia. Areas may wish to examine the outpatient care for pneumonia and pneumococcal vaccination rates to identify potential processes of care that may reduce admission rates. Necessity of hospital admission appears to be a problem for this indicator. High rates may reflect large number of inappropriate admissions, poor outpatient care, or other systemic failures outside the control of the health care system.

The rate is defined as admissions for CAP per 100,000 adults in each county. The indicator includes all non-maternal discharges age 18 and older with the ICD-10-CM principal diagnosis code for CAP. It excludes transfer cases, MDC 14 (pregnancy, childbirth, and puerperium), MDC 15 (newborn and other neonates), and those with diagnosis code for sickle cell anemia (or similarly coded HB-S disease).

Table 6 shows the number of hospital admissions for bacterial pneumonia by county along with the observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- The national average admission rate for bacterial pneumonia in 2020 was 132.8 per 100,000 population, age 18+ (see Table 13).
- In New Jersey, there were 7,750 hospital admissions for bacterial pneumonia in 2022. With a risk-adjusted rate of 118.8 per 100,000, New Jersey had a significantly lower rate than the 2020 national benchmark rate of 132.8.

Table 6. Hospital admissions for community-acquired pneumonia
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	7,750	106.6	139.1	118.8	115.8 - 121.8
Atlantic	323	147.7	148.2	154.4 **	137.6 - 171.3
Bergen	617	81.6	146.4	86.4 *	77.3 - 95.5
Burlington	445	119.9	144.7	128.4	115.3 - 141.5
Camden	457	112.4	133.8	130.1	117.1 - 143.1
Cape May	179	225.4	189.6	184.2 **	159.5 - 208.9
Cumberland	340	295.5	133.8	342.2 **	317.8 - 366.6
Essex	631	96.9	124.4	120.6	110.0 - 131.3
Gloucester	139	57.4	132.5	67.1 *	50.2 - 84.1
Hudson	429	76.1	109.2	108.0	95.8 - 120.2
Hunterdon	103	97.6	157.8	95.9	72.4 - 119.4
Mercer	330	110.3	134.1	127.5	112.3 - 142.6
Middlesex	675	99.5	131.0	117.7	107.5 - 127.8
Monmouth	628	122.5	149.2	127.2	116.2 - 138.1
Morris	291	71.4	147.9	74.9 *	62.5 - 87.2
Ocean	1,031	208.5	173.9	185.8 **	175.5 - 196.1
Passaic	348	88.4	132.6	103.3 *	90.0 - 116.5
Salem	75	147.0	148.5	153.4	118.6 - 188.2
Somerset	143	52.1	141.7	56.9 *	41.6 - 72.3
Sussex	127	107.5	143.3	116.3	93.0 - 139.6
Union	340	77.7	130.6	92.2 *	79.5 - 104.8
Warren	99	110.2	149.5	114.2	88.0 - 140.3

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 11 - Community-acquired pneumonia was formerly called "bacterial pneumonia."

PQI 12 – Urinary tract infection

Urinary tract infection (UTI) is a common acute condition that can, when caused by bacteria can be treated with antibiotics in an outpatient setting. However, this condition, especially bacterial UTIs can progress to more clinically significant infections, requiring emergent care to prevent pyelonephritis, a condition where the infection ascends to the kidneys and can cause severe damage to the organ. Certain populations are more at risk, particularly women, and vulnerable individuals with inadequate treatment. Proper outpatient treatment is believed to reduce hospital admissions for UTI, and lower admission rates represent better quality of care at a community level. Hospital admission for UTI is a PQI that would be of most interest to comprehensive health care delivery systems. As a PQI, admission for UTI is not a measure of hospital quality, but rather one measure of outpatient care and other health care issues.

The rate is defined as admissions for UTI per 100,000 adults in each county. The indicator includes all non-maternal discharges age 18 and older with ICD- 10-CM principal diagnosis code for urinary tract infection. It excludes transfer cases, MDC14 (pregnancy, childbirth, and puerperium), MDC 15 (newborn and other neonates), patients with diagnosis code of kidney/urinary tract disorder, and patients with diagnosis or procedure codes indicating an immunocompromised state.

Table 7 shows the number of hospital admissions for urinary tract infection by county along with the observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- In New Jersey, there were 8,999 hospital admissions for urinary tract infection in 2022. The risk-adjusted hospital admissions rate for urinary tract infection is 133.4 per 100,000.
- The national average admission rate for urinary tract infection in 2020 was 101.3 per 100,000 population, age 18+ (see Table 13).
- County-level urinary tract infection rates can be compared to the statewide average as well as the national average to see where specific counties stand on this specific indicator.

Table 7. Hospital admissions for urinary tract infection
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	8,999	123.8	107.3	133.4	130.9 - 136.0
Atlantic	359	164.1	112.8	168.3 **	153.9 - 182.7
Bergen	679	89.8	113.6	91.4 *	83.7 - 99.1
Burlington	596	160.5	111.9	165.8 **	154.7 - 176.9
Camden	686	168.6	103.5	188.5 **	177.4 - 199.5
Cape May	90	113.3	146.7	89.4 *	68.4 - 110.3
Cumberland	346	300.5	102.2	340.1 **	319.3 - 361.0
Essex	701	107.6	96.3	129.2	120.2 - 138.2
Gloucester	247	101.9	99.9	118.0 *	103.5 - 132.6
Hudson	545	96.6	84.2	132.8	122.4 - 143.2
Hunterdon	166	157.2	119.3	152.5	132.3 - 172.6
Mercer	330	110.3	103.3	123.5	110.6 - 136.4
Middlesex	688	101.4	99.7	117.6 *	108.9 - 126.3
Monmouth	800	156.0	114.2	158.0 **	148.7 - 167.3
Morris	440	108.0	114.1	109.5 *	99.0 - 120.0
Ocean	980	198.1	139.8	163.9 **	155.4 - 172.5
Passaic	367	93.2	102.8	104.8 *	93.6 - 116.1
Salem	49	96.1	114.4	97.1 *	67.5 - 126.7
Somerset	232	84.4	109.0	89.6 *	76.5 - 102.7
Sussex	152	128.7	104.6	142.3	121.9 - 162.6
Union	403	92.1	100.0	106.5 *	95.7 - 117.3
Warren	143	159.0	113.7	161.8 **	139.5 - 184.2

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 14 – Uncontrolled diabetes

Uncontrolled diabetes indicates a failure to stabilize blood sugar levels in a diabetic patient, with patients either chronic, excessively high blood glucose (hyperglycemia) or frequent fluctuations where blood glucose becomes dangerously low (hypoglycemia). In some diabetics, glucose levels can be stabilized by proper administration of insulin and diligent home blood-glucose monitoring. Other diabetics who are insulin-resistant require other types of medication control and monitoring to avoid overall problems with glycemic control. However, it is unclear whether poor glycemic control arises from poor quality medical care, non-compliance of patients, lack of education, or problems of access to care – or more simply, the difficulty in controlling this complex metabolic disease. Areas with high rates may wish to examine these factors when interpreting this indicator. Proper outpatient treatment and adherence to care may reduce the incidence of uncontrolled diabetes, and lower admission rates represent better quality of care.

Hospital admission for uncontrolled diabetes is a PQI that would be of most interest to comprehensive health care delivery systems, such as some health maintenance organizations (HMOs), or public health agencies. Uncontrolled diabetes as a measure of potentially avoidable hospitalizations should be used in conjunction with short-term complications of diabetes (PQI 01).

The rate is defined as admissions for uncontrolled diabetes per 100,000 adults in each county. The indicator includes all non-maternal discharges age 18 and older with ICD- 10-CM/PCS diagnosis codes for uncontrolled diabetes, without mention of a short- term or long-term complication. It excludes transfer cases, MDC 14 (pregnancy, childbirth, and puerperium), and MDC 15 (newborn and other neonates).

Table 8 shows the number of hospital admissions for uncontrolled diabetes by county along with the observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- In New Jersey, there were 2,989 hospital admissions for uncontrolled diabetes in 2022. The risk-adjusted rate is 42.9 per 100,000. By comparison, the national admission rate for uncontrolled diabetes in 2020 was 36.3 per 100,000.
- Hospital admission rates for uncontrolled diabetes in Atlantic, Camden, Cumberland, and Essex counties were statistically significantly higher compared to the statewide average.

Table 8. Hospital admissions for uncontrolled diabetes
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	2,989	41.1	37.5	42.9	41.4 - 44.4
Atlantic	132	60.4	39.4	59.9 **	51.7 - 68.2
Bergen	157	20.8	38.8	21.0 *	16.5 - 25.4
Burlington	150	40.4	38.6	41.0	34.6 - 47.4
Camden	233	57.3	36.6	61.3 **	55.0 - 67.6
Cape May	27	34.0	47.0	28.3 *	15.8 - 40.9
Cumberland	175	152.1	36.6	162.6 **	150.7 - 174.4
Essex	390	59.9	34.8	67.4 **	62.3 - 72.5
Gloucester	80	33.0	36.7	35.3	27.1 - 43.4
Hudson	222	39.4	31.6	48.7	42.9 - 54.4
Hunterdon	23	21.8	41.5	20.6 *	9.0 - 32.2
Mercer	75	25.1	36.5	26.9 *	19.5 - 34.2
Middlesex	252	37.2	36.1	40.2	35.3 - 45.1
Monmouth	226	44.1	39.7	43.4	38.1 - 48.8
Morris	99	24.3	39.2	24.3 *	18.2 - 30.4
Ocean	236	47.8	43.2	43.3	38.0 - 48.5
Passaic	170	43.2	36.2	46.7	40.3 - 53.1
Salem	12	23.5	39.4	23.4 *	6.3 - 40.5
Somerset	67	24.4	38.2	25.0 *	17.5 - 32.5
Sussex	38	32.2	39.3	32.0	20.8 - 43.2
Union	174	39.8	36.1	43.0	36.9 - 49.1
Warren	51	56.8	39.9	55.6	42.8 - 68.4

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 15 – Asthma in younger adults

Asthma exacerbation, or difficulty breathing, is one of the most common reasons for hospital admission and emergency room care. Most causes of asthma can be managed with proper ongoing therapy on an outpatient basis, though severe exacerbations may require emergent medical treatment. The assumption is that proper outpatient treatment may reduce the incidence or exacerbation of asthma requiring hospitalization, and that lower admission rates suggest better quality of care at community level. Environmental factors such as air pollution, occupational exposure to irritants, or other exposure to allergens have been shown to increase hospitalization rates or exacerbate asthma symptoms.

As a PQI, asthma in young adults is not a measure of hospital quality, but rather one measure of overall outpatient care in a community. The rate is defined as admissions for asthma per 100,000 population adults aged 18-39 in each county. The measure includes all non-maternal discharges age 18 to 39 with ICD-10-CM/PCS codes for asthma, but excludes transfer cases, MDC 14 (pregnancy, childbirth, and puerperium), MDC 15 (newborn and other neonates), and those with any diagnosis code of cystic fibrosis and anomalies of the respiratory system. Adults aged 40 and over with COPD or asthma are evaluated in PQI 05.

Table 9 shows the number of hospital admissions for asthma in younger adults by county along with their observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- In New Jersey, there were 750 hospital admissions for asthma in young adults (ages 18 to 40) in 2022 for a risk-adjusted rate of 36.0 per 100,000.
- Camden, Cumberland, and Essex counties have young adult asthma admission rates that are statistically significantly higher than the statewide average.

Table 9. Hospital admissions for asthma in younger adults
(per 100,000 population, age 18-39)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	750	28.9	19.1	36.0	33.9 - 38.1
Atlantic	23	31.0	18.9	39.1	26.6 - 51.5
Bergen	51	20.4	19.1	25.4 *	18.6 - 32.1
Burlington	42	33.1	19.1	41.2	31.8 - 50.7
Camden	85	55.9	19.3	68.7 **	60.1 - 77.3
Cape May	6	29.1	18.9	36.5	12.9 - 60.0
Cumberland	29	67.1	18.6	85.8 **	69.4 - 102.2
Essex	150	59.7	19.2	73.9 **	67.2 - 80.6
Gloucester	17	19.2	18.8	24.2	12.8 - 35.6
Hudson	78	29.6	19.5	36.1	29.6 - 42.6
Hunterdon	2	6.6	19.0	8.2 *	0.0 - 27.6
Mercer	29	26.4	18.7	33.5	23.2 - 43.8
Middlesex	53	20.9	18.9	26.3 *	19.5 - 33.0
Monmouth	31	19.0	18.9	23.9	15.5 - 32.3
Morris	14	10.5	19.0	13.2 *	3.9 - 22.4
Ocean	34	21.7	18.9	27.3 *	18.8 - 35.9
Passaic	38	25.3	18.9	31.8	23.1 - 40.6
Salem	5	29.5	19.1	36.7	10.9 - 62.6
Somerset	5	5.5	19.1	6.9 *	0.0 - 18.1
Sussex	9	23.9	18.9	30.0	12.6 - 47.5
Union	42	26.6	19.2	32.9	24.5 - 41.4
Warren	7	24.4	19.0	30.6	10.6 - 50.5

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQI 16 – Lower-extremity amputation among patients with diabetes

Diabetes is a major risk factor for lower-extremity amputation, which can be caused by infection, peripheral neuropathy (nerve damage), peripheral artery disease (PAD) and microvascular disease. These factors together can lead to low sensation in and poor oxygenation of peripheral extremities, leading to increases in accidents. Further poor wound healing seen in diabetic patients can progress to tissue damage and death, infection, and need for amputation. These events happen particularly in the feet and toes. Proper long-term glucose control, diabetes education, and foot care are some of the interventions that can reduce the incidence of infection, neuropathy, and microvascular diseases. As a PQI, lower-extremity amputations among patients with diabetes, is not a measure of hospital quality but rather one measure of outpatient care and other health care problems in a community. Proper and continued treatment and glucose control may reduce the incidence of lower-extremity amputation; and lower hospitalization rates represent better quality of care.

The rate is defined as admissions for lower-extremity amputation in patients with diabetes per 100,000 adults in each county. The indicator includes all non- maternal discharges age 18 and older with ICD-10-CM procedure codes for lower- extremity amputation and diagnosis code for diabetes and excludes transfer cases, MDC 14 (pregnancy, childbirth, and puerperium), MDC 15 (newborn and other neonates), and those with trauma diagnosis codes.

Table 10 shows the number of hospital admissions for lower-extremity amputation by county along with their observed, expected and risk-adjusted rates. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- In New Jersey, there were 2,198 admissions for lower-extremity amputation in 2022. The risk-adjusted hospital admissions rate for lower-extremity amputation was 29.0 per 100,000. The national rate for 2020 (see Table 13) was 33.9 per 100,000.
- Burlington, Camden, Cumberland, Essex, and Passaic counties have rates that are statistically significantly higher than the statewide average.

Table 10. Hospital admissions for lower-extremity amputation among patients with diabetes
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk-adjusted rate	95% Confidence Interval
Statewide	2,198	30.2	35.1	29.0	27.7 - 30.3
Atlantic	78	35.7	37.2	32.3	25.0 - 39.6
Bergen	151	20.0	36.4	18.5 *	14.5 - 22.5
Burlington	147	39.6	36.2	36.9 **	31.2 - 42.6
Camden	159	39.1	33.9	38.9 **	33.2 - 44.5
Cape May	35	44.1	43.8	33.9	22.7 - 45.1
Cumberland	111	96.5	34.2	95.1 **	84.6 - 105.7
Essex	242	37.1	32.2	38.9 **	34.4 - 43.5
Gloucester	50	20.6	34.7	20.0 *	12.8 - 27.2
Hudson	156	27.7	28.3	32.9	27.7 - 38.1
Hunterdon	11	10.4	40.4	8.7 *	0.0 - 18.8
Mercer	96	32.1	34.2	31.6	25.1 - 38.1
Middlesex	186	27.4	34.0	27.2	22.8 - 31.5
Monmouth	141	27.5	38.0	24.4	19.6 - 29.1
Morris	62	15.2	37.1	13.8 *	8.5 - 19.2
Ocean	159	32.2	38.9	27.9	23.1 - 32.7
Passaic	153	38.9	33.6	39.0 **	33.2 - 44.7
Salem	10	19.6	37.3	17.7	2.6 - 32.9
Somerset	48	17.5	36.4	16.2 *	9.6 - 22.8
Sussex	18	15.2	38.8	13.2 *	3.5 - 23.0
Union	154	35.2	34.1	34.8	29.4 - 40.2
Warren	31	34.5	38.5	30.2 *	19.0 - 41.4

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

PQIs 90, 91, 92 – Prevention quality composite indicators:

Overall composite (PQI 90), Acute composite (PQI 91), and Chronic composite (PQI 92)

As mentioned earlier, the PQIs are currently implemented at the county level based on the location of the patient's residence, not on the location of the hospital. In other words, the PQIs are hospitalization rates for residents of the county, regardless of whether the hospital at which the patient has been treated, is located inside or outside the county, or state. The PQI composites are intended to improve the statistical precision of the individual PQI, allowing for greater discrimination in performance among areas, and improved ability to identify potentially determining factors in performance. Thus, the PQI composites are designed to help provide quick information on issues such as assessment of quality and disparity, baselines to track progress, and identify information gaps, and emphasize interdependence of quality and disparities.

- An overall composite captures the general concept of potentially avoidable hospitalization connecting the individual PQI measures, which are all rates at the area level. The composite measures - acute and chronic – are created to investigate different factors influencing hospitalization rates for acute and chronic conditions. The PQIs used in each composite score are delineated below.
- **Overall composite (PQI 90)**
Includes all 10 PQIs (i.e., PQI 01, PQI 03, PQI 05, PQI 07, PQI 08, PQI 11, PQI 12, PQI 14, PQI 15, and PQI 16).
- **Acute composite (PQI 91)**
Includes only PQI 11 and PQI 12.
- **Chronic composite (PQI 92)**
Includes the remaining 8 non-acute PQIs included under the overall composite.

Table 11 shows composite PQI measures for New Jersey in 2022 and shows the number of hospital admissions for overall, acute, and chronic conditions by county along with their risk-adjusted rates. Observed and expected rates are excluded for brevity. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

Table 11. Composite PQIs
(per 100,000 population, age 18+)

County	Overall composite (PQI 90)		Acute composite (PQI 91)		Chronic composite (PQI 92)	
	Volume	Rate	Volume	Rate	Volume	Rate
Statewide	78,159	1,137.1	16,749	252.2	61,411	894.8
Atlantic	3,250	1,483.1 **	682	322.3 **	2,568	1,175.8 **
Bergen	5,516	742.1 *	1,296	178.0 *	4,220	569.5 *
Burlington	4,452	1,223.0 **	1,041	294.5 **	3,411	941.2 **
Camden	6,078	1,623.3 **	1,143	319.1 **	4,935	1,320.4 **
Cape May	1,210	1,227.6 **	269	271.7 **	941	969.2 **
Cumberland	3,464	3,173.4 **	686	676.9 **	2,779	2,572.2 **
Essex	8,159	1,456.9 **	1,332	250.1	6,827	1,214.5 **
Gloucester	1,820	830.3 *	386	185.2 *	1,434	650.0 *
Hudson	5,225	1,213.9 **	974	241.2	4,251	979.6
Hunterdon	872	780.8 *	269	247.9 *	603	541.4 *
Mercer	3,314	1,211.0 **	660	250.8	2,654	969.4
Middlesex	6,432	1,056.1 *	1,363	234.9 *	5,069	829.5 *
Monmouth	5,925	1,141.6	1,428	284.9 **	4,497	869.2
Morris	2,770	684.7 *	731	184.9 *	2,039	505.2 *
Ocean	7,468	1,314.0 **	2,011	348.8 **	5,457	981.7 **
Passaic	3,623	1,018.1 *	715	208.2 *	2,908	816.5 *
Salem	506	996.9 *	124	249.7	382	754.1 *
Somerset	1,827	693.3 *	375	147.1 *	1,452	550.1 *
Sussex	1,153	997.1 *	279	257.1	874	750.0 *
Union	3,978	1,015.0 *	743	198.8 *	3,235	821.4 *
Warren	1,117	1,221.2	242	275.6	875	958.6

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

Overall composite (PQI 90)

Includes all 10 PQIs (i.e., PQI 01, PQI 03, PQI 05, PQI 07, PQI 08, PQI 11, PQI 12, PQI 14, PQI 15, and PQI 16).

Acute composite (PQI 91)

Includes only PQI 11 and PQI 12.

Chronic composite (PQI 92)

Includes the remaining 8 non-acute PQIs included under the overall composite.

PQI 93 – Diabetes composite

Diabetes composite (PQI 93) is composed of PQI 01 diabetes with short-term complications, PQI 03 diabetes with long-term complications, PQI 14 uncontrolled diabetes, and PQI 16 lower-extremity amputation among patients with diabetes. The diabetes composite rate represents hospital admissions per 100,000 population, ages 18 years and older; and it includes admissions for any one or more conditions as listed above.

Table 12 shows the number of hospital admissions for Diabetes Composite conditions by county along with their observed, expected and risk-adjusted rates including their corresponding 95% Confidence Intervals. The New Jersey rate for this PQI can be compared to the National rate in Table 13, while Tables 16, 17 and 18 show the distribution of these patients, as compared to the other PQIs, by other demographic factors of age, sex and race/ethnicity.

- In New Jersey, there were 17,168 admissions for diabetes composite (i.e., diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes, and diabetes with lower-extremity amputation) in 2022, with a risk-adjusted rate of 240.6 per 100,000 adults in each county (Table 12).
- Atlantic, Camden, Cumberland, Essex, Mercer, and Passaic counties have rates that are statistically significantly higher than the statewide average.

Table 12. Diabetes composite
(per 100,000 population, age 18+)

County	Hospital admissions	Observed rate	Expected rate [^]	Risk- adjusted rate	95% Confidence Interval
Statewide	17,168	236.2	241.7	240.6	236.9 - 244.2
Atlantic	813	371.7	248.7	367.9**	347.3 - 388.6
Bergen	1,032	136.5	246.4	136.3*	125.2 - 147.5
Burlington	950	255.9	245.7	256.4	240.4 - 272.3
Camden	1,449	356.2	237.5	369.3**	353.8 - 384.8
Cape May	180	226.7	272.7	204.7*	171.9 - 237.4
Cumberland	782	679.5	238.7	700.8**	671.7 - 729.9
Essex	2,040	313.1	231.4	333.1**	320.7 - 345.5
Gloucester	428	176.7	239.8	181.4*	161.4 - 201.3
Hudson	1,303	231.0	218.1	260.8	247.1 - 274.5
Hunterdon	176	166.8	259.7	158.1*	129.0 - 187.2
Mercer	754	252.0	238.4	260.2**	242.2 - 278.2
Middlesex	1,445	213.0	237.5	220.7*	208.7 - 232.7
Monmouth	1,104	215.3	251.6	210.7*	197.3 - 224.1
Morris	516	126.7	248.8	125.3*	110.2 - 140.5
Ocean	1,239	250.6	256.3	240.8	227.2 - 254.3
Passaic	1,006	255.5	236.4	266.1**	250.3 - 281.9
Salem	100	196.1	249.0	193.8*	151.1 - 236.5
Somerset	358	130.3	246.3	130.2*	111.7 - 148.7
Sussex	244	206.6	253.5	200.6*	172.7 - 228.4
Union	1,007	230.0	238.1	237.8	222.9 - 252.8
Warren	242	269.2	253.1	261.8	229.9 - 293.8

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

[^] Expected rate = [(Observed rate/Risk-adjusted rate) * standard deviation].

It is the rate the county would have if it performed the same as the statewide average (reference population) given the county's actual case-mix (e.g., age, gender, DRG, and comorbidity categories). If the observed rate is higher than the expected rate (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the county performed worse than the reference population for that indicator. If the observed rate is lower than the expected rate (i.e., the ratio of observed/expected is less than 1.0), then the implication is that the county performed better than the reference population for that indicator (the reference population being the total NJ population for that year).

Diabetes composite (PQI 93)

Includes PQI 1, PQI 3, PQI 14, and PQI 16.

Statewide PQI Measures Compared to National Estimates

National rates for PQIs are derived from the State Inpatient Data (SID), which is a national dataset dealing with inpatients only. SID is built from UB datasets coming from 49 participating states including the District of Columbia (Alabama and Idaho are not participating). The uniform format of the SID helps facilitate cross-state comparisons because it contains all-payer, encounter-level information on inpatient discharges, including clinical and resource information typically found on a billing record, such as patient demographics, up to 30 ICD-10 diagnosis and procedural codes, length of stay, expected payer, admission and discharge dates, and discharge disposition. In 2020, the SID database represented more than 97% of all annual discharges in the United States.

Table 13 shows National and New Jersey’s statewide-level prevention quality indicator estimates for the ten individual PQIs and the four composite PQIs analyzed in this report. New Jersey’s statewide estimated rates for 2018, 2020 and 2022 are presented along with the 2018 and 2020 National rates (the latest available) for readers to make comparisons. All rates in the table including the national rates are calculated using the PQIs module (SAS Version 2023).

Data in Table 13 clearly demonstrates that New Jersey’s hospitalization rates for almost all the PQIs including the composite measures are considerably higher than the national averages. It ought to be noted, however, that NJ hospitalization rates for 2020 are lower than expected due to the pandemic.

Table 13. Comparing New Jersey's statewide PQI rates with National rates
(per 100,000 population)

Prevention Quality Indicators (PQIs)	National		New Jersey		
	2018	2020	2018	2020	2022
Diabetes with short-term complications (PQI 01)	82.2	81.8	78.4	66.5	64.1
Diabetes with long-term complication (PQI 03)	108.9	104.2	138.4	105.5	122.7
COPD or asthma in older adults (PQI 05)	381.1	221.6	486.2	218.7	312.9
Hypertension (PQI 07)	60.8	52.4	72.9	51.1	65.5
Heart failure (PQI 08)	429.6	372.5	463.7	339.7	393.1
Community-acquired pneumonia (PQI 11)	183.6	132.8	182.8	112.1	118.8
Urinary tract infection (PQI 12)	134.8	101.3	162.3	106.7	133.4
Uncontrolled diabetes (PQI 14)	42.1	36.3	55.7	38.6	42.9
Asthma in younger adults (PQI 15)	29.2	18.9	49.0	27.0	36.0
Lower-extremity amputation (PQI 16)	32.3	33.9	34.0	28.8	29.0
Overall composite (PQI 90)	1,301.4	1,039.8	1,444.5	960.5	1,137.1
Acute composite (PQI 91)	318.4	234.1	344.1	218.2	252.2
Chronic composite (PQI 92)	983.1	805.8	1,123.2	751.1	894.8
Diabetes composite (PQI 93)	247.5	237.1	285.5	222.5	240.6

Both the National and NJ rates are calculated using the latest versions of AHRQ SAS Software (i.e., based on the ICD-10-CM diagnosis & procedure codes).

Note that 2020 numbers for New Jersey are lower than previous years due to COVID-19.

Overall composite (PQI 90)

Includes all 10 PQIs (i.e., PQI 01, PQI 03, PQI 05, PQI 07, PQI 08, PQI 11, PQI 12, PQI 14, PQI 15, and PQI 16).

Acute composite (PQI 91)

Includes only PQI 11 and PQI 12.

Chronic composite (PQI 92)

Includes the remaining 8 non-acute PQIs included under the overall composite.

Diabetes composite (PQI 93)

Includes PQI 1, PQI 3, PQI 14, and PQI 16.

Costs of Potentially Preventable Hospitalizations

This section presents potentially preventable hospitalizations and their associated costs. The terms “preventable hospitalizations” and “unnecessary hospitalizations” are often used interchangeably with “avoidable hospitalizations” to indicate the presence of hospital care for patients whose primary condition or diagnosis is one that, if detected and cared for effectively at an earlier point, may not lead to hospitalization. While not every hospitalization can be prevented through improvement in health care delivery, early detection, care, and education of persons with ambulatory care sensitive conditions is believed to reduce rates of potentially avoidable hospitalizations and save both lives and cost.

Table 14 shows the amount of money that could be saved by reducing potentially avoidable hospitalizations as estimated by the PQIs module. These statistics would assist health care planners in identifying communities for future interventions to improve preventive and primary care services, improve patient safety as well as in tracking the impacts of such interventions over time. Such information is particularly relevant in assessing the role hospitals and physicians may play in containing health care expenditures arising from potentially avoidable hospitalizations.

The UB database contains information on total charges for each patient’s in-hospital stay. This hospital charge information represents the amount that hospitals bill for services they provide but does not reflect how much they realistically cost; or the specific amounts that hospitals received in payment. Often, users are interested in seeing how hospital charges translate into actual costs, and the HCUP cost- to-charge ratio (CCR) Files enable this conversion.

The HCUP CCR files contain hospital-specific cost-to-charge ratios based on all-payer inpatient cost for nearly every hospital in the corresponding National Inpatient Sample (NIS) or State Inpatient Data (SID) sets. Cost information is obtained from the hospital accounting reports collected by the Centers for Medicare and Medicaid Services (CMS).

Hospitalization costs presented in this report are calculated using the HCUP CCR estimators. These estimates are obtained by multiplying total charges reported in the UB by cost-to-charge ratio (CCR) after data elements on the HCUP prepared CCR file for New Jersey were merged with our UB data using the appropriate procedure of merging different data sets. Thus, it is important to note that cost-to-charge ratio (CCR) files for NJ are obtained from HCUP.

In 2022, NJ hospitals reported about 78,159 hospitalizations for treatment of all the medical conditions outlined under the PQIs, which according to AHRQ’s specifications, are considered preventable. Using the cost-to-charge ratio estimators, potentially avoidable hospitalizations on the conditions presented in this report would have saved about 1.1 billion dollars (\$1,075,233,363.00) in 2022 alone.

Table 14. Estimated costs over potentially preventable hospitalizations

Prevention Quality Indicators (PQIs)	# of preventable hospitalizations	Average length of in hospital stay (days)	Average estimated cost per patient per day (\$)	Average estimated cost per patient for all days (\$)	Total estimated cost for all the preventable hospitalizations (\$)
Diabetes with short-term complications	4,583	5.3	2,611	13,720	62,880,822.35
Diabetes with long-term complications	8,726	5.5	2,527	13,897	121,265,222.00
COPD or asthma in older adults	11,233	5.3	2,558	13,559	152,308,247.00
Hypertension	4,522	5.3	2,595	13,752	62,186,544.00
Heart failure	27,758	5.5	2,541	13,976	387,945,808.00
Community-acquired pneumonia	7,750	5.2	2,565	13,339	103,377,250.00
Urinary tract infection	8,999	5.1	2,644	13,484	121,342,516.00
Uncontrolled diabetes	2,989	5.5	2,570	14,133	42,243,537.00
Asthma in younger adults	750	5.4	2,597	14,023	10,517,250.00
Lower-extremity amputation	2,198	5.6	2,496	13,979	30,725,842.00
Overall composite	78,159	5.4	2,548	13,757	1,075,233,363.00
Acute composite	16,749	5.2	2,580	13,417	224,721,333.00
Chronic composite	61,411	5.4	2,565	13,849	850,480,939.00
Diabetes composite	17,168	5.4	2,566	13,859	237,931,312.00

Source: NJ UB 2022.

Cost = (TOTCHG * GAPICC)

TOTCHG stands for "total charges reported in UB data," while GAPICC stands for "group average all-payer inpatient cost/charge ratio (CCR)." HCUP constructed the CCR files using all-payer, inpatient cost and charge information that hospitals report to CMS. CCR provides an estimate of all-payer inpatient cost-to-charge ratio for hospitals in states that participate in HCUP.

Note: The HCUP cost-to-charge ratio (CCR) files enable users to convert total charges reported in UB databases to estimated actual costs. Each file contains hospital-specific cost-to-charge ratios based on all-payer inpatient cost for nearly every hospital in the corresponding National Inpatient Sample (NIS) or State Inpatient Data (SID). Cost information was obtained from the hospital accounting reports collected by the Centers for Medicare and Medicaid Services (CMS). Using the merged data elements from the cost-to-charge ratio files and the total charges reported in the UB data sets, the hospital total charge data was converted to cost estimates by multiplying total charges with the appropriate cost-to-charge ratio, per AHRQ's recommendation.

Potentially Preventable Hospitalizations by Payer Type

Table 15 shows the percentage distribution of potentially preventable hospitalizations for each PQI by health insurance payer type as reported in the NJ 2022 UB data.

- Of the 27,758 potentially preventable hospitalizations for heart failure, 38.7% were paid for by Medicare. Similarly, 38.7% of the 11,233 hospitalizations for COPD, and 37.0% of the 4,522 for hypertension were paid for by Medicare.
- About 38.7% of all the potentially preventable hospitalizations for community-acquired pneumonia (CAP) and 38.2% of urinary tract infections (UTI) were paid for by Medicare.
- Overall, more than 38.8% of the potentially preventable hospitalizations both for acute and chronic conditions were paid for by Medicare. These data also show that payment by private insurance for acute conditions was more than 32%.
- It should also be noted that 35.3% of hospital admissions for asthma in younger adults (ages 18-39) were paid by private insurance, implying significant gain in health insurance coverage among young adults.
- Both HCUP and AHRQ reports have shown that hospital stays paid for by Medicare were over three times more likely to be potentially preventable than were stays paid for by private insurance.

Table 15. Preventable hospitalizations by payer type

PQIs	# of preventable hospitalizations	Paid by (%)				
		Medicare	Medicaid	Private	Self-Pay	Other
Diabetes with short-term complications	4,583	38.7	18.8	30.7	1.6	10.2
Diabetes with long-term complications	8,726	38.7	17.2	32.3	1.8	10.0
COPD or asthma in older adults	11,233	38.7	17.5	32.0	2.0	9.7
Hypertension	4,522	37.0	16.8	34.2	2.2	9.9
Heart failure	27,758	38.7	17.2	33.0	1.7	9.4
Community-acquired pneumonia	7,750	38.7	18.4	32.0	2.3	8.6
Urinary tract infection	8,999	38.2	17.4	33.0	2.0	9.3
Uncontrolled diabetes	2,989	36.2	18.3	33.6	2.0	10.0
Asthma in younger adults	750	34.0	16.7	35.3	2.6	11.5
Lower-extremity amputation	2,198	38.8	18.4	30.5	2.2	10.2
Overall composite	78,159	38.4	17.5	32.7	1.9	9.5
Acute composite	16,749	38.4	17.9	32.6	2.2	9.0
Chronic composite	61,411	38.4	17.4	32.7	1.9	9.7
Diabetes composite	17,168	38.2	17.9	32.1	1.8	10.0

Source: **New Jersey 2022 UB Data**

* = Statistically significantly below state average (i.e., better than average).

** = Statistically significantly above state average (i.e., worse than average).

Overall composite (PQI 90)

Includes all 10 PQIs (i.e., PQI 01, PQI 03, PQI 05, PQI 07, PQI 08, PQI 11, PQI 12, PQI 14, PQI 15, and PQI 16).

Acute composite (PQI 91)

Includes only PQI 11 and PQI 12.

Chronic composite (PQI 92)

Includes the remaining 8 non-acute PQIs included under the overall composite.

Diabetes composite (PQI 93)

Includes PQI 1, PQI 3, PQI 14, and PQI 16.

Selected PQIs by Age, Sex and Race/Ethnicity

The following tables show the breakdown of the 14 PQIs by age (Tables 16.1 and 16.2), sex (Table 17), and race/ethnicity (Table 18), of the total number of potentially preventable hospital admissions. The purpose of including these tables is to assess the extent to which hospitalizations vary by socio-demographic characteristics with the hope that such information will shine some light on prevention services planning.

Table 16.1 presents age distribution of the total hospital admissions for each PQI presented in Tables 1 through 12. As expected, hospitalizations for heart failure, community-acquired pneumonia, urinary tract infection and uncontrolled diabetes are significantly higher among people aged 65 and older.

Table 16.2 presents hospital admission rates by broad age groups.

- Among the 18–39-year-olds, hospitalization rates were higher for diabetes with long term complications at 64.6 per 100,000, followed by asthma in younger adults at 28.9 per 100,000.
- Among 40–64-year-olds, heart failure hospitalizations were more distinct at 206.0 per 100,000 followed by COPD at 142.1, and diabetes with long term complications at 141.2 per 100,000.
- Among the age group 65–74, the rate of hospitalizations for heart failure was the highest at 653.1 per 100,000, followed by COPD at 356.8, and diabetes with long term complications at 232.8 per 100,000.
- Among the 75 and older population, the highest hospitalization rate was due to heart failure at 2,166.1 per 100,000 followed by urinary tract infection at 785.8, community-acquired at 548.6, and COPD at 521.5 per 100,000 population.
- For all age groups, hospitalizations for chronic conditions were consistently higher compared with hospitalizations for acute conditions.

Table 17 shows potentially preventable hospitalizations of patients by sex for all ten PQIs and two of the composite measures. Among males, heart failure (HF) with 343.8 per 100,000 hospitalizations rate was the most noticeable, closely followed by COPD at 139.1/100,000. Heart failure (HF) at 418.2 per 100,000 was also most noticeable for females, while diabetes with long term complications at 178.4 per 100,000 stood out to reflect the highest hospital admission rates. Both gender categories reflected higher hospitalization rates for chronic conditions than for acute conditions.

Table 18 shows variations in potentially preventable hospitalizations of patients by race/ethnicity for all the ten individual PQIs and two of the composite measures. Diabetes with short term complications hospitalization rate was much higher for Blacks (68.4) compared to the statewide average of 63.1 per 100,000. Except for Asian non-Hispanics (NH), COPD hospitalizations were associated with the highest rates followed by heart failure for all race/ethnic groups. The highest rate for Asian NH was heart failure (118.1/100,000). Avoidable hospitalizations (i.e., rates) for all the measures displayed in this table are markedly higher for Blacks (African Americans) compared to other race/ethnic groups. The race/ethnic group Asian NH showed consistently, lower rates of hospitalizations, than all the other race/ethnic groups. Preventable hospitalization rates by socio-demographic characteristics clearly show wide variation. Some of these variations may result from lifestyle differences, lack of access to the health care system, or other social determinants of health.

Table 16.1: Age distribution of preventable hospitalizations

PQIs	# of preventable hospitalizations	Age Distribution (%)			
		18-39	40-64	65-74	75+
Diabetes with short-term complications	4,583	36.6	44.0	10.8	8.6
Diabetes with long-term complication	8,726	6.3	49.5	24.6	19.6
COPD or asthma in older adults	11,233	-	38.7	29.3	32.0
Hypertension	4,522	8.9	41.9	18.9	30.2
Heart failure	27,758	1.8	22.7	21.7	53.8
Community-acquired pneumonia	7,750	4.7	23.8	22.7	48.8
Urinary tract infection	8,999	6.2	16.2	17.4	60.2
Uncontrolled diabetes	2,989	9.4	33.7	22.2	34.7
Asthma in younger adults	750	100.0	-	-	-
Lower-extremity amputation	2,198	2.2	51.8	26.5	19.5
Overall composite	78,159	6.6	30.3	21.8	41.4
Acute composite	16,749	5.5	19.8	19.9	54.9
Chronic composite	61,411	6.8	33.2	22.3	37.7
Diabetes composite	17,168	14.8	45.5	20.5	19.2

Source: NJ UB 2022

Note: "COPD or asthma in older adults" (PQI 05) - covers the adults 40+ years of age while "asthma in younger adults" (PQI 15) applies only to adults 18-39.

Overall composite (PQI 90)

Includes all 10 PQIs (i.e., PQI 01, PQI 03, PQI 05, PQI 07, PQI 08, PQI 11, PQI 12, PQI 14, PQI 15, and PQI 16).

Acute composite (PQI 91)

Includes only PQI 11 and PQI 12.

Chronic composite (PQI 92)

Includes the remaining 8 non-acute PQIs included under the overall composite.

Diabetes composite (PQI 93)

Includes PQI 1, PQI 3, PQI 14, and PQI 16.

Table 16.2: Hospitalized patients for selected PQIs by age
(Rates are per 100,000 population in the given age group)

Selected PQIs	18 to 39		40 to 64		65 to 74		75+		Total (Ages 18 and over)	
	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate
Diabetes with short-term complications	1,677	64.6	2,017	66.0	495	53.7	394	7.2	4,583	63.1
Diabetes with long-term complications	550	21.2	4,319	141.2	2,147	232.8	1,710	248.0	8,726	120.1
COPD or asthma in older adults	-	-	4,347	142.1	3,291	356.8	3,595	521.5	11,233	154.6
Hypertension	403	15.5	1,896	62.0	856	92.8	1,367	198.3	4,522	62.2
Heart failure	500	19.2	6,301	206.0	6,024	653.1	14,933	2,166.1	27,758	381.9
Community-acquired pneumonia	364	14.0	1,845	60.3	1,759	190.7	3,782	548.6	7,750	106.6
Urinary tract infection	558	21.5	1,458	47.7	1,466	158.9	5,417	785.8	8,999	123.8
Uncontrolled diabetes	281	10.8	1,007	32.9	664	72.0	1,037	150.4	2,989	41.1
Asthma in younger adults	750	28.9	-	-	-	-	-	-	750	10.3
Lower-extremity amputation	48	1.8	1,139	37.2	582	63.1	429	62.2	2,198	30.2
Acute composite	917	35.3	3,316	108.4	3,323	360.3	9,193	1,333.5	16,749	230.5
Chronic composite	4,176	160.8	20,388	666.7	13,695	1,484.7	23,151	3,358.2	61,411	845.0
NJ 2022 population estimate (age 18+)	2,597,554		3,058,269		922,378		689,389		7,267,590	

Source: NJ UB 2022.

Note: "COPD or asthma in older adults" (PQI 05) - covers the adults 40+ years of age while "asthma in younger adults" (PQI 15) applies only to adults 18-39.

Note: Rates in this table are not risk adjusted. They are calculated as observed/row rates obtained by dividing # of hospitalization in the age group by the total population in that same age group.

Note: According to the NJ Department of Labor and Workforce Development, NJ's estimated total population in July 2022 was 9,261,699. These data were released in June 2023.

Table 17. Hospitalized patients for selected PQIs by sex
(Rates are per 100,000 population ages 18 and older)

Selected PQIs	Male		Female		Total	
	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate
Diabetes with short-term complications	1,994	56.3	2,589	69.5	4,583	63.1
Diabetes with long-term complications	2,084	58.8	6,642	178.4	8,726	120.1
COPD or asthma in older adults	4,931	139.1	6,302	169.3	11,233	154.6
Hypertension	1,963	55.4	2,559	68.7	4,522	62.2
Heart failure	12,186	343.8	15,572	418.2	27,758	381.9
Community-acquired pneumonia	3,410	96.2	4,340	116.6	7,750	106.6
Urinary tract infection	3,879	109.4	5,120	137.5	8,999	123.8
Uncontrolled diabetes	1,303	36.8	1,686	45.3	2,989	41.1
Asthma in younger adults	332	9.4	418	11.2	750	10.3
Lower-extremity amputation	956	27.0	1,242	33.4	2,198	30.2
Acute composite	7,286	205.6	9,463	254.1	16,749	230.5
Chronic composite	26,959	760.7	34,452	925.3	61,411	845.0
NJ 2020 Population Estimate (age 18+)	3,544,124		3,723,466		7,267,590	

Source: NJ UB 2022.

Note: "COPD or asthma in older adults" (PQI 05) - covers the adults 40+ years of age while "asthma in younger adults" (PQI 15) applies only to adults 18-39.

Note: Rates in this table are not risk adjusted. They are calculated as observed/row rates obtained by dividing # of hospitalization in the age group by the total population in that same age group.

Table 18. Hospitalized patients for selected PQIs by race/ethnicity

Selected PQIs	White NH		Black NH		Hispanic		Asian NH		Other		Total	
	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate	# of hospital admissions	Rate
Diabetes with short-term complications	2,359	46.9	880	68.4	769	46.6	163	15.9	412	154.7	4,583	63.1
Diabetes with long-term complications	4,537	90.2	1,423	110.6	1,553	94.1	384	37.3	829	311.3	8,726	120.1
COPD or asthma in older adults	6,100	121.3	1,910	148.4	1,864	112.9	438	42.6	921	345.9	11,233	154.6
Hypertension	2,297	45.7	841	65.4	818	49.5	186	18.1	380	142.7	4,522	62.2
Heart failure	15,041	299.1	4,523	351.5	4,658	282.1	1,214	118.1	2,322	872.0	27,758	381.9
Community-acquired pneumonia	4,371	86.9	1,124	87.4	1,278	77.4	310	30.2	667	250.5	7,750	106.6
Urinary tract infection	5,120	101.8	1,321	102.7	1,453	88.0	323	31.4	782	293.7	8,999	123.8
Uncontrolled diabetes	1,539	30.6	535	41.6	541	32.8	116	11.3	258	96.9	2,989	41.1
Asthma in younger adults	346	6.9	178	13.8	132	8.0	28	2.7	66	24.8	750	10.3
Lower-extremity amputation	1,143	22.7	352	27.4	413	25.0	88	8.6	202	75.9	2,198	30.2
Acute composite	9,494	188.8	2,439	189.6	2,723	164.9	636	61.9	1,457	547.2	16,749	230.5
Chronic composite	32,597	648.1	10,442	811.6	10,504	636.1	2,583	251.2	5,285	1,984.7	61,411	845.0
NJ 2022 Population Estimate (age 18+)	5,029,388		1,286,671		1,651,202		1,028,157		266,281		7,267,590	

Source: NJ UB 2022.

Note: "COPD or asthma in older adults" (PQI 05) - covers the adults 40+ years of age while "asthma in younger adults" (PQI 15) applies only to adults 18-39.

Note: Rates in this table are not risk adjusted. They are calculated as observed/row rates obtained by dividing # of hospitalization in the age group by the total population in that same age group.

Summary of Findings

Potentially preventable hospitalizations, or patient in-hospital stays that might be avoided with the delivery of quality outpatient treatments and disease management, serve as useful indicators of possible unmet community health needs. By measuring the frequency of such hospitalizations among patient subpopulations, policymakers and providers can identify those communities most in need of improvements in outpatient care as well as the conditions for which care is most needed. Rates of potentially preventable hospitalizations are higher for vulnerable populations with limited access to care. Targeting issues related to access to primary care may serve to narrow disparities in health outcomes and improve the quality of care while reducing costs.

This report presents the number of preventable hospital admissions in each of the 21 counties. In addition to volume of hospitalizations, observed, expected and risk-adjusted rates (note that translations of these rates are discussed in the section that presents the Prevention Quality Indicators Module) for all the ten individual and four composite prevention quality indicators are provided to help assess the quality of health care in each county. Statewide and national estimates are also provided to facilitate county to state and county to national comparisons.

According to the 2022 New Jersey data, there are substantial variations in preventable hospital admissions by county. Some counties exhibit significantly higher admission rates than the statewide average while others have significantly lower rates. Not surprisingly, the variations appear to reflect the socio-economic disparities of the county populations, with more affluent counties having significantly lower rates than the state average and the less affluent counties having significantly higher admission rates. For example, hospital admissions rates for diabetes with short-term complications in Morris, Somerset, Bergen, and Hunterdon counties are 25.6, 28.5, 29.8, and 31.5 per 100,000, respectively. By comparison, the rates for Cumberland, Atlantic, Camden, Salem and Essex counties are 202.0, 126.1, 108.8, 96.9, and 89.2 per 100, 000, respectively (see Table 1).

In another example, the lowest rate of hospital admission for hypertension is recorded in Somerset (27.7 per 100,000) and Hunterdon (29.3 per 100,000) followed by Morris (30.7 per 100,000) and Bergen (31.8 per 100,000). By comparison, the highest rate of hospital admission for hypertension is reported in Cumberland (162.0 per 100,000), followed by Atlantic (108.0 per 100,000), Camden (102.7 per 100,000) and Essex (112.1 per 100,000) (See Table 4).

Other indicators also show similar variations by county, suggesting that PQIs are useful as baseline measures for the study of health disparities in geographic areas. A closer examination of PQI measures may help planners identify the socio-economic determinants of such huge variation in costly and potentially preventable hospitalizations. More importantly, this report can be used in promoting the expansion of primary health care facilities to provide better health care access to those in need. This will lower preventable and costly hospital admissions.

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[AHRQ QI: PQI Technical Specifications Updates](#)

[AHRQ QI: National Healthcare Quality and Disparities Report Data](#)

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For inquiries, contact the New Jersey Department of Health, Office of Health Care Quality Assessment, by calling (800) 418-1397, by emailing at Markos.Ezra@doh.nj.gov or by fax at (609) 984-7633