

Patient Safety Indicators

Technical Report

A Supplement to the Hospital Performance Report

2021 Data

Health Care Quality Assessment

**Healthcare Quality & Informatics
Office of Population Health
New Jersey Department of Health**

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Executive Summary

The Office of Health Care Quality Assessment (HCQA) of the New Jersey Department of Health assesses health care quality using qualitative and quantitative data reported by hospitals to support performance monitoring related to patient care and safety. Specifically, HCQA produces consumer reports on cardiac surgery, hospital performance, and hospital quality indicators; reviews confidential reports and root-cause analyses of reportable medical errors; and maintains several databases to support licensure requirements. In order to enhance information, the Department provides to the public on hospital care, HCQA staff apply statistical tools developed by the Federal Agency for Healthcare Research and Quality (AHRQ) to the New Jersey hospital discharge data commonly known as Uniform Billing (UB) data. This report presents findings resulting from the application of a statistical tool known as the Patient Safety Indicator (PSI) module to the 2018 New Jersey hospital discharge data. The PSI module currently in use contains 18 indicators that reflect the quality of care provided by hospitals. These indicators serve as flags for potential quality problems (adverse events) rather than provide definitive measures of quality of care. According to the AHRQ, the 18 indicators are selected based on their ability to screen out conditions present on admission from conditions that develop after admission, the potential preventability of the complication, and the ability of the indicator to identify medical error.

This report is a supplement to the Hospital Performance Report and covers only the 12 PSIs mandated for public reporting by law. **In 2009, legislation (S2471) was signed into law requiring that hospital-specific data on patient-safety performance and serious medical errors be included in the annual New Jersey Hospital Performance Report. Incidentally, one of the 12 selected PSIs, namely “Transfusion Reaction”, has retired as of 2016. AHRQ has declared that it can no more be used as a quality indicator. Hence, information on only 11 PSIs is presented in this report.** The data presents adverse events during hospitalization in each of the 71 licensed hospitals currently operating in the state. For the seven PSIs, risk-adjusted rates are provided along with confidence intervals to help make a statistical assessment of patient safety in the hospital. Statewide and national estimates are also provided to help compare hospital performance to the state or to the national rates.

Comparison of a hospital’s rate to the statewide rate (presented in the top row of each of the PSI tables (Tables 1-11) is one way to assess how well that hospital performed among its peers in the state. A hospital’s peers could be defined at many levels (e.g., teaching hospitals, urban hospitals, suburban hospitals, etc.). It is suggested that a hospital’s performance be assessed by looking at its performance across the several PSI estimates presented in the PSI tables.

The 2021 New Jersey data shows that there are substantial variations in risk-adjusted rates of adverse events by hospital. Some hospitals exhibit significantly higher risk-adjusted rates (risk-adjusted adverse event rates) than the corresponding statewide rates while others have significantly lower rates than the statewide rates.

Some Highlights

- Statewide, in 2021, there were a total of 11 cases of '*Retained surgical item or unretrieved device fragment*', formerly called '*foreign body left during procedure*'. These 11 events were reported by 9 hospitals. Table 1 shows the distribution of these adverse events by hospital.
- Overall, there were 75 cases of '*iatrogenic pneumothorax*' in 2021, for a risk-adjusted rate of 0.13 per 1,000 medical and surgical discharges. Hospital-specific rates for this indicator ranged from a low of 0.0 to a high of 1.68 per 1,000 medical and surgical discharges.
- Altogether there were 40 cases of '*In Hospital Fall with Hip Fracture*' in 2021, for a risk-adjusted rate of 0.07 per 1,000 medical or surgical discharges. Hospital-specific rates for this indicator ranged from a low of 0.0 to a high of 1.06 per 1,000 medical or surgical discharges.
- Statewide, there were 326 '*Perioperative hemorrhage or hematoma*' cases in 2021, for a risk-adjusted rate of 2.16 per 1,000 surgical discharges. Hospital-specific rates for this indicator ranged from a low of 0.0 to a high of 7.62 per 1,000 surgical discharges.
- Statewide, there were 512 cases of '*Perioperative pulmonary embolism (PE) or deep vein thrombosis (DVT)*' in 2021, for a risk-adjusted rate of 3.35 per 1,000 surgical discharges. Hospital-specific rates for this indicator ranged from a low of 0.0 to a high of 20.18 per 1,000 surgical discharges (see Table 5).
- Statewide, there were 225 '*Postoperative sepsis*' cases reported in 2021 for a risk-adjusted rate of 3.76 per 1,000 elective surgery discharges. Seven hospitals had risk-adjusted rates that were statistically significantly higher than the statewide rate (see Table 6). Note that higher rate implies worse performance.
- Statewide, there were 29 '*Postoperative wound dehiscence*' cases reported in 2021 for a risk-adjusted rate of 0.91 per 1,000 abdominopelvic surgical discharges.
- Statewide, there were 111 cases of '*Abdominopelvic Accidental Puncture or Laceration*' reported by NJ hospitals in 2021. The statewide risk-adjusted rate for occurrence of this adverse event during procedure for the year was 0.97

per 1,000 discharges. Hospital-specific rates for this indicator ranged from a low of 0.0 to a high of 7.45 per 1,000 discharges.

- There were 296 cases of '*Birth trauma - injury to neonate*' reported statewide in 2021 for a rate of 3.16 per 1,000 live births. Similarly, there were 401 cases of obstetric trauma among instrument-assisted vaginal deliveries (for a rate of 106.45 per 1,000 deliveries) and 942 cases of obstetric trauma among vaginal deliveries without instrument (for a rate of 15.85 per 1,000).
- Comparison of New Jersey's PSI estimates to the National estimated averages is shown on Table 12.

Introduction

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

The AHRQ Quality Indicators (QIs) are a set of quality indicators organized into four modules, each of which measures quality associated, by and large, with patient care in an outpatient or inpatient setting. 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 purposes they are designed to serve can be found at: <https://qualityindicators.ahrq.gov>. This report presents findings resulting from the application of the Patient Safety Indicator (PSI) module to the 2021 New Jersey hospital discharge (UB) data. The PSI module currently contains 18 hospital-level indicators (including PSI.90 which stands for Patient Safety and Adverse Events Composite) that reflect the quality of care provided by hospitals (it used to be 19 before the retirement of PSI.16 – Transfusion reaction). These indicators serve as flags for potential quality problems (adverse events) rather than provide definitive measures of quality of care. According to the AHRQ, these indicators are selected based on their ability to screen out conditions present on admission from conditions that develop after admission, the potential preventability of the complication, and the ability of the indicator to identify medical error.

This report is a supplement to the Hospital Performance Report and covers only the 12 PSIs mandated for public reporting by law. **In 2009, legislation (S2471) was signed into law requiring that hospital-specific data on patient-safety performance, and serious medical errors be included in the annual New Jersey Hospital Performance Report. Incidentally, one of the 12 selected PSIs, namely “Transfusion Reaction”, has been retired in the latest versions of the AHRQ QI Software (i.e., since Version 2019). AHRQ has declared that it can no more be used as a quality indicator. Hence, information on only 11 PSIs is presented in this report.** Detailed explanation of the Patient Safety Indicators module, including interpretation of the PSI measures as well as technical definitions of individual indicators presented in subsequent sections are, for the most part, excerpted from

AHRQ's Guide and Software Documentation to Patient Safety Indicators. These sources are listed in the reference section of this report.

The PSIs tables in subsequent pages present volume of adverse events as well as occurrence rates during hospitalization in each of the hospitals in the state. Risk-adjusted rates are provided along with confidence intervals for seven PSIs to help make a statistical assessment of patient safety in the hospital. Only observed rates are reported for the birth delivery related PSIs because the module does not risk-adjust these indicators. One indicator – 'retained surgical item or unretrieved device fragment' - is reported in volume only because it is a very rare event, commonly referred to as 'never-event'. Statewide and national estimates are also provided to help compare hospital performance to the statewide or to the national average rates.

Comparison of a hospital's rate to the statewide rate (presented in the top row of each of the PSI tables [Table 1-Table 11]) is one way to assess how well that hospital performed among its peers in the state. A hospital's peers could be defined at many levels (e.g., teaching hospitals, urban hospitals, suburban hospitals, etc.). It is suggested that a hospital's performance be assessed by looking at its performance across the several PSI estimates presented in the PSI tables.

The Patient Safety Indicators (PSIs) Module

Patient safety has been an issue of major national interest. Policy makers, providers, and consumers have made the safety of patients and the overall quality of care in U.S. hospitals a top priority. AHRQ states that the need to assess, monitor, track, and improve the safety of inpatient care became apparent with the publication of the Institute of Medicine's series of reports describing the problems of medical errors.

One way of detecting and reporting potentially preventable adverse events is to develop screening measures based on routinely collected UB data. UB data provide adequate information (data elements) about health care services delivered in hospitals on patients' diagnoses, procedures, age, gender, admission source, and discharge status. From these data elements, it is possible to construct a picture of the quality and safety of health care. Although quality assessments based on UB data cannot be definitive, they can be used to flag potential safety problems and success stories, which can then be further investigated. UB data can be used to identify indicators of potential problems that result from exposure to the health care system and are likely to be prevented as a result of system-level changes.

With this background, AHRQ developed the Patient Safety Indicators (PSIs) module in an effort to assess the quality of care inside hospitals with a focus on potentially preventable and other iatrogenic events, resulting from exposure to the health care system. The Patient Safety Indicators (PSIs) module is a tool specifically designed to help health care system leaders identify potential adverse events occurring during hospitalization for surgeries, procedures and childbirth. The PSIs (listed below) were

developed after a comprehensive literature review, analysis of the International Classification of Diseases, 10th Revision, Clinical Modification, (ICD-10-CM) codes, review by a clinician panel, implementation of risk adjustment, and empirical analyses.

- Death in Low-Mortality Diagnosis Related Groups (DRGs) (PSI.02)
- Pressure ulcer (PSI.03)
- Death among Surgical Inpatients with Serious Treatable Complications (PSI.04)
- Retained surgical item or unretrieved device fragment - formerly called foreign body left in during procedure (PSI.05)*
- Iatrogenic pneumothorax (PSI.06)*
- Central venous catheter-related bloodstream infections (PSI.07)
- In Hospital Fall with Hip Fracture – formerly called postoperative hip fracture (PSI.08)*
- Perioperative hemorrhage or hematoma (PSI.09)*
- Postoperative Acute Kidney Injury Requiring Dialysis – formerly called postoperative physiologic and metabolic derangements (PSI.10)
- Postoperative respiratory failure (PSI.11)
- Perioperative pulmonary embolism or deep vein thrombosis (PSI.12)*
- Postoperative sepsis (PSI.13)*
- Postoperative wound dehiscence (PSI.14)*
- Abdominopelvic Accidental Puncture or Laceration – (PSI.15)*
- Transfusion reaction (PSI.16)*
- Birth trauma - injury to neonate (PSI.17)*
- Obstetric trauma - vaginal delivery with instrument (PSI.18)*
- Obstetric trauma - vaginal delivery without instrument (PSI.19)*
- Patient Safety and Adverse Events Composite (PSI.90)

The indicators have been shown to have complication/adverse event rates that vary substantially across institutions and for which evidence suggests that high complication/adverse event rates may be associated with deficiencies in the quality of care.

It is important to note that PSIs are intended to measure the occurrence rate of adverse events from: i) complications of medical conditions after admission, ii) complications from surgical procedures, and iii) complications from obstetric procedures. Fourteen of the current 18 PSIs are related to surgical or medical discharges while three are for obstetric discharges. Six indicators (PSIs 03, 09, 10, 11, 12, 14), incorporate information about when procedures were performed (relative to the admission date), which is important in the risk-adjustment process. Admission type is used by four PSIs (PSIs 10, 11, 13, and 17) to identify elective surgeries and newborn admissions.

As stated earlier, this report focuses on the 11 PSIs (denoted by an asterisk in the list above) mandated for public reporting by the New Jersey legislature and provides comprehensive definitions for each along with their specific qualifications for their inclusion in the module.

How are PSI rates calculated?

Most of the AHRQ Quality Indicators are ratios or rates in which the numerator is a count of hospitalizations with the condition or outcome of interest and the denominator is an estimate of the number of people (or hospitalizations) at risk for that outcome over a period of time (generally, one year). The PSIs SAS Software generates observed, expected, and risk-adjusted rates, as well as lower and upper 95% confidence limits for risk-adjusted rates, when applicable, for each indicator at a hospital level. Brief descriptions of these rates are given below.

Observed rates: An observed rate is defined as the number of events of interest (numerator) divided by the population at risk (denominator). Observed rates may vary between areas or hospitals due to a number of factors. Some areas and hospitals provide exemplary care, while others provide sub-standard care. Some areas may serve people that are at higher risk for complications or exacerbations of their conditions, while others serve people that are at lower risk. Some hospitals may have sicker patients with more complex conditions, while others may have a lower-risk case mix. For hospital-level observed rates, the populations at risk are derived from hospital discharge records. The AHRQ software program calculates observed PSI rates regardless of the number of cases available. It is recommended that performance measurement assessment based on fewer than 30 cases in the denominator should be interpreted with caution.

Expected rates: Unlike observed rates, expected rates are derived from applying the average case-mix of a reference population that reflects a large proportion of the U.S. hospitalized population. The expected rate is the rate a hospital would have if it performed the same as the reference population, given the hospital's actual case-mix (e.g., age, gender, modified DRG and comorbidities). In other words, the expected rate answers the question – "what rate of adverse events would we expect to see if this area or hospital provided the average level of care observed in the reference population, but provided it to the patients with the locally observed distribution of characteristics?" (i.e., average performance from the reference patient population applied to locally observed mix of patients with their local risk profiles). When the observed rate is smaller than the expected rate (or the observed/expected ratio is < 1), then there is reason to think that the hospital (or area) is performing better than average on this indicator given the local patient case mix. The expected rate is calculated only for risk-adjusted indicators.

Risk-adjusted rates: A hospital's risk-adjusted rate is obtained after its observed rate is adjusted to account for the difference between the patient case-mix of the reference population and that of the hospital. Regression coefficients from a baseline database reflecting a large proportion of the U.S. population (based on State Inpatient Databases (SID) compiled from about 49 states) are applied to observed rates for the purpose of making risk-adjustments. The baseline file of regression coefficients representing the average case-mix of the U.S. population is provided as part of the PSI software. The risk-adjusted rates reflect the age, sex, DRG, and comorbidity distribution of the data in the baseline file rather than the distributions of patients in the hospital-level data. 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 hospital-level 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 – i.e. “how does the rate of adverse events for this hospital (or area) compare to the rate we would expect to see if it provided the average level of care observed in the reference population, but provided it to the patients with the locally observed distribution of characteristics?” If the risk-adjusted rate is higher than the reference rate, the hospital (or area) is performing worse than an average hospital or area in the reference population in providing care to patients with the locally observed distribution of characteristics.

In short, the observed rate (raw indicator) is adjusted using a logistic regression to account for differences among hospitals and areas in demographics. This will allow risk-adjusted rates produced by various states to be compared directly to one another. The interpretation of risk-adjusted rates becomes clear when we compare risk-adjusted rates with the observed rates. Hospitals that exhibit large differences between their observed and risk-adjusted rates tend to have a more complex case-mix. More importantly, risk-adjustment in the PSI module includes an adjustment for the Present on Admission (POA) indicator. The POA indicator identifies instances in which a condition was present on admission (i.e. pre-existing condition) and those that occur during the hospital stay. The POA indicator enables conditions present on admission to be identified and excluded from the quality measures, when appropriate.

Interpretation of PSI rates

The purpose of analysis determines which rates one should use in evaluating the performance of a hospital. If the reader's primary interest is to focus on a particular hospital, to identify cases for further follow-up and quality improvement without comparisons made to other hospitals, then he/she ought to simply examine the observed rate. But, if the purpose of the analysis is to compare the performance of a particular hospital with national, state, or regional averages or performances of other selected hospitals, then all rates (observed, expected and risk-adjusted) should be examined.

Hospitals can compare their expected rates to the population rate to see how their patient case-mix compares to the reference population. The population rate refers to the overall rate for the reference population. If the reference population rate is higher than the hospital's expected rate, then the hospital's case-mix is less severe than the reference population. If the reference population rate is lower than the hospital's expected rate, then the hospital's case-mix is more severe than the reference population.

Comparing the observed rate to the expected rate allows hospitals to see how far or how close they are from what is expected of them, based on the reference population. If the observed rate is higher than the expected rate for any given indicator (i.e., the ratio of observed/expected is greater than 1.0), then the implication is that the hospital performed worse than expected for that particular 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 hospital performed better than expected.

Comparing a hospital's risk-adjusted rate to its expected rate shows the effect of risk-adjustment on the patient safety indicator measurement. The risk-adjusted rate accounts for the difference between the case-mix of the reference population and the hospital's case-mix. For that reason, risk-adjusted rates should be used for better hospital-to-hospital comparisons. Risk-adjusted rates are given along with their respective 95% confidence intervals.

- Even in the best hospital, some patients will experience complications either after an operation or as a result of other care. The rates in this report are calculated by comparing the number of complications (adverse events) expected in a particular hospital (based on the number of operations they do or patients they see, usually after adjusting for how old and how sick their patients are) and how many patients actually experienced the adverse events (i.e., complications).
- Confidence Intervals are used to identify which hospitals had statistically significantly more or fewer complications than expected given the risk factors of their patients. Hospitals with significantly higher rates than expected, after adjusting for risk factors, are those where the confidence interval range falls entirely above the statewide risk-adjusted complication rate. Hospitals with statistically significantly lower rates than expected have their confidence interval range entirely below the statewide risk-adjusted complication rate.
- Comparison of a hospital's rate to the statewide rate (presented in the top row of each PSI Table), is one way to assess how well that hospital performed among its peers in the state. A hospital's peers could be defined at many levels (e.g., teaching hospitals, urban hospitals, suburban hospitals, etc.). It is suggested that a hospital's performance be assessed by looking at its performance across the 11 PSI estimates presented in the Tables.

A hospital's rate is statistically significantly above (denoted by double asterisks) the statewide rate if the statewide rate falls completely below the hospital's 95% confidence interval. By comparison, a hospital's rate is significantly below (denoted by a single asterisk) the statewide rate if the statewide rate falls completely above the hospital's 95% confidence interval for that indicator. Some rates that appear large are not marked as statistically significantly higher than the statewide rate while others that appear small are not marked as statistically lower than the statewide rate. The reason may be that rates calculated from small numbers of events tend to have wider confidence intervals that make the statewide rate fall within the interval, giving the appearance of good performance by those hospitals compared to hospitals with rates based on large numbers of events. For example, the risk-adjusted rate for Postoperative Sepsis (Table 6) for CarePoint Health-Hoboken University MC is 50.1 per 1,000 surgical discharges. This rate of 50.1 per 1,000 which is derived from 3 cases out of 105 surgical discharges has a 95% confidence interval of 34.4– 65.8 and is considered statistically significantly higher than the statewide rate of 3.8 per 1,000 because the confidence interval range is completely above the statewide average. By comparison, Hackensack University Medical Center's rate of 3.6 per 1,000, which is derived from 18 cases out of 3,708 surgeries has a 95% confidence interval of 1.9 – 5.4 and is not statistically significantly different from the statewide rate of 3.8 per 1,000 because the statewide average falls within the confidence interval range of the hospital's rate.

In general, PSIs are not intended as definitive quality measures because quality of performance may be influenced by several other factors. However, there is strong evidence that PSI measures indicate differences in hospital performance, which are potentially clinically important. They do measure differences in the hospitals' ability to reduce severe and potentially preventable complications and adverse events. Performance on a single PSI often cannot reliably indicate actual quality differences. AHRQ recommends that examining all the indicators together is likely to produce a more complete picture of overall quality of care.

Remember: Lower rates are better and mean the hospital has fewer adverse events than the statewide average.

Limitations of PSI measures

These PSI rates should only be seen as a starting point for examining the quality of care at a particular hospital. They should not be used to make strong conclusions. There are a few issues to keep in mind when looking at these measures.

- The PSIs do not address all aspects of quality. For example, they do not include information on what patients say about their care in the hospital, or information on whether hospitals consistently follow steps known to lead to better results.

- One obvious limitation is that many important quality concerns including adverse drug events cannot be monitored using UB data because these data are unlikely to capture all cases of patient complications. The indicators in the PSIs module contain a large proportion of surgical indicators rather than medical or psychiatric indicators because medical complications are often difficult to distinguish from comorbidities that are present on admission. In addition, patients with medical conditions tend to be more heterogeneous than surgical patients, especially elective surgical patients, making it more difficult to account for case-mix.
- The ability of administrative data to distinguish between adverse events in which no error occurred from true medical errors is limited. A number of factors such as heterogeneity of clinical conditions included in some codes, lack of information about event timing available in these data sets, and limited clinical detail for risk adjustment, contribute to the difficulty in identifying complications that represent medical error or may at least be in some part preventable.
- Questions about the clinical accuracy of discharge-based diagnosis coding lead to concerns about the interpretation of reported diagnoses that may represent safety problems. Specifically, UB data are unlikely to capture all cases of a complication, regardless of the preventability, without false positives and false negatives (sensitivity and specificity). Also, when the codes are accurate in defining an event, the clinical vagueness inherent in the description of the code itself (e.g., “hypotension”) may lead to a highly heterogeneous pool of clinical states represented by that code.

Patient Safety Indicator estimates for New Jersey

As indicated earlier, this report is based on an application of the AHRQ PSIs module to the New Jersey hospital discharge data. In this section, we provide an abbreviated description or definition for each of the 11 indicators used, followed by a table showing the numbers of adverse events, total hospital discharges, and the corresponding observed, expected and risk-adjusted rates, along with 95% confidence intervals, when applicable. Where the cell entry is missing, it is designated by “.” to indicate that the hospital did not perform that particular procedure, or it did less than 3 procedures (risk-adjusted rate is not computed when the denominator is less than 3).

Comparison of a specific hospital-level PSI rate to the statewide average for the same indicator is one appropriate way to see how well a hospital performs among its peers. Following AHRQ’s recommendation, we have compared hospital rates against statewide rates to assess performance.

PSI.05 - Retained surgical item or unretrieved device fragment

- This indicator is measured using volume – not a rate. It tells you the number of patients who had a ‘retained surgical item or unretrieved device fragment’ during surgical or medical procedures. It is considered a never-event and happens very rarely. All cases with pre-existing conditions are excluded from the measure.
- The measure refers to discharges 18 years and older or obstetric patients (MDC 14 - pregnancy, childbirth, and puerperium), with ICD-10-CM codes for a ‘retained surgical item or unretrieved device fragment’ in any secondary diagnosis field of medical and surgical discharges defined by specific DRGs or MS-DRGs.
- Patients with ICD-10-CM codes for a ‘retained surgical item or unretrieved device fragment’ in the principal diagnosis field or secondary diagnosis present on admission (POA) are excluded from the measure.
- Table 1 shows that in 2021, there were 11 cases of ‘retained surgical item or unretrieved device fragment’ in New Jersey.

**Table 1. Retained Surgical Item or Unretrieved Device Fragment
(formerly Foreign body left during procedure)**

Hospital	# of cases
Statewide	11
AtlantiCare Regional Medical Center-City	1
Cooper Hospital University Medical Center	1
Englewood Hospital and Medical Center	1
Hackensack University Medical Center	2
Jefferson Stratford Hospital	1
Morristown Medical Center	2
Raritan Bay Medical Center-Perth Amboy	1
St. Francis Medical Center	1
Virtua Memorial Hospital of Burlington County	1

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using the AHRQ SAS Software, Version 2022. The National numbers (Table 12) come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

Note - 'Retained Surgical Item or Unretrieved Device Fragment' is reported in volume or count, not rate.

PSI.06 - Iatrogenic pneumothorax

- This indicator flags cases of iatrogenic pneumothorax (i.e. patients who had air leaking out of their lungs due to an accidental puncture during a medical or surgical procedure) occurring in a facility. The rate, which is risk-adjusted by age, sex, DRG, and comorbidity categories, is defined as the number of iatrogenic pneumothorax cases per 1,000 discharges surgical and medical discharges.
- The numerator refers to the number of discharges with any secondary ICD-10-CM diagnosis codes for iatrogenic pneumothorax meeting the inclusion and exclusion rules for the denominator.
- The denominator refers to all medical and surgical discharges age 18 years and older defined by specific DRGs.
- The following cases are excluded from the denominator or from the rate calculation:
 - cases with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for iatrogenic pneumothorax, if known;
 - cases with ICD-10-CM diagnosis codes for specified chest trauma (rib fractures, traumatic pneumothorax and related chest wall injuries);
 - cases with any listed ICD-10-CM diagnosis codes for pleural effusion;
 - cases with any listed ICD-10-PCS procedure codes for thoracic surgery;
 - cases with any listed ICD-10-PCS procedure codes for cardiac procedure; and
 - obstetric cases (MDC 14 - pregnancy, childbirth, and puerperium).
- Table 2 shows the number of iatrogenic pneumothorax cases by hospital, as well as the observed, expected and risk-adjusted rates with their corresponding 95% confidence intervals. Statewide, there were 75 cases of iatrogenic pneumothorax out of 535,616 eligible discharges reported in 2021 for a risk-adjusted rate of 0.13 per 1,000 discharges.

Table 2. Iatrogenic Pneumothorax (per 1,000 medical and surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate ^Δ	Risk-adjusted rate	95% Confidence interval
Statewide	75	535,616	0.1	0.2	0.1	0.1 - 0.2
AtlantiCare Regional Medical Center-City	1	6,696	0.1	0.1	0.2	0.0 - 0.5
AtlantiCare Regional Medical Center-Mainland	1	10,240	0.1	0.2	0.1	0.0 - 0.3
Bayshore Medical Center	0	6,043	0.0	0.2	0.0	0.0 - 0.3
Bergen New Bridge Medical Center	2	4,082	0.5	0.1	1.6 **	0.9 - 2.3
Cape Regional Medical Center	1	4,840	0.2	0.1	0.3	0.0 - 0.8
Capital Health Medical Center-Hopewell	0	6,239	0.0	0.2	0.0	0.0 - 0.3
Capital Health Regional Medical Center	0	5,210	0.0	0.2	0.0	0.0 - 0.4
CarePoint Health-Bayonne Medical Center	1	3,228	0.3	0.2	0.3	0.0 - 0.8
CarePoint Health-Christ Hospital	0	4,749	0.0	0.1	0.0	0.0 - 0.5
CarePoint Health-Hoboken University MC	0	2,148	0.0	0.1	0.0	0.0 - 0.6
CentraState Medical Center	3	8,314	0.4	0.2	0.3	0.1 - 0.6
Chilton Memorial Hospital	0	5,683	0.0	0.2	0.0	0.0 - 0.3
Clara Maass Medical Center	0	8,243	0.0	0.2	0.0	0.0 - 0.3
Community Medical Center	0	15,066	0.0	0.2	0.0	0.0 - 0.2
Cooper Hospital University Medical Center	2	21,482	0.1	0.2	0.1	0.0 - 0.2
Cooperman Barnabas Medical Center	4	15,011	0.3	0.2	0.2	0.0 - 0.4
Deborah Heart and Lung Center	0	3,021	0.0	0.6	0.0	0.0 - 0.2
East Orange General Hospital	0	3,976	0.0	0.1	0.0	0.0 - 0.5
Englewood Hospital and Medical Center	2	9,994	0.2	0.2	0.2	0.0 - 0.4
Hackensack Meridian Health, Mountainside MC	0	6,637	0.0	0.2	0.0	0.0 - 0.3
Hackensack Meridian Health-Pascack Valley MC	0	2,520	0.0	0.2	0.0	0.0 - 0.5
Hackensack University Medical Center	1	22,000	0.0	0.3	0.0	0.0 - 0.2
Hackettstown Medical Center	0	3,217	0.0	0.1	0.0	0.0 - 0.5
Holy Name Medical Center	0	6,159	0.0	0.2	0.0	0.0 - 0.3
Hudson Regional Hospital	0	1,991	0.0	0.2	0.0	0.0 - 0.6
Hunterdon Medical Center	3	5,432	0.6	0.2	0.5 **	0.2 - 0.9
Inspira Medical Center Elmer	0	1,328	0.0	0.1	0.0	0.0 - 0.8
Inspira Medical Center Mullica Hill	1	6,572	0.2	0.2	0.2	0.0 - 0.5
Inspira Medical Center Vineland	1	10,123	0.1	0.2	0.1	0.0 - 0.4
Jefferson Cherry Hill Hospital	2	5,671	0.4	0.1	0.6	0.1 - 1.0
Jefferson Stratford Hospital	0	4,904	0.0	0.1	0.0	0.0 - 0.5
Jefferson Washington Township Hospital	0	9,125	0.0	0.1	0.0	0.0 - 0.3
Jersey City Medical Center	0	8,506	0.0	0.2	0.0	0.0 - 0.3
Jersey Shore University Medical Center	4	19,164	0.2	0.2	0.1	0.0 - 0.3
JFK University Medical Center	2	12,154	0.2	0.2	0.2	0.0 - 0.4
Monmouth Medical Center	1	5,820	0.2	0.2	0.2	0.0 - 0.5
Monmouth Medical Center Southern Campus	1	4,743	0.2	0.1	0.3	0.0 - 0.8
Morristown Medical Center	5	23,260	0.2	0.3	0.1	0.0 - 0.3
Newark Beth Israel Medical Center	0	8,291	0.0	0.2	0.0	0.0 - 0.3
Newton Medical Center	0	5,579	0.0	0.1	0.0	0.0 - 0.4
Ocean University Medical Center	1	11,819	0.1	0.2	0.1	0.0 - 0.3
Overlook Medical Center-Summit	1	13,406	0.1	0.2	0.1	0.0 - 0.2
Palisades Medical Center	0	4,686	0.0	0.2	0.0	0.0 - 0.4

Table 2. Iatrogenic Pneumothorax (per 1,000 medical and surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	75	535,616	0.1	0.2	0.1	0.1 - 0.2
Penn Medicine Princeton Medical Center	0	8,404	0.0	0.2	0.0	0.0 - 0.3
Raritan Bay Medical Center-Old Bridge	0	4,393	0.0	0.2	0.0	0.0 - 0.4
Raritan Bay Medical Center-Perth Amboy	0	4,453	0.0	0.1	0.0	0.0 - 0.4
Riverview Medical Center	0	8,850	0.0	0.2	0.0	0.0 - 0.3
Robert Wood Johnson University Hospital	6	19,622	0.3	0.2	0.3	0.1 - 0.4
Robert Wood Johnson University Hospital Hamilton	1	4,749	0.2	0.2	0.2	0.0 - 0.5
Robert Wood Johnson University Hospital Rahway	0	4,260	0.0	0.2	0.0	0.0 - 0.4
Robert Wood Johnson University Hospital Somerset	3	10,148	0.3	0.2	0.3	0.1 - 0.6
Saint Clare's Hospital-Denville	1	4,022	0.2	0.2	0.2	0.0 - 0.6
Saint Clare's Hospital-Dover	0	3,271	0.0	0.2	0.0	0.0 - 0.5
Saint Michael's Medical Center	0	3,980	0.0	0.2	0.0	0.0 - 0.4
Saint Peter's University Hospital	1	7,855	0.1	0.2	0.1	0.0 - 0.4
Salem Medical Center	2	1,996	1.0	0.1	1.7 **	0.9 - 2.4
Shore Medical Center	2	6,090	0.3	0.1	0.5	0.1 - 0.9
Southern Ocean Medical Center	0	5,938	0.0	0.2	0.0	0.0 - 0.3
St. Francis Medical Center	0	2,742	0.0	0.2	0.0	0.0 - 0.5
St. Joseph's University Medical Center	2	11,356	0.2	0.2	0.2	0.0 - 0.4
St. Joseph's Wayne Medical Center	3	3,051	1.0	0.2	0.9 **	0.4 - 1.3
St. Luke's Warren Hospital	0	3,394	0.0	0.2	0.0	0.0 - 0.4
St. Mary's General Hospital	0	4,130	0.0	0.2	0.0	0.0 - 0.4
Trinitas Regional Medical Center	1	4,507	0.2	0.2	0.2	0.0 - 0.6
University Hospital	4	11,534	0.3	0.2	0.3	0.1 - 0.5
Valley Hospital	1	10,304	0.1	0.3	0.1	0.0 - 0.3
Virtua Memorial Hospital of Burlington County	2	9,513	0.2	0.2	0.2	0.0 - 0.5
Virtua Our Lady of Lourdes Hospital-Camden	2	8,549	0.2	0.3	0.1	0.0 - 0.4
Virtua West Jersey Hospital-Marlton	1	5,592	0.2	0.2	0.2	0.0 - 0.5
Virtua West Jersey Hospital-Voorhees	2	11,735	0.2	0.1	0.2	0.0 - 0.5
Virtua Willingboro Hospital	1	3,805	0.3	0.1	0.6	0.0 - 1.2

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using the AHRQ SAS Software, Version 2022. The National numbers (Table 12) come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Δ : Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.08 – In Hospital Fall with Hip Fracture

- This indicator intends to capture cases of in-hospital falls with hip fractures and includes only secondary diagnosis codes to eliminate fractures that were present on admission. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity categories, is defined as the number of cases of in-hospital fall with hip fracture per 1,000 surgical discharges with an operating room procedure.
- The numerator refers to discharges with ICD-10-CM codes for hip fracture in any secondary diagnosis field among cases meeting the inclusion and exclusion rules for the denominator.
- The denominator refers to all surgical discharges 18 years and older defined by specific DRGs and an ICD-10-CM codes for an operating room procedure.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with ICD-10-CM code for hip fracture in the principal diagnosis field or secondary diagnosis present on admission, if known;
 - cases where the only operating room procedure is hip fracture repair; and where a procedure for hip fracture repair occurs before or on the same day as the first operating room procedure (*if day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available*);
 - cases with diseases and disorders of the musculoskeletal system and connective tissue (MDC 8);
 - cases with principal diagnosis or secondary diagnosis (present on admission, if known) of seizure, syncope, stroke, coma, cardiac arrest, poisoning, trauma, delirium and other psychoses, or anoxic brain injury;
 - cases with any diagnosis of metastatic cancer, lymphoid malignancy or bone malignancy, or self-inflicted injury; and
 - MDC 14 (pregnancy, childbirth and the puerperium).
- Table 3 shows the number, by hospital, of patients who experienced 'In-hospital fall with hip fracture' among all surgical discharges age 18 and older, the observed rates, expected rates and risk-adjusted rates with their corresponding 95% confidence intervals. Statewide, there were only 40 In-hospital falls with hip fracture cases reported out of 569,979 eligible discharges in 2021.

Table 3. In Hospital Fall with Hip Fracture (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	40	569,979	0.1	0.1	0.1	0.0 - 0.1
AtlantiCare Regional Medical Center-City	1	7,160	0.1	0.1	0.2	0.0 - 0.4
AtlantiCare Regional Medical Center-Mainland	0	10,737	0.0	0.1	0.0	0.0 - 0.2
Bayshore Medical Center	0	6,406	0.0	0.1	0.0	0.0 - 0.2
Bergen New Bridge Medical Center	0	4,137	0.0	0.0	0.0	0.0 - 0.5
Cape Regional Medical Center	1	4,954	0.2	0.1	0.3	0.0 - 0.6
Capital Health Medical Center-Hopewell	0	6,698	0.0	0.1	0.0	0.0 - 0.2
Capital Health Regional Medical Center	0	5,593	0.0	0.1	0.0	0.0 - 0.2
CarePoint Health-Bayonne Medical Center	0	3,357	0.0	0.1	0.0	0.0 - 0.3
CarePoint Health-Christ Hospital	1	4,923	0.2	0.1	0.2	0.0 - 0.5
CarePoint Health-Hoboken University MC	1	2,247	0.4	0.1	0.5	0.1 - 0.9
CentraState Medical Center	2	8,628	0.2	0.1	0.2	0.0 - 0.4
Chilton Memorial Hospital	0	5,927	0.0	0.1	0.0	0.0 - 0.2
Clara Maass Medical Center	0	8,464	0.0	0.1	0.0	0.0 - 0.2
Community Medical Center	1	15,598	0.1	0.1	0.1	0.0 - 0.2
Cooper Hospital University Medical Center	2	23,902	0.1	0.1	0.1	0.0 - 0.2
Cooperman Barnabas Medical Center	2	16,142	0.1	0.1	0.1	0.0 - 0.2
Deborah Heart and Lung Center	0	3,505	0.0	0.1	0.0	0.0 - 0.3
East Orange General Hospital	0	4,062	0.0	0.0	0.0	0.0 - 0.3
Englewood Hospital and Medical Center	0	10,678	0.0	0.1	0.0	0.0 - 0.2
Hackensack Meridian Health, Mountainside MC	0	7,112	0.0	0.1	0.0	0.0 - 0.2
Hackensack Meridian Health-Pascack Valley MC	0	2,585	0.0	0.1	0.0	0.0 - 0.3
Hackensack University Medical Center	1	24,573	0.0	0.1	0.0	0.0 - 0.1
Hackettstown Medical Center	1	3,313	0.3	0.1	0.3	0.0 - 0.7
Holy Name Medical Center	1	6,564	0.2	0.1	0.1	0.0 - 0.3
Hudson Regional Hospital	0	2,009	0.0	0.0	0.0	0.0 - 0.5
Hunterdon Medical Center	0	5,675	0.0	0.1	0.0	0.0 - 0.2
Inspira Medical Center Elmer	1	1,385	0.7	0.1	1.1 **	0.5 - 1.6
Inspira Medical Center Mullica Hill	1	6,939	0.1	0.1	0.1	0.0 - 0.3
Inspira Medical Center Vineland	0	10,642	0.0	0.1	0.0	0.0 - 0.2
Jefferson Cherry Hill Hospital	0	5,850	0.0	0.1	0.0	0.0 - 0.3
Jefferson Stratford Hospital	1	5,070	0.2	0.1	0.3	0.0 - 0.6
Jefferson Washington Township Hospital	0	9,539	0.0	0.1	0.0	0.0 - 0.2
Jersey City Medical Center	1	9,263	0.1	0.1	0.1	0.0 - 0.3
Jersey Shore University Medical Center	0	20,901	0.0	0.1	0.0	0.0 - 0.1
JFK University Medical Center	2	12,627	0.2	0.1	0.2	0.0 - 0.3
Monmouth Medical Center	0	6,242	0.0	0.1	0.0	0.0 - 0.2
Monmouth Medical Center Southern Campus	1	4,868	0.2	0.1	0.3	0.0 - 0.5
Morristown Medical Center	1	26,190	0.0	0.1	0.0	0.0 - 0.1
Newark Beth Israel Medical Center	0	9,021	0.0	0.1	0.0	0.0 - 0.2
Newton Medical Center	0	5,850	0.0	0.1	0.0	0.0 - 0.2
Ocean University Medical Center	1	12,230	0.1	0.1	0.1	0.0 - 0.2

Table 3. In Hospital Fall with Hip Fracture (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	40	569,979	0.1	0.1	0.1	0.0 - 0.1
Overlook Medical Center-Smmit	2	14,177	0.1	0.1	0.1	0.0 - 0.2
Palisades Medical Center	1	4,855	0.2	0.1	0.2	0.0 - 0.4
Penn Medicine Princeton Medical Center	1	8,765	0.1	0.1	0.1	0.0 - 0.2
Raritan Bay Medical Center-Old Bridge	0	4,547	0.0	0.1	0.0	0.0 - 0.3
Raritan Bay Medical Center-Perth Amboy	0	4,614	0.0	0.0	0.0	0.0 - 0.3
Riverview Medical Center	1	9,302	0.1	0.1	0.1	0.0 - 0.3
Robert Wood Johnson University Hospital	1	22,283	0.0	0.1	0.0	0.0 - 0.2
Robert Wood Johnson University Hospital Hamilton	0	4,979	0.0	0.1	0.0	0.0 - 0.2
Robert Wood Johnson University Hospital Rahway	0	4,387	0.0	0.1	0.0	0.0 - 0.3
Robert Wood Johnson University Hospital Somerset	1	10,496	0.1	0.1	0.1	0.0 - 0.3
Saint Clare's Hospital-Denville	0	4,113	0.0	0.1	0.0	0.0 - 0.2
Saint Clare's Hospital-Dover	2	3,353	0.6	0.1	0.6 **	0.3 - 0.9
Saint Michael's Medical Center	0	4,221	0.0	0.1	0.0	0.0 - 0.3
Saint Peter's University Hospital	0	8,147	0.0	0.1	0.0	0.0 - 0.2
Salem Medical Center	0	2,060	0.0	0.0	0.0	0.0 - 0.5
Shore Medical Center	2	6,203	0.3	0.1	0.4 **	0.2 - 0.6
Southern Ocean Medical Center	0	6,171	0.0	0.1	0.0	0.0 - 0.2
St. Francis Medical Center	0	2,951	0.0	0.0	0.0	0.0 - 0.4
St. Joseph's University Medical Center	3	12,198	0.2	0.1	0.3	0.1 - 0.4
St. Joseph's Wayne Medical Center	0	3,182	0.0	0.1	0.0	0.0 - 0.3
St. Luke's Warren Hospital	0	3,597	0.0	0.1	0.0	0.0 - 0.3
St. Mary's General Hospital	0	4,323	0.0	0.1	0.0	0.0 - 0.3
Trinitas Regional Medical Center	0	4,659	0.0	0.1	0.0	0.0 - 0.3
University Hospital	0	12,327	0.0	0.1	0.0	0.0 - 0.2
Valley Hospital	0	11,132	0.0	0.1	0.0	0.0 - 0.1
Virtua Memorial Hospital of Burlington County	1	9,760	0.1	0.1	0.1	0.0 - 0.3
Virtua Our Lady of Lourdes Hospital-Camden	1	9,625	0.1	0.1	0.1	0.0 - 0.3
Virtua West Jersey Hospital-Marlton	0	6,117	0.0	0.1	0.0	0.0 - 0.2
Virtua West Jersey Hospital-Voorhees	1	11,954	0.1	0.1	0.1	0.0 - 0.2
Virtua Willingboro Hospital	0	3,914	0.0	0.0	0.0	0.0 0.4

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using the AHRQ SAS Software, Version 2022. The National numbers (Table 12) come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Δ : Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.09 – Perioperative hemorrhage or hematoma

- This indicator is designed to capture perioperative hemorrhage or hematoma cases with control of perioperative hemorrhage, drainage of hematoma, or a miscellaneous hemorrhage- or hematoma-related procedure following surgery. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity categories, is defined as the number of patients with perioperative hemorrhage (too much bleeding) or hematoma (drainage of hematoma) per 1,000 surgical discharges ages 18 years and older.
- The numerator refers to the number of discharges with ICD-10-CM codes for perioperative hemorrhage or hematoma in any secondary diagnosis field or discharges with ICD-10-CM codes for perioperative control of hemorrhage or drainage of hematoma in any secondary procedure, while the denominator refers to all surgical discharges age 18 years and older defined by specific DRGs and an ICD-10-CM code for an operating room procedure.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with a secondary diagnosis of perioperative hemorrhage or hematoma present on admission, if known;
 - cases with a diagnosis of coagulation disorder;
 - cases with a principal diagnosis of perioperative hemorrhage or hematoma;
 - cases where the only operating room procedure is control of perioperative hemorrhage, drainage of hematoma, or a miscellaneous hemorrhage- or hematoma-related procedure;
 - cases where a procedure for perioperative control of hemorrhage or drainage of hematoma occurs before the first operating room procedure (*if day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available*); and
 - obstetric cases (MDC 14 - pregnancy, childbirth and the puerperium).
- Table 4 shows the number of perioperative hemorrhage or hematoma cases by hospital, the number of eligible surgical discharges, observed rates, expected rates, and risk-adjusted rates along with their corresponding 95% confidence intervals. Statewide, there were 326 perioperative hemorrhage or hematoma cases out of 137,029 eligible surgical discharges reported in 2021 for a statewide risk-adjusted rate of 2.16 per 1,000.

Table 4. Perioperative Hemorrhage or Hematoma (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	326	137,029	2.4	2.5	2.2	1.9 - 2.4
AtlantiCare Regional Medical Center-City	6	1,669	3.6	2.3	3.5	1.2 - 5.7
AtlantiCare Regional Medical Center-Mainland	3	2,797	1.1	1.9	1.3	0.0 - 3.2
Bayshore Medical Center	2	1,358	1.5	2.4	1.4	0.0 - 3.8
Bergen New Bridge Medical Center	0	247	0.0	1.6	0.0	0.0 - 7.1
Cape Regional Medical Center	2	578	3.5	2.3	3.4	0.0 - 7.2
Capital Health Medical Center-Hopewell	7	1,887	3.7	2.7	3.1	1.2 - 5.1
Capital Health Regional Medical Center	2	1,071	1.9	2.3	1.8	0.0 - 4.6
CarePoint Health-Bayonne Medical Center	0	488	0.0	2.1	0.0	0.0 - 4.4
CarePoint Health-Christ Hospital	0	698	0.0	2.4	0.0	0.0 - 3.4
CarePoint Health-Hoboken University MC	0	383	0.0	1.8	0.0	0.0 - 5.3
CentraState Medical Center	1	1,663	0.6	2.2	0.6	0.0 - 2.9
Chilton Memorial Hospital	2	1,137	1.8	2.0	2.0	0.0 - 4.9
Clara Maass Medical Center	6	1,869	3.2	2.1	3.4	1.2 - 5.6
Community Medical Center	2	2,894	0.7	1.9	0.8	0.0 - 2.7
Cooper Hospital University Medical Center	14	7,231	1.9	2.7	1.6	0.6 - 2.6
Cooperman Barnabas Medical Center	24	5,348	4.5	3.3	3.1	2.0 - 4.2
Deborah Heart and Lung Center	14	1,608	8.7	3.8	5.2 **	3.4 - 7.0
East Orange General Hospital	0	403	0.0	2.2	0.0	0.0 - 4.7
Englewood Hospital and Medical Center	12	3,718	3.2	2.6	2.7	1.3 - 4.2
Hackensack Meridian Health, Mountainside MC	0	1,714	0.0	1.8	0.0	0.0 - 2.5
Hackensack Meridian Health-Pascack Valley MC	0	939	0.0	1.5	0.0	0.0 - 3.7
Hackensack University Medical Center	16	7,321	2.2	2.8	1.8	0.8 - 2.7
Hackettstown Medical Center	1	396	2.5	2.6	2.2	0.0 - 6.6
Holy Name Medical Center	3	1,805	1.7	2.3	1.6	0.0 - 3.7
Hudson Regional Hospital	3	1,402	2.1	1.8	2.7	0.0 - 5.5
Hunterdon Medical Center	2	1,070	1.9	1.6	2.7	0.0 - 6.1
Inspira Medical Center Elmer	0	179	0.0	2.0	0.0	0.0 - 7.4
Inspira Medical Center Mullica Hill	3	1,354	2.2	2.3	2.1	0.0 - 4.6
Inspira Medical Center Vineland	4	1,774	2.3	2.3	2.3	0.1 - 4.5
Jefferson Cherry Hill Hospital	0	707	0.0	1.8	0.0	0.0 - 3.9
Jefferson Stratford Hospital	2	827	2.4	1.9	2.9	0.0 - 6.4
Jefferson Washington Township Hospital	3	1,732	1.7	2.2	1.7	0.0 - 4.0
Jersey City Medical Center	1	1,922	0.5	2.6	0.4	0.0 - 2.4
Jersey Shore University Medical Center	21	6,293	3.3	2.7	2.8	1.7 - 3.8
JFK University Medical Center	7	2,597	2.7	2.3	2.7	0.8 - 4.5
Monmouth Medical Center	14	1,895	7.4	2.2	7.6 **	5.5 - 9.8
Monmouth Medical Center Southern Campus	0	339	0.0	2.0	0.0	0.0 - 5.4
Morristown Medical Center	38	10,738	3.5	3.0	2.7	1.9 - 3.4
Newark Beth Israel Medical Center	3	1,904	1.6	2.9	1.2	0.0 - 3.1
Newton Medical Center	1	630	1.6	1.9	1.8	0.0 - 5.8

Table 4. Perioperative Hemorrhage or Hematoma (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	326	137,029	2.4	2.5	2.2	1.9 - 2.4
Ocean University Medical Center	2	2,118	0.9	2.3	0.9	0.0 - 2.9
Overlook Medical Center-Summit	13	4,224	3.1	2.2	3.1	1.7 - 4.5
Palisades Medical Center	0	789	0.0	2.0	0.0	0.0 - 3.5
Penn Medicine Princeton Medical Center	1	1,801	0.6	1.9	0.7	0.0 - 3.1
Raritan Bay Medical Center-Old Bridge	1	687	1.5	1.7	2.0	0.0 - 6.1
Raritan Bay Medical Center-Perth Amboy	0	795	0.0	1.6	0.0	0.0 - 3.9
Riverview Medical Center	5	1,935	2.6	2.3	2.5	0.4 - 4.6
Robert Wood Johnson University Hospital	33	7,852	4.2	2.9	3.3 **	2.4 - 4.2
Robert Wood Johnson University Hospital Hamilton	0	959	0.0	2.0	0.0	0.0 - 3.2
Robert Wood Johnson University Hospital Rahway	2	620	3.2	2.0	3.6	0.0 - 7.6
Robert Wood Johnson University Hospital Somerset	1	1,661	0.6	2.0	0.7	0.0 - 3.1
Saint Clare's Hospital-Denville	1	936	1.1	1.9	1.2	0.0 - 4.5
Saint Clare's Hospital-Dover	0	621	0.0	1.8	0.0	0.0 - 4.2
Saint Michael's Medical Center	0	758	0.0	2.5	0.0	0.0 - 3.2
Saint Peter's University Hospital	3	1,438	2.1	2.5	1.9	0.0 - 4.3
Salem Medical Center	0	208	0.0	1.9	0.0	0.0 - 7.0
Shore Medical Center	4	1,161	3.4	2.2	3.6	0.8 - 6.3
Southern Ocean Medical Center	1	972	1.0	2.0	1.2	0.0 - 4.3
St. Francis Medical Center	0	658	0.0	2.2	0.0	0.0 - 3.6
St. Joseph's University Medical Center	6	3,158	1.9	2.5	1.7	0.2 - 3.3
St. Joseph's Wayne Medical Center	1	484	2.1	1.9	2.4	0.0 - 7.0
St. Luke's Warren Hospital	0	595	0.0	2.1	0.0	0.0 - 4.0
St. Mary's General Hospital	0	1,090	0.0	2.3	0.0	0.0 - 2.8
Trinitas Regional Medical Center	0	942	0.0	2.3	0.0	0.0 - 3.0
University Hospital	9	3,412	2.6	2.7	2.2	0.8 - 3.7
Valley Hospital	9	3,541	2.5	2.5	2.3	0.8 - 3.8
Virtua Memorial Hospital of Burlington County	4	2,311	1.7	2.3	1.7	0.0 - 3.6
Virtua Our Lady of Lourdes Hospital-Camden	4	2,692	1.5	3.4	1.0	0.0 - 2.4
Virtua West Jersey Hospital-Marlton	4	1,251	3.2	2.5	2.8	0.4 - 5.3
Virtua West Jersey Hospital-Voorhees	3	2,552	1.2	2.0	1.3	0.0 - 3.3
Virtua Willingboro Hospital	0	223	0.0	2.2	0.0	0.0 - 6.2

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using SAS Software, Version2022. The National numbers (Table 12) come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Missing (.) = Hospital did not perform the procedure during the year; or it performed less than 3 procedures (rate is not computed when the denominator is less than 3).

Δ : Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.12- Perioperative pulmonary embolism (PE) or deep vein thrombosis (DVT)

- This indicator measures incidences of perioperative pulmonary embolism (blood clot in the lungs) or deep vein thrombosis (blood clot in a large vein) occurring during a surgical procedure. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity, is defined as the number of perioperative pulmonary embolism (PE) or deep vein thrombosis (DVT) cases per 1,000 surgical discharges.
- The numerator includes discharges, among cases meeting the inclusion and exclusion rules for the denominator, with a secondary ICD-10-CM diagnosis codes for deep vein thrombosis or pulmonary embolism.
- The denominator includes all surgical discharges age 18 and older with ICD-10-CM procedure codes for an operating room procedure, defined by specific DRG or MS-DRG codes.
- The following are excluded from the denominator or from rate calculation:
 - cases with secondary diagnosis for pulmonary embolism or deep vein thrombosis, present on admission (pre-existing conditions);
 - cases with principal diagnosis for pulmonary embolism or deep vein thrombosis;
 - cases in which interruption of vena cava is the only operating room procedure or in which interruption of vena cava occurs before or on the same day as the first operating room procedure (*if day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available*); and
 - obstetric discharges (MDC 14 - pregnancy, childbirth and the puerperium).
- Table 5 presents the number of perioperative pulmonary embolism or deep vein thrombosis cases among all surgical discharges age 18 and older by hospital, observed rates, expected rates, risk-adjusted rates, and the 95% confidence intervals computed for the risk-adjusted rates. Statewide, there were 512 cases of perioperative pulmonary embolism or deep vein thrombosis reported in 2021 for a statewide risk-adjusted rate of 3.35 per 1,000 surgical discharges.

Table 5. Perioperative Pulmonary Embolism or Deep Vein Thrombosis (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	512	145,780	3.5	3.4	3.3	3.1 - 3.6
AtlantiCare Regional Medical Center-City	3	1,694	1.8	4.2	1.4	0.0 - 3.7
AtlantiCare Regional Medical Center-Mainland	11	3,139	3.5	3.0	3.8	1.7 - 5.8
Bayshore Medical Center	4	1,415	2.8	3.2	2.9	0.0 - 5.8
Bergen New Bridge Medical Center	2	254	7.9	1.3	20.2 **	9.1 - 31.3
Cape Regional Medical Center	3	627	4.8	3.7	4.2	0.0 - 8.3
Capital Health Medical Center-Hopewell	12	2,015	6.0	3.5	5.5	3.1 - 7.9
Capital Health Regional Medical Center	12	1,094	11.0	4.3	8.2 **	5.3 - 11.1
CarePoint Health-Bayonne Medical Center	1	549	1.8	4.0	1.5	0.0 - 5.8
CarePoint Health-Christ Hospital	1	745	1.3	3.1	1.4	0.0 - 5.5
CarePoint Health-Hoboken University MC	3	415	7.2	2.4	9.6	3.3 - 15.9
CentraState Medical Center	10	1,737	5.8	3.2	5.7	3.1 - 8.4
Chilton Memorial Hospital	4	1,230	3.3	3.3	3.2	0.1 - 6.3
Clara Maass Medical Center	3	1,994	1.5	2.5	1.9	0.0 - 4.7
Community Medical Center	9	3,032	3.0	3.0	3.2	1.1 - 5.2
Cooper Hospital University Medical Center	39	7,834	5.0	4.1	3.9	2.8 - 5.0
Cooperman Barnabas Medical Center	30	5,690	5.3	2.9	5.9 **	4.3 - 7.4
Deborah Heart and Lung Center	2	1,719	1.2	3.0	1.3	0.0 - 4.1
East Orange General Hospital	0	409	0.0	3.1	0.0	0.0 - 5.6
Englewood Hospital and Medical Center	2	3,821	0.5	2.6	0.6 *	0.0 - 2.6
Hackensack Meridian Health, Mountainside MC	0	1,789	0.0	2.7	0.0 *	0.0 - 2.9
Hackensack Meridian Health-Pascack Valley MC	0	977	0.0	2.5	0.0	0.0 - 4.0
Hackensack University Medical Center	13	8,060	1.6	4.1	1.3 *	0.2 - 2.4
Hackettstown Medical Center	2	451	4.4	3.9	3.7	0.0 - 8.5
Holy Name Medical Center	7	1,873	3.7	3.6	3.3	0.9 - 5.7
Hudson Regional Hospital	0	1,414	0.0	2.2	0.0	0.0 - 3.6
Hunterdon Medical Center	3	1,158	2.6	3.2	2.6	0.0 - 5.8
Inspira Medical Center Elmer	0	198	0.0	3.5	0.0	0.0 - 7.6
Inspira Medical Center Mullica Hill	6	1,472	4.1	3.5	3.8	1.0 - 6.5
Inspira Medical Center Vineland	4	1,898	2.1	3.3	2.1	0.0 - 4.6
Jefferson Cherry Hill Hospital	0	767	0.0	3.4	0.0	0.0 - 3.9
Jefferson Stratford Hospital	2	865	2.3	2.5	3.0	0.0 - 7.4
Jefferson Washington Township Hospital	3	1,782	1.7	3.6	1.5	0.0 - 4.0
Jersey City Medical Center	8	2,044	3.9	3.6	3.6	1.2 - 5.9
Jersey Shore University Medical Center	15	6,711	2.2	3.8	1.9 *	0.7 - 3.2
JFK University Medical Center	12	2,708	4.4	3.4	4.2	2.1 - 6.2
Monmouth Medical Center	11	1,964	5.6	3.0	6.1 **	3.5 - 8.7
Monmouth Medical Center Southern Campus	2	363	5.5	4.5	3.9	0.0 - 8.9
Morristown Medical Center	54	11,522	4.7	3.9	3.9	3.0 - 4.9
Newark Beth Israel Medical Center	12	2,156	5.6	3.4	5.3	3.0 - 7.7
Newton Medical Center	1	707	1.4	3.8	1.2	0.0 - 5.1

Table 5. Perioperative Pulmonary Embolism or Deep Vein Thrombosis (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	512	145,780	3.5	3.4	3.3	3.1 - 3.6
Ocean University Medical Center	8	2,258	3.5	3.7	3.1	0.9 - 5.3
Overlook Medical Center-Summit	17	4,436	3.8	3.4	3.7	2.0 - 5.3
Palisades Medical Center	2	852	2.3	3.5	2.2	0.0 - 5.9
Penn Medicine Princeton Medical Center	10	1,948	5.1	3.6	4.6	2.2 - 7.0
Raritan Bay Medical Center-Old Bridge	3	745	4.0	2.7	4.9	0.4 - 9.3
Raritan Bay Medical Center-Perth Amboy	2	826	2.4	1.6	4.8	0.0 - 10.2
Riverview Medical Center	5	2,059	2.4	3.2	2.4	0.0 - 4.9
Robert Wood Johnson University Hospital	37	8,208	4.5	3.5	4.2	3.0 - 5.3
Robert Wood Johnson University Hospital Hamilton	4	1,006	4.0	3.4	3.8	0.4 - 7.2
Robert Wood Johnson University Hospital Rahway	2	653	3.1	3.3	3.0	0.0 - 7.3
Robert Wood Johnson University Hospital Somerset	2	1,746	1.1	3.1	1.2	0.0 - 3.9
Saint Clare's Hospital-Denville	3	984	3.0	3.3	3.0	0.0 - 6.5
Saint Clare's Hospital-Dover	1	645	1.6	2.3	2.2	0.0 - 7.4
Saint Michael's Medical Center	1	822	1.2	3.0	1.3	0.0 - 5.3
Saint Peter's University Hospital	5	1,517	3.3	3.2	3.4	0.5 - 6.2
Salem Medical Center	0	214	0.0	2.2	0.0	0.0 - 9.2
Shore Medical Center	6	1,276	4.7	2.8	5.5	2.1 - 8.8
Southern Ocean Medical Center	2	1,037	1.9	2.7	2.3	0.0 - 6.1
St. Francis Medical Center	2	701	2.9	2.2	4.3	0.0 - 9.4
St. Joseph's University Medical Center	11	3,468	3.2	3.5	3.0	1.1 - 4.8
St. Joseph's Wayne Medical Center	2	532	3.8	3.9	3.1	0.0 - 7.5
St. Luke's Warren Hospital	2	633	3.2	3.5	2.9	0.0 - 7.1
St. Mary's General Hospital	0	1,134	0.0	2.3	0.0	0.0 - 3.9
Trinitas Regional Medical Center	6	994	6.0	2.9	6.6	2.9 - 10.3
University Hospital	23	3,590	6.4	4.3	4.8	3.2 - 6.4
Valley Hospital	8	3,829	2.1	3.5	1.9	0.2 - 3.6
Virtua Memorial Hospital of Burlington County	14	2,400	5.8	2.7	7.1 **	4.6 - 9.6
Virtua Our Lady of Lourdes Hospital-Camden	16	2,753	5.8	3.1	6.1 **	3.9 - 8.2
Virtua West Jersey Hospital-Marlton	3	1,302	2.3	2.7	2.8	0.0 - 6.2
Virtua West Jersey Hospital-Voorhees	9	2,685	3.4	3.2	3.4	1.2 - 5.5
Virtua Willingboro Hospital	0	235	0.0	3.1	0.0	0.0 7.4

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using SAS Software, Version2022. The National numbers (Table 12) come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Missing (.) = Hospital did not perform the procedure during the year; or it performed less than 3 procedures (rate is not computed when the denominator is less than 3).

Δ : Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference or statewide population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.13 – Postoperative sepsis

- This indicator flags how often hospitalized patients get a serious bloodstream infection (nosocomial postoperative sepsis). A serious infection of the bloodstream caused by toxin-producing bacteria, known as sepsis, can occur after surgery. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity categories, is defined as the number of sepsis cases per 1,000 elective surgery patients with an operating room procedure.
- The numerator includes discharges with secondary ICD-10-CM diagnosis codes for sepsis while the denominator includes all elective surgical discharges age 18 and older defined by specific DRG or MS-DRG codes with admission type recorded as elective.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for sepsis;
 - cases with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for infection;
 - cases with any listed ICD-10-CM diagnosis codes or any listed ICD-10-CM procedure codes for immunocompromised state;
 - cases with any listed ICD-10-CM diagnosis codes for cancer;
 - MDC 14 (pregnancy, childbirth, and puerperium).
- Table 6 shows the number of postoperative sepsis cases among elective surgery patients by hospital, as well as the observed, expected and risk-adjusted rates along with their corresponding 95% confidence intervals. Statewide, there were 225 postoperative sepsis cases reported in 2021 for a statewide risk-adjusted rate of 3.76 per 1,000 elective discharges.

Table 6. Postoperative Sepsis (per 1,000 elective surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	225	55,705	4.0	4.2	3.8	3.3 - 4.3
AtlantiCare Regional Medical Center-City	4	557	7.2	4.2	6.7	1.8 - 11.7
AtlantiCare Regional Medical Center-Mainland	1	1,458	0.7	3.7	0.7	0.0 - 4.0
Bayshore Medical Center	2	465	4.3	2.6	6.4	0.0 - 13.3
Bergen New Bridge Medical Center	0	214	0.0	1.3	0.0	0.0 - 14.4
Cape Regional Medical Center	0	67	0.0	6.3	0.0	0.0 - 11.7
Capital Health Medical Center-Hopewell	3	966	3.1	6.1	2.0	0.0 - 5.1
Capital Health Regional Medical Center	1	147	6.8	6.3	4.2	0.0 - 11.9
CarePoint Health-Bayonne Medical Center	0	79	0.0	4.7	0.0	0.0 - 12.4
CarePoint Health-Christ Hospital	1	119	8.4	5.4	6.1	0.0 - 15.6
CarePoint Health-Hoboken University MC	3	105	28.6	2.2	50.1 **	34.4 - 65.8
CentraState Medical Center	1	594	1.7	2.9	2.3	0.0 - 8.1
Chilton Memorial Hospital	2	454	4.4	2.6	6.7	0.0 - 13.8
Clara Maass Medical Center	2	538	3.7	2.9	5.0	0.0 - 11.0
Community Medical Center	2	779	2.6	4.1	2.4	0.0 - 6.7
Cooper Hospital University Medical Center	18	2,995	6.0	6.1	3.8	2.1 - 5.6
Cooperman Barnabas Medical Center	7	1,428	4.9	4.3	4.4	1.4 - 7.5
Deborah Heart and Lung Center	3	230	13.0	6.4	8.0	1.8 - 14.2
East Orange General Hospital	0	103	0.0	4.6	0.0	0.0 - 10.3
Englewood Hospital and Medical Center	5	2,237	2.2	3.5	2.5	0.0 - 5.2
Hackensack Meridian Health, Mountainside MC	0	877	0.0	2.0	0.0	0.0 - 5.8
Hackensack Meridian Health-Pascack Valley MC	0	592	0.0	1.8	0.0	0.0 - 7.5
Hackensack University Medical Center	18	3,708	4.9	5.2	3.6	1.9 - 5.4
Hackettstown Medical Center	0	48	0.0	6.4	0.0	0.0 - 13.7
Holy Name Medical Center	9	761	11.8	4.9	9.5 **	5.6 - 13.4
Hudson Regional Hospital	2	1,217	1.6	1.1	5.8	0.0 - 12.4
Hunterdon Medical Center	0	596	0.0	1.8	0.0	0.0 - 7.3
Inspira Medical Center Elmer	0	47	0.0	3.6	0.0	0.0 - 18.5
Inspira Medical Center Mullica Hill	2	277	7.2	5.6	5.0	0.0 - 11.0
Inspira Medical Center Vineland	3	570	5.3	3.6	5.8	0.5 - 11.1
Jefferson Cherry Hill Hospital	3	265	11.3	2.5	17.6 **	8.3 - 26.9
Jefferson Stratford Hospital	1	404	2.5	1.6	6.1	0.0 - 15.6
Jefferson Washington Township Hospital	3	732	4.1	3.8	4.2	0.0 - 8.8
Jersey City Medical Center	5	390	12.8	5.5	9.1 **	4.0 - 14.3
Jersey Shore University Medical Center	5	2,309	2.2	4.6	1.9	0.0 - 4.2
JFK University Medical Center	6	1,003	6.0	4.2	5.5	1.9 - 9.2
Monmouth Medical Center	2	1,260	1.6	3.5	1.8	0.0 - 5.4
Monmouth Medical Center Southern Campus	2	52	38.5	11.2	13.4	3.6 - 23.3
Morristown Medical Center	9	6,090	1.5	4.8	1.2 *	0.0 - 2.6
Newark Beth Israel Medical Center	5	541	9.2	3.8	9.6 **	4.3 - 14.9
Newton Medical Center	1	137	7.3	4.2	6.8	0.0 - 16.8
Ocean University Medical Center	1	636	1.6	4.5	1.4	0.0 - 5.8

Table 6. Postoperative Sepsis (per 1,000 elective surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate ^Δ	Risk-adjusted rate	95% Confidence interval
Statewide	225	55,705	4.0	4.2	3.8	3.3 - 4.3
Overlook Medical Center-Summit	8	2,446	3.3	3.8	3.4	0.9 - 5.9
Palisades Medical Center	2	275	7.3	2.3	12.1	2.7 - 21.5
Penn Medicine Princeton Medical Center	1	805	1.2	3.1	1.6	0.0 - 6.4
Raritan Bay Medical Center-Old Bridge	1	176	5.7	2.5	8.9	0.0 - 20.3
Raritan Bay Medical Center-Perth Amboy	0	338	0.0	0.9	0.0	0.0 - 13.7
Riverview Medical Center	0	940	0.0	2.6	0.0	0.0 - 4.8
Robert Wood Johnson University Hospital	37	3,819	9.7	5.0	7.6 **	5.8 - 9.3
Robert Wood Johnson University Hospital Hamilton	2	334	6.0	3.7	6.4	0.0 - 13.3
Robert Wood Johnson University Hospital Rahway	0	127	0.0	2.1	0.0	0.0 - 14.7
Robert Wood Johnson University Hospital Somerset	1	457	2.2	3.2	2.7	0.0 - 8.9
Saint Clare's Hospital-Denville	0	344	0.0	2.7	0.0	0.0 - 7.8
Saint Clare's Hospital-Dover	0	337	0.0	1.3	0.0	0.0 - 11.7
Saint Michael's Medical Center	0	147	0.0	7.3	0.0	0.0 - 7.3
Saint Peter's University Hospital	1	529	1.9	4.5	1.6	0.0 - 6.5
Salem Medical Center	0	111	0.0	1.3	0.0	0.0 - 19.7
Shore Medical Center	2	454	4.4	2.4	7.1	0.0 - 14.4
Southern Ocean Medical Center	1	416	2.4	2.4	4.0	0.0 - 11.7
St. Francis Medical Center	1	149	6.7	6.1	4.3	0.0 - 12.2
St. Joseph's University Medical Center	7	669	10.5	4.0	10.2 **	5.6 - 14.8
St. Joseph's Wayne Medical Center	0	43	0.0	5.1	0.0	0.0 - 16.2
St. Luke's Warren Hospital	0	178	0.0	2.1	0.0	0.0 - 12.5
St. Mary's General Hospital	1	446	2.2	3.8	2.3	0.0 - 8.1
Trinitas Regional Medical Center	0	224	0.0	2.7	0.0	0.0 - 9.8
University Hospital	4	1,032	3.9	7.1	2.1	0.0 - 4.8
Valley Hospital	6	1,711	3.5	5.2	2.7	0.1 - 5.2
Virtua Memorial Hospital of Burlington County	4	998	4.0	2.9	5.4	1.0 - 9.9
Virtua Our Lady of Lourdes Hospital-Camden	5	821	6.1	6.2	3.8	0.5 - 7.2
Virtua West Jersey Hospital-Marlton	4	440	9.1	5.2	6.9	1.8 - 11.9
Virtua West Jersey Hospital-Voorhees	5	883	5.7	3.8	5.8	1.6 - 9.9
Virtua Willingboro Hospital	0	9	0.0	3.9	0.0	0.0 - 40.9

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using SAS Software, Version2022. The national numbers come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Missing (.) = Hospital did not perform the procedure during the year; or it performed less than 3 procedures (rate is not computed when the denominator is less than 3).

^ = Rates are based on denominators less than 30 and should be taken with caution.

Δ: Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference or statewide population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.14 – Postoperative wound dehiscence

- This indicator flags cases of wound dehiscence (i.e., when surgical wound in the stomach or pelvic area is split open after an operation) in patients who have undergone abdominal and pelvic surgery. Some or all of these complications may require treatment with another major operation to fix the wound. Wound dehiscence following surgery is a medical error that can be avoided. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity categories, is defined as the number of cases of re-closure of postoperative disruption of abdominal wall per 1,000 cases of abdominopelvic surgery.
- The numerator includes discharges with ICD-10-CM code for re-closure of postoperative disruption of abdominal wall in any procedure field, while the denominator includes all patients ages 18 and older with any listed ICD-10-CM procedure codes for abdominopelvic surgery.
- The following cases are excluded from the denominator or from rate calculation:
 - cases where a procedure for re-closure of postoperative disruption of abdominal wall occurs before or on the same day as the first abdominopelvic surgery procedure (*if day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available*),
 - with any-listed ICD-10-CM diagnosis codes or any-listed ICD-10-CM procedure codes for immunocompromised state,
 - cases where length of stay is less than 2 days, and
 - MDC 14 (pregnancy, childbirth, and puerperium).
- Table 7 shows the number of postoperative wound dehiscence cases among patients who have undergone abdominal and pelvic surgery by hospital, observed rates, expected rates, and risk-adjusted rates along with their corresponding 95% confidence intervals. Statewide, there were 29 postoperative wound dehiscence cases reported in 2021 for a statewide risk-adjusted rate of 0.91 per 1,000 abdominopelvic surgical discharges.

Table 7. Postoperative wound dehiscence (per 1,000 abdominopelvic surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	29	35,892	0.8	1.4	0.9	0.5 - 1.3
AtlantiCare Regional Medical Center-City	2	414	4.8	2.2	3.5	0.2 - 6.7
AtlantiCare Regional Medical Center-Mainland	2	454	4.4	1.6	4.4	0.7 - 8.0
Bayshore Medical Center	1	503	2.0	1.1	2.8	0.0 - 6.9
Bergen New Bridge Medical Center	0	22	0.0	0.9	0.0	0.0 - 22.4
Cape Regional Medical Center	0	153	0.0	1.9	0.0	0.0 - 5.7
Capital Health Medical Center-Hopewell	0	669	0.0	1.3	0.0	0.0 - 3.3
Capital Health Regional Medical Center	0	229	0.0	2.6	0.0	0.0 - 4.0
CarePoint Health-Bayonne Medical Center	0	88	0.0	2.3	0.0	0.0 - 6.9
CarePoint Health-Christ Hospital	0	234	0.0	0.9	0.0	0.0 - 6.7
CarePoint Health-Hoboken University MC	0	119	0.0	0.7	0.0	0.0 - 10.7
CentraState Medical Center	0	583	0.0	1.5	0.0	0.0 - 3.3
Chilton Memorial Hospital	0	273	0.0	1.5	0.0	0.0 - 4.7
Clara Maass Medical Center	0	471	0.0	0.8	0.0	0.0 - 5.0
Community Medical Center	0	810	0.0	1.3	0.0	0.0 - 3.0
Cooper Hospital University Medical Center	1	1,769	0.6	2.4	0.4	0.0 - 1.9
Cooperman Barnabas Medical Center	3	1,740	1.7	1.0	2.6	0.3 - 4.9
Deborah Heart and Lung Center	0	40	0.0	3.4	0.0	0.0 - 8.4
East Orange General Hospital	1	115	8.7	1.9	7.1	0.6 - 13.6
Englewood Hospital and Medical Center	0	935	0.0	0.8	0.0	0.0 - 3.6
Hackensack Meridian Health, Mountainside MC	0	788	0.0	0.5	0.0	0.0 - 5.2
Hackensack Meridian Health-Pascack Valley MC	0	364	0.0	0.7	0.0	0.0 - 5.9
Hackensack University Medical Center	2	1,767	1.1	1.4	1.3	0.0 - 3.2
Hackettstown Medical Center	0	123	0.0	2.0	0.0	0.0 - 6.2
Holy Name Medical Center	0	585	0.0	1.3	0.0	0.0 - 3.5
Hudson Regional Hospital	0	390	0.0	0.3	0.0	0.0 - 8.6
Hunterdon Medical Center	0	274	0.0	1.9	0.0	0.0 - 4.3
Inspira Medical Center Elmer	0	57	0.0	1.1	0.0	0.0 - 12.3
Inspira Medical Center Mullica Hill	2	356	5.6	1.8	4.9 **	1.1 - 8.7
Inspira Medical Center Vineland	1	531	1.9	1.3	2.3	0.0 - 6.1
Jefferson Cherry Hill Hospital	0	199	0.0	1.5	0.0	0.0 - 5.6
Jefferson Stratford Hospital	0	263	0.0	1.1	0.0	0.0 - 5.7
Jefferson Washington Township Hospital	0	497	0.0	1.8	0.0	0.0 - 3.2
Jersey City Medical Center	0	418	0.0	1.6	0.0	0.0 - 3.7
Jersey Shore University Medical Center	0	1,042	0.0	1.8	0.0	0.0 - 2.2
JFK University Medical Center	0	652	0.0	1.4	0.0	0.0 - 3.2
Monmouth Medical Center	0	546	0.0	1.3	0.0	0.0 - 3.7
Monmouth Medical Center Southern Campus	0	84	0.0	2.9	0.0	0.0 - 6.2
Morristown Medical Center	1	2,417	0.4	1.3	0.5	0.0 - 2.2
Newark Beth Israel Medical Center	1	382	2.6	1.2	3.4	0.0 - 8.0
Newton Medical Center	0	226	0.0	2.0	0.0	0.0 - 4.6
Ocean University Medical Center	1	731	1.4	1.6	1.4	0.0 - 4.3
Overlook Medical Center-Summit	1	1,321	0.8	1.3	0.9	0.0 - 3.2
Palisades Medical Center	0	252	0.0	1.8	0.0	0.0 - 4.6

Table 7. Postoperative wound dehiscence (per 1,000 abdominopelvic surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	29	35,892	0.8	1.4	0.9	0.5 - 1.3
Penn Medicine Princeton Medical Center	1	520	1.9	1.2	2.6	0.0 - 6.5
Raritan Bay Medical Center-Old Bridge	0	189	0.0	0.9	0.0	0.0 - 7.3
Raritan Bay Medical Center-Perth Amboy	0	333	0.0	0.5	0.0	0.0 - 7.2
Riverview Medical Center	1	477	2.1	1.4	2.4	0.0 - 6.2
Robert Wood Johnson University Hospital	1	1,644	0.6	1.5	0.6	0.0 - 2.6
Robert Wood Johnson University Hospital Hamilton	1	310	3.2	2.1	2.4	0.0 - 6.2
Robert Wood Johnson University Hospital Rahway	0	150	0.0	0.9	0.0	0.0 - 8.3
Robert Wood Johnson University Hospital Somerset	2	424	4.7	1.3	5.7 **	1.6 - 9.9
Saint Clare's Hospital-Denville	0	295	0.0	1.3	0.0	0.0 - 5.0
Saint Clare's Hospital-Dover	0	300	0.0	0.8	0.0	0.0 - 6.4
Saint Michael's Medical Center	0	201	0.0	1.7	0.0	0.0 - 5.3
Saint Peter's University Hospital	0	547	0.0	1.1	0.0	0.0 - 4.0
Salem Medical Center	0	55	0.0	1.3	0.0	0.0 - 11.5
Shore Medical Center	0	312	0.0	1.5	0.0	0.0 - 4.6
Southern Ocean Medical Center	0	371	0.0	1.5	0.0	0.0 - 4.2
St. Francis Medical Center	0	84	0.0	3.0	0.0	0.0 - 6.0
St. Joseph's University Medical Center	1	873	1.1	1.3	1.3	0.0 - 4.2
St. Joseph's Wayne Medical Center	0	259	0.0	0.9	0.0	0.0 - 6.5
St. Luke's Warren Hospital	0	134	0.0	1.9	0.0	0.0 - 6.2
St. Mary's General Hospital	0	312	0.0	0.8	0.0	0.0 - 6.1
Trinitas Regional Medical Center	0	288	0.0	1.3	0.0	0.0 - 5.0
University Hospital	0	603	0.0	2.0	0.0	0.0 - 2.8
Valley Hospital	1	963	1.0	1.5	1.1	0.0 - 3.6
Virtua Memorial Hospital of Burlington County	0	640	0.0	1.1	0.0	0.0 - 3.6
Virtua Our Lady of Lourdes Hospital-Camden	2	392	5.1	1.7	4.7	0.9 - 8.5
Virtua West Jersey Hospital-Marlton	0	360	0.0	1.5	0.0	0.0 - 4.2
Virtua West Jersey Hospital-Voorhees	0	897	0.0	1.3	0.0	0.0 - 2.8
Virtua Willingboro Hospital	0	73	0.0	1.2	0.0	0.0 - 10.5

Source: New Jersey numbers are derived from the **2019 NJ UB Data** using SAS Software, Version2022. The national numbers (Table 12) come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Missing (.) = Hospital did not perform the procedure during the year; or it performed less than 3 procedures (rate is not computed when the denominator is less than 3).

^ = Rates are based on denominators less than 30 and should be taken with caution.

Δ : Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference or statewide population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.15 - Abdominopelvic Accidental Puncture or Laceration

- This indicator measures the occurrence of complications that arise due to technical difficulties in medical care, specifically, those involving an accidental puncture or laceration. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity categories, is defined as the number of patients who had an accidental cut or lacerations (secondary diagnosis) during a medical procedure per 1,000 discharges.
- The numerator refers to all discharges with any secondary ICD-10-CM code denoting technical difficulty (e.g., accidental cut, puncture, perforation, or laceration) during a procedure.
- The denominator refers to all medical and surgical discharges age 18 and older defined by specific DRG or MS-DRG codes, excluding cases:
 - with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for accidental puncture or laceration during a procedure,
 - with any listed ICD-10-CM procedure codes for spine surgery, and
 - MDC 14 (pregnancy, childbirth, and puerperium).
- Table 8 shows the number of cases of accidental puncture or laceration among all discharges with ICD-10-CM code denoting technical difficulty (e.g., accidental cut, puncture, perforation, or laceration) in any secondary diagnosis field by hospital along with observed and expected rates as well as risk-adjusted rates with their corresponding 95% confidence intervals. Statewide, there were 111 cases of accidental punctures or lacerations out of 119,105 eligible patients reported in 2021 for a risk-adjusted rate of 0.96 per 1,000 discharges.

Table 8. Abdominopelvic Accidental Puncture or Laceration (per 1,000 medical and surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	111	119,105	0.9	0.9	1.0	0.8 - 1.1
AtlantiCare Regional Medical Center-City	5	1,604	3.1	1.0	2.9 **	1.4 - 4.4
AtlantiCare Regional Medical Center-Mainland	2	1,686	1.2	0.9	1.3	0.0 - 2.9
Bayshore Medical Center	0	1,419	0.0	0.9	0.0	0.0 - 1.7
Bergen New Bridge Medical Center	0	308	0.0	0.3	0.0	0.0 - 6.1
Cape Regional Medical Center	0	792	0.0	0.8	0.0	0.0 - 2.4
Capital Health Medical Center-Hopewell	1	1,640	0.6	1.2	0.5	0.0 - 1.8
Capital Health Regional Medical Center	0	720	0.0	0.9	0.0	0.0 - 2.4
CarePoint Health-Bayonne Medical Center	0	563	0.0	0.8	0.0	0.0 - 2.8
CarePoint Health-Christ Hospital	2	843	2.4	0.9	2.5	0.3 - 4.7
CarePoint Health-Hoboken University MC	2	346	5.8	0.8	7.5 **	3.7 - 11.2
CentraState Medical Center	0	1,752	0.0	0.9	0.0	0.0 - 1.5
Chilton Memorial Hospital	0	1,413	0.0	0.7	0.0	0.0 - 1.9
Clara Maass Medical Center	0	1,741	0.0	0.7	0.0	0.0 - 1.7
Community Medical Center	0	3,037	0.0	0.9	0.0	0.0 - 1.2
Cooper Hospital University Medical Center	8	5,107	1.6	1.2	1.3	0.5 - 2.0
Cooperman Barnabas Medical Center	9	4,455	2.0	1.1	1.8	0.9 - 2.7
Deborah Heart and Lung Center	0	258	0.0	1.2	0.0	0.0 - 3.4
East Orange General Hospital	0	491	0.0	0.5	0.0	0.0 - 3.8
Englewood Hospital and Medical Center	0	2,608	0.0	0.9	0.0	0.0 - 1.2
Hackensack Meridian Health, Mountainside MC	0	1,884	0.0	0.9	0.0	0.0 - 1.5
Hackensack Meridian Health-Pascack Valley MC	0	596	0.0	0.8	0.0	0.0 - 2.8
Hackensack University Medical Center	4	5,789	0.7	1.1	0.6	0.0 - 1.4
Hackettstown Medical Center	0	601	0.0	0.8	0.0	0.0 - 2.8
Holy Name Medical Center	6	1,460	4.1	1.2	3.4 **	2.0 - 4.9
Hudson Regional Hospital	1	707	1.4	0.5	2.6	0.0 - 5.7
Hunterdon Medical Center	0	957	0.0	0.9	0.0	0.0 - 2.1
Inspira Medical Center Elmer	0	187	0.0	0.8	0.0	0.0 - 4.9
Inspira Medical Center Mullica Hill	2	1,429	1.4	0.9	1.5	0.0 - 3.2
Inspira Medical Center Vineland	1	2,161	0.5	0.8	0.6	0.0 - 2.1
Jefferson Cherry Hill Hospital	1	946	1.1	0.7	1.5	0.0 - 3.9
Jefferson Stratford Hospital	0	983	0.0	0.6	0.0	0.0 - 2.5
Jefferson Washington Township Hospital	1	1,618	0.6	0.9	0.7	0.0 - 2.3
Jersey City Medical Center	2	1,401	1.4	0.9	1.5	0.0 - 3.1
Jersey Shore University Medical Center	3	3,569	0.8	1.2	0.7	0.0 - 1.6
JFK University Medical Center	3	2,565	1.2	0.9	1.2	0.0 - 2.4
Monmouth Medical Center	3	1,609	1.9	1.3	1.4	0.1 - 2.7
Monmouth Medical Center Southern Campus	0	594	0.0	0.9	0.0	0.0 - 2.6
Morristown Medical Center	11	6,061	1.8	1.2	1.4	0.7 - 2.1
Newark Beth Israel Medical Center	0	1,712	0.0	0.9	0.0	0.0 - 1.5
Newton Medical Center	2	1,115	1.8	0.8	2.2	0.2 - 4.3

Table 8. Abdominopelvic Accidental Puncture or Laceration (per 1,000 medical and surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate Δ	Risk-adjusted rate	95% Confidence interval
Statewide	111	119,105	0.9	0.9	1.0	0.8 - 1.1
Ocean University Medical Center	1	2,524	0.4	0.9	0.4	0.0 - 1.6
Overlook Medical Center-Summit	1	4,000	0.3	1.0	0.2	0.0 - 1.2
Palisades Medical Center	1	866	1.2	0.7	1.6	0.0 - 4.0
Penn Medicine Princeton Medical Center	0	1,721	0.0	0.9	0.0	0.0 - 1.6
Raritan Bay Medical Center-Old Bridge	0	775	0.0	0.5	0.0	0.0 - 3.0
Raritan Bay Medical Center-Perth Amboy	0	778	0.0	0.6	0.0	0.0 - 2.8
Riverview Medical Center	3	1,637	1.8	1.0	1.8	0.3 - 3.2
Robert Wood Johnson University Hospital	10	6,080	1.6	1.0	1.6	0.8 - 2.4
Robert Wood Johnson University Hospital Hamilton	4	1,157	3.5	1.0	3.5 **	1.7 - 5.3
Robert Wood Johnson University Hospital Rahway	2	829	2.4	0.5	4.5 **	1.6 - 7.4
Robert Wood Johnson University Hospital Somerset	1	1,893	0.5	0.7	0.7	0.0 - 2.3
Saint Clare's Hospital-Denville	0	792	0.0	0.9	0.0	0.0 - 2.2
Saint Clare's Hospital-Dover	0	665	0.0	0.7	0.0	0.0 - 2.9
Saint Michael's Medical Center	0	701	0.0	0.7	0.0	0.0 - 2.7
Saint Peter's University Hospital	0	1,788	0.0	0.9	0.0	0.0 - 1.5
Salem Medical Center	0	223	0.0	0.5	0.0	0.0 - 5.6
Shore Medical Center	0	1,203	0.0	0.8	0.0	0.0 - 2.0
Southern Ocean Medical Center	0	1,491	0.0	0.8	0.0	0.0 - 1.8
St. Francis Medical Center	0	355	0.0	0.7	0.0	0.0 - 3.8
St. Joseph's University Medical Center	5	2,904	1.7	0.9	2.0	0.8 - 3.2
St. Joseph's Wayne Medical Center	0	758	0.0	0.7	0.0	0.0 - 2.5
St. Luke's Warren Hospital	0	861	0.0	0.7	0.0	0.0 - 2.4
St. Mary's General Hospital	1	1,400	0.7	0.7	1.0	0.0 - 3.0
Trinitas Regional Medical Center	2	1,103	1.8	0.8	2.3	0.3 - 4.4
University Hospital	3	2,443	1.2	1.0	1.2	0.0 - 2.5
Valley Hospital	2	2,734	0.7	1.1	0.6	0.0 - 1.7
Virtua Memorial Hospital of Burlington County	2	2,399	0.8	0.7	1.2	0.0 - 2.6
Virtua Our Lady of Lourdes Hospital-Camden	1	1,755	0.6	0.8	0.7	0.0 - 2.3
Virtua West Jersey Hospital-Marlton	1	1,313	0.8	0.9	0.8	0.0 - 2.6
Virtua West Jersey Hospital-Voorhees	2	2,749	0.7	1.0	0.7	0.0 - 1.9
Virtua Willingboro Hospital	0	481	0.0	0.5	0.0	0.0 - 3.8

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using SAS Software, Version 2022. The national numbers come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

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

Missing (.) = Hospital did not perform the procedure during the year; or it performed less than 3 procedures (rate is not computed when the denominator is less than 3).

Δ : Expected rate is the rate the hospital would have if it had the same case-mix (e.g., age, gender, DRG, and comorbidity categories) as the reference or statewide population. If the observed rate is higher than the expected rate (i.e., the ratio of observed to expected is greater than 1.0), it suggests that the hospital performed worse than the reference population on that indicator.

PSI.17 - Birth trauma - injury to neonate

- This indicator flags cases of birth trauma among all newborns in a hospital. Birth trauma (injury to neonate) is caused by medical complications during labor and delivery. The rate is defined as the number of cases of birth trauma (injury to neonate) per 1,000 live births. No risk-adjustment is made to this indicator and no significance tests performed as a result.
- The numerator includes discharges with ICD-10-CM code for birth trauma in any diagnosis field excluding infants with a subdural or cerebral hemorrhage and any diagnosis code of pre-term infant (i.e., births with birth weight of <2,000 grams and <37 gestation weeks or <=34 gestation weeks). It also excludes infants with diagnosis code of osteogenesis imperfecta.
- The denominator includes all livebirths (newborns).
- Table 9 shows the number of 'birth trauma - injury to neonate' cases among infants born alive and the observed rates by hospital. Statewide, there were 296 cases of 'birth trauma - injury to neonate' among 93,755 livebirths reported in 2021, for an observed rate of 3.16 per 1,000 newborns/livebirths.

Table 9. Birth Trauma - Injury to Neonate (per 1,000 livebirths)

Hospital	# of cases	# of livebirths	Observed rate
Statewide	296	93,755	3.2
AtlantiCare Regional Medical Center-City	0	1	0.0 Ω
AtlantiCare Regional Medical Center-Mainland	7	2,003	3.5
Cape Regional Medical Center	0	253	0.0
Capital Health Medical Center-Hopewell	2	3,550	0.6
CarePoint Health-Hoboken University MC	4	849	4.7
CentraState Medical Center	1	658	1.5
Chilton Memorial Hospital	0	519	0.0
Clara Maass Medical Center	6	1,655	3.6
Community Medical Center	5	2,169	2.3
Cooper Hospital University Medical Center	2	1,949	1.0
Cooperman Barnabas Medical Center	27	6,278	4.3
Englewood Hospital and Medical Center	1	2,953	0.3
Hackensack Meridian Health, Mountainside MC	8	839	9.5
Hackensack Meridian Health-Pascack Valley MC	3	1,276	2.4
Hackensack University Medical Center	25	4,746	5.3
Holy Name Medical Center	10	1,560	6.4
Hudson Regional Hospital	3	163	18.4
Hunterdon Medical Center	5	956	5.2
Inspira Medical Center Elmer	0	253	0.0
Inspira Medical Center Mullica Hill	3	1,159	2.6
Inspira Medical Center Vineland	6	1,272	4.7
Jefferson Stratford Hospital	0	1	0.0 Ω
Jefferson Washington Township Hospital	3	862	3.5
Jersey City Medical Center	4	1,981	2.0
Jersey Shore University Medical Center	35	3,113	11.2
JFK University Medical Center	9	1,527	5.9
Monmouth Medical Center	22	6,185	3.6
Morristown Medical Center	6	4,911	1.2
Newark Beth Israel Medical Center	4	2,367	1.7
Newton Medical Center	1	510	2.0
Ocean University Medical Center	12	769	15.6
Overlook Medical Center-Summit	2	2,486	0.8
Palisades Medical Center	5	864	5.8
Penn Medicine Princeton Medical Center	2	2,058	1.0
Raritan Bay Medical Center-Perth Amboy	0	1,005	0.0
Riverview Medical Center	14	1,363	10.3
Robert Wood Johnson University Hospital	22	2,464	8.9
Robert Wood Johnson University Hospital Somerset	4	866	4.6
Saint Clare's Hospital-Denville	1	1,152	0.9

Table 9. Birth Trauma - Injury to Neonate (per 1,000 livebirths)

Hospital	# of cases	# of livebirths	Observed rate
Statewide	296	93,755	3.2
Saint Peter's University Hospital	11	5,087	2.2
Shore Medical Center	1	836	1.2
Southern Ocean Medical Center	2	388	5.2
St. Joseph's University Medical Center	2	2,814	0.7
St. Mary's General Hospital	0	563	0.0
Trinitas Regional Medical Center	4	1,121	3.6
University Hospital	1	1,173	0.9
Valley Hospital	4	3,488	1.1
Virtua Memorial Hospital of Burlington County	4	2,139	1.9
Virtua Our Lady of Lourdes Hospital-Camden	0	654	0.0
Virtua West Jersey Hospital-Voorhees	3	5,947	0.5

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using SAS Software, Version2022. The national numbers come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

Ω - indicates that it could be coding error. A denominator of 1 can happen very rarely. So, the hospital may not have performed the procedure during the year in question.

Note that this indicator is measured using observed rate only. Risk-adjustment is no more made on this indicator.

Newborn or livebirth is defined as any neonate with either 1) an ICD-10-CM diagnosis code for an in-hospital live-born birth or 2) an admission type of newborn (ATYPE=4), age in days at admission equaling zero, and not an ICD-10-CM diagnosis code for an out-of-hospital birth. A neonate is defined as any discharge with age in days at admission between zero and 28 days (inclusive). If age in days is missing, then a neonate is defined as any DRG in MDC 15, an admission type of newborn (ATYPE=4), or an ICD-10-CM diagnosis code for an in-hospital live-born birth.)

Birth trauma injuries per 1,000 newborns (as a quality indicator) excludes preterm infants with a birth weight less than 2,000 grams, and cases with osteogenesis imperfecta. Exclude cases: • with any listed ICD-10-CM diagnosis codes for preterm infant with a birth weight less than 2,000 grams (PRETEID*) • with any listed ICD-10-CM diagnosis codes for osteogenesis imperfecta (OSTEOID*) • with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

PSI.18 - Obstetric trauma - vaginal delivery with instrument

- This indicator flags potentially preventable trauma cases during instrument-assisted vaginal delivery. The rate is defined as the number of obstetric trauma cases (3rd or 4th degree lacerations, other obstetric lacerations) per 1,000 instrument-assisted vaginal deliveries. No risk-adjustment is made to this indicator and no significance tests performed as a result.
- The numerator refers to the number of cases of obstetric trauma on births with instrument-assisted vaginal deliveries.
- The denominator includes all vaginal delivery discharges with any listed ICD-10-CM procedure code for instrument-assisted delivery.
- Table 10 shows the number of obstetric trauma cases (obstetric trauma – vaginal delivery with instrument) among instrument-assisted vaginal delivery discharges and their corresponding observed rates, by hospital. Statewide, there were 401 cases of obstetric trauma among instrument-assisted vaginal deliveries reported in 2021 yielding a rate of 106.45 per 1,000 instrument-assisted vaginal delivery discharges.

Table 10. Obstetric trauma - vaginal delivery with instrument (per 1,000 instrument-assisted vaginal deliveries)

Hospital	# of cases	# of discharges	Obs. rate
Statewide	401	3,767	106.5
AtlantiCare Regional Medical Center-Mainland	1	26	38.5
Cape Regional Medical Center	1	5	200.0 ^
Capital Health Medical Center-Hopewell	18	119	151.3
CarePoint Health-Hoboken University MC	1	14	71.4 ^
CentraState Medical Center	0	16	0.0 ^
Chilton Memorial Hospital	0	37	0.0
Clara Maass Medical Center	4	52	76.9
Community Medical Center	10	89	112.4
Cooper Hospital University Medical Center	16	111	144.1
Cooperman Barnabas Medical Center	36	342	105.3
Englewood Hospital and Medical Center	15	190	78.95
Hackensack Meridian Health, Mountainside MC	3	73	41.1
Hackensack Meridian Health-Pascack Valley MC	6	88	68.2
Hackensack University Medical Center	29	304	95.4
Holy Name Medical Center	5	58	86.21
Hudson Regional Hospital	1	8	125.0
Hunterdon Medical Center	2	31	64.5
Inspira Medical Center Elmer	0	3	0.0 ^
Inspira Medical Center Mullica Hill	1	26	38.5
Inspira Medical Center Vineland	0	39	0.0
Jefferson Washington Township Hospital	1	15	66.7 ^
Jersey City Medical Center	4	43	93.0
Jersey Shore University Medical Center	15	172	87.2
JFK University Medical Center	3	40	75
Monmouth Medical Center	21	256	82.0
Morristown Medical Center	48	202	237.62
Newark Beth Israel Medical Center	6	65	92.3
Newton Medical Center	1	23	43.5
Ocean University Medical Center	1	22	45.5 ^
Overlook Medical Center-Summit	4	84	47.6
Palisades Medical Center	3	29	103.5
Penn Medicine Princeton Medical Center	16	86	186.1
Raritan Bay Medical Center-Perth Amboy	2	27	74.1 ^
Riverview Medical Center	12	93	129.0
Robert Wood Johnson University Hospital	5	79	63.3

Table 10. Obstetric trauma - vaginal delivery with instrument (per 1,000 instrument-assisted vaginal deliveries)

Hospital	# of cases	# of discharges	Obs. rate
Statewide	401	3,767	106.5
Robert Wood Johnson University Hospital Somerset	10	77	129.9
Saint Clare's Hospital-Denville	11	41	268.3
Saint Peter's University Hospital	28	182	153.85
Shore Medical Center	1	6	166.7 ^
Southern Ocean Medical Center	2	16	125.0 ^
St. Joseph's University Medical Center	0	76	0.0
St. Mary's General Hospital	0	12	0.0 ^
Trinitas Regional Medical Center	3	22	136.4 ^
University Hospital	1	27	37.04 ^
Valley Hospital	11	125	88.0
Virtua Memorial Hospital of Burlington County	7	68	102.9
Virtua Our Lady of Lourdes Hospital-Camden	0	19	0.0 ^
Virtua West Jersey Hospital-Voorhees	36	229	157.2

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using the AHRQ SAS Software, Version 2022. The national numbers come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

^ = Rate is based on a denominator less than 30, and should be taken with caution.

Note that this indicator is measured using observed rate only. Risk-adjustment is no more made on this indicator because materially important risk factors (e.g., whether the mother is nulliparous or multiparous or the size of the infant) are not available in the Healthcare Cost and Utilization Project (HCUP) State Inpatient Database (SID), which is used for standardization in the AHRQ modules.

PSI.19 - Obstetric trauma - vaginal delivery without instrument

- This indicator flags cases of potentially preventable obstetric trauma during a vaginal delivery without assistance of medical instrument. The rate is defined as the number of obstetric trauma cases (3rd and 4th degree lacerations) per 1,000 vaginal deliveries that occurred without assistance of medical instrument. No risk-adjustment is made to this indicator and no significance tests performed as a result.
- The numerator includes all discharges with ICD-10-CM code for obstetric trauma in any diagnosis or procedure field (excluding instrument-assisted delivery).
- The denominator includes all vaginal delivery discharges identified by DRG or MS-DRG codes excluding cases with any listed ICD-10-CM procedure codes for instrument-assisted delivery.
- Table 11 shows the number of cases of obstetric trauma - vaginal delivery without instrument among all vaginal deliveries by hospital. Statewide, there were 942 cases reported for obstetric trauma - vaginal delivery without instrument in 2021. The statewide rate for this indicator was 15.85 per 1,000 vaginal deliveries.

Table 11. Obstetric trauma - vaginal deliveries without instrument (per 1,000 vaginal delivery discharges)

Hospital	# of cases	# of discharges	Observed rate
Statewide	942	59,447	15.8
AtlantiCare Regional Medical Center-Mainland	10	1,256	8.0
Cape Regional Medical Center	2	147	13.6
Capital Health Medical Center-Hopewell	40	2,395	16.7
CarePoint Health-Hoboken University MC	12	478	25.1
CentraState Medical Center	3	389	7.7
Chilton Memorial Hospital	0	291	0.0
Clara Maass Medical Center	1	944	1.1
Community Medical Center	13	1,426	9.1
Cooper Hospital University Medical Center	24	1,315	18.3
Cooperman Barnabas Medical Center	79	3,687	21.4
Englewood Hospital and Medical Center	26	1,903	13.7
Hackensack Meridian Health, Mountainside MC	9	401	22.4
Hackensack Meridian Health-Pascack Valley MC	7	757	9.2
Hackensack University Medical Center	35	2,763	12.7
Holy Name Medical Center	10	860	11.6
Hudson Regional Hospital	0	96	0.0
Hunterdon Medical Center	15	620	24.2
Inspira Medical Center Elmer	11	202	54.5
Inspira Medical Center Mullica Hill	22	784	28.1
Inspira Medical Center Vineland	4	933	4.3
Jefferson Cherry Hill Hospital	0	1	Ω
Jefferson Stratford Hospital	0	3	Ω
Jefferson Washington Township Hospital	10	555	18.018
Jersey City Medical Center	31	1,209	25.6
Jersey Shore University Medical Center	41	1,979	20.7
JFK University Medical Center	11	1,031	10.7
Monmouth Medical Center	60	4,879	12.3
Morristown Medical Center	54	3,110	17.4
Newark Beth Israel Medical Center	14	1,478	9.5
Newton Medical Center	4	316	12.7
Ocean University Medical Center	4	531	7.5
Overlook Medical Center-Summit	16	1,612	9.9
Palisades Medical Center	9	555	16.2
Penn Medicine Princeton Medical Center	26	1,275	20.4
Raritan Bay Medical Center-Old Bridge	0	2	Ω

Table 11. Obstetric trauma - vaginal deliveries without instrument (per 1,000 vaginal delivery discharges)

Hospital	# of cases	# of discharges	Observed rate
Statewide	942	59,447	15.8
Raritan Bay Medical Center-Perth Amboy	5	617	8.104
Riverview Medical Center	11	778	14.1
Robert Wood Johnson University Hospital	23	1,597	14.4
Robert Wood Johnson University Hospital Somerset	11	490	22.4
Saint Clare's Hospital-Denville	26	718	36.2
Saint Peter's University Hospital	98	3,134	31.3
Shore Medical Center	11	482	22.8
Southern Ocean Medical Center	7	222	31.5
St. Joseph's University Medical Center	6	1,471	4.1
St. Mary's General Hospital	1	277	3.6
Trinitas Regional Medical Center	9	690	13.0
University Hospital	6	845	7.1
Valley Hospital	40	2,134	18.7
Virtua Memorial Hospital of Burlington County	23	1,395	16.5
Virtua Our Lady of Lourdes Hospital-Camden	6	479	12.5
Virtua West Jersey Hospital-Voorhees	56	3,935	14.2

Source: New Jersey numbers are derived from the **2021 NJ UB Data** using the AHRQ SAS Software, Version 2022. The national numbers come from AHRQ's Benchmark Data Tables derived from analysis of the 2019 HCUP - State Inpatient Database (SID) using the same Version.

Ω - Could be Coding Error

Note that this indicator is measured using observed rate only. Risk-adjustment is no more made on this indicator because materially important risk factors (e.g., whether the mother is nulliparous or multiparous or the size of the infant) are not available in the Healthcare Cost and Utilization Project (HCUP) State Inpatient Database (SID), which is used for standardization in the AHRQ modules.

Statewide PSI Average Rates Compared to National Rates

It needs to be emphasized that the Quality Indicators (QIs) developed by the Agency for Healthcare Research and Quality (AHRQ) are standardized, evidence-based measures of health care quality that can be used with readily available hospital inpatient administrative data to measure and track clinical performance and outcomes.

As stated earlier, the New Jersey statewide estimates are derived from the NJ UB data using the Quality Indicators (QIs) SAS Software for PSIs. NJ's 2016 to 2019 estimates are calculated using the QIs SAS Software (i.e., Versions 2019 & 2020), These versions are is based on the ICD-10-CM/PCS Diagnosis and Procedure Codes, while the 2013 to 2015 estimates, which are based on ICD-9-CM codes are calculated using earlier versions of the Software. Table 12 below shows National PSIs estimates for 2010 to 2017 (estimates for 2014 and 2015 are not available); and New Jersey's statewide estimates for the years 2010 through 2019. The national estimates come from AHRQ's National Comparative Data derived from the Nationwide Inpatient Sample (NIS) data, which in turn is extracted from the State Inpatient Data (SID) that comes from all participating States nationwide including New Jersey. A Federal agency called HCUP (Healthcare Cost & Utilization Project) compiles and manages UB datasets that come from participating States. Currently, 49 States and the District of Columbia are participating in the HCUP database programs.

HCUP is the Nation's most comprehensive source of hospital data, including information on inpatient care, ambulatory care, and emergency department visits. HCUP enables researchers, insurers, policymakers and others to study health care delivery and patient outcomes over time, and at the national, regional, State, and community levels.

Some Highlights from Table 12:

- NJ hospitals have shown dramatic improvements since the Department started reporting on Patient Safety Indicators (PSIs) in its Hospital Performance Report. Some of the PSIs (i.e., State-level averages) that showed significant improvement over the last ten years include:
 - Retained Surgical Item or Unretrieved Device Fragment declined from 38 cases in 2011 to 11 in 2021 – quite an improvement.
 - Post-operative PE or DVT declined from 6.56 per 1,000 in 2010 to 3.35 in 2021.

- Post-operative Sepsis fell from 14.45 per 1,000 in 2010 to 3.76 in 2021. It should be noted that the drastic drop could also be due to changes made on the indicator definitions when the transition from ICD-09 to ICD-10 was made in 2016.
- Post-operative Wound Dehiscence declined from 1.96 per 1,000 in 2010 to 0.31 in 2019 but slightly increased to 0.91 in 2021. .
- Perioperative Hemorrhage or Hematoma declined from 5.31 per 1,000 in 2013 to 2.16 in 2021.
- Birth Trauma - Injury to Neonate has increased from 2.56 per 1,000 livebirths in 2010 to 3.16 in 2021.
- Obstetric Trauma - Vaginal Delivery with Instrument declined from 133.60 per 1,000 in 2010 to 1106.45 in 2021.
- Obstetric Trauma - Vaginal Delivery without Instrument declined from 22.55 per 1,000 in 2010 to 15.85 in 2021
- Overall, New Jersey performed better than or equal to the national averages for most of the 10 PSIs that are measured using rates. As shown in the table, the only indicator where New Jersey performed slightly but persistently worse than the national averages is Postoperative PE/DVT.

Table 12. Comparing New Jersey's Statewide PSI Rates with National Rates (per 1,000 medical and surgical discharges)

Patient Safety Indicators (PSIs)						
	2012	2013	2016	2017	2018	2019
Retained Surgical Item or Unretrieved Device Fragment (PSI.05) Ω	973	852	694	619	629	597
Iatrogenic Pneumothorax (PSI-06)	0.34	0.32	0.21	0.19	0.19	0.17
In Hospital Fall with Hip Fracture (PSI.08)	0.04	0.08	0.08	0.07	0.07	0.07
Post-operative Hemorrhage or Hematoma (PSI.09)	5.11	4.52	2.29	2.25	2.39	2.25
Post-operative PE or DVT (PSI.12)	4.99	3.72	3.45	3.37	3.41	3.23
Post-operative Sepsis (PSI.13)	9.61	4.26	4.05	3.97	4.09	3.91
Post-operative Wound Dehiscence (PSI.14)	1.86	1.71	0.69	0.67	0.80	1.58
Abdominopelvic Accidental Puncture/Laceration (PSI.15)	1.89	0.73	1.06	1.04	1.04	0.97
Transfusion Reaction (PSI.16) $\Omega \mu$	38	38	-	-	-	-
Birth Trauma - Injury to Neonate (PSI.17)	1.89	1.97	4.63	4.77	4.48	4.60
Obstetric Trauma - Vaginal Delivery with Instrument (PSI.18)	133.19	127.87	109.90	115.42	116.01	117.23
Obstetric Trauma - Vaginal Delivery without Instrument (PSI.19)	20.97	19.97	17.30	17.63	17.44	17.48

PSIs (abbreviated)	New Jersey									
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
PSI.05 Ω	38	28	32	23	13	16	17	13	10	11
PSI.06	0.32	0.27	0.28	0.23	0.19	0.17	0.15	0.14	0.17	0.13
PSI.08	0.03	0.02	0.03	0.03	0.04	0.06	0.05	0.06	0.07	0.07
PSI.09	4.72	5.31	4.85	4.41	2.39	2.12	2.33	2.22	2.20	2.16
PSI.12	5.51	6.74	6.11	5.48	3.99	4.05	4.02	3.42	3.75	3.35
PSI.13	11.07	9.11	10.42	8.09	3.79	3.73	3.24	3.45	3.80	3.76
PSI.14	1.67	1.49	1.45	1.24	0.53	0.58	0.59	0.31	0.63	0.91
PSI.15	1.22	1.63	1.37	1.05	0.94	0.90	0.85	0.92	0.84	0.97
PSI.16 $\Omega \mu$	1	1	1	0	-	-	-	-	.	.
PSI.17	1.73	1.54	1.55	1.98	2.45	2.19	2.41	1.87	2.44	3.16
PSI.18	126.00	124.05	112.58	96.00	82.96	109.38	112.11	117.33	114.68	106.45
PSI.19	19.07	17.30	16.44	13.33	14.80	14.62	14.43	14.59	14.79	15.85

New Jersey's rates are derived from the NJ UB database, while the national numbers come from AHRQ's Benchmark Data Tables derived from analysis of the HCUP - State Inpatient Database (SID).

Ω - Indicator reported in volume instead of rate, because it is a rare event.

μ - Indicator no more used as quality measure. AHRQ has decided to retire this PSI measure since 2016 (i.e., since transition to ICD-10-CM/PCS)

National Rates for 2014 and 2015 - not available.

'Retained Surgical Item or Unretrieved Device Fragment' was formerly called 'Foreign Body Left in During Procedure'

Summary of findings

This report presents occurrences of adverse events (patient safety indicators) during hospitalization in each of New Jersey hospitals. For 10 of the 12 PSIs, observed, expected and risk-adjusted occurrence rates are provided along with confidence intervals (where applicable) to help make a statistical assessment of patient safety in New Jersey hospitals. Statewide and national estimates are also provided to help compare hospital performance to the state or to the national rates.

Comparison of a hospital's rate to the statewide rate (presented in the top row of a hospital-level PSI table) is one way to assess how well that hospital performed among its peers. A hospital's peers could be defined at many levels (e.g., teaching hospitals, urban hospitals, suburban hospitals, etc.). It is suggested that a hospital's performance be assessed by looking at its performance across the several PSI estimates presented in the 12 Tables.

According to the 2021 New Jersey data, there are substantial variations by hospital in rates of adverse events. Some hospitals exhibit significantly higher adverse event rates than the corresponding statewide rates while others have significantly lower rates.

The performances of hospitals suggested by the patient safety indicators in this report may reflect factors that do not relate to hospital performance, such as patient or physician preference, stage of illness, age, other accompanying illnesses or conditions, or the availability of specialized equipment or doctors. While the data analysis method tries to adjust for many of these factors, it is often not possible to account for all of them through statistical analysis.

Consumers should remember that doctors direct and oversee the medical care that is delivered in hospitals, prescribe tests, and prescribe medications and treatments. This report does not separate the effect of the doctor from the effect of the hospital. The quality of patient care provided in a hospital comes from how well its doctors, nurses, support staff and management work together as well as the technology and other resources available in the facility. This report is not designed to help consumers and their families choose treatment options but to help them discuss patient safety issues with their physicians.

References

Patient Safety Indicators Technical Specifications Updates - Version v2020 (ICD 10-CM/PCS), October 2020:
https://www.qualityindicators.ahrq.gov/Modules/PSI_TechSpec_ICD10_v2019.aspx

AHRQ Quality Indicator: Benchmark Data Tables for the PSI based on the Nationwide Inpatient Sample (NIS).

http://www.qualityindicators.ahrq.gov/Modules/psi_resources.aspx

Health Care Quality Assessment, *Patient Safety Indicators: Technical Reports:*

<http://www.nj.gov/health/healthcarequality/qi.shtml>.

For inquiries, contact the New Jersey Department of Health and Senior Services, Office of Health Care Quality Assessment, by calling (800) 418-1397, by emailing at Markos.Ezra@doh.nj.gov by fax at (609) 984-7735.