

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: www.nj.gov/health/healthcarequality/qi.shtml.

This report, presents findings resulting from the application of the Patient Safety Indicator (PSI) module to the 2010 New Jersey hospital discharge (UB) data. The PSI module contains 18 hospital-level 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, 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. Description of the Patient Safety Indicators module, Interpretation of the PSI measures as well as 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 tables present adverse events 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 three birth delivery related PSIs because the

module does not risk-adjust these indicators. Two indicators – foreign body left during procedure and transfusion reaction - are reported in volume only because they are very rare events, commonly referred to as ‘never-events’. 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 health 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, 9th Revision, Clinical Modification, (ICD-9-CM) codes, review by a clinician panel, implementation of risk adjustment, and empirical analyses.

- Death in low mortality DRGs (PSI.02)
- Pressure ulcer (PSI.03)

- Death among surgical inpatients (PSI.04)
- Foreign body left in during procedure (PSI.05)*
- Iatrogenic pneumothorax (PSI.06)*
- Central venous catheter-related bloodstream infections (PSI.07)
- Postoperative hip fracture (PSI.08)*
- Postoperative hemorrhage or hematoma (PSI.09)*
- Postoperative physiologic and metabolic derangements (PSI.10)
- Postoperative respiratory failure (PSI.11)
- Postoperative pulmonary embolism or deep vein thrombosis (PSI.12)*
- Postoperative sepsis (PSI.13)*
- Postoperative wound dehiscence (PSI.14)*
- Accidental puncture and 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)*

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. Fifteen of the 18 PSIs are related to surgical or medical discharges while the remaining 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 12 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?

The PSIs software module 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. Observed rates are the raw rates, while the expected and risk-adjusted rates are rates derived from applying the average case-mix of a baseline file that reflects a large proportion of the U.S. hospitalized population.

Observed rates: Observed rates are raw rates generated by the software from the data under analysis. An observed rate is defined as the number of events of interest (numerator) divided by the population at risk (denominator). 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).

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 44 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 users' data. Thus, 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.

Risk-adjustment in the latest PSI module (Version 4.2) 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 the analysis determines which rates one should use in evaluating the performance of a hospital. If the user'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 population rate is higher than the expected rate, then the hospital's case-mix is less severe than the reference population. If the population rate is lower than the 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 (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 12 PSI estimates presented in the Tables.

A hospital's rate is statistically significantly above (designated 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 (designated by a single asterisk) the statewide rate if the statewide rate falls completely above the hospital 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 Post-operative sepsis (Table 6) for Bergen Regional Medical Center and St. Joseph's Hospital and Medical Center are 64.0 and 26.4 per 1,000 elective surgical discharges, respectively. St. Joseph's rate of 26.4, which is derived from 11 adverse events among 435 elective surgical discharges, has a 95% confidence interval of 15.9 – 37.0 and is considered statistically significantly higher than the statewide rate of 14.5 per 1,000 because the confidence interval range is completely above the statewide average. By comparison, Bergen's rate of 64.0, which is derived from 1 adverse event among 33 elective surgeries, has a 95% confidence interval of 9.2 – 118.8 and is not statistically significantly different from the statewide rate of 14.5 per 1,000 because the statewide average falls within the confidence interval range.

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.

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.

- In some cases, the PSIs track serious failures in a hospital's performance which happen only once in a while. One has to be careful when comparing hospitals on these very rare events. The numbers are so small that it is difficult to know when a difference is meaningful or occurs due to chance alone. For example, a major reaction to a blood transfusion occurs in only a few cases out of a million people each year.
- 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.
- Incomplete reporting is an issue in the accuracy of any data source used for identifying patient safety problems, as medical providers might fear adverse consequences as a result of "full disclosure" in potentially public records such as discharge abstracts.
- 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 12 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 - Foreign body left during procedure

- This indicator is designed to identify patients who had a foreign object accidentally left in their body during a procedure. The indicator is measured using volume of occurrence – not a rate. It tells you the number of patients who had a foreign object accidentally left in their body 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 numerator refers to discharges with ICD-9-CM codes for foreign object left in the patient’s body during the procedure reported in any secondary diagnosis field among eligible cases (i.e., those meeting the inclusion and exclusion rules for the denominator).
- The denominator includes all medical and surgical discharges 18 years and older or MDC 14 (pregnancy, childbirth, and puerperium) defined by specific DRGs, excluding patients with ICD-9-CM codes for foreign object left in the patient’s body during the procedure reported in the principal diagnosis field or secondary diagnosis present on admission (POA).
- Table 1 shows that, Statewide there were 27 cases of foreign body accidentally left in a patient during a procedure.

Table 1. Foreign body left during procedure (volume of occurrences among eligible medical and surgical discharges).

Hospital	# of cases
Statewide	27
Capital Health System at Mercer	1
CentraState Medical Center	1
Cooper Hospital/University Medical Center	2
Deborah Heart and Lung Center	2
Hackensack University Medical Center	1
Hunterdon Medical Center	1
Jersey Shore University Medical Center	1
Monmouth Medical Center	1
Morristown Memorial Hospital	2
Newark Beth Israel Medical Center	1
RWJ University Hospital	7
St. Barnabas Medical Center	2
St. Joseph's Hospital and Medical Center	1
UMDNJ-University Hospital	1
Underwood-Memorial Hospital	1
Valley Hospital	1
Virtua-West Jersey Hospital Voorhees	1

Source: New Jersey 2010 UB Data.

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.
- The numerator refers to the number of discharges with ICD-9-CM code of 512.1 in any secondary diagnosis field among cases 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 ICD-9-CM code of 512.1 as the principal diagnosis or secondary diagnosis present on admission, if known;
 - cases with ICD-9-CM diagnosis code of chest trauma or pleural effusion;
 - cases with ICD-9-CM procedure code of diaphragmatic surgery repair;
 - cases with any code indicating thoracic surgery or lung or pleural biopsy or assigned to cardiac surgery DRGs; and
 - 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 292 cases of iatrogenic pneumothorax out of 744,084 eligible discharges reported in 2010 for a risk-adjusted rate of 0.3 per 1,000 discharges.

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

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate^	Risk-adjusted rate	95% Confidence interval
Statewide	292	744,084	0.4	0.5	0.3	0.3 - 0.4
Atlanticare Regional Medical Center-City	3	8,733	0.3	0.5	0.3	0.0 - 0.8
Atlanticare Regional Medical Center-Mainland	0	14,888	0.0	0.5	0.0	0.0 - 0.3
Bayonne Medical Center	3	5,412	0.6	0.5	0.5	0.0 - 1.1
Bayshore Community Hospital	3	7,218	0.4	0.5	0.4	0.0 - 0.8
Bergen Regional Medical Center	0	6,457	0.0	0.5	0.0	0.0 - 0.5
Cape Regional Medical Center	3	8,909	0.3	0.4	0.4	0.0 - 0.9
Capital Health Regional Medical Center	1	7,780	0.1	0.6	0.1	0.0 - 0.5
Capital Health System at Mercer	0	5,546	0.0	0.5	0.0	0.0 - 0.5
ContraState Medical Center	7	10,718	0.7	0.5	0.6	0.2 - 1.0
Chilton Memorial Hospital	7	8,315	0.8	0.5	0.9 **	0.4 - 1.3
Christ Hospital	3	7,932	0.4	0.4	0.4	0.0 - 0.9
Clara Maass Medical Center	5	13,917	0.4	0.5	0.3	0.0 - 0.7
Community Medical Center	6	24,044	0.2	0.5	0.2	0.0 - 0.5
Cooper Hospital/University Medical Center	23	14,475	1.6	0.6	1.3 **	0.9 - 1.6
Deborah Heart and Lung Center	2	4,131	0.5	1.2	0.2	0.0 - 0.6
East Orange General Hospital	2	6,857	0.3	0.6	0.2	0.0 - 0.7
Englewood Hospital and Medical Center	5	13,377	0.4	0.5	0.3	0.0 - 0.7
Hackensack University Medical Center	9	28,406	0.3	0.6	0.3	0.0 - 0.5
Hackettstown Community Hospital	2	4,505	0.4	0.5	0.4	0.0 - 1.1
Hoboken University Medical Center	0	5,871	0.0	0.4	0.0	0.0 - 0.6
Holy Name Hospital	6	12,431	0.5	0.5	0.4	0.1 - 0.8
Hunterdon Medical Center	5	5,735	0.9	0.5	0.8	0.3 - 1.4
Jersey City Medical Center	2	12,003	0.2	0.5	0.2	0.0 - 0.6
Jersey Shore University Medical Center	9	21,693	0.4	0.6	0.3	0.1 - 0.6
JFK Community Medical Center-Edison	5	14,635	0.3	0.7	0.2	0.0 - 0.5
Kennedy Memorial Hospitals UMC-Cherry Hill	3	8,977	0.3	0.4	0.4	0.0 - 0.9
Kennedy Memorial Hospitals UMC-Stratford	0	7,016	0.0	0.4	0.0	0.0 - 0.5
Kennedy Memorial Hospitals UMC-Wash. Twp.	6	11,747	0.5	0.4	0.6	0.2 - 1.0
Kimball Medical Center	0	10,187	0.0	0.4	0.0	0.0 - 0.5
Lourdes Medical Center of Burlington Cty.	3	7,097	0.4	0.4	0.5	0.0 - 1.1
Meadowlands Hospital Medical Center	2	2,818	0.7	0.5	0.7	0.0 - 1.5
Memorial Hospital of Salem County	4	5,159	0.8	0.4	1.0	0.3 - 1.7
Monmouth Medical Center	1	9,371	0.1	0.5	0.1	0.0 - 0.6
Morristown Memorial Hospital	9	22,064	0.4	0.6	0.3	0.1 - 0.6
Mountainside Hospital	4	7,928	0.5	0.5	0.5	0.0 - 0.9
Newark Beth Israel Medical Center	9	13,213	0.7	0.6	0.6	0.2 - 0.9
Newton Memorial Hospital	2	6,112	0.3	0.4	0.4	0.0 - 0.9
Ocean Medical Center Brick Division	2	12,127	0.2	0.5	0.2	0.0 - 0.5
Our Lady of Lourdes Medical Center	12	11,372	1.1	0.6	0.8 **	0.5 - 1.2
Overlook Hospital	6	17,253	0.3	0.5	0.3	0.0 - 0.6
Palisades Medical Center - NY PHS	5	6,987	0.7	0.4	0.8	0.3 - 1.4

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

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	292	744,084	0.4	0.5	0.3	0.3 - 0.4
Raritan Bay Medical Center-Old Bridge	0	5,357	0.0	0.5	0.0	0.0 - 0.6
Raritan Bay Medical Center-Perth Amboy	3	7,700	0.4	0.5	0.4	0.0 - 0.9
Riverview Medical Center	2	10,254	0.2	0.6	0.2	0.0 - 0.5
RWJ University Hospital	24	23,954	1.0	0.7	0.7 **	0.4 - 0.9
RWJ University Hospital at Hamilton	2	11,893	0.2	0.5	0.2	0.0 - 0.6
RWJ University Hospital at Rahway	2	6,170	0.3	0.7	0.2	0.0 - 0.7
Shore Memorial Hospital	1	8,884	0.1	0.5	0.1	0.0 - 0.6
Somerset Medical Center	3	12,654	0.2	0.5	0.2	0.0 - 0.6
South Jersey Healthcare Regional MC	6	11,588	0.5	0.5	0.5	0.1 - 0.9
South Jersey Hospital-Elmer	0	3,114	0.0	0.4	0.0	0.0 - 0.8
Southern Ocean Medical Center	4	5,398	0.7	0.5	0.7	0.1 - 1.2
St. Barnabas Medical Center	8	17,862	0.4	0.6	0.4	0.1 - 0.7
St. Clare's Hospital-Denville	1	10,527	0.1	0.5	0.1	0.0 - 0.5
St. Clare's Hospital-Dover	0	3,503	0.0	0.4	0.0	0.0 - 0.8
St. Clare's Hospital-Sussex	0	1,158	0.0	0.3	0.0	0.0 - 1.5
St. Francis Medical Center-Trenton	4	6,099	0.7	0.5	0.6	0.1 - 1.1
St. Joseph's Hospital and Medical Center	6	19,419	0.3	0.5	0.3	0.0 - 0.6
St. Joseph's Wayne Hospital	0	5,391	0.0	0.5	0.0	0.0 - 0.6
St. Mary's Hospital (Passaic)	2	7,535	0.3	0.7	0.2	0.0 - 0.6
St. Michael's Medical Center	4	12,626	0.3	0.6	0.3	0.0 - 0.6
St. Peter's University Hospital	1	10,876	0.1	0.6	0.1	0.0 - 0.5
Trinitas Hospital	4	10,296	0.4	0.5	0.4	0.0 - 0.8
UMDNJ-University Hospital	7	13,061	0.5	0.6	0.4	0.1 - 0.8
Underwood-Memorial Hospital	5	9,972	0.5	0.7	0.4	0.0 - 0.7
University Medical Center at Princeton	4	9,768	0.4	0.6	0.3	0.0 - 0.7
Valley Hospital	10	22,366	0.4	0.5	0.4	0.1 - 0.7
Virtua-Memorial Hospital Burlington Cty.	4	13,580	0.3	0.6	0.2	0.0 - 0.6
Virtua-West Jersey Hospital Berlin	1	4,063	0.2	0.6	0.2	0.0 - 0.8
Virtua-West Jersey Hospital Marlton	1	10,515	0.1	0.6	0.1	0.0 - 0.4
Virtua-West Jersey Hospital Voorhees	2	9,795	0.2	0.7	0.1	0.0 - 0.5
Warren Hospital	2	5,290	0.4	0.5	0.4	0.0 - 1.0

Source: New Jersey 2010 UB Data.

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

[^] 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.08 – Post-operative hip fracture

- This indicator intends to capture cases of in-hospital 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 hip fracture per 1,000 surgical discharges with an operating room procedure.
- The numerator refers to discharges with ICD-9-CM code 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-9-CM code for an operating room procedure.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with ICD-9-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 discharges with postoperative 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 6 postoperative hip fracture cases reported out of 128,396 eligible discharges in 2010.

Table 3. Post-operative hip fracture (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	6	128,396	0.0	0.2	0.0	0.0 - 0.1
Atlanticare Regional Medical Center-City	0	939	0.0	0.1	0.0	0.0 - 0.9
Atlanticare Regional Medical Center-Mainland	0	2,304	0.0	0.2	0.0	0.0 - 0.5
Bayonne Medical Center	0	527	0.0	0.2	0.0	0.0 - 1.1
Bayshore Community Hospital	1	656	1.5	0.1	1.7 **	0.7 - 2.8
Bergen Regional Medical Center	0	86	0.0	0.1	0.0	0.0 - 3.0
Cape Regional Medical Center	0	684	0.0	0.1	0.0	0.0 - 1.0
Capital Health Regional Medical Center	0	716	0.0	0.1	0.0	0.0 - 1.0
Capital Health System at Mercer	2	1,024	2.0	0.1	2.2 **	1.4 - 3.0
CentraState Medical Center	0	1,806	0.0	0.1	0.0	0.0 - 0.6
Chilton Memorial Hospital	0	1,202	0.0	0.1	0.0	0.0 - 0.8
Christ Hospital	0	1,275	0.0	0.1	0.0	0.0 - 0.7
Clara Maass Medical Center	0	2,355	0.0	0.1	0.0	0.0 - 0.5
Community Medical Center	0	2,312	0.0	0.1	0.0	0.0 - 0.5
Cooper Hospital/University Medical Center	0	4,021	0.0	0.2	0.0	0.0 - 0.4
Deborah Heart and Lung Center	0	2,797	0.0	0.2	0.0	0.0 - 0.4
East Orange General Hospital	0	410	0.0	0.1	0.0	0.0 - 1.3
Englewood Hospital and Medical Center	0	3,387	0.0	0.2	0.0	0.0 - 0.4
Hackensack University Medical Center	0	7,041	0.0	0.2	0.0	0.0 - 0.3
Hackettstown Community Hospital	0	572	0.0	0.1	0.0	0.0 - 1.1
Hoboken University Medical Center	0	662	0.0	0.1	0.0	0.0 - 1.1
Holy Name Hospital	0	1,908	0.0	0.1	0.0	0.0 - 0.6
Hunterdon Medical Center	0	719	0.0	0.1	0.0	0.0 - 1.0
Jersey City Medical Center	0	1,654	0.0	0.2	0.0	0.0 - 0.6
Jersey Shore University Medical Center	1	5,022	0.2	0.2	0.2	0.0 - 0.5
JFK Community Medical Center-Edison	0	2,542	0.0	0.1	0.0	0.0 - 0.5
Kennedy Memorial Hospitals UMC-Cherry Hill	0	357	0.0	0.1	0.0	0.0 - 1.5
Kennedy Memorial Hospitals UMC-Stratford	0	759	0.0	0.1	0.0	0.0 - 1.0
Kennedy Memorial Hospitals UMC-Wash. Twp.	0	1,435	0.0	0.1	0.0	0.0 - 0.7
Kimball Medical Center	0	569	0.0	0.1	0.0	0.0 - 1.1
Lourdes Medical Center of Burlington Cty.	0	957	0.0	0.1	0.0	0.0 - 0.9
Meadowlands Hospital Medical Center	0	459	0.0	0.1	0.0	0.0 - 1.3
Memorial Hospital of Salem County	0	429	0.0	0.1	0.0	0.0 - 1.3
Monmouth Medical Center	0	1,392	0.0	0.1	0.0	0.0 - 0.7
Morristown Memmorial Hospital	0	7,055	0.0	0.2	0.0	0.0 - 0.3
Mountainside Hospital	0	1,467	0.0	0.1	0.0	0.0 - 0.7
Newark Beth Israel Medical Center	0	3,705	0.0	0.2	0.0	0.0 - 0.4
Newton Memorial Hospital	0	622	0.0	0.1	0.0	0.0 - 1.1
Ocean Medical Center Brick Division	0	1,350	0.0	0.1	0.0	0.0 - 0.7
Our Lady of Lourdes Medical Center	0	3,725	0.0	0.2	0.0	0.0 - 0.4
Overlook Hospital	1	3,193	0.3	0.1	0.4	0.0 - 0.9
Palisades Medical Center - NY PHS	0	712	0.0	0.1	0.0	0.0 - 1.0

Table 3. Post-operative hip fracture (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	6	128,396	0.0	0.2	0.0	0.0 - 0.1
Raritan Bay Medical Center-Old Bridge	0	428	0.0	0.1	0.0	0.0 - 1.3
Raritan Bay Medical Center-Perth Amboy	0	750	0.0	0.2	0.0	0.0 - 0.9
Riverview Medical Center	0	1,456	0.0	0.1	0.0	0.0 - 0.7
RWJ University Hospital	0	7,039	0.0	0.2	0.0	0.0 - 0.3
RWJ University Hospital at Hamilton	0	1,702	0.0	0.1	0.0	0.0 - 0.6
RWJ University Hospital at Rahway	0	560	0.0	0.1	0.0	0.0 - 1.1
Shore Memorial Hospital	0	1,162	0.0	0.1	0.0	0.0 - 0.8
Somerset Medical Center	0	1,934	0.0	0.1	0.0	0.0 - 0.6
South Jersey Healthcare Regional MC	0	1,458	0.0	0.1	0.0	0.0 - 0.7
South Jersey Hospital-Elmer	0	350	0.0	0.1	0.0	0.0 - 1.5
Southern Ocean Medical Center	0	781	0.0	0.1	0.0	0.0 - 1.0
St. Barnabas Medical Center	0	4,661	0.0	0.2	0.0	0.0 - 0.4
St. Clare's Hospital-Denville	0	1,330	0.0	0.1	0.0	0.0 - 0.7
St. Clare's Hospital-Dover	0	515	0.0	0.1	0.0	0.0 - 1.2
St. Clare's Hospital-Sussex	0	90	0.0	0.1	0.0	0.0 - 2.9
St. Francis Medical Center-Trenton	0	1,244	0.0	0.2	0.0	0.0 - 0.7
St. Joseph's Hospital and Medical Center	0	2,977	0.0	0.2	0.0	0.0 - 0.4
St. Joseph's Wayne Hospital	0	580	0.0	0.1	0.0	0.0 - 1.1
St. Mary's Hospital (Passaic)	1	1,613	0.6	0.2	0.6	0.0 - 1.2
St. Michael's Medical Center	0	2,486	0.0	0.2	0.0	0.0 - 0.5
St. Peter's University Hospital	0	2,420	0.0	0.1	0.0	0.0 - 0.6
Trinitas Hospital	0	1,585	0.0	0.1	0.0	0.0 - 0.7
UMDNJ-University Hospital	0	2,117	0.0	0.2	0.0	0.0 - 0.6
Underwood-Memorial Hospital	0	1,317	0.0	0.1	0.0	0.0 - 0.7
University Medical Center at Princeton	0	1,393	0.0	0.1	0.0	0.0 - 0.7
Valley Hospital	0	4,778	0.0	0.2	0.0	0.0 - 0.4
Virtua-Memorial Hospital Burlington Cty.	0	2,151	0.0	0.1	0.0	0.0 - 0.6
Virtua-West Jersey Hospital Berlin	0	248	0.0	0.1	0.0	0.0 - 1.7
Virtua-West Jersey Hospital Marlton	0	1,912	0.0	0.1	0.0	0.0 - 0.6
Virtua-West Jersey Hospital Voorhees	0	1,944	0.0	0.1	0.0	0.0 - 0.6
Warren Hospital	0	610	0.0	0.1	0.0	0.0 - 1.1

Source: New Jersey 2010 UB Data.

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

[^] 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.09 – Post-operative hemorrhage or hematoma

- This indicator is designed to capture hemorrhage or hematoma cases following a surgical procedure and is limited to secondary procedure and diagnosis codes, respectively, to isolate those that can be linked to a surgical procedure. The rate, which is risk-adjusted for age, sex, DRG, and comorbidity categories, is defined as the number of patients with postoperative hemorrhage (too much bleeding) or postoperative hematoma (drainage of hematoma) per 1,000 surgical discharges.
- The numerator refers to the number of discharges with ICD-9-CM codes for postoperative hemorrhage or postoperative hematoma in any secondary diagnosis field or discharges with ICD-9-CM codes for postoperative control of hemorrhage or drainage of hematoma in any secondary procedure field.
- The denominator refers to all surgical discharges age 18 years and older defined by specific DRGs and an ICD-9-CM code for an operating room procedure.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with preexisting conditions (present on admission, if known) of postoperative hemorrhage or postoperative hematoma;
 - cases where the only operating room procedure is postoperative control of hemorrhage or drainage of hematoma;
 - cases where a procedure for postoperative 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
 - MDC 14 (pregnancy, childbirth and the puerperium) are excluded from the denominator.
- Table 4 shows the number of post-operative 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 435 postoperative hemorrhage or hematoma cases reported in 2010 for a statewide risk-adjusted rate of 3.7 per 1,000 discharges.

Table 4. Post-operative hemorrhage or hematoma (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate^	Risk-adjusted rate	95% Confidence interval
Statewide	435	203,551	2.1	1.5	3.7	3.4 - 4.0
Atlanticare Regional Medical Center-City	1	1,893	0.5	1.5	0.9	0.0 - 3.9
Atlanticare Regional Medical Center-Mainland	4	4,694	0.9	1.0	2.1	0.0 - 4.4
Bayonne Medical Center	2	730	2.7	1.6	4.4	0.0 - 9.0
Bayshore Community Hospital	1	1,041	1.0	1.7	1.5	0.0 - 5.3
Bergen Regional Medical Center	0	170	0.0	1.8	0.0	0.0 - 9.2
Cape Regional Medical Center	3	1,265	2.4	1.5	4.0	0.4 - 7.6
Capital Health Regional Medical Center	2	1,725	1.2	1.3	2.3	0.0 - 5.6
Capital Health System at Mercer	3	1,533	2.0	1.5	3.3	0.0 - 6.5
CentraState Medical Center	7	2,775	2.5	1.6	4.1	1.7 - 6.5
Chilton Memorial Hospital	8	1,946	4.1	1.7	6.4	3.6 - 9.2
Christ Hospital	4	1,586	2.5	1.7	3.9	0.8 - 6.9
Clara Maass Medical Center	5	3,461	1.4	1.6	2.3	0.2 - 4.5
Community Medical Center	10	4,156	2.4	1.5	4.1	2.1 - 6.1
Cooper Hospital/University Medical Center	14	6,336	2.2	1.6	3.5	1.9 - 5.0
Deborah Heart and Lung Center	13	3,115	4.2	1.6	6.9 **	4.6 - 9.2
East Orange General Hospital	1	562	1.8	1.8	2.5	0.0 - 7.5
Englewood Hospital and Medical Center	10	5,127	2.0	1.4	3.5	1.6 - 5.3
Hackensack University Medical Center	30	11,958	2.5	1.4	4.5	3.3 - 5.7
Hackettstown Community Hospital	2	991	2.0	1.4	3.6	0.0 - 7.8
Hoboken University Medical Center	2	942	2.1	1.5	3.6	0.0 - 7.8
Holy Name Hospital	6	3,026	2.0	1.5	3.5	1.1 - 5.9
Hunterdon Medical Center	0	1,367	0.0	1.3	0.0	0.0 - 3.8
Jersey City Medical Center	3	2,387	1.3	1.4	2.3	0.0 - 5.0
Jersey Shore University Medical Center	15	7,683	2.0	1.4	3.7	2.1 - 5.2
JFK Community Medical Center-Edison	3	4,014	0.7	1.4	1.4 *	0.0 - 3.5
Kennedy Memorial Hospitals UMC-Cherry Hill	0	731	0.0	1.4	0.0	0.0 - 5.1
Kennedy Memorial Hospitals UMC-Stratford	2	1,126	1.8	1.5	3.0	0.0 - 6.8
Kennedy Memorial Hospitals UMC-Wash. Twp.	2	2,140	0.9	1.5	1.6	0.0 - 4.4
Kimball Medical Center	0	902	0.0	1.8	0.0	0.0 - 4.0
Lourdes Medical Center of Burlington Cty.	12	1,364	8.8	1.5	14.9 **	11.4 - 18.5
Meadowlands Hospital Medical Center	1	581	1.7	1.5	2.9	0.0 - 8.2
Memorial Hospital of Salem County	3	620	4.8	1.6	7.9	2.8 - 13.0
Monmouth Medical Center	6	2,653	2.3	1.4	4.1	1.5 - 6.7
Morristown Memmorial Hospital	24	11,726	2.0	1.4	3.9	2.6 - 5.2
Mountainside Hospital	2	2,190	0.9	1.5	1.6	0.0 - 4.4
Newark Beth Israel Medical Center	14	4,628	3.0	1.6	4.7	2.9 - 6.5
Newton Memorial Hospital	1	1,007	1.0	1.5	1.7	0.0 - 5.8
Ocean Medical Center Brick Division	5	2,891	1.7	1.4	3.2	0.7 - 5.7
Our Lady of Lourdes Medical Center	14	4,404	3.2	1.7	4.9	3.0 - 6.7
Overlook Hospital	19	5,690	3.3	1.4	6.3 **	4.5 - 8.1
Palisades Medical Center - NY PHS	0	1,027	0.0	1.6	0.0	0.0 - 3.9

Table 4. Post-operative hemorrhage or hematoma (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	435	203,551	2.1	1.5	3.7	3.4 - 4.0
Raritan Bay Medical Center-Old Bridge	0	706	0.0	1.5	0.0	0.0 - 4.9
Raritan Bay Medical Center-Perth Amboy	0	1,074	0.0	1.5	0.0	0.0 - 3.9
Riverview Medical Center	7	2,911	2.4	1.3	4.7	2.1 - 7.3
RWJ University Hospital	31	9,853	3.1	1.5	5.3 **	4.0 - 6.6
RWJ University Hospital at Hamilton	11	2,832	3.9	1.5	6.8 **	4.4 - 9.3
RWJ University Hospital at Rahway	1	1,042	1.0	1.5	1.7	0.0 - 5.7
Shore Memorial Hospital	8	2,369	3.4	1.3	6.5	3.7 - 9.4
Somerset Medical Center	8	3,037	2.6	1.3	5.1	2.6 - 7.6
South Jersey Healthcare Regional MC	6	2,357	2.5	1.5	4.3	1.6 - 6.9
South Jersey Hospital-Elmer	0	765	0.0	1.1	0.0	0.0 - 5.4
Southern Ocean Medical Center	2	1,247	1.6	1.6	2.6	0.0 - 6.2
St. Barnabas Medical Center	19	6,645	2.9	1.8	4.0	2.6 - 5.4
St. Clare's Hospital-Denville	2	2,249	0.9	1.4	1.7	0.0 - 4.6
St. Clare's Hospital-Dover	0	710	0.0	1.4	0.0	0.0 - 5.0
St. Clare's Hospital-Sussex	0	102	0.0	1.7	0.0	0.0 - 12.0
St. Francis Medical Center-Trenton	8	1,577	5.1	1.4	9.1 **	5.7 - 12.4
St. Joseph's Hospital and Medical Center	4	4,891	0.8	1.4	1.5 *	0.0 - 3.4
St. Joseph's Wayne Hospital	0	967	0.0	1.4	0.0	0.0 - 4.3
St. Mary's Hospital (Passaic)	5	2,104	2.4	1.5	4.1	1.2 - 6.9
St. Michael's Medical Center	4	3,218	1.2	1.5	2.2	0.0 - 4.5
St. Peter's University Hospital	1	3,677	0.3	1.5	0.5 *	0.0 - 2.7
Trinitas Hospital	1	2,284	0.4	1.5	0.7 *	0.0 - 3.5
UMDNJ-University Hospital	11	4,681	2.3	2.3	2.7	1.1 - 4.2
Underwood-Memorial Hospital	5	1,976	2.5	1.5	4.4	1.5 - 7.4
University Medical Center at Princeton	4	2,845	1.4	1.2	3.0	0.3 - 5.8
Valley Hospital	15	7,830	1.9	1.4	3.5	2.0 - 5.0
Virtua-Memorial Hospital Burlington Cty.	8	4,238	1.9	1.4	3.4	1.4 - 5.5
Virtua-West Jersey Hospital Berlin	2	391	5.1	1.6	8.0	1.7 - 14.3
Virtua-West Jersey Hospital Marlton	9	3,416	2.6	1.4	5.0	2.6 - 7.3
Virtua-West Jersey Hospital Voorhees	5	2,356	2.1	1.8	3.0	0.6 - 5.5
Warren Hospital	4	1,039	3.8	1.6	6.4	2.4 - 10.3

Source: New Jersey 2010 UB Data.

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

[^] 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.12- Post-operative pulmonary embolism (PE) or deep vein thrombosis (DVT)

- This indicator measures incidences of PE (blood clot in the lungs) or DVT (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 pulmonary embolism (PE) or deep vein thrombosis (DVT) cases per 1,000 surgical discharges with an operating room procedure.
- The numerator includes discharges with ICD-9-CM codes for deep vein thrombosis or pulmonary embolism in any secondary diagnosis field.
- The denominator includes all surgical discharges age 18 and older defined by specific DRGs and an ICD-9-CM code for an operating room procedure.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with pre-existing conditions (present on admission, if known) of deep vein thrombosis or pulmonary embolism where a procedure for interruption of vena cava is the only operating room procedure;
 - cases where a procedure for 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
 - MDC 14 (pregnancy, childbirth and the puerperium).
- Table 5 presents the number of post-operative 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 1,461 cases of postoperative pulmonary embolism or deep vein thrombosis reported in 2010 for a statewide risk-adjusted rate of 6.6 per 1,000 surgical discharges.

Table 5. Post-operative pulmonary embolism or deep vein thrombosis (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate^	Risk-adjusted rate	95% Confidence interval
Statewide	1,461	202,948	7.2	11.2	6.6	6.1 - 7.0
Atlanticare Regional Medical Center-City	12	1,885	6.4	13.8	4.7	0.9 - 8.5
Atlanticare Regional Medical Center-Mainland	27	4,670	5.8	10.6	5.5	2.7 - 8.3
Bayonne Medical Center	7	729	9.6	13.0	7.5	1.1 - 13.9
Bayshore Community Hospital	3	1,043	2.9	12.8	2.3	0.0 - 7.7
Bergen Regional Medical Center	3	166	18.1	12.2	15.0	1.3 - 28.8
Cape Regional Medical Center	3	1,272	2.4	16.0	1.5 *	0.0 - 5.8
Capital Health Regional Medical Center	46	1,718	26.8	22.9	11.9 **	8.8 - 15.0
Capital Health System at Mercer	6	1,528	3.9	8.9	4.5	0.0 - 9.9
CentraState Medical Center	14	2,784	5.0	10.7	4.8	1.2 - 8.4
Chilton Memorial Hospital	8	1,949	4.1	11.7	3.6	0.0 - 7.7
Christ Hospital	4	1,583	2.5	9.1	2.8	0.0 - 8.0
Clara Maass Medical Center	10	3,444	2.9	12.2	2.4 *	0.0 - 5.4
Community Medical Center	21	4,154	5.1	12.8	4.0	1.3 - 6.7
Cooper Hospital/University Medical Center	72	6,288	11.5	10.9	10.7 **	8.3 - 13.0
Deborah Heart and Lung Center	8	3,111	2.6	10.9	2.4 *	0.0 - 5.8
East Orange General Hospital	5	558	9.0	15.6	5.9	0.0 - 12.5
Englewood Hospital and Medical Center	27	5,119	5.3	10.2	5.3	2.5 - 8.0
Hackensack University Medical Center	156	11,860	13.2	10.6	12.6 **	10.8 - 14.3
Hackettstown Community Hospital	9	980	9.2	9.6	9.7	3.3 - 16.2
Hoboken University Medical Center	4	943	4.2	9.0	4.8	0.0 - 11.6
Holy Name Hospital	23	3,011	7.6	10.8	7.2	3.7 - 10.6
Hunterdon Medical Center	6	1,361	4.4	11.4	4.0	0.0 - 9.0
Jersey City Medical Center	1	2,372	0.4	9.1	0.5 *	0.0 - 4.7
Jersey Shore University Medical Center	21	7,678	2.7	11.6	2.4 *	0.3 - 4.5
JFK Community Medical Center-Edison	56	3,990	14.0	11.6	12.3 **	9.4 - 15.2
Kennedy Memorial Hospitals UMC-Cherry Hill	4	727	5.5	12.9	4.3	0.0 - 10.7
Kennedy Memorial Hospitals UMC-Stratford	4	1,116	3.6	9.6	3.8	0.0 - 9.8
Kennedy Memorial Hospitals UMC-Wash. Twp.	5	2,140	2.3	10.0	2.4	0.0 - 6.7
Kimball Medical Center	6	893	6.7	14.1	4.8	0.0 - 10.4
Lourdes Medical Center of Burlington Cty.	5	1,367	3.7	9.2	4.0	0.0 - 9.6
Meadowlands Hospital Medical Center	0	583	0.0	8.6	0.0	0.0 - 8.8
Memorial Hospital of Salem County	4	622	6.4	9.9	6.6	0.0 - 14.5
Monmouth Medical Center	23	2,643	8.7	11.1	8.0	4.4 - 11.6
Morristown Memorial Hospital	92	11,685	7.9	10.5	7.6	5.8 - 9.4
Mountainside Hospital	12	2,195	5.5	10.8	5.1	1.1 - 9.2
Newark Beth Israel Medical Center	24	4,600	5.2	13.3	4.0 *	1.5 - 6.5
Newton Memorial Hospital	4	997	4.0	11.8	3.5	0.0 - 9.2
Ocean Medical Center Brick Division	11	2,880	3.8	12.2	3.2 *	0.0 - 6.5
Our Lady of Lourdes Medical Center	17	4,421	3.8	10.7	3.6 *	0.8 - 6.5

Table 5. Post-operative pulmonary embolism or deep vein thrombosis (per 1,000 surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	1,461	202,948	7.2	11.2	6.6	6.1 - 7.0
Overlook Hospital	69	5,667	12.2	12.3	10.1 **	7.7 - 12.5
Palisades Medical Center - NY PHS	5	1,023	4.9	9.9	5.0	0.0 - 11.2
Raritan Bay Medical Center-Old Bridge	5	703	7.1	11.2	6.5	0.0 - 13.5
Raritan Bay Medical Center-Perth Amboy	7	1,074	6.5	10.8	6.1	0.4 - 11.9
Riverview Medical Center	7	2,910	2.4	11.0	2.2 *	0.0 - 5.7
RWJ University Hospital	89	9,821	9.1	12.0	7.7	5.9 - 9.5
RWJ University Hospital at Hamilton	8	2,829	2.8	10.4	2.8 *	0.0 - 6.4
RWJ University Hospital at Rahway	7	1,040	6.7	13.1	5.2	0.0 - 10.6
Shore Memorial Hospital	12	2,363	5.1	9.8	5.3	1.2 - 9.4
Somerset Medical Center	30	3,034	9.9	9.7	10.4 **	6.8 - 14.1
South Jersey Healthcare Regional MC	11	2,352	4.7	10.8	4.4	0.5 - 8.3
South Jersey Hospital-Elmer	4	767	5.2	9.3	5.7	0.0 - 13.1
Southern Ocean Medical Center	6	1,242	4.8	12.1	4.1	0.0 - 9.1
St. Barnabas Medical Center	67	6,624	10.1	11.2	9.2 **	6.9 - 11.5
St. Clare's Hospital-Denville	18	2,245	8.0	9.5	8.6	4.3 - 12.8
St. Clare's Hospital-Dover	7	712	9.8	8.7	11.5	3.6 - 19.4
St. Clare's Hospital-Sussex	1	104	9.6	10.0	9.8	0.0 - 29.2
St. Francis Medical Center-Trenton	8	1,579	5.1	8.9	5.8	0.5 - 11.0
St. Joseph's Hospital and Medical Center	17	4,889	3.5	10.2	3.5 *	0.7 - 6.3
St. Joseph's Wayne Hospital	4	964	4.1	11.4	3.7	0.0 - 9.7
St. Mary's Hospital (Passaic)	5	2,101	2.4	10.3	2.4	0.0 - 6.6
St. Michael's Medical Center	12	3,208	3.7	12.4	3.1 *	0.0 - 6.2
St. Peter's University Hospital	46	3,667	12.5	9.1	14.0 **	10.6 - 17.4
Trinitas Hospital	4	2,289	1.7	10.6	1.7 *	0.0 - 5.7
UMDNJ-University Hospital	51	4,605	11.1	13.8	8.1	5.7 - 10.6
Underwood-Memorial Hospital	11	1,982	5.5	9.7	5.8	1.3 - 10.3
University Medical Center at Princeton	10	2,857	3.5	9.4	3.8	0.0 - 7.6
Valley Hospital	100	7,803	12.8	11.2	11.6 **	9.5 - 13.7
Virtua-Memorial Hospital Burlington Cty.	32	4,228	7.6	10.7	7.2	4.3 - 10.1
Virtua-West Jersey Hospital Berlin	2	392	5.1	12.9	4.0	0.0 - 12.8
Virtua-West Jersey Hospital Marlton	25	3,428	7.3	10.5	7.1	3.8 - 10.4
Virtua-West Jersey Hospital Voorhees	7	2,353	3.0	9.8	3.1	0.0 - 7.2
Warren Hospital	11	1,029	10.7	12.5	8.7	3.2 - 14.2

Source: New Jersey 2010 UB Data.

* = Statistically significantly below state average, ** = Statistically significantly above state average.

[^] 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 – Post-operative sepsis

- This indicator flags how often hospitalized patients get a serious bloodstream infection (nosocomial postoperative sepsis) following an operation (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 and a length of stay of 4 days or more.
- The numerator includes discharges with ICD-9-CM code for sepsis in any secondary diagnosis field while the denominator includes all elective surgical discharges age 18 and older defined by specific DRGs and an ICD-9-CM code for an operating room procedure.
- The following cases are excluded from the denominator or from rate calculation:
 - cases with pre-existing condition (present on admission, if known) of sepsis or infection;
 - cases with any code for immunocompromised state or cancer;
 - MDC 14 (pregnancy, childbirth, and puerperium); and
 - cases with a length of stay of less than 4 days.
- Table 6 shows the number of post-operative 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 256 post-operative sepsis cases reported in 2010 for a statewide risk-adjusted rate of 14.5 per 1,000 elective discharges.

Table 6. Post-operative sepsis (per 1,000 elective surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate^	Risk-adjusted rate	95% Confidence interval
Statewide	256	14,829	17.3	14.8	14.5	12.8 - 16.1
Atlanticare Regional Medical Center-City	1	50	20.0	10.1	24.5	0.0 - 58.4
Atlanticare Regional Medical Center-Mainland	9	379	23.7	14.3	20.5	10.3 - 30.8
Bayonne Medical Center	2	22	90.9	15.7	71.6 ^**	31.0 - 112.2
Bayshore Community Hospital	2	52	38.5	17.2	27.6	2.4 - 52.9
Bergen Regional Medical Center	1	33	30.3	5.9	64.0	9.2 - 118.8
Cape Regional Medical Center	2	48	41.7	19.7	26.1	1.9 - 50.4
Capital Health Regional Medical Center	1	62	16.1	13.4	14.9	0.0 - 41.0
Capital Health System at Mercer	2	80	25.0	12.6	24.6	0.7 - 48.5
CentraState Medical Center	3	115	26.1	15.1	21.3	3.2 - 39.4
Chilton Memorial Hospital	0	67	0.0	16.8	0.0	0.0 - 22.5
Christ Hospital	3	70	42.9	10.5	50.7 **	22.6 - 78.8
Clara Maass Medical Center	5	114	43.9	13.7	39.7 **	20.5 - 58.9
Community Medical Center	3	179	16.8	20.5	10.1	0.0 - 22.5
Cooper Hospital/University Medical Center	17	916	18.6	18.4	12.5	6.7 - 18.3
Deborah Heart and Lung Center	0	11	0.0	21.0	0.0 ^	0.0 - 49.7
East Orange General Hospital	0	18	0.0	11.7	0.0 ^	0.0 - 52.3
Englewood Hospital and Medical Center	11	501	22.0	13.8	19.7	10.6 - 28.8
Hackensack University Medical Center	20	887	22.5	16.1	17.3	11.0 - 23.6
Hackettstown Community Hospital	2	50	40.0	8.5	58.0 **	21.2 - 94.8
Hoboken University Medical Center	1	67	14.9	9.1	20.3	0.0 - 51.1
Holy Name Hospital	6	145	41.4	11.1	46.0 **	27.1 - 64.9
Hunterdon Medical Center	1	62	16.1	13.5	14.8	0.0 - 41.0
Jersey City Medical Center	0	122	0.0	13.2	0.0	0.0 - 18.8
Jersey Shore University Medical Center	8	619	12.9	18.9	8.5	1.5 - 15.4
JFK Community Medical Center-Edison	6	412	14.6	10.9	16.6	5.2 - 27.9
Kennedy Memorial Hospitals UMC-Cherry Hill	1	27	37.0	8.5	54.0 ^	3.7 - 104.3
Kennedy Memorial Hospitals UMC-Stratford	0	46	0.0	12.9	0.0	0.0 - 31.1
Kennedy Memorial Hospitals UMC-Wash. Twp.	0	57	0.0	20.8	0.0	0.0 - 21.6
Kimball Medical Center	0	17	0.0	15.6	0.0 ^	0.0 - 46.4
Lourdes Medical Center of Burlington Cty.	2	139	14.4	17.2	10.3	0.0 - 25.8
Memorial Hospital of Salem County	1	39	25.6	14.2	22.4	0.0 - 54.5
Monmouth Medical Center	1	199	5.0	11.4	5.4	0.0 - 21.2
Morristown Memorial Hospital	6	1,170	5.1	14.5	4.4 *	0.0 - 10.2
Mountainside Hospital	2	96	20.8	12.8	20.1	0.0 - 41.8
Newark Beth Israel Medical Center	11	464	23.7	16.3	17.9	9.3 - 26.6
Newton Memorial Hospital	1	64	15.6	7.9	24.4	0.0 - 58.2
Ocean Medical Center Brick Division	4	203	19.7	11.5	21.2	5.5 - 36.9
Our Lady of Lourdes Medical Center	5	574	8.7	19.6	5.5 *	0.0 - 12.6
Overlook Hospital	3	375	8.0	11.9	8.3	0.0 - 19.6
Palisades Medical Center - NY PHS	0	46	0.0	10.6	0.0	0.0 - 34.4
Raritan Bay Medical Center-Old Bridge	1	31	32.3	10.4	38.4	0.0 - 80.7

Table 6. Post-operative sepsis (per 1,000 elective surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	256	14,829	17.3	14.8	14.5	12.8 - 16.1
Raritan Bay Medical Center-Perth Amboy	1	25	40.0	17.6	28.2 [^]	0.0 - 64.3
Riverview Medical Center	2	143	14.0	13.2	13.1	0.0 - 30.4
RWJ University Hospital	20	976	20.5	15.2	16.7	10.5 - 23.0
RWJ University Hospital at Hamilton	1	199	5.0	11.6	5.4	0.0 - 21.1
RWJ University Hospital at Rahway	0	49	0.0	14.6	0.0	0.0 - 28.2
Shore Memorial Hospital	1	131	7.6	9.9	9.5	0.0 - 30.6
Somerset Medical Center	0	280	0.0	11.8	0.0 [*]	0.0 - 13.2
South Jersey Healthcare Regional MC	3	148	20.3	14.5	17.3	1.1 - 33.5
South Jersey Hospital-Elmer	0	39	0.0	10.1	0.0	0.0 - 38.4
Southern Ocean Medical Center	1	45	22.2	15.2	18.0	0.0 - 46.9
St. Barnabas Medical Center	15	640	23.4	16.1	18.0	10.5 - 25.4
St. Clare's Hospital-Denville	0	41	0.0	12.4	0.0	0.0 - 33.7
St. Clare's Hospital-Dover	1	12	83.3	24.0	43.0 [^]	0.0 - 86.7
St. Francis Medical Center-Trenton	5	190	26.3	17.7	18.4	5.4 - 31.3
St. Joseph's Hospital and Medical Center	11	435	25.3	11.8	26.4 ^{**}	15.9 - 37.0
St. Joseph's Wayne Hospital	2	63	31.7	8.9	44.2	12.0 76.3
St. Mary's Hospital (Passaic)	8	168	47.6	17.2	34.3 ^{**}	20.3 - 48.4
St. Michael's Medical Center	7	259	27.0	21.0	15.9	5.7 - 26.2
St. Peter's University Hospital	4	222	18.0	13.2	16.9	2.9 - 31.0
Trinitas Hospital	3	100	30.0	11.7	31.6	9.5 - 53.8
UMDNJ-University Hospital	12	401	29.9	11.1	33.3 ^{**}	21.9 - 44.7
Underwood-Memorial Hospital	0	112	0.0	11.9	0.0	0.0 - 20.8
University Medical Center at Princeton	1	241	4.1	12.3	4.2	0.0 - 18.1
Valley Hospital	8	536	14.9	15.2	12.2	3.8 - 20.6
Virtua-Memorial Hospital Burlington Cty.	3	273	11.0	12.8	10.6	0.0 - 23.4
Virtua-West Jersey Hospital Berlin	0	12	0.0	22.7	0.0 [^]	0.0 - 45.5
Virtua-West Jersey Hospital Marlton	1	287	3.5	12.8	3.4	0.0 - 15.9
Virtua-West Jersey Hospital Voorhees	1	132	7.6	16.6	5.7	0.0 - 21.8
Warren Hospital	1	44	22.7	17.9	15.7	0.0 - 40.3

Source: New Jersey 2010 UB Data.

* = Statistically significantly below state average, ** = Statistically significantly above state average.

NB: Rates based on denominators less than 30 should be taken with caution.

[^] 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.

Missing (.) indicates that the hospital did not perform the procedure during the year in question; or it did less than 3 procedures (risk-adjusted rate is not computed when the denominator is less than 3).

PSI.14 – Post-operative 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-9-CM code (5461) for re-closure of postoperative disruption of abdominal wall in any procedure field, while the denominator includes all abdominopelvic surgical discharges age 18 and older.
- 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*);
 - cases with pre-existing conditions (POA) and all obstetric admissions;
 - cases where length of stay is less than 2 days;
 - cases with immunocompromised state; and
 - MDC 14 (pregnancy, childbirth, and puerperium).
- Table 7 shows the number of post-operative 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 64 postoperative wound dehiscence cases reported in 2010 for a statewide risk-adjusted rate of 2.0 per 1,000 abdominopelvic surgical discharges.

Table 7. Post-operative wound dehiscence (per 1,000 abdominopelvic surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate^	Risk-adjusted rate	95% Confidence interval
Statewide	64	31,989	2.0	2.2	2.0	1.5 - 2.5
Atlanticare Regional Medical Center-City	0	237	0.0	2.2	0.0	0.0 - 5.9
Atlanticare Regional Medical Center-Mainland	0	393	0.0	2.5	0.0	0.0 - 4.3
Bayonne Medical Center	1	192	5.2	2.7	4.2	0.0 - 10.1
Bayside Community Hospital	0	211	0.0	2.8	0.0	0.0 - 5.6
Bergen Regional Medical Center	1	33	30.3	2.1	32.0 **	15.6 - 48.4
Cape Regional Medical Center	0	296	0.0	2.6	0.0	0.0 - 4.9
Capital Health Regional Medical Center	1	188	5.3	2.5	4.6	0.0 - 10.8
Capital Health System at Mercer	1	333	3.0	1.8	3.7	0.0 - 9.3
CentraState Medical Center	1	634	1.6	2.4	1.4	0.0 - 4.9
Chilton Memorial Hospital	0	331	0.0	2.8	0.0	0.0 - 4.4
Christ Hospital	2	343	5.8	2.1	6.2	1.1 - 11.3
Clara Maass Medical Center	1	565	1.8	3.1	1.3	0.0 - 4.5
Community Medical Center	3	802	3.7	3.1	2.7	0.0 - 5.4
Cooper Hospital/University Medical Center	6	1,307	4.6	1.9	5.4 **	2.6 - 8.1
Deborah Heart and Lung Center	0	26	0.0	1.8	0.0 ^	0.0 - 19.8
East Orange General Hospital	1	100	10.0	2.8	7.7	0.0 - 15.8
Englewood Hospital and Medical Center	1	562	1.8	2.2	1.8	0.0 - 5.7
Hackensack University Medical Center	3	1,373	2.2	2.3	2.0	0.0 - 4.4
Hackettstown Community Hospital	1	181	5.5	2.3	5.3	0.0 - 11.9
Hoboken University Medical Center	0	149	0.0	2.1	0.0	0.0 - 7.8
Holy Name Hospital	0	583	0.0	2.0	0.0	0.0 - 4.0
Hunterdon Medical Center	0	212	0.0	2.2	0.0	0.0 - 6.3
Jersey City Medical Center	0	318	0.0	2.2	0.0	0.0 - 5.2
Jersey Shore University Medical Center	1	915	1.1	1.9	1.2	0.0 - 4.5
JFK Community Medical Center-Edison	2	788	2.5	2.2	2.6	0.0 - 5.8
Kennedy Memorial Hospitals UMC-Cherry Hill	1	80	12.5	3.0	9.3	0.4 - 18.1
Kennedy Memorial Hospitals UMC-Stratford	0	173	0.0	2.1	0.0	0.0 - 7.1
Kennedy Memorial Hospitals UMC-Wash. Twp.	2	387	5.2	2.2	5.2	0.5 - 9.8
Kimball Medical Center	1	259	3.9	2.8	3.0	0.0 - 8.1
Lourdes Medical Center of Burlington Cty.	0	311	0.0	2.0	0.0	0.0 - 5.5
Meadowlands Hospital Medical Center	0	185	0.0	1.4	0.0	0.0 - 8.4
Memorial Hospital of Salem County	0	131	0.0	1.8	0.0	0.0 - 8.9
Monmouth Medical Center	0	495	0.0	2.1	0.0	0.0 - 4.2
Morristown Memorial Hospital	2	1,195	1.7	2.3	1.6	0.0 - 4.2
Mountainside Hospital	2	333	6.0	2.4	5.6	0.7 - 10.4
Newark Beth Israel Medical Center	1	638	1.6	1.4	2.4	0.0 - 6.9
Newton Memorial Hospital	1	213	4.7	3.1	3.3	0.0 - 8.6
Ocean Medical Center Brick Division	1	483	2.1	3.0	1.5	0.0 - 5.0
Our Lady of Lourdes Medical Center	1	522	1.9	2.6	1.6	0.0 - 5.3
Overlook Hospital	0	978	0.0	2.1	0.0	0.0 - 3.0
Palisades Medical Center - NY PHS	0	149	0.0	2.1	0.0	0.0 - 7.7
Raritan Bay Medical Center-Old Bridge	0	107	0.0	2.8	0.0	0.0 - 7.9
Raritan Bay Medical Center-Perth Amboy	1	185	5.4	2.1	5.6	0.0 - 12.5

Table 7. Post-operative wound dehiscence (per 1,000 abdominopelvic surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	64	31,989	2.0	2.2	2.0	1.5 - 2.5
Riverview Medical Center	2	424	4.7	3.2	3.2	0.0 - 6.9
RWJ University Hospital	3	1,412	2.1	2.2	2.1	0.0 - 4.5
RWJ University Hospital at Hamilton	0	530	0.0	2.3	0.0	0.0 - 3.9
RWJ University Hospital at Rahway	1	190	5.3	3.2	3.7	0.0 - 9.2
Shore Memorial Hospital	0	356	0.0	2.4	0.0	0.0 - 4.7
Somerset Medical Center	1	489	2.0	2.3	1.9	0.0 - 6.0
South Jersey Healthcare Regional MC	1	622	1.6	1.8	1.9	0.0 - 6.0
South Jersey Hospital-Elmer	0	94	0.0	2.7	0.0	0.0 - 8.6
Southern Ocean Medical Center	0	217	0.0	3.2	0.0	0.0 - 5.2
St. Barnabas Medical Center	3	1,463	2.1	1.7	2.7	0.0 - 5.5
St. Clare's Hospital-Denville	0	377	0.0	2.3	0.0	0.0 - 4.7
St. Clare's Hospital-Dover	0	208	0.0	1.8	0.0	0.0 - 7.1
St. Clare's Hospital-Sussex	0	28	0.0	2.3	0.0 [^]	0.0 - 16.9
St. Francis Medical Center-Trenton	0	186	0.0	2.7	0.0	0.0 - 6.1
St. Joseph's Hospital and Medical Center	2	630	3.2	1.8	3.8	0.0 - 7.8
St. Joseph's Wayne Hospital	0	198	0.0	2.3	0.0	0.0 - 6.4
St. Mary's Hospital (Passaic)	0	395	0.0	2.3	0.0	0.0 - 4.5
St. Michael's Medical Center	1	268	3.7	2.2	3.7	0.0 - 9.3
St. Peter's University Hospital	0	943	0.0	1.4	0.0	0.0 - 3.8
Trinitas Hospital	0	415	0.0	1.9	0.0	0.0 - 4.9
UMDNJ-University Hospital	2	619	3.2	2.2	3.2	0.0 - 6.9
Underwood-Memorial Hospital	1	334	3.0	2.4	2.7	0.0 - 7.5
University Medical Center at Princeton	0	363	0.0	2.2	0.0	0.0 - 4.8
Valley Hospital	3	1,024	2.9	2.6	2.5	0.0 - 5.1
Virtua-Memorial Hospital Burlington Cty.	0	664	0.0	2.3	0.0	0.0 - 3.5
Virtua-West Jersey Hospital Berlin	0	57	0.0	4.4	0.0	0.0 - 8.6
Virtua-West Jersey Hospital Marlton	3	452	6.6	3.1	4.6	1.0 - 8.3
Virtua-West Jersey Hospital Voorhees	1	902	1.1	1.8	1.4	0.0 - 4.8
Warren Hospital	1	233	4.3	2.7	3.5	0.0 - 9.0

Source: New Jersey 2010 UB Data.

** = Statistically significantly above state average.

NB: Rates based on denominators less than 30 should be taken with caution.

[^] 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 - 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 during a medical procedure per 1,000 discharges.
- The numerator refers to all discharges with ICD-9-CM code denoting technical difficulty (e.g., accidental cut, puncture, perforation, or laceration) in any secondary diagnosis field.
- The denominator refers to all medical and surgical discharges age 18 and older defined by specific DRGs, excluding cases:
 - with ICD-9-CM code denoting technical difficulty (e.g., accidental cut, puncture, perforation, or laceration) in the principal diagnosis field or secondary diagnosis present on admission, if known;
 - MDC 14 (pregnancy, childbirth, and puerperium); and
 - with ICD-9-CM code for spine surgery.
- Table 8 shows the number of cases of accidental puncture or laceration among all discharges with ICD-9-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 1,337 cases of accidental punctures or lacerations reported in 2010 for a risk-adjusted rate of 1.7 per 1,000 discharges.

Table 8. Accidental puncture or laceration (per 1,000 medical and surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate^	Risk-adjusted rate	95% Confidence interval
Statewide	1,337	777,419	1.7	3.0	1.7	1.6 - 1.8
Atlanticare Regional Medical Center-City	6	9,127	0.7	2.2	0.9	0.0 - 2.3
Atlanticare Regional Medical Center-Mainland	13	15,612	0.8	2.6	1.0	0.0 - 1.9
Bayonne Medical Center	3	5,575	0.5	2.3	0.7	0.0 - 2.4
Bayshore Community Hospital	5	7,405	0.7	2.0	1.0	0.0 - 2.5
Bergen Regional Medical Center	0	6,498	0.0	0.7	0.0	0.0 - 2.8
Cape Regional Medical Center	7	9,301	0.8	2.0	1.1	0.0 - 2.5
Capital Health Regional Medical Center	3	8,165	0.4	2.3	0.5	0.0 - 1.9
Capital Health System at Mercer	12	5,700	2.1	3.4	1.9	0.5 - 3.3
CentraState Medical Center	38	11,159	3.4	3.1	3.3 **	2.3 - 4.3
Chilton Memorial Hospital	28	8,824	3.2	2.9	3.4 **	2.2 - 4.6
Christ Hospital	9	8,166	1.1	2.5	1.3	0.0 - 2.6
Clara Maass Medical Center	15	14,312	1.0	2.8	1.1	0.2 - 2.1
Community Medical Center	34	25,011	1.4	2.5	1.7	0.9 - 2.4
Cooper Hospital/University Medical Center	43	15,803	2.7	4.4	1.9	1.2 - 2.6
Deborah Heart and Lung Center	16	4,885	3.3	5.7	1.8	0.6 - 2.9
East Orange General Hospital	2	6,984	0.3	1.6	0.5	0.0 - 2.3
Englewood Hospital and Medical Center	15	13,933	1.1	3.7	0.9	0.1 - 1.7
Hackensack University Medical Center	77	30,244	2.5	4.0	2.0	1.4 - 2.5
Hackettstown Community Hospital	7	4,544	1.5	2.5	1.9	0.1 - 3.6
Hoboken University Medical Center	2	6,009	0.3	2.0	0.5	0.0 - 2.2
Holy Name Hospital	9	12,906	0.7	3.0	0.7	0.0 - 1.7
Hunterdon Medical Center	4	6,052	0.7	2.8	0.7	0.0 - 2.2
Jersey City Medical Center	13	12,454	1.0	2.3	1.4	0.3 - 2.5
Jersey Shore University Medical Center	100	23,421	4.3	3.6	3.6 **	3.0 - 4.3
JFK Community Medical Center-Edison	17	14,976	1.1	3.4	1.0	0.2 - 1.9
Kennedy Memorial Hospitals UMC-Cherry Hill	3	9,201	0.3	1.3	0.7	0.0 - 2.4
Kennedy Memorial Hospitals UMC-Stratford	15	7,239	2.1	2.0	3.2	1.6 - 4.7
Kennedy Memorial Hospitals UMC-Wash. Twp.	18	12,182	1.5	2.5	1.8	0.7 - 2.9
Kimball Medical Center	3	10,563	0.3	1.6	0.6	0.0 - 2.0
Lourdes Medical Center of Burlington Cty.	16	7,232	2.2	2.4	2.9	1.4 - 4.3
Meadowlands Hospital Medical Center	8	2,857	2.8	2.7	3.2	1.0 - 5.3
Memorial Hospital of Salem County	5	5,283	0.9	1.8	1.6	0.0 - 3.5
Monmouth Medical Center	13	9,324	1.4	3.3	1.3	0.2 - 2.4
Morristown Memmorial Hospital	58	23,924	2.4	4.7	1.6	1.0 - 2.1
Mountainside Hospital	16	8,500	1.9	3.2	1.8	0.7 - 3.0
Newark Beth Israel Medical Center	30	14,349	2.1	3.7	1.7	0.9 - 2.5
Newton Memorial Hospital	10	6,354	1.6	2.3	2.1	0.5 - 3.6
Ocean Medical Center Brick Division	16	12,604	1.3	2.7	1.4	0.4 - 2.4
Our Lady of Lourdes Medical Center	19	12,352	1.5	3.9	1.2	0.3 - 2.0
Overlook Hospital	38	17,645	2.2	3.6	1.8	1.1 - 2.6

Table 8. Accidental puncture or laceration (per 1,000 medical and surgical discharges)

Hospital	# of cases	# of discharges	Obs. rate	Exp. Rate [^]	Risk-adjusted rate	95% Confidence interval
Statewide	1,337	777,419	1.7	3.0	1.7	1.6 - 1.8
Palisades Medical Center - NY PHS	6	7,279	0.8	2.0	1.3	0.0 - 2.8
Raritan Bay Medical Center-Old Bridge	3	5,541	0.5	1.9	0.9	0.0 - 2.7
Raritan Bay Medical Center-Perth Amboy	8	7,910	1.0	1.9	1.6	0.1 - 3.1
Riverview Medical Center	16	10,441	1.5	3.2	1.5	0.4 - 2.5
RWJ University Hospital	131	26,066	5.0	4.4	3.5 **	2.9 - 4.1
RWJ University Hospital at Hamilton	29	12,386	2.3	2.7	2.6	1.6 - 3.6
RWJ University Hospital at Rahway	1	6,364	0.2	2.4	0.2	0.0 - 1.7
Shore Memorial Hospital	6	8,848	0.7	2.8	0.7	0.0 - 1.9
Somerset Medical Center	15	13,169	1.1	2.9	1.2	0.2 - 2.2
South Jersey Healthcare Regional MC	27	11,780	2.3	2.6	2.7	1.6 - 3.8
South Jersey Hospital-Elmer	5	3,228	1.5	2.2	2.1	0.0 - 4.3
Southern Ocean Medical Center	4	5,804	0.7	2.8	0.8	0.0 - 2.2
St. Barnabas Medical Center	71	18,772	3.8	4.2	2.8 **	2.1 - 3.4
St. Clare's Hospital-Denville	23	10,787	2.1	2.6	2.5	1.4 - 3.6
St. Clare's Hospital-Dover	15	3,691	4.1	2.4	5.2 **	3.2 - 7.2
St. Clare's Hospital-Sussex	0	1,198	0.0	1.9	0.0	0.0 - 3.9
St. Francis Medical Center-Trenton	13	6,404	2.0	2.7	2.3	0.9 - 3.8
St. Joseph's Hospital and Medical Center	12	20,026	0.6	2.5	0.7 *	0.0 - 1.6
St. Joseph's Wayne Hospital	1	5,536	0.2	2.3	0.2	0.0 - 1.9
St. Mary's Hospital (Passaic)	11	8,035	1.4	3.3	1.3	0.1 - 2.4
St. Michael's Medical Center	11	13,352	0.8	2.6	1.0	0.0 - 2.0
St. Peter's University Hospital	19	11,333	1.7	4.1	1.3	0.4 - 2.1
Trinitas Hospital	8	10,612	0.8	2.7	0.9	0.0 - 2.0
UMDNJ-University Hospital	14	13,806	1.0	3.1	1.0	0.1 - 1.9
Underwood-Memorial Hospital	8	10,355	0.8	2.8	0.9	0.0 - 2.0
University Medical Center at Princeton	16	9,985	1.6	3.1	1.6	0.5 - 2.7
Valley Hospital	39	23,600	1.7	3.6	1.4	0.8 - 2.0
Virtua-Memorial Hospital Burlington Cty.	30	13,741	2.2	3.4	2.0	1.1 - 2.9
Virtua-West Jersey Hospital Berlin	2	4,267	0.5	1.7	0.8	0.0 - 3.0
Virtua-West Jersey Hospital Marlton	12	10,729	1.1	3.4	1.0	0.0 - 2.0
Virtua-West Jersey Hospital Voorhees	24	10,260	2.3	4.0	1.8	0.9 - 2.7
Warren Hospital	11	5,439	2.0	2.5	2.4	0.8 - 4.0

Source: New Jersey 2010 UB Data.

* = Statistically significantly below state average, ** = Statistically significantly above state average.

[^] 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.16 - Transfusion reaction

- This indicator flags cases of major reactions due to transfusions (ABO and Rh). It measures the occurrence of major reactions to blood transfusions. Using the wrong type of blood or blood substitute are examples of why this type of medical error may occur. The indicator is measured using volume of occurrence – not a rate. It tells you the number of patients who had a transfusion reaction during hospital stay. It is considered a never-event and happens very rarely. All cases with pre-existing conditions are excluded from the measure.
- The rate is defined as the number of patients who had a bad reaction to a blood transfusion per 1,000 discharges. No risk-adjustment is made to this indicator because it is a very rare event expected to have a zero rate of occurrence.
- The numerator includes discharges with ICD-9-CM codes for transfusion reaction in any secondary diagnosis field.
- The denominator includes all medical and surgical discharges age 18 years and older or in MDC 14 (pregnancy, childbirth, and puerperium), defined by specific DRGs or MS-DRGs, excluding cases with primary diagnosis code for transfusion reaction or cases with secondary diagnosis code for transfusion reaction present on admission (POA).
- Transfusion reaction is considered a never-event and happens very rarely. There were only 3 cases in New Jersey, in 2010, one of which was attested by Monmouth Medical Center, to be the result of incorrect coding. One case occurred in St. Joseph's Hospital and Medical Center and the other one in Virtua-Memorial Hospital Burlington County.

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-9-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 (denoting birth weight of <2,500 grams and <37 gestation weeks or <=34 gestation weeks). It also excludes infants with injury to skeleton (CD-9-CM codes - 7673 and 7674) and infants with diagnosis code of osteogenesis imperfecta (CD-9-CM code - 75651).
- The denominator includes all live births (newborns)¹.
- Table 9 shows the number of cases of birth trauma - injury to neonate among infants born alive and the observed rates by hospital. Statewide, there were 257 cases of birth trauma - injury to neonate reported in 2010 for an observed rate of 2.6 per 1,000 live births.

¹ Newborn is defined as any neonate with either 1) an ICD-9-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-9-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-9-CM diagnosis code for an in-hospital live-born birth.)

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

(This indicator is calculated by the Pediatric Quality Indicators (PDIs) Module because it is based on pediatric discharges.)

Hospital	# of cases	# of livebirths	Observed rate
Statewide	257	100,386	2.6
Atlanticare Regional Medical Center-City	0	24	0.0 ^
Atlanticare Regional Medical Center-Mainland	9	2,266	4.0
Cape Regional Medical Center	1	547	1.8
Capital Health System at Mercer	3	2,169	1.4
CentraState Medical Center	2	1,620	1.2
Chilton Memorial Hospital	1	926	1.1
Christ Hospital	2	1,275	1.6
Clara Maass Medical Center	1	1,777	0.6
Community Medical Center	3	1,601	1.9
Cooper Hospital/University Medical Center	10	2,197	4.6
Englewood Hospital and Medical Center	4	1,910	2.1
Hackensack University Medical Center	31	6,099	5.1
Hackettstown Community Hospital	1	733	1.4
Hoboken University Medical Center	1	1,380	0.7
Holy Name Hospital	2	1,357	1.5
Hunterdon Medical Center	2	1,068	1.9
Jersey City Medical Center	1	1,574	0.6
Jersey Shore University Medical Center	2	1,693	1.2
JFK Community Medical Center-Edison	3	2,617	1.1
Kennedy Memorial Hospitals UMC-Wash. Twp.	4	1,246	3.2
Kimball Medical Center	7	1,275	5.5
Lourdes Medical Center of Burlington Cty.	1	191	5.2
Meadowlands Hospital Medical Center	0	637	0.0
Memorial Hospital of Salem County	1	217	4.6
Monmouth Medical Center	9	4,273	2.1
Morristown Memmorial Hospital	7	3,933	1.8
Mountainside Hospital	7	1,149	6.1
Newark Beth Israel Medical Center	5	3,056	1.6
Newton Memorial Hospital	1	450	2.2
Ocean Medical Center Brick Division	0	989	0.0
Our Lady of Lourdes Medical Center	3	1,141	2.6

