

**NEW JERSEY 2010 HOSPITAL PERFORMANCE REPORT**

**TECHNICAL REPORT: METHODOLOGY**

**RECOMMENDED CARE (PROCESS OF CARE) MEASURES**

**New Jersey Department of Health and Senior Services  
Health Care Quality Assessment  
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**A. Sources of Hospital Recommended Care (Process of Care) Measures and Data**

The **New Jersey 2010 Hospital Performance Report** on Recommended Care (Process of Care) Measures uses data and methodology that were developed by The Joint Commission and the Centers for Medicare and Medicaid Services (CMS) for reporting on hospital quality. The New Jersey Department of Health and Senior Services (Department) followed the measure definitions developed by The Joint Commission and the CMS, as presented in Section D of this technical report.

The **New Jersey 2010 Hospital Performance Report** on Recommended Care (Process of Care) Measures includes information on hospital discharges for the period of January 1, 2009 through December 31, 2009. Twenty-four recommended care measures on acute myocardial infarction (AMI or heart attack), pneumonia, heart failure, and surgical care improvement (SCIP) are reported in the 2010 Report. To be consistent with the CMS' reporting on hospital quality, the 2010 Report provides information on one additional surgical care improvement measure and withdraws information on one AMI measure and one pneumonia measure. As in the 2009 Report, rates for all hospitals are published, including rates based on fewer than 25 cases.

The report and its methodology have been developed with the guidance of the Department's Quality Improvement Advisory Committee (QIAC). **Table 1** lists the measures collected by the Department and indicates whether each measure is included in the report.

All New Jersey general acute care hospitals and one specialized heart hospital were required to submit the information for AMI, pneumonia, heart failure, and SCIP measures to the Department through their Joint Commission vendors on a quarterly basis. Hospitals collected the basic information for each record by abstracting data from patient medical records and administrative databases. The data were transmitted to Joint Commission vendors, who processed the data according to algorithms established by The Joint Commission to produce scores for each measure. Joint Commission vendors then transmitted both the individual patient files and the hospital level information to the Department. The Department summarized the quarterly data and provided a summary report to each hospital for review. The Department also provided each hospital with a summary report for the full twelve months for review.

**Table 1: Joint Commission Core Performance Measures and Inclusion in Report**

Joint Commission Core Performance Measures	Included in Report
<u>Acute Myocardial Infarction (AMI)</u>	
Aspirin at arrival	Included
Aspirin prescribed at discharge	Included
Beta blocker at arrival	Not Included
Beta blocker prescribed at discharge	Included
ACEI/ARB for LVSD	Included
Smoking cessation advice	Included
Inpatient mortality	Not Included
Time to fibrinolysis	Not Included
Fibrinolytic agent received within 30 minutes of hospital arrival	Not Included
Time to Primary PCI (median)	Not Included
Primary PCI received within 90 minutes of hospital arrival	Included
<u>Pneumonia</u>	
Oxygenation assessment	Not Included
Pneumococcal vaccination	Included
Antibiotic timing (median)	Not Included
Initial antibiotic received within 8 hours of arrival	Not Included
Initial antibiotic received within 6 hours of arrival	Included
Initial antibiotic received within 4 hours of arrival	Not Included
Initial antibiotic selection for PN immunocompetent ICU patient *	Included
Initial antibiotic selection for PN immunocompetent non-ICU patient *	Included
Blood cultures in emergency department	Included
Blood cultures within 24 hours	Not Included
Smoking cessation advice	Included
Influenza vaccination**	Included
<u>Surgical Care Improvement</u>	
Preventive antibiotic started	Included
Appropriate antibiotic received	Included
Preventive antibiotic stopped	Included
Venous thromboembolism (VTE) prophylaxis ordered	Included
VTE prophylaxis received	Included
<u>Controlled blood sugar for heart patients</u>	Included
<u>Surgery patients with safe hair removal</u>	Included
<u>Beta Blocker continued</u>	Included
<u>Heart Failure</u>	
LVS assessment	Included
ACEI/ARB for LVSD	Included
Discharge instructions	Included
Smoking cessation advice	Included

\* Because of small sample sizes for ICU patients, these two measures were combined into one measure following the CMS methodology.

\*\* This is a seasonal measure that includes information from January 1, 2009 through February 28, 2009 discharges and October 1, 2009 through December 31, 2009 discharges.

## **B. Calculation of Hospital Performance Rates**

### **Calculation of individual rates**

Each rate was calculated following the Joint Commission methodology described in Section D. The rate for each quality measure represents the proportion of times that the hospital provided the recommended care. Each measure included only those patients who were eligible for that form of care. For example, patients with contraindications for aspirin were excluded from the aspirin at arrival and aspirin prescribed at discharge measures.

### **Calculation of overall scores**

The overall AMI, pneumonia, SCIP, and heart failure scores for each hospital are summary measures of how frequently the hospital provided recommended care based on six AMI measures, six pneumonia measures, seven SCIP measures, and four heart failure measures, respectively (**Table 2**).

The overall score for each of the four conditions was calculated using the following steps:

- The numerator was the total number of patients who received care and the denominator was the total number of patients who were eligible for care for the selected quality measures.
- The overall score was calculated as a percentage by dividing the numerator by the denominator.
- Overall scores (as well as individual rates) were rounded to the nearest whole numbers. When hospitals were presented from high to low overall scores, a more detailed calculation using six decimal places was used.

Because of the inclusion of new measures or changes in measure definitions, overall scores are not necessarily comparable to the overall scores from previous years.

**Table 2: Measures Included in the AMI, Pneumonia, SCIP, and Heart Failure Overall Scores**

Condition	Measures Included in Overall Score
AMI	Aspirin at Arrival Aspirin at Discharge Beta Blocker at Discharge ACEI/ARB for LVSD Smoking Cessation Advice Primary PCI Received Within 90 Minutes of Hospital Arrival
Pneumonia	Pneumococcal Vaccination Influenza Vaccination Initial Antibiotic Received Within 6 Hours of Arrival Antibiotic Selection Blood Cultures in Emergency Department Smoking Cessation Advice
SCIP	Preventive Antibiotic Started Preventive Antibiotic Stopped Appropriate Antibiotic Received VTE Prophylaxis Received Controlled Blood Sugar for Heart Patients Surgery Patients with Safer Hair Removal Beta Blocker Continued
Heart Failure	LVS Assessment ACEI/ARB for LVSD Discharge Instructions Smoking Cessation Advice

### **Calculation of top 10% and 50% scores**

For each measure, including the overall score, we identified the hospital score that was at the 50<sup>th</sup> percentile (“median”), and the 90<sup>th</sup> percentile (“top 10<sup>th</sup> percentile”). These statistics included all hospitals, including those with fewer than 25 cases for a measure.

### **C. Data Validation**

Hospitals have internal processes to check the accuracy of their data collection. The Joint Commission has reviewed the accuracy of the vendors’ systems for processing the data and calculating the rates as well as conducted a limited study of the accuracy of the abstraction process in a small sample from all hospitals.

CMS reviews the accuracy of the data submitted by hospitals to the federal government for its quality assessment initiatives. Their data validation process examines the abstracted elements of five records per hospital per quarter selected at random from the cases submitted to CMS for AMI, pneumonia, heart failure, and SCIP conditions<sup>1</sup>. With assistance from the Healthcare Quality Strategies, Inc. (formerly PRONJ, the Healthcare Quality Improvement Organization of New Jersey), the Department adapted this process to assess the data it received. Validation reports from the last two quarters of 2008 and first two quarters of 2009 were examined to determine the validity of the data submitted by New Jersey hospitals. The department followed the CMS methodology in calculating 95% confidence intervals<sup>2</sup> for this period. The confidence interval had to include or exceed a threshold of 80%, meaning that a hospital was likely to be correct in its reporting of data elements at least 80% of the time. All hospitals met the 80% threshold in 2009.

## D. Measure Definitions

**Tables 3 through 6** describe the individual quality measures reported for the AMI, pneumonia, SCIP, and heart failure conditions. The definitions for these measures follow the Joint Commission/CMS definitions that were in effect for the reporting period (Specifications Manual for National Hospital Quality Measures versions 2.5b to 3.0c).

This technical report provides the specifications that were in effect for fourth quarter 2009 discharges. For the complete specification manuals and detailed information on definitional changes that were implemented during 2009, we refer the interested readers to the Joint Commission ([www.jointcommission.org](http://www.jointcommission.org)) and CMS QualityNet ([www.qualitynet.org](http://www.qualitynet.org)) websites.

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<sup>1</sup> More information on the CMS validation process is available at [www.qualitynet.org](http://www.qualitynet.org)

<sup>2</sup> Based on the CMS document, “2009 Confidence Interval”, available at [www.qualitynet.org](http://www.qualitynet.org) (released June 20, 2008).

**Table 3: Acute Myocardial Infarction (Heart Attack) Quality Measures**

<b>Measure</b>	<b>Description</b>	<b>Detailed Specifications</b>
1. Aspirin at arrival	Percent of eligible heart attack patients that received an aspirin within 24 hours before or after arriving at the hospital	<a href="#">Details</a>
2. Aspirin at discharge	Percent of eligible heart attack patients that were prescribed an aspirin when they were discharged from the hospital	<a href="#">Details</a>
3. Beta blocker at discharge	Percent of eligible heart attack patients that were prescribed a beta-blocker medication when they were discharged from the hospital	<a href="#">Details</a>
4. ACEI/ARB for LVSD	Percent of eligible heart attack patients with left ventricular systolic dysfunction (LVSD, or low heart function) that were prescribed an angiotensin converting enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) medication when they were discharged from the hospital	<a href="#">Details</a>
5. Smoking cessation advice	Percent of eligible heart attack patients with a history of smoking cigarettes, who were given smoking cessation counseling during their hospital stay.	<a href="#">Details</a>
6. Primary PCI received within 90 minutes of hospital arrival	Percent of eligible heart attack patients who received primary percutaneous coronary intervention (PCI) within 90 minutes after they arrived at hospital	<a href="#">Details</a>

**Table 4: Pneumonia Quality Measures**

<b>Measure</b>	<b>Description</b>	<b>Detailed Specifications</b>
1. Pneumococcal vaccination	Percent of eligible pneumonia patients 65 years and older that were asked if they had received a pneumococcal vaccination, and if they had not, received the vaccination prior to discharge from the hospital, if indicated.	<a href="#">Details</a>
2. Influenza vaccination	Percent of patients discharged during January, February, October, November, or December with pneumonia, age 50 and older, who were screened for influenza vaccine status and were vaccinated prior to discharge, if indicated	<a href="#">Details</a>
3. Initial antibiotic received within 6 hours of arrival	Percent of eligible pneumonia patients admitted to hospital that received their first dose of antibiotics within 6 hours of their arrival at hospital	<a href="#">Details</a>
4. Initial antibiotic selection for immunocompetent patients	Percent of immunocompetent patients with Community-Acquired Pneumonia who received an initial antibiotic regimen during the first 24 hours that is consistent with current guidelines	<a href="#">Details</a>
5. Blood cultures in emergency department	Percent of eligible pneumonia patients whose initial emergency department blood culture was performed prior to the administration of the first hospital dose of antibiotics	<a href="#">Details</a>
6. Smoking cessation advice	Percent of eligible pneumonia patients with a history of smoking cigarettes, that were given smoking cessation counseling during their hospital stay.	<a href="#">Details</a>

**Table 5: Surgical Care Improvement Quality Measures**

<b>Measure</b>	<b>Description</b>	<b>Detailed Specifications</b>
1. Preventive antibiotic started	Percent of eligible surgery patients who received preventive antibiotics within one hour prior to surgical incision.	<a href="#">Details</a>
2. Preventive antibiotic stopped	Percent of eligible surgery patients whose preventive antibiotics were discontinued within 24 hours after surgery end time	<a href="#">Details</a>
3. Appropriate antibiotic received	Percent of eligible surgery patients who received preventive antibiotics recommended for their specific surgical procedure.	<a href="#">Details</a>
4. VTE prophylaxis ordered	Percent of eligible surgery patients who had treatment prescribed for the prevention of blood clots	<a href="#">Details</a>
5. VTE prophylaxis received	Percent of eligible surgery patients who received the appropriate treatment to prevent blood clots, as recommended for the specific type of surgery performed	<a href="#">Details</a>
6. Controlled blood sugar for heart patients	Percent of cardiac surgery patients with controlled 6 a.m. blood glucose ( $\leq 200$ mg/dL) in the two days right after surgery.	<a href="#">Details</a>
7. Surgery patients with safer hair removal	Percent of surgery patients who had hair removed from the surgical area before surgery using a safe method. No hair removal, or hair removal with clippers or depilatory is considered appropriate. Shaving is considered inappropriate.	<a href="#">Details</a>
8. Beta Blocker continued	Surgery patients on Beta-Blocker therapy prior to arrival who received a Beta-Blocker during the perioperative period.	<a href="#">Details</a>

**Table 6: Heart Failure Quality Measures**

<b>Measure</b>	<b>Description</b>	<b>Detailed Specifications</b>
1. LVS assessment	Percent of eligible heart failure patients that were given a test to assess the left ventricular systolic (LVS) function of their heart before or during hospitalization, or had a test planned for soon after discharge from the hospital	<a href="#">Details</a>
2. ACEI/ARB for LVSD	Percent of eligible heart failure patients with low heart function that were prescribed an angiotensin converting enzyme inhibitor (ACE inhibitor) or angiotensin receptor blocker (ARB) medication when they were discharged from the hospital	<a href="#">Details</a>
3. Discharge instructions	Percent of eligible heart failure patients discharged to home with written instructions or educational materials to the patient or caregiver that addresses all of the following: activity level, diet, discharge medications, follow-up appointment, weight monitoring, and what to do if symptoms worsen.	<a href="#">Details</a>
4. Smoking cessation advice	Percent of eligible heart failure patients with history of smoking cigarettes, who were given smoking cessation counseling during their hospital stay.	<a href="#">Details</a>