



## Target Analysis Methodology for Assessing Hospital Performance on the Aligned CMS/Joint Commission National Hospital Quality Measures (Core Measures)

With the release of the first *ORYX Performance Measure Reports* for 2009, The Joint Commission is implementing a new methodology – Target Analysis – for assessing hospital performance on the aligned CMS/Joint Commission National Hospital Quality Measures (Core Measures).

Since The Joint Commission first began to report hospital performance on the core measures on its public website, Quality Check, hospital performance on these measures has been improving. Historically, hospital performance on the core measures has been based upon a comparison of each hospital's performance against the national average for each measure. However, if the goal for the use of performance measures and performance measure data is to foster continued improvement in hospital performance, then use of the national average as a benchmark is not the most effective approach to achieving that goal. Also, by using the national average, if performance on a specific measure is either very high or very low, statistical differences from the national average can result in a misleading interpretation of an organization's performance.

For these reasons, The Joint Commission's Board of Commissioners approved the implementation of a new target measure range (target analysis) approach to evaluating hospital performance on the hospital core performance measures beginning with the receipt of 3<sup>rd</sup> Quarter 2008 data which were due at The Joint Commission by February 5, 2009.

There are two components to the new target analysis methodology:

1. Using the national average for each performance measure, a target range, with upper and lower target limits, will be constructed for each measure. (For ratio and outcome ["risk-adjusted"] measures, the target range will be a single value based on the national rate.)
2. Then, a predicted estimate of an organization's performance with a corresponding 95% confidence interval will be generated.

The predicted estimate of an organization's performance on each measure, displayed as a confidence interval with upper and lower confidence limits, will be compared to the target range to determine the hospital's performance on the measure.

### **Calculation of Target Range**

The calculation of the target range in the target analysis for each core measure is dependant upon the type of measure:

#### **Proportion Measures** **(See Example 1)**

For each core proportion measure, a target range is calculated based on the national rate.



Where the direction of desired improvement is an increase in the rate, the target range consists of an upper target limit and a lower target limit and is computed as follows:

1. If the national rate is greater than or equal to 95% then the upper target limit and lower target limit will both be set to 95%.
2. If the national rate is less than 95% and greater than or equal to 90%, then the upper target limit is set to 95% and the lower target limit is set to the national rate.
3. If the national rate is less than 90%, then the lower target limit is set to the national rate and the upper target limit is the average of the national rate and 100%.

**Examples**

National Rate	Lower Target Limit	Upper Target Limit
0.98	0.95	0.95
0.92	0.92	0.95
0.84	0.84	0.92

Where the direction of desired improvement is a decrease, then the target range consists of an upper and lower computed as follows:

1. If the national rate is less than or equal to 0.05 then the upper target limit and lower target limit will both be set to 0.05.
2. If the national rate is greater than 0.05 and less than or equal to 0.10, then the lower target limit is set to 0.05 and the upper target limit is set to the national rate.
3. If the national rate is greater than 0.10 then the upper target limit is set to the average of (the national rate and 0%) and the lower target limit is set to 0.05).

**Examples**

National Rate	Lower Target Limit	Upper Target Limit
0.04	0.05	0.05
0.08	0.05	0.08
0.28	0.05	0.14

**Ratio Measures**

For ratio measures, the target range is a single value based on the national rate.

**Continuous Variable Measures**

**(See Example 2)**

The target range for continuous variable measures is based on the national average (weighted median rate) and a cut-off value specific to the measure. For example, the Pneumonia antibiotic timing measure will use the national average and six hours as the target



range since receiving an antibiotic within six hours of hospital arrival is the current standard of care.

### **Outcome Proportion Measures** (See Example 3)

Each outcome (“risk adjusted”) measure uses a target range that consists of a single value based on the national observed rate.

### **Comparative Norm**

The comparative norm (i.e., expected rate) around which the target measure range will be derived in the target analysis for core measures will be based on the:

“weighted median rate” if the measure is a continuous variable measure;

“weighted group mean” if the measure is a proportion, ratio, or risk-adjusted measure.

### **Small Sample Size Issues for Target Analysis** (See Example 4)

When a hospital’s population (referred to as *sample size* or simply “*n*”) for a measure for the analysis time period is very small, a warning message will appear on the *ORYX Performance Measure Report* alerting the user that due to a small sample size the **data should be interpreted and used with caution**.

The very small sample size warning message will be issued when:

For proportion and ratio measures, the sample size for the quarter is less than 30 (i.e.,  $n < 30$ )

For continuous measures, the quarter's sample size is less than 10 (i.e.,  $n < 10$ )

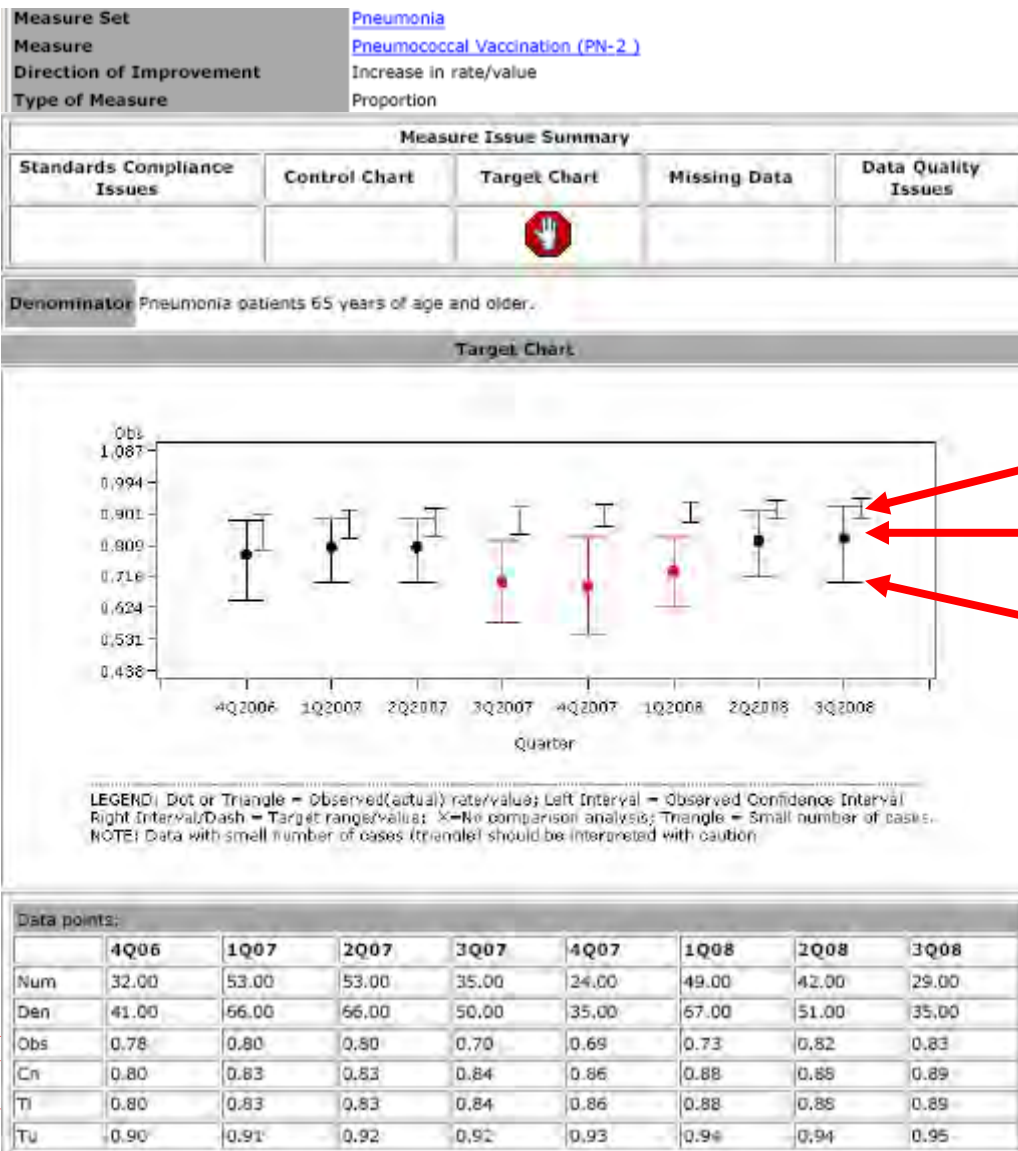
The number of organizations participating in the measure's target group is less than 10 for non-risk adjusted measures

The results of this new analytical approach to assessing hospital performance on the core measures also will be used in the display of hospital performance on the measures as presented in the National Quality Improvement Goals report on Quality Check, and those same results will be used in the Priority Focus Process (PFP) as well as the Strategic Surveillance System (S3).

Additional information regarding implementation of the new Target Analysis methodology for assessing hospital performance on the core measures will be available in an upcoming issue of *Perspectives*, and an updated version of the *ORYX Performance Measure Report User Guide* will be available shortly on your secure Joint Commission extranet site under **Performance Measurement (ORYX)**.

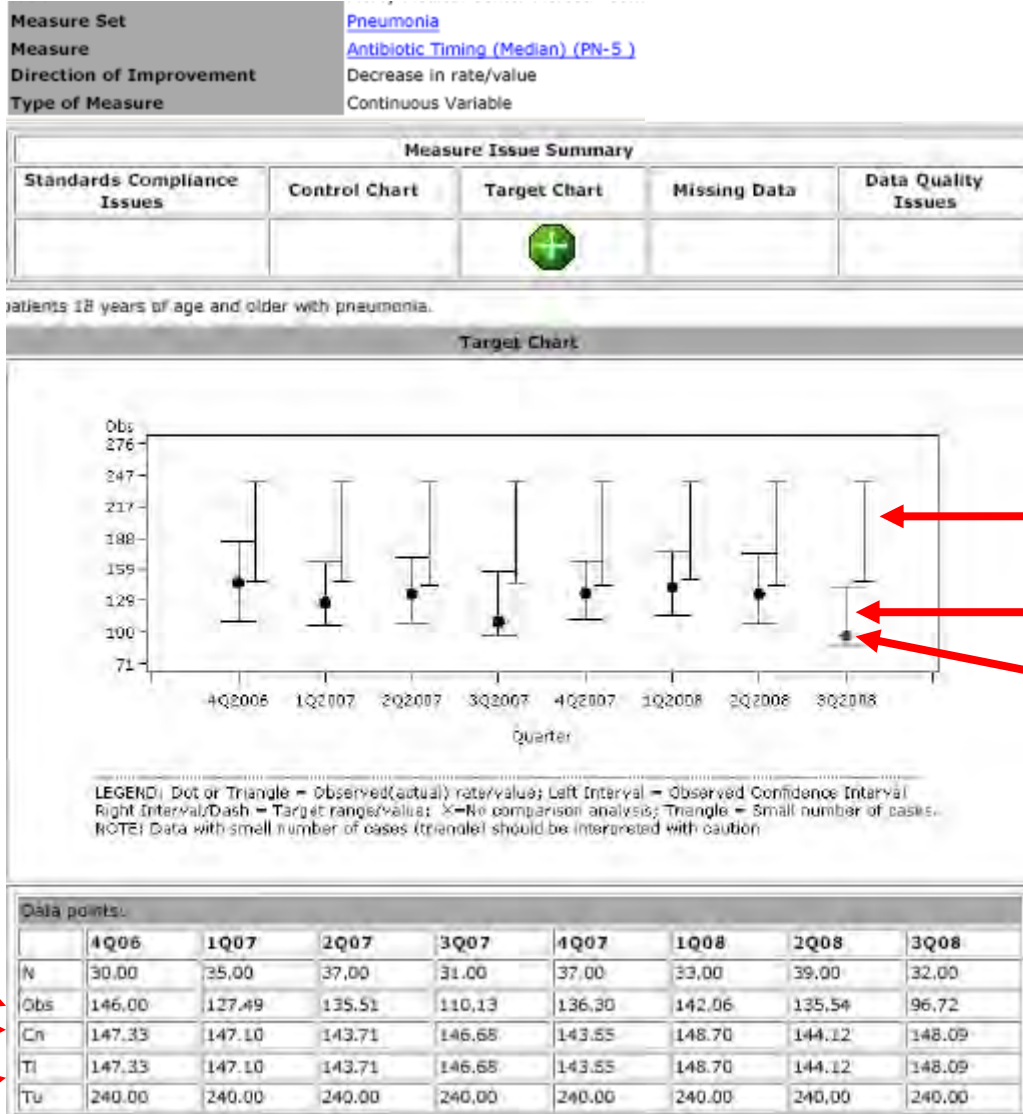
For questions regarding the above changes, please contact the ORYX Information Line at [hcooryx@jointcommissison.org](mailto:hcooryx@jointcommissison.org) or by phone at 630-792-5085.

### Example Target Chart for Proportion Measure Direction of Improvement = Increase in Rate/Value



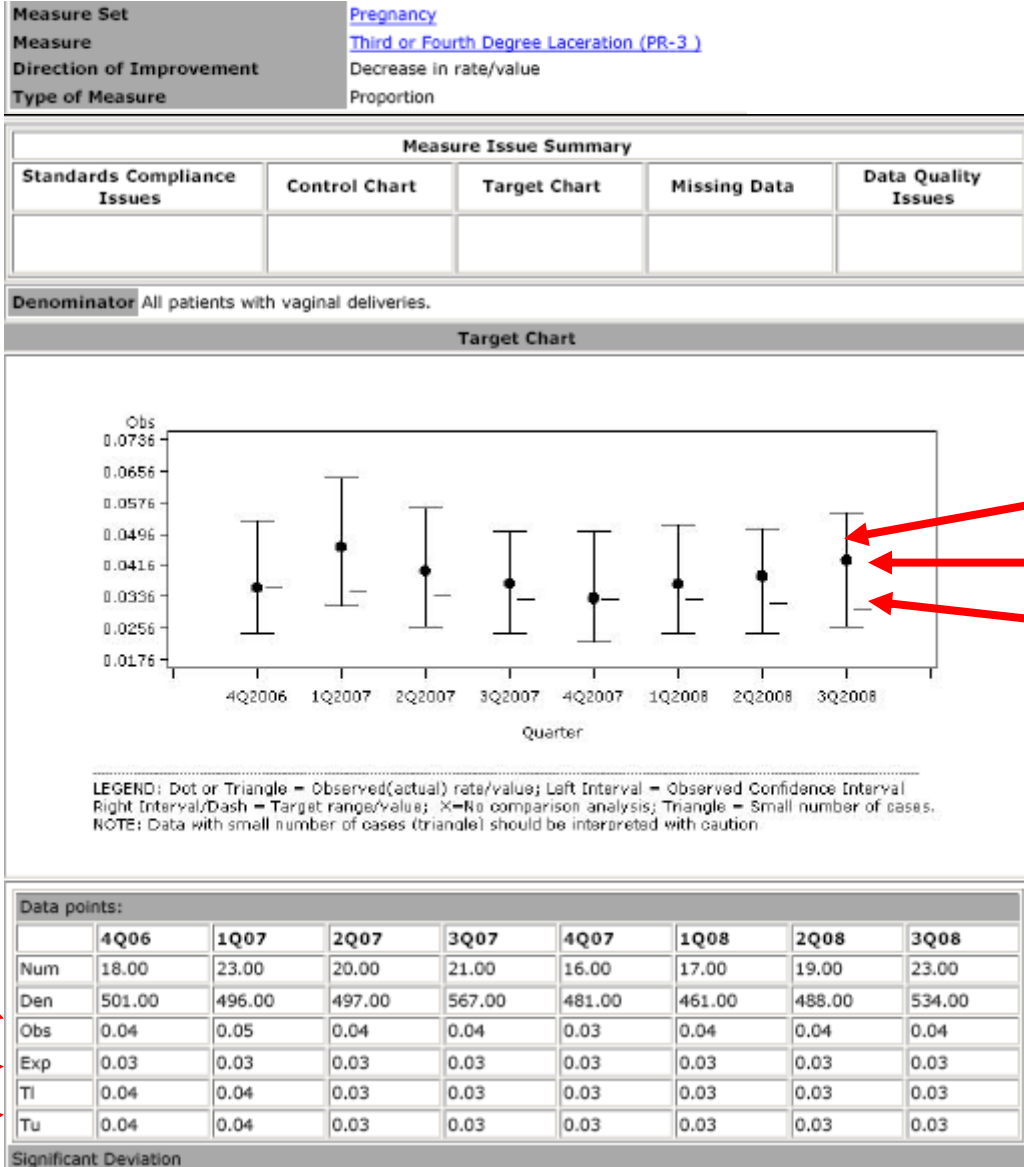
1. Target Range with Upper and Lower Target Limits
2. Hospital's Observed Rate/Value (Graphic Display/Table Value)
3. Predicted Estimate of Hospital's Performance with Upper and Lower Confidence Intervals
4. Cn = Comparative Norm (Expected Rate)
5. Target Range Values
  - Tl = Lower Target Limit Value
  - Tu = Upper Target Limit Value

### Example Target Chart for Continuous Variable Measure Direction of Improvement = Decrease in Rate/Value



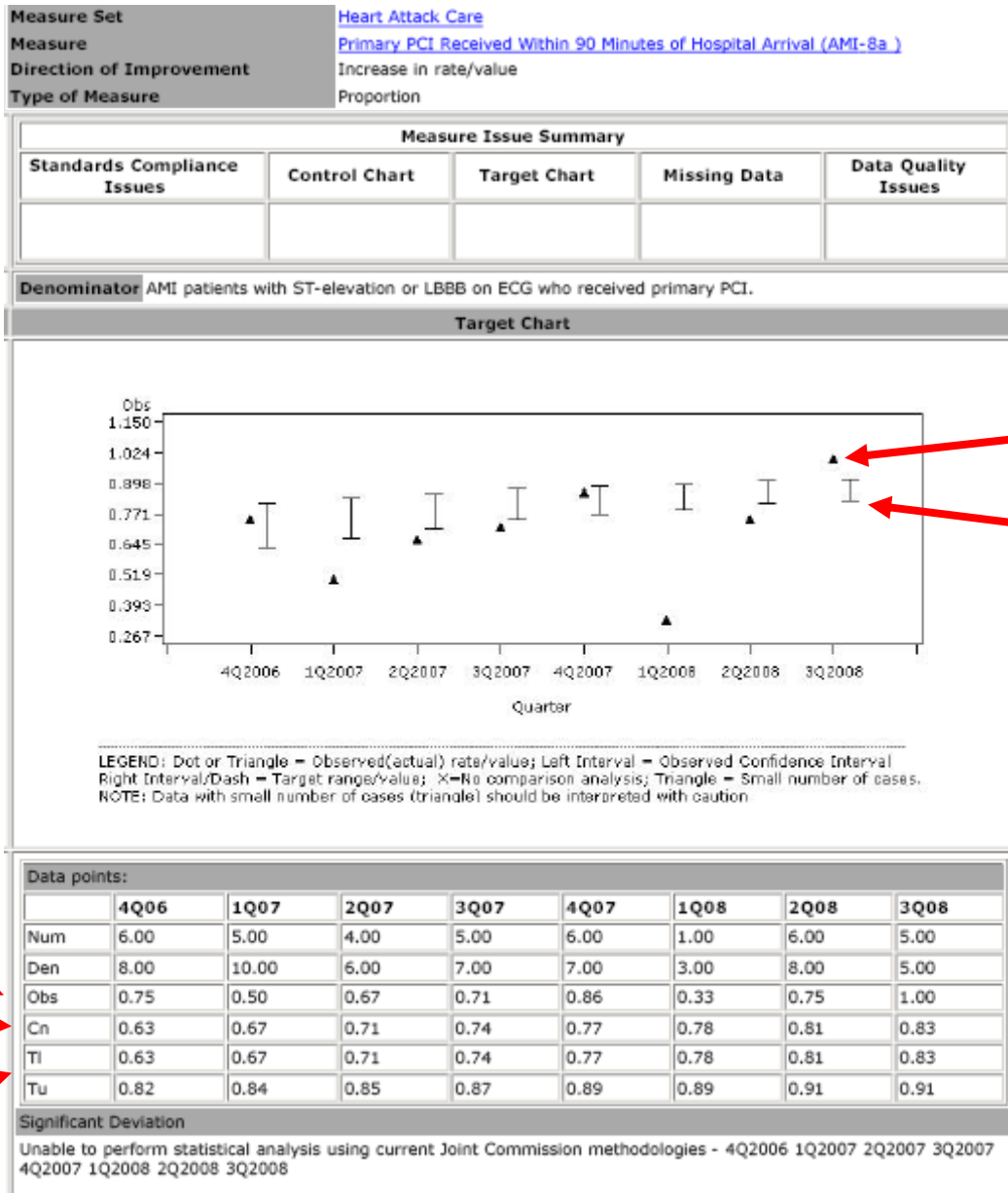
1. Target Range with Upper and Lower Target Limits
2. Predicted Estimate of Hospital's Performance with Upper and Lower Confidence Intervals
3. Hospital's Observed Rate/Value (Graphic Display/Table Value)
4. Cn = Comparative Norm (Expected Value)
5. Target Range Values
  - Tl = Lower Target Limit Value
  - Tu = Upper Target Limit Value

### Example Target Chart for Outcome (“Risk-Adjusted”) Proportion Measure



1. Predicted Estimate of Hospital’s Performance with Upper and Lower Confidence Intervals
2. Hospital’s Observed Rate/Value (Graphic Display/Table Value)
3. Exp = Comparative Norm (Expected Rate)
4. Target Values
  - Tl = Lower Target Value
  - Tu = Upper Target Value

### Example Target Chart for Proportion Measure Small Sample Size



1. Hospital's Observed Rate/Value (Graphic Display/Table Value)
2. Target Range with Upper and Lower Target Limits
3. Cn = Comparative Norm (Expected Rate)
4. Target Range Values
  - Tl = Lower Target Limit Value
  - Tu = Upper Target Limit Value