

## Scoring for the Acute Care 2006 Report:

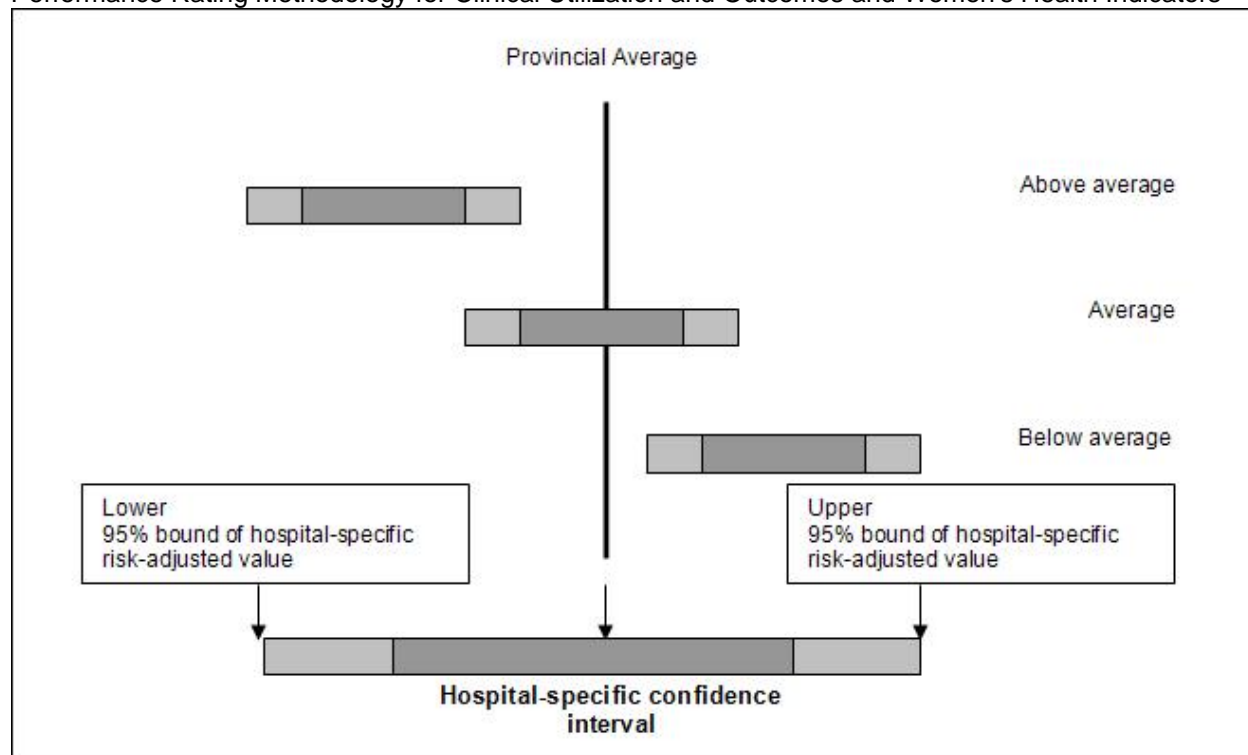
In the Clinical Utilization and Outcomes (CUO), Women's Health (WH) and Patient Satisfaction quadrants there are cases where hospitals may have the same score but are rated differently. In very general terms, this is due to sample size and confidence intervals. The statistical description of why this occurs is summarized (and depicted) below. Additional details on Performance Rating, Calculating Confidence Intervals, and Risk-adjustment, are provided in the Technical Summary Reports located on [www.hospitalreport.ca](http://www.hospitalreport.ca).

### Clinical Utilization and Outcomes and Women's Health

The performance rating is assigned by using confidence intervals around the hospital's risk-adjusted value and comparing that to the provincial average which is used as the benchmark. If a hospital's confidence interval contains the provincial average, it is considered an average performer. It is only above or below average when the provincial mean is not contained in the confidence interval. Each hospital will have a different confidence interval so that's why even though your hospital may have the same value as another hospital, your confidence interval 'range' can be different. This is depicted in the diagram below. Sample size is involved, however, other components are also considered in the process to build the risk-adjusted value and confidence intervals.

The cardiac indicators are either considered to have a statistically significant difference or not have statistically significant difference. A difference value is calculated using the formula  $(F-M)/F$ . For these indicators, 0 is the benchmark (not the provincial mean). If the confidence interval around the difference value contains 0, there is 'no statistically significant difference'. If 0 is not contained in the hospital's range, then there is a 'statistically significant difference' between men and women.

### Performance Rating Methodology for Clinical Utilization and Outcomes and Women's Health Indicators



\*Note: Confidence intervals can be different within each quadrant as well as among them (e.g. CUO and Women's Health uses 95% for most indicators but also uses 90% and 99.9% for some indicators).

### Patient Satisfaction

Two criteria were used to assess each hospital's performance. Statistical significance was used to assign

hospitals to the above average performance category. A second criterion, described below, was used for assigning hospitals to the below average performance category.

A 99.9% Confidence Interval (CI) was calculated for each indicator score within each hospital. Each hospital was compared to the average indicator score for all hospitals (the grand mean):

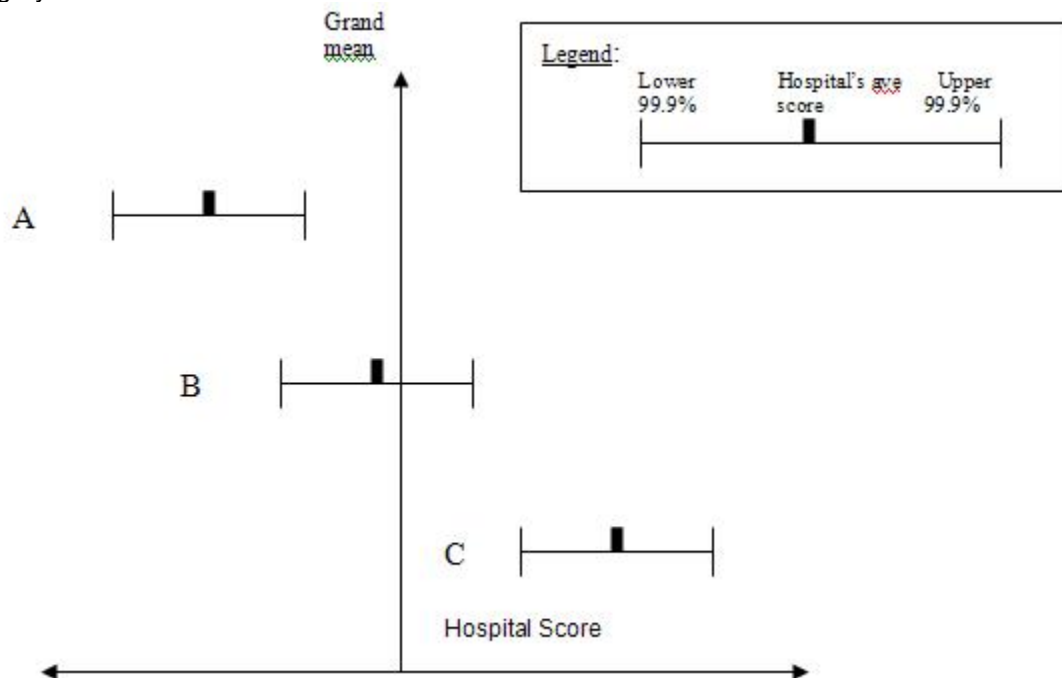
- "Above average" performance allocations were given to hospitals with indicator scores that were significantly statistically above the grand mean, using the 99.9% CI. This means that the lower bound of the confidence interval was higher than the grand mean.
- "Provincial Average" performance allocations were given to hospitals with indicator scores not significantly different from the grand mean.
- "Below average" performance allocations were given to hospitals with indicator scores both statistically significantly below the grand mean and lower than all non-significant hospital indicator scores. This means that the upper bound of the confidence interval was below the grand mean, and the hospital's indicator score was lower than the scores of all hospitals that were allocated an "average" performance.

The diagram below illustrates the criteria used to calculate the confidence intervals and compare to the grand mean.

Step 1: Calculate 99.9% CIs and Compare to Grand Mean

Procedure for Determining a Hospital's Performance

Category



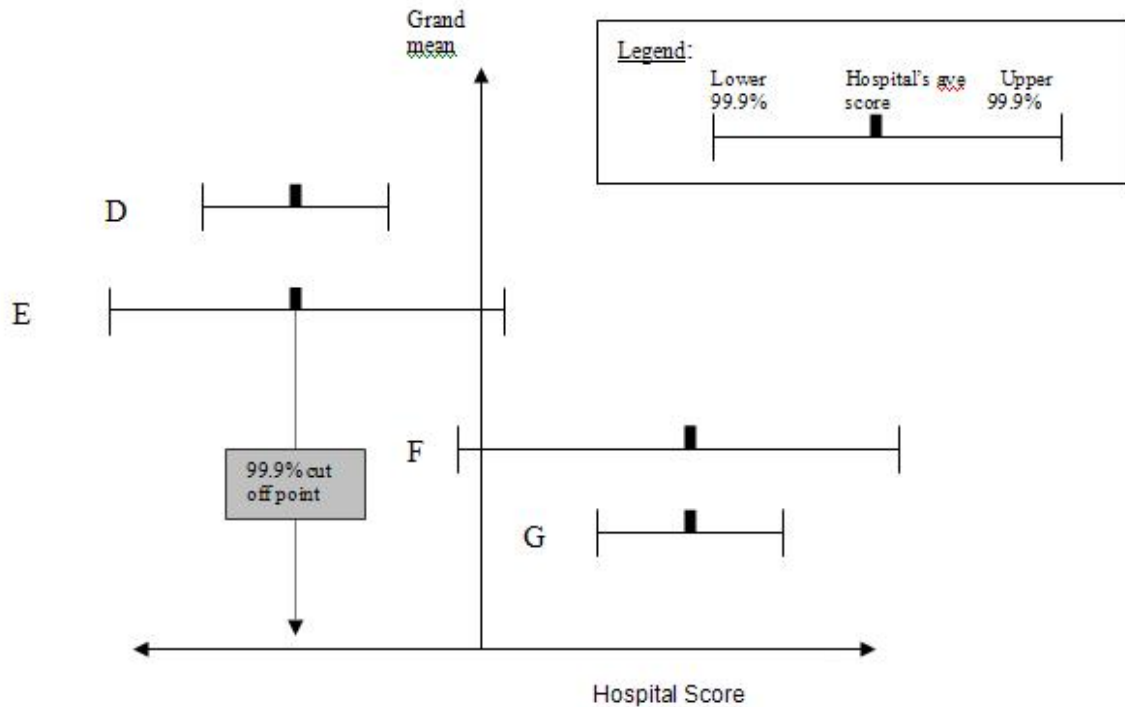
HOSPITAL A: The grand mean is above the upper 99.9% CI. The average indicator score for hospital A is estimated to be less than the grand mean (average of all hospital average) 999 times out of 1000.  
ALLOCATION: Below average

HOSPITAL B: The grand mean falls between the upper and lower 99.9% CI of the hospital average. The average indicator score for hospital B is estimated to not be significantly different than the grand mean 999 times out of 1000.  
ALLOCATION: Provincial Average

HOSPITAL C: The grand mean is below the lower 99.9% CI. The average indicator score for hospital C is estimated to be greater than the grand mean 999 times out of 1000.  
 ALLOCATION: Above average

Step 2: Apply Low Cut-Off Point

Applying the Low Cut-Off Point for Performance Allocations



99.9% Low Cut-off Point (HOSPITAL D & E)

Hospital D has the same average score as hospital E. However, based on the allocation process previously described, hospital D would receive a lower allocation (below average) than hospital E (provincial average) due to the size of the confidence intervals. A low cut-off point is applied to prevent this bias against hospitals that have a greater sample size/narrower confidence interval.

The 99.9% low cut-off point is determined by identifying the lowest indicator score of those hospitals that received an allocation of "provincial average" (and for which the grand mean fell within the 99.9% CI). Any hospital with an average score which falls between this low cut-off point and the grand mean receives an allocation of "provincial average" irrespective of whether the upper 99.9% confidence limit falls below the "provincial average". Therefore, hospital D which has the same average score as hospital E would also receive an allocation of "provincial average".