New User Guide

December 20, 2020

Guide to ArborMetrix for New Users

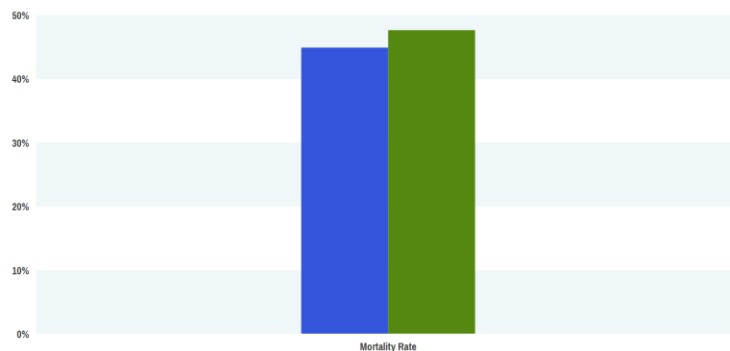## Contents

Graph Interpretation

An explanation of interpretation of charts and graphs displayed in the ArborMetrix platform.

Bar Chart: For Viewing Total Cases

Using a bar chart, users can compare their case rate over a selected time period against the selected peer group.
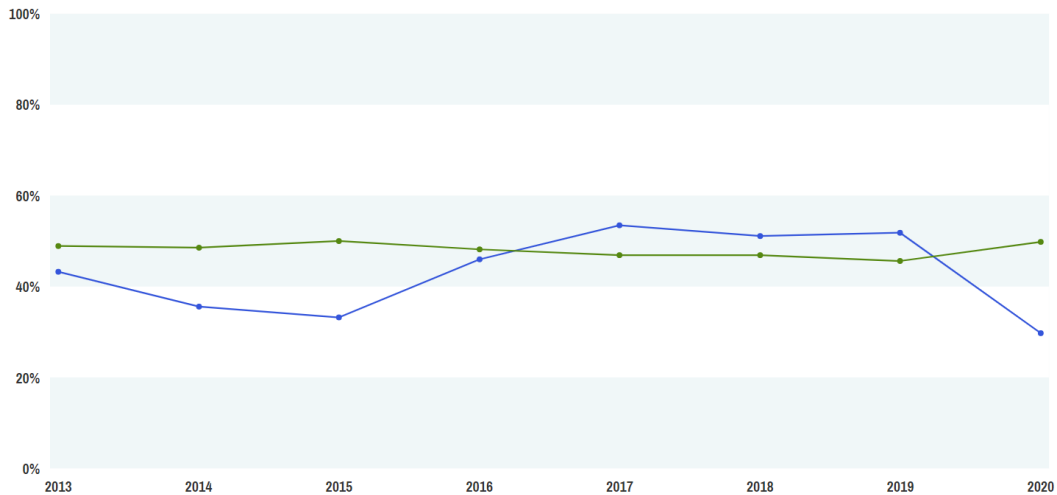

Data Elements

- The blue bar represents the total cases at your center for the selected time period
- The green bar represents the total cases of the comparison group for the selected time period

Trend Line: For Viewing Cases over Time

Using the Trend Line chart, users can view cases over time as compared with the selected peer group.
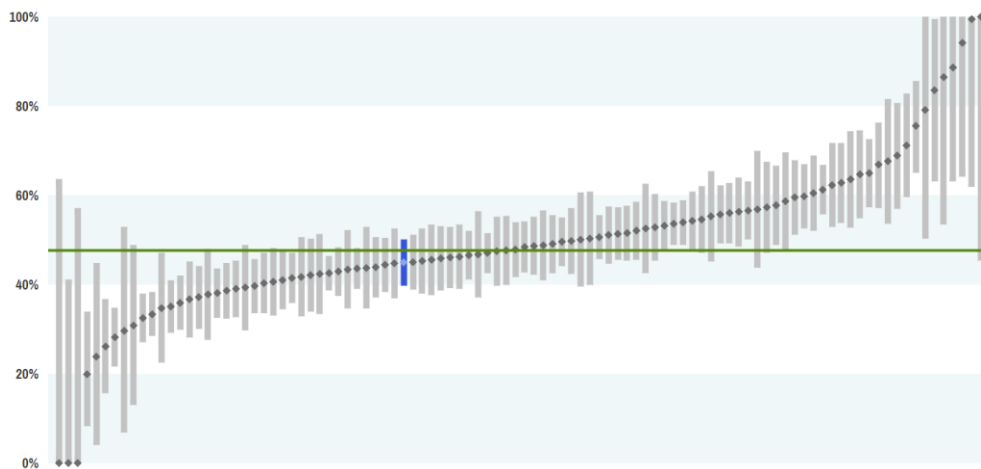

Data Elements

- The blue data points represent data for your center
- The green data points represent data from the Peer Group

Caterpillar Plots: For Comparing Centers

A caterpillar plot allows users to visualize their center's cases compared with other centers within the peer group. Users can compare placement of their center compared to others, as well as in compare their center to the comparison group average (green line).

Data Elements

- Each data point represents the data from a center
- The horizontal lines represent the confidence interval associated with each data point.
- The blue data point and horizontal lines represent data from your center.
- The green line represents the average cases within the Peer Group; this defaults to 'ELSO – All' but can be customized by using the Peer Groups filter selection

Confidence Intervals

The confidence interval is the estimated range that a given measure could be observed in. The wider the confidence interval, the larger the estimated range of the measure value. In the caterpillar plots, if the confidence interval passes through the green line (representing the average measure value for that peer group), it means the center's value cannot be distinguished from the peer group average.

Adjusted vs Unadjusted Measures

Unadjusted Measures

Unadjusted measures are the observed occurrence that are unaffected by any statistical adjustments. Unadjusted measures reflect what actually happened.

Adjusted Measures

Adjusted measures are outcomes that have been risk adjusted and reliability adjusted.

Risk Adjustment

Risk adjustment is a process that corrects for patient severity of illness and ensures comparisons are similar. Some hospitals treat more high-risk patients and this creates a challenge in comparing complications, utilization, and mortality rates for patients with the same condition but different health status. Risk-adjustment uses statistical models for accounting for the clinical risk factors that differ between patients. For example, an 65 year old female with multiple comorbidities is more likely to suffer adverse outcomes compared to a healthy 40 year old male undergoing the same procedure. To determine which covariates to include, we use advanced statistical methods (e.g., stepwise regression models) as well as clinical expert opinion. Covariates most frequently included are: age, sex, support type, and comorbidity information where available.

Reliability Adjustment

The purpose of reliability adjustment is to control for statistical precision. A value of "0" means the outcome is 100% noise (completely unreliable) and a value of "1" means the outcome is 100% signal (perfectly reliable). If you have a rate of 0.0% and your sample size is small, this may be the result of chance (i.e., good luck) and with reliability adjustment your "true" rate will likely be closer to the overall average. Reliability considers both the hospital sample size ("noise") and the amount of true variation across hospitals ("signal") for a given measure. For example, a zero-mortality occurrence rate out of two operations (0/2) is not the same as zero occurrences out of one hundred operations (0/100). With a smaller number of cases it is more likely that this is due to chance and is not indicative of true performance.