

Infection Reporting for Central Line-Associated Bloodstream Infections

The following graph and table show information about the infections in Vermont hospitals among patients who had a central line in an ICU setting.

Central Line-Associated Bloodstream Infections (CLABSIs) is presented using a standardized infection ratio (SIR). The standardized infection ratio (SIR) is a summary measure that compares the number of infections associated with central lines in Vermont to national data. The SIR for CLABSI takes into account the type of hospital intensive care unit that may increase or decrease the patient's risk of infection. This adjustment for differences allows us to make reasonable comparisons among hospitals regardless of the characteristics of their patients. Findings in this report are based on the assumption that patients at Vermont hospitals are similar to all patients in the NHSN database.

The SIR is a ratio that describes a hospital's infection numbers compared to a predicted number using national data. The national data includes all hospitals in the U.S. reporting data for CLABSI to the Centers for Disease Control and Prevention's National Healthcare Safety Network (NHSN) Database. Since the NHSN database does not contain data for every central line in the U.S, there is a level of uncertainty associated with the estimated SIR. This uncertainty is represented by a "95% confidence interval" (presented as a shaded bar on the graph below). A confidence interval of 95% can be interpreted as follows. If the procedure for calculating the SIR were repeated for different groups of people who had central line, the true SIR would fall within that range 95% of the time. Confidence intervals provide a simple way to determine statistical significance. If one SIR lies outside the 95% confidence interval of another SIR, there's a significant difference between the two SIRs. ([Click here for technical guide](#)).

Keep in mind that a hospital's infection reporting is only one thing to consider when choosing where to get your care. The advice of your physician, the hospital's and specialist's experience with the type of care you need, and other factors unique to your situation should be considered as well. Be careful when drawing conclusions from this information. Small numbers of patients and infections may distort reported performance.

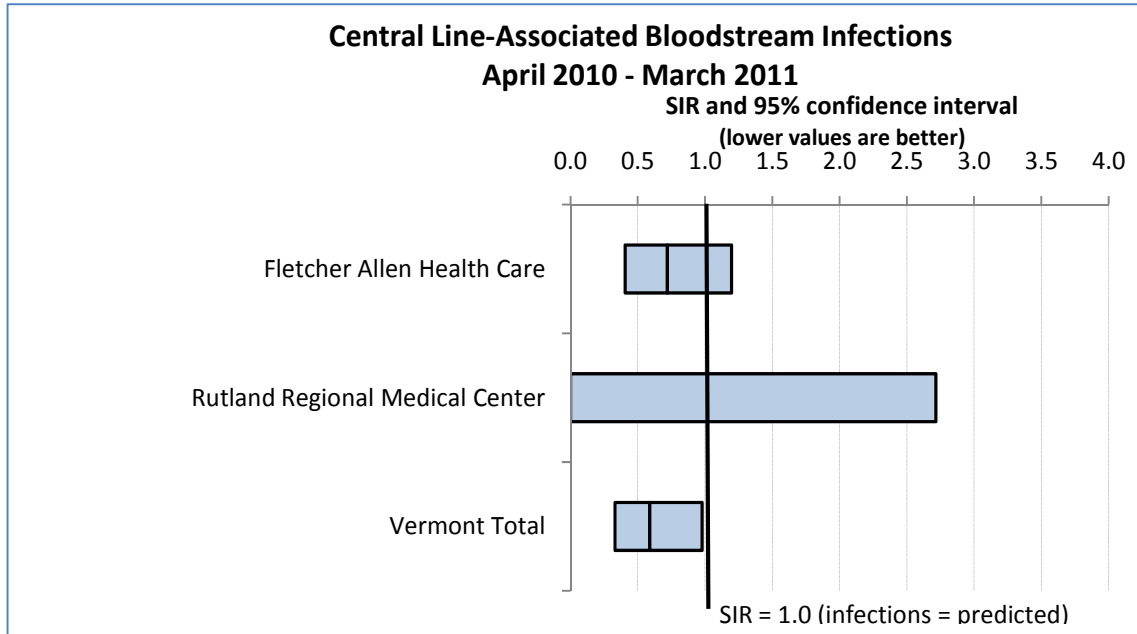
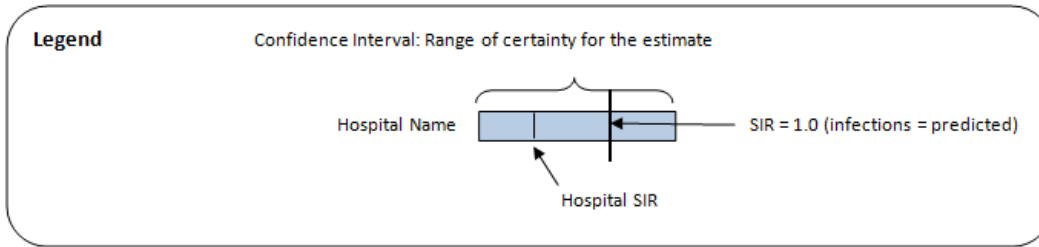
Reading the graph:

Since the SIR is an estimate, the confidence interval (CI) is also shown using the shaded bar in the graph below. A confidence interval is a measure of certainty (in this case with 95% certainty) of an estimate (such as the SIR). For hospitals with smaller volumes, the shaded bar will be wider.

The closer the hospital's SIR is to 1.0, the closer the number of infections was to the number of predicted infections for that hospital. The SIR can only be calculated if the number of predicted infections for the hospital is greater than 1.0. When the number of predicted infections is less than 1.0, the number of days with a central line in place is too low in that ICU to calculate a reliable SIR. This is the reason that a SIR could not be calculated for every Vermont hospital ICU with patients who had a central line within the reporting year.

When a SIR can be calculated, there are four possible results for the hospital:

- If a Vermont hospital has an SIR of 0, it means they had **no** infections during that time period.
- If the shaded bar on the graph (95% CI) falls completely below the reference line of 1.0, the number of infections was **lower (better)** than what we would predict, based on national data.
- If the shaded bar crosses over the reference line of 1.0, the number of infections was **similar (not significantly different)** than what we would predict, based on national data.
- If the shaded bar falls completely above the reference line of 1.0, the number of infections was **higher (worse)** than what we would predict, based on national data.



Central Line-Associated Bloodstream Infections April 1, 2010 through March 31, 2011					
Hospital	Number of Infections	Number of Central Line Days	Standardized Infection Ratio	95% Confidence Interval for SIR	Hospital performance compared to NHSN national data
Brattleboro Memorial Hospital	0	257	Not applicable	na	na
Central Vermont Medical Center	0	515	Not applicable	na	na
Fletcher Allen Health Care	11	6,162	0.72	(0.41, 1.20)	Similar to national NHSN
North Country Hospital	0	95	Not applicable	na	na
Northeastern Vermont Regional Hospital	0	60	Not applicable	na	na
Rutland Regional Medical Center	0	735	0	(0, 2.72)	Similar to national NHSN
Southwestern Vermont Medical Center	0	514	Not applicable	na	na
Springfield Hospital	0	84	Not applicable	na	na
Vermont Total	11	8,422	0.59	(0.33, 0.98)	Lower than national NHSN

Note: The following hospitals do not have ICUs that meet the CDC definition for reporting central line-associated bloodstream infections and therefore are excluded from this report: Copley Hospital, Gifford Medical Center, Grace Cottage Hospital, Mt Ascutney Hospital & Health Center, Northwestern Medical Center, and Porter Hospital.

Rutland Regional Medical Center had **no** infections during the reporting period but the relatively small volume of central line days made the shaded bar (confidence interval) wide in the chart.

Not applicable (na): ICU patients had too few central line days to calculate a reliable SIR. When SIR cannot be calculated, a comparison to national data is not possible.