

Central Line-Associated Bloodstream Infections in Wisconsin, 2009-2010

The Wisconsin Division of Public Health Healthcare-Associated Infections (HAIs) Prevention Project announces the release of the first annual report on rates of central line-associated bloodstream infections (CLABSIs) among hospitals reporting data to the CDC National Patient Safety Network (NHSN).

Major findings include an increase in the number of reporting hospitals since the project began in September, 2009 and significant reductions—33% in 2009 and 26% in 2010—in CLABSI occurrence among the reporting hospitals compared to the national baseline CLABSI occurrence from 2006-2008. The reductions among Wisconsin hospitals reporting to NHSN are similar to the national reduction in CLABSI occurrence for the same time period.

2009 Wisconsin CLABSI Data Summary

In 2009, 11 Wisconsin hospitals reported CLABSI data from 34 inpatient units (excluding neonatal intensive care units) to NHSN and conferred rights to these data to DPH. All 11 facilities are general acute care hospitals, and 17 (50%) of the 34 reporting units are critical care units. Of 408 possible reporting months, 343 (84%) months of data were submitted.

One (3%) of 34 reporting units had a mean CLABSI incidence density (number of CLABSI per 1,000 patient days) that was lower than the 2009 national pooled mean for similar units (0.0 vs. 1.3, $p = 0.044$). This rate was based on 12 months of data collected from a medical/surgical intensive care unit.

The remaining 33 reporting units had CLABSI rates that were not statistically different from the national pooled mean ranging from 0 to 1.8 CLABSI per 1,000 patient days, depending on the type of unit.

CLABSI occurrence in 2009 among these 34 units can be compared to national data using a standardized infection ratio (SIR), which is calculated by dividing the number of CLABSIs reported (54) by the number of CLABSIs expected (80). The expected number is based on the national pooled mean CLABSI rate from 2006-2008.

The 2009 SIR for the 34 reporting units is 0.67 ($p < 0.001$ CI 0.50-0.87), meaning the CLABSI occurrence among these units was 33% less than the national baseline CLABSI occurrence from 2006-2008.

2010 Wisconsin CLABSI Data Summary

In 2010, 40 Wisconsin hospitals reported CLABSI data from 156 inpatient units (excluding neonatal intensive care units) to NHSN and conferred rights to these data to DPH. Of the 40 facilities, 34 (85%) are general acute care hospitals and 6 (15%) are critical access hospitals. Critical care units comprise 48 (31%) of the 156 reporting units. Of 1,872 possible reporting months, 909 (49%) months of data were submitted.

One (< 1%) of 156 reporting units had a mean CLABSI incidence density that was lower than the 2009 national pooled mean for similar units (0.0 vs. 1.1, $p = 0.043$). This rate was based on 6 months of data collected from a surgical ward. Two (1%) of 156 reporting units had a mean CLABSI incidence density higher than the 2009 national pooled mean for similar units (5.7 vs. 1.4, $p = 0.009$; 10.3 vs.

1.1, $p = .005$). Each of these rates represents 6 months of data, one from a medical ward and one from a medical/surgical intensive care unit.

The remaining 153 reporting units had CLABSI rates that were not statistically different from the national pooled mean ranging from 0 to 2.6 CLABSI per 1,000 patient days, depending on the type of unit.

The 2010 SIR for the 156 reporting units is 0.74 ($p < 0.001$ CL 0.60-0.89), meaning the CLABSI occurrence among these units was 26% less than the national CLABSI occurrence for the same time period, and this difference was statistically significant.

Summary

Although there was an increase in the CLABSI SIR from 2009 (0.67) to 2010 (0.74), the increase is not statistically significant ($p = 0.57$). There is also no difference between the Wisconsin CLABSI SIRs and the 2009 national CLABSI SIR of 0.83 ($p = 0.12$ for 2009 and $p = 0.27$ for 2010). This means that CLABSI occurrence in Wisconsin has been significantly reduced from 2009-2010 compared to the baseline time period of 2006-2008, and the reductions are similar to the national reduction during the same time period.