Abstract:

BACKGROUND: “Zero” central line-associated bloodstream infections (CLABSI) have not been reported from Asian countries, which usually have predominance of difficult to curtail gram negative infections. It also remains unclear whether lowering CLABSI rates below National Healthcare Safety Network (NHSN) benchmarks in such countries is even possible. In this study, we evaluated effects of a quality improvement initiative to achieve “Zero CLABSI” in our intensive care unit.

METHODS: A root cause analysis in February 2010 identified problems with clinical practice, environment, and products. Extensive education sessions were followed by implementation of strategies in the form of “itemized” bundles derived from practice guidelines, with complete enforcement starting August 2010. Results were benchmarked against NHSN data. Data were analyzed in a preintervention (1 year) and postintervention (2 years) fashion, using Poisson regression analysis to generate incidence-rate ratio (IRR).

RESULTS: In the preintervention period, CLABSI rate was 6.9/1,000 catheter-days (CDs) (35 CLABSI/5,083 CDs). In the postintervention year 1, rate was 1.06/1,000 CDs (4 CLABSI/3,787 CDs).
CDs) with IRR of 0.15 (95% confidence interval: 0.04-0.44, P < .001) and reduction of 85%. In postintervention year 2, rate was 0.35/1,000 CDs (1/2,860 CDs) with IRR of 0.05 (95% confidence interval: 0.001-0.31, P < .001). There was a period of “Zero CLABSIs” for 15 consecutive months, surpassing NHSN benchmarks.

CONCLUSION: CLABSIs can be eliminated in any intensive care unit regardless of the location and type of organism. NHSN data should be a realistic CLABSI benchmarking target for developing countries.