Reducing Central Line Associated Blood Stream Infection Rates in a Teaching Hospital
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**Problem:** The CL-BSI rates in our hospital have been historically high. At times approaching or exceeding the 90th percentile for reporting hospitals. Our third quarter data revealed that we were above the 90th percentile in all ICUs for the third quarter. During a performance improvement analysis, it was noted that there was not a strong program in place that was based on the best evidence.

**Evidence:** A literature review was conducted and a plan was developed to decrease CL-BSIs in the ICUs. The Institute for Healthcare Improvement and the Center for Disease Control were the primary entities consulted for the bundle of care. Literature that provided positive direction on instituting the bundle was also utilized.

**Strategy:** Our new central line program included a central line cart that is configured in such a way that all items must be taken from the cart. This ensures that all necessary supplies are taken in order to comply with the bundle of care. A performance improvement program was written that included a nurse champion on each unit that ensured compliance via a performance improvement tool and checklist for each central line placement. Also, a comprehensive and ongoing educational program was written for the doctors, nurses, and technicians that assist with central line placement. Empowerment to stop the procedure by the nurses was also in the equation.

**Practice:** The program was in place by September 2008. It included teaching about the new central line cart and program via a 20 minute PowerPoint presentation. All of the staff was included in the teaching. The teaching was conducted daily for two weeks in order to cover both day and night shifts.

**Results:** A significant decrease was seen comparing the third and fourth quarters of 2008. The CL-BSI rates on our two SICUs decreased from 9.9 and 15.3 per 1000 central line (CL) days to 3.8 and 4 per 1000 CL days respectively. The CL-BSI rate for MICU decreased from 6.9 to 4 per 1000 central line days. The end of year CL-BSI rate is now the lowest it has been in four years.

**Recommendations:** Although our hospitals CL-BSI rates remain above the median for reporting hospitals, it is clear that after only three months, the evidence based initiative has had a positive impact. We are looking forward to the report for the first quarter of 2009 and are sure that we will reach our goal of being below the median for reporting hospitals with a long term goal of at or below zero.

**Lessons learned:** Change is difficult and takes time. The group that offered the most resistance was the residents, but the program is now widely accepted.

**Bibliography:**