Sustained Reduction of CABSI--Does Silver Make the Difference?
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Problem: In 2008 the catheter associated bloodstream infection rate (CABSI) in this Burn Center was 6.3 per 1000 central line (CVC) days. The greatest interval between CABSI was 61 days. NHSN pooled mean CABSI rate for Burn Centers was 5.5/1000 CVC days. By early 2009 our CABSI rate had escalated to 14.8/1000. The purpose of this evidence based practice (EBP) project was to evaluate the impact of silver coated dressings and IV connectors on CABSI rates in the Burn Center.

Evidence: CABSI are the most common healthcare associated infection in the critical burn patient and the leading cause of morbidity and mortality (Cone, 2005; Shupp, 2010). Most CABSIs emanate from the insertion site, hub or both (Mermel, 2009). EBP strategies to reduce acquired infections have been widely published including silver-impregnated plastic catheters and biofilms (Hill, 2009; Khattak, 2009; Mermel, 2009).

Strategy: Concurrent surveillance for device associated infections is performed within the Burn Center and data is submitted monthly to NHSN network. A PICO question was formulated: In burn patients with CVC or PICC how the use of silver-alginate-coated dressing and silver-coated IV connector impact the rate of CABSI?

Practice Change: Maximum barrier precautions, chlorhexidine skin antiseptics, antimicrobial impregnated catheters and daily assessment of catheter need with documentation of line insertion days have been our standard practice. In May 2009, use a silver-alginate-coated dressing and a silver-coated IV connector was initiated with CVC and PICC lines.

Evaluation: CABSI are reported quarterly as number per 1000 central line days. CABSI rates and interval between CABSI were tracked before and after this evidence-based practice change.

Results: The CABSI rate declined to 5.4/1000 in late 2009. CVC days were reduced by 53% and arterial lines by 60%. The interval between CABSI increased to 141 days. In first quarter 2010, the CABSI rate declined to 2.8/1000 days with reduction of CVC days by 62% and arterial lines by 60%. In the 2010 first quarter the interval between CABSI is 114 days.

Recommendations: These EBP changes have led to a reduction in CABSI and the number of line use days. The Burn Center team plans to replicate the review for urinary catheter infections.

Lessons Learned: Skin assessment documentation even photography with silver dressing application should be discussed. We learned that diligent monitoring of our practice must not be lessened when the results show improvement.