Problem: Central line blood stream infections (CLBSI) are the most common type of nosocomial infection today resulting in 80,000 annual cases, 28,000 deaths and an estimated cost of $2.3 billion. Approximately 50% of CLBSI occur in ICUs, two-thirds are largely preventable, with average cost savings of $40,000 per infection.

Evidence: Similar to aviation checklists, CLBSI checklists are designed to reduce the incidence of human error. The National Nosocomial Infection Surveillance System developed a best practice bundle for central venous catheter (CVC) insertion, while Dr. Pronovost developed into a corresponding checklist. This change resulted in a savings of 1500 lives and $200 million dollars.

Strategy: A CVC checklist was created with the primary objective of decreasing the incidence of CLBSI, subsequently decreasing morbidity and mortality. The checklist incorporates two strategic components: memory recall, and identification of basic steps in a complex process.

Practice Change: RNs/techs assisting a physician inserting a CVC may stop the procedure immediately, if aseptic technique is violated. After reestablishing a sterile field, the procedure may be resumed.

Evaluation: CLBSI rates reported per 1000 catheter days for 2008: ICU 1.8 (5 CLBSIs), CSU 0.9 (2 CLBSIs) and CCU 1.0 (1 CLBSI). Target rates for the 2009 pilot study: ICU 1.3 (3 CLBSIs), CSU 0.8 (1 CLBSI), and CCU 0.5 (0 CLBSI), with the ultimate goal of no CLBSI.

Results: It is anticipated this study will demonstrate a significant reduction in CLBSI rates, improved quality of patient care and cost savings.

Recommendations: CLBSI can be reduced through implementation of a simple checklist and better surveillance of nosocomial infection, clinician education and greater adoption of evidence-based practice guidelines among both nurses and physicians.

Lessons Learned: Ongoing feedback of decreasing rates of CLBSI helped to reinforce compliance and effective team behavior. Checklists provide a valid representation of the actual task setting with measurable outcomes. Implementation of the checklist provided for increased quality of care, patient safety, and cost savings.