



Successful Central Line Associated Bloodstream Infection (CLABSI) Reduction Using a Multi-Disciplinary Approach



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Background

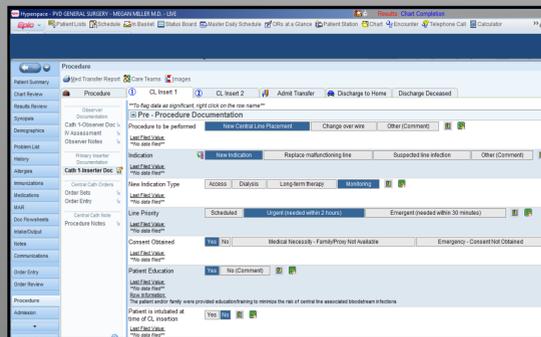
- Central Line Associated Bloodstream Infections (CLABSI) are a significant source of morbidity and mortality for hospitalized patients.
- Most CLABSI prevention initiatives focus on insertion technique and are often limited to higher risk settings such as Intensive Care Units¹.
- We aimed to reduce CLABSI by at least 10% as part of an enterprise-wide annual goal for FY2012.
- A multi-disciplinary task force identified and implemented sequential interventions focusing on central line accessing/maintenance and standardized practices in all patient-care areas.

Methods

- The CLABSI task force included departmental leaders from nursing, infection prevention, risk management and patient safety, supply chain, faculty, and housestaff.
- Standardized nursing practices for accessing and maintaining central lines were taught via computer based training (CBT) and reinforced with return demonstration for all 1400 nurses. This included a "Scrub the Hub" protocol to ensure proper chlorhexidine application and drying time.
- Clinicians were educated on proper line placement technique via CBT, including a pre- and post-test, followed by simulation training for some trainees.
- An electronic central line insertion checklist tool requiring both an observer and inserter to participate in and document the procedure was introduced.
- Standardized kits for insertion and dressing changes were stocked for use.
- Monthly and FY CLABSI rates were calculated and tested for significance using the student t-test (STATA).



Custom-built standardized Adult Supply Bundle containing items needed for central line insertion; a similar bundle was developed for Pediatrics.

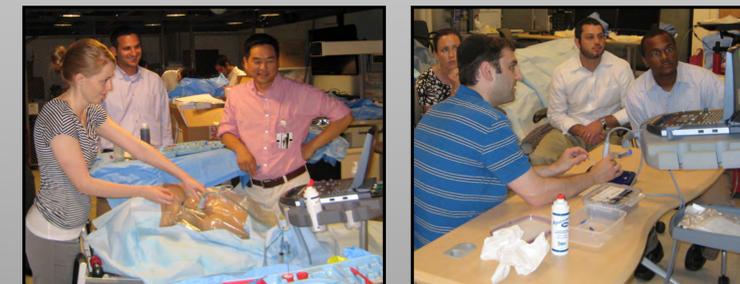
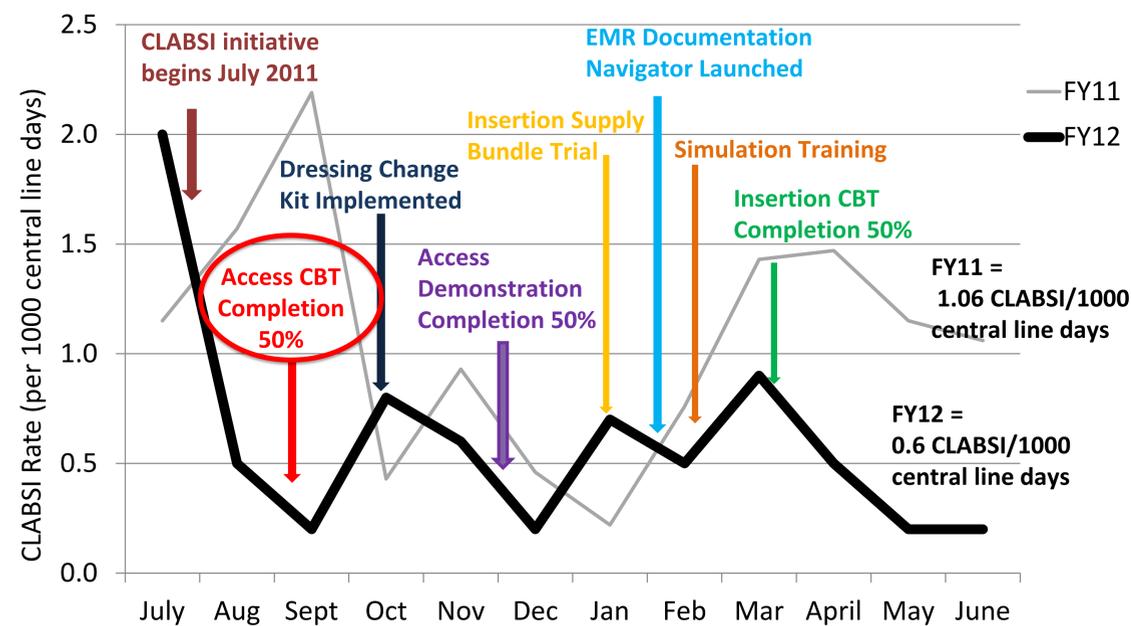


Electronic Medical Record (EMR) tool for central line insertion requires both the observer and inserter to document portions of the procedure using a standardized checklist.

Results

- CLABSI rates decreased from 1.06 per 1000 central line days in FY11 to 0.6 per 1000 central line days in FY12 ($p = 0.027$).
- CLABSI rates have ranged from 0.2 to 0.9 per 1000 central line days over the past twelve months.
- Notable decreases in the monthly rate were temporally associated with certain interventions:
 - 50% completion of the line access and maintenance CBT
 - 50% completion of the return demonstration
 - 50% completion of the insertion CBT and simulation training

Monthly CLABSI rates FY11 vs. FY12



Faculty and housestaff during central line insertion simulation training ; reproduced with permission.

Conclusions

- Practitioner education coupled with institution-wide standardization of supplies and procedures led to a statistically significant decrease in CLABSI from FY11 to FY12 and reduced CLABSI by 40%, surpassing our goal.
- The unique focus on standardized accessing and maintenance protocols early in the intervention period helped drive success and was critical to CLABSI reduction.
- This approach offers an opportunity for improvement above and beyond insertion best practices and could be utilized in future quality improvement initiatives.