

Application of Innovative Methods to Transform the Environment of Care and Reduce Surgical Site Infection (SSI)

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Abstract

Background: Postoperative SSI contributes to patient mortality, morbidity and increased length of stay. SSI can impose devastating lifestyle changes to patients and render financial burden to health care organizations.

Purpose: The purpose of this project was to reduce the incidence of SSI to zero using multidisciplinary and systematic approaches within an integrated care delivery system.

Methods: Clinical staff, leadership and quality were fully engaged in this project in all surgical settings. Metrics included 5 areas of practice, a self efficacy survey, hospital SSI rates and National Surgical Quality Improvement Program (NSQIP) data. Staff were educated on new surgical attire practices and skin prep agents. Colorectal bundle procedures were implemented. Nursing staff attended sessions on surgical skin prep and hair removal procedures in a simulated setting. Twenty percent of selected operating room clinical leaders attended simulation sessions on ethics and the Association of Operating Room Nursing (AORN) standards. Adherence to the AORN standards of practice and Self Efficacy⁵ surveys were distributed to clinical leaders initially and at 6 months. All clinical staff attended sessions where results of clinical leader surveys, topics relating to codes of ethics, AORN standards, insidious intimidation and lateral violence were discussed. These sessions included cognitive rehearsal using clinical scenarios. Key surgeons practiced a model of team building to encourage leveling of power relationships and foster transparent communication.

Results: Data showed a 50% reduction in the incidence of SSI overall within a 12 month period with significant SSI reduction in 6 surgical specialties. Attire compliance remained at 95% and correct antibiotic timing at 90% over a 6 month period. Practices related to the choice of skin prep agent and adherence to clipping procedures averaged 65% over a 5 month period. Clinical leaders surveyed 6 months after simulation indicated improvement in consistent practice of 14 of 18 AORN standards. Self efficacy scores increased overall and specifically in the area of conflict.

Conclusion: Engagement of 20% of identified clinical leaders positively influenced practice changes. Comprehensive auditing procedures with reporting and follow-up assisted in stabilizing changes. Simulation education is an effective and comprehensive approach to changing practice, developing skills and building teams.

Assumptions

- Simulation education is an effective and comprehensive approach to changing practice, developing skill and improving multi-disciplinary team communication.
- Comprehensive, specific and consistent auditing procedures with observation, electronic medical record reporting and follow-up to clinical staff will influence practice changes.
- Engage 20% of identified clinical leaders on staff to influence change.
- Escalation procedures in communication will support staff to address those not in compliance with new policies and culture.

References

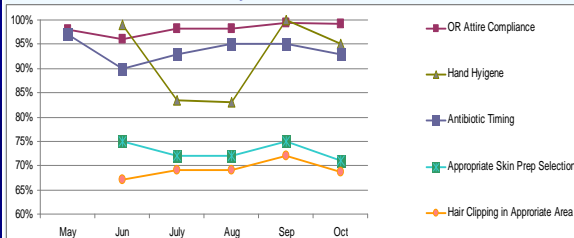
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Methods

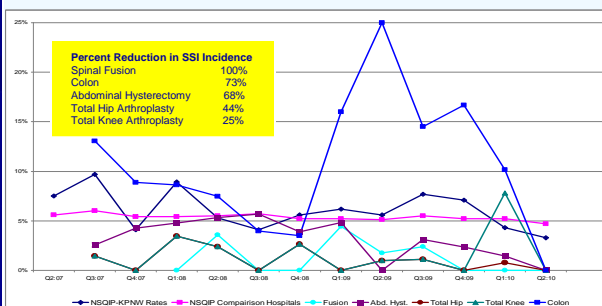
- Educated multi disciplinary staff and implemented changes in surgical attire practices
- Key surgeon leaders practiced the Baylor-Permanente¹⁻⁴ model of team building using simulation
- Implemented simulation based surgical skin preparation education sessions with competency validation for staff throughout region
- Colorectal surgeons implemented bundle procedures with multi disciplinary involvement effective January 2010
- Completed environment of care simulation sessions for 20% (n=43) of the operating room staff identified as clinical leaders
- Shared results on current practices, self efficacy from simulation and action plan to operating room staff throughout the region
- Completed 24 education sessions to regional operating room staff on lateral violence and insidious intimidation using cognitive rehearsal. Staff participated in case scenarios that demonstrated skill in team communication and advocating for the patient on a) sterile technique, b) traffic control and c) cleaning procedures

Results

Quality Metrics for SSI Reduction
May 2009 to October 2010

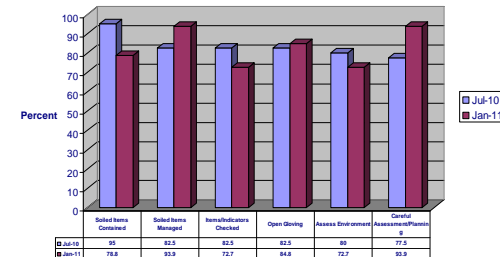


Incidence of KPNW SSI and National Surgical Quality Improvement (NSQIP)
for General and Vascular Surgery
April 2007 to April 2010

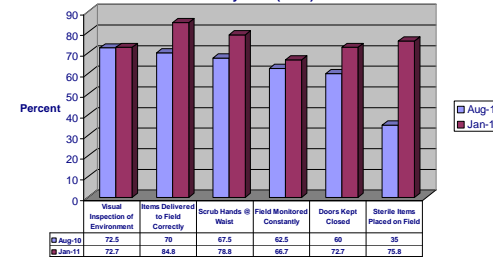


Results

Staff Perception of AORN Standards Practiced >90%
August 2010 (n=40)
January 2011 (n=33)



Staff Perception of AORN Standards Practiced >90%
August 2010 (n=40)
January 2011 (n=33)



Surgical Services Staff Education Environment of Care
Self Efficacy⁵ Survey
Sample of Question Responses of "Exactly True"
August 2010 (n=38) and January 2011 (n=33)

