Appendix Table C4c. Study context for SSI which control for secular trend or confounding

| **Study** | **Infection** | **Location/Size** | **Influence of context on outcomes** | **Theory behind Patient Safety Practice** | **Existing Patient Safety Infrastructure** | **External Factors** | **Patient Safety Culture at Unit Level** | **Availability of Intervention materials** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Burkitt, United States - 2009 | SSI | Pittsburgh, PA/36 bed surgery unit; 146 bed tertiary care for veterans | Improvements across the 5 classes of surgery differed. The TPS focused their efforts on the more common surgical procedures. Most common were orthopedic, so those physicians had more discussions with the TPS team and also had the high-test compliance percentages. | In the TPS model, frontline work groups identify problems, experiment with possible solutions, measure the results, and implement strategies to improve quality, resulting in a “ground up” rather than “top down” approach. | This intervention evolved from efforts to reduce MRSA. |  | TPS team leader was a staff nurse, who worked with all staff to identify problems and develop solutions. | All staff are involved. Battery packs were purchased and a computerized medication system was available. |
| Hedrick, United States - 2007 | SSI | Charlottesville, VA/547 bed hospital; 29,000 admissions/yr |  |  |  | In 2003, Virginia Healthcare Quality Center (VHQC) asked medical centers in the state to choose a target population for which they want to lower SSI rates. The VHQC began this program in response the CMS Surgical Infection Prevention project. | A multidisciplinary team defined the scope of the problem and designed interventions to lower SSI rates. Specific nurses were designated responsible for implementation. | coordination among multiple disciplines, designated enforcers of intervention were assigned, standardization of procedures |
| Kaimal, United States - 2008 | SSI | San Francisco, CA/ |  | Systems of pt care are complex and require multidisciplinary problem-solving in order to make improvements. Understanding the nature of the system and the roles of the participants is essential for policy change. | The authors had tried some initial policy changes regarding retraining RNs, new surgical prep, supplemental O2, pt warming, and improving scrub technique, but none had lowered the SSI rate prior to the intervention of this study. |  | A multidisciplinary task force worked with members of different depts. Nurses were designated as communicators and enforcers of the policy change. | The policy change was communicated verbally and electronically. |
| Kao, United States - 2010 | SSI | both hospitals in Houston, TX/2 county hospitals | Hospital 1 scored lower on the Safety Attitudes Questionnaire in safety domains and teamwork compared to hospital 2. Hospital 1 had lower compliance with antibiotic timing, but had better compliance with antibiotic discontinuation and overall compliance compared to hospital 2. Hospital 1 had higher SSI rates compared to hospital 2. |  | A standardized antibiotic form was available to both hospitals prior to intervention, however it was not implemented extensively. | Preintervention data had been reported previously as part of a study on factors predicting compliance with SSI prophylaxis guidelines. The hospitals’ district was collecting SSI rates from hospitals during the study period, so lowering SSI was a concern. Hospital 2 had proportionately more abdominal vascular cases. | In hospital 2, nurses were responsible for completing a pre-op checklist. | multidisciplinary team, standardized forms |
| Kritchevsky, United States - 2008 | SSI | /44 acute care hospitals |  | Quality improvement collaborative bring together groups of practitioners in a series of meetings to share and implement practical solutions for rapid improvement of processes for which the gap between knowledge and practice in health care is substantial. |  | During the study, there was national interest in the antibiotic prophylaxis process because of the creation of SIP (National Surgical Infection Prevention Project) by the Centers for Medicare and Medicaid Services. During study period, antibiotic prophylaxis use improved nationally. | 2 staff from each hospital were trained to collect data, then each hospital was responsible for developing their own intervention strategies. | The collaborative requires extensive involvement from multidisciplinary staff. There were no details on the specific interventions that each hospital chose to implement. |
| Mannien, Netherlands - 2006 | SSI | The Netherlands/<400 beds: 3 hospitals; 400-800 beds: 6 hospitals; >800 beds: 3 hospitals |  |  | All hospitals were part of a larger national surveillance network that monitored nosocomial infections, PREZIES. |  | The CHIPS study group developed the antibiotic recommendations and provided each hospital with an audit report at the start of the intervention. The study group also organized educational mtgs for medical specialists and nurses. |  |
| Trussell, United States - 2008 | SSI | Phoenix, AZ/ |  |  |  |  | For the antibiotic prophylaxis arm of the pathway, cardiac anesthesiologists were designated responsibility of following the protocol. Nurses were responsible for maintaining glucose control through the whole ICU stay and for appropriate hair removal. | The protocol pathway is relatively non-labor intensive, requires no pt compliance, includes emergency cases, and places no added stress to surgeons. Glucose control did place a heavier labor burden on ICU nurses. |