Appendix Table C5a(2). Infection rate outcomes for CLABSI which control for secular trend or confounding

| **Study** | **Infection** | **Intervention(s)** | **Pre-cost** | **Post-cost** | **Cost statistical analysis** | **Savings due to intervention** | **Savings statistical analysis** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Apisarnthanarak, Thailand - 2010 | CLABSI | Period 3: Intensified hand hygiene promotion plus CLABSI bundle | medical:16 (SD 7.6); surgical: 11 (SD 5.4); ICU: 17 (SD 6.5); other units: 9 (SD 3.6) | post1 medical: 6.8 (SD 3.5); post1 surgical: 5.5 (SD 2.4); post1 ICU: 7.1 (SD 3.9); post1 other units: 5.2 (SD 1.1); post2 medical: 1.5 (SD 0.4); post2 surgical: 0.08 (SD 0.1); post2 ICU: 2.1 (SD 1.1); post2 other units: 0.9 (SD 0.2) | all t-test: p<0.05; See segmented results below | mean infections/1000 device-days | 12 and 24 months |
| Barsuk, United States - 2009 | CLABSI | CVC Insertion Simulation | MICU traditional: 3.2; SICU traditional: 4.86 | MICU simulation-based: 0.5; SICU traditional: 5.26 | Poisson Regression: IRR=0.16; 95% CI, 0.05-0.44, p=0.001 (comparison reflects post-MICU vs pre-MICU and SICU) | infections/1000 device-days | 16 |
| Costello, United States - 2008 | CLABSI | Full Intervention: Pediatric Multidisciplinary CLABSI Bundle | mean: 7.8 (95% CI 5.6-10.5) | post1 mean: 4.7 (95% CI 3.4-6.3); post2 mean: 2.3 (95% CI 1.2-3.8) | post1 Wald test: p=0.029; post2 Wald test: p=0.0002 | infections/1000 device-days | 24 |
| DePalo, United States - 2010 | CLABSI, VAP | CLABSI Education Program and Bundle | median CLABSI Q1 2006: 1.95; median VAP Q1 2006: 0.58 | median CLABSI Q2 2008: 0; median VAP Q2 2008: 0 | mixed model: comparison of 1st 4 quarters to last 4 quarters: CLABSI: p=0.003; VAP: p=0.075 | Infections/1000 device-days | 27 |
| Duane, United States - 2009 | CLABSI | Group 3: Central venous line (CVL) protocol + CVL supply cart + nurse education + nurse checklist and nurse empowerment | 16.5 | Group2: 15.0; Group3: 7.7 | Poisson regression of quarterly infection rates Group1 vs. Group3 p<0.0001; Group2 vs. Group3 p<0.004; Group1 vs. Group2 p=0.08 | infections/1000 device-days | Group2: 12; Group3: 6 (18 mos since CVL protocol implementation) |
| Khouli, United States - 2011 | CLABSI | Simulation-based sterile technique training | video: 3.6; simulation; 3.5 | video: 3.4; simulation; 1.0 | Poisson Regression incidence rate ratio: 0.30 (95% CI: 0.10-0.91) p=0.03 | infections/1000 device-days |  |
| McKee, United States - 2008 | CLABSI | CLABSI education, cart, checklist, and nurse empowerment | Monthly mean: 5.2 | Monthly mean before faulty PDMV was recognized: 6.6; Monthly mean for non-contaminated post-intervention period: 2.7 | Poisson regression p<0.05; Statistical process control chart methodology p=0.07 | infections/1000 device-days | 31 |
| Miller, United States - 2010 | CLABSI | Bundle - CLABSI | mean: 5.4 (95% CI 4.5-6.4) | mean: 3.1 (95% CI 2.4-4.0) | Hierarchical regression: relative rate=0.57, 95%CIs 0.45-0.74, p<0.0001 | infections/1000 device-days | 12 |
| Perez Parra, Spain - 2010 | CLABSI | CLABSI Education | Overall: 4.22; General SICU: 3.4; Cardiac SICU: | Overall: 2.94; General SICU: 5.3 | Wilcoxon rank sum test: Overall: p=0.03; General SICU: p=0.05; Cardiac SICU: p=0.12; MICU: p=0.31; Poisson Regression: RR= 0.69 (95% CI 0.44-1.08), p= 0.11 | infections/1000 device-days | 9 |
| Pronovost, United States - 2010 | CLABSI | Conceptual Model - CDC CLABSI Bundle | median: 2.7 (IQR 06.-4.8) | Implementation median: 1.6 (IQR 0-4.4); 0-3mos post-implementation median: 0 (IQR 0-3); 34-36mos post-implementation median: 0 (IQR 0-1.2) | generalized linear latent and mixed models Implementation IRR: 0.81 (95% CI 0.61-1.08); 0-3mos IRR: 0.68 (95% CI 0.53-0.88); 34-36mos IRR: 0.34 (95% CI 0.24-0.48) | infections/1000 device-days | 36 |
| Scales, Canada - 2011 | CLABSI, VAP | Bundle - CLABSI, VAP |  |  |  |  |  |
| Schulman, United States - 2011 | CLABSI | Bundle - CLABSI | old CDC definition mean: 6.4; new CDC definition mean: 3.5 | new CDC definition 2.1 | Chi-square result (unit of analysis NICU) p<.0005 for both definitions; Poisson regression old definition risk ratio: 0.33 (95% CI 0.27-0.41) p<.0005; Poisson regression new definition risk ratio: 0.6 (95% CI 0.48-0.75) p<.0005 | infections/1000 device-days | 10 |
| Seguin, France - 2010 | CAUTI, CLABSI | Physician reminder of catheter duration | CLABSI: 2.8; CAUTI: 5.0 | CLABSI: 0.7; CAUTI: 4.9 | Adjusted CLABSI Poisson Regression: p=0.051; Adjusted CAUTI Poisson Regression: p=0.938 | infections/1000 device-days | 9 |
| Zingg, Switzerland - 2009 | CLABSI | Educational Program for catheter care and hand hygiene | overall: 3.9; MICU: 9; SICU: 3 | overall: 1.0; MICU: 3.9; SICU: 0.2 | chi square: overall p<0.001, MICU vs SICU p<0.001 for both periods; Cox, overall HR=4.47 (95% CI 1.86-10.2, p<0.001) | infections/1000 device-days | 5 |