Appendix Table C6-LQ-a. Quality ratings for VAP which do not control for secular trend or confounding

| **Study** | **Infection** | **All\_Vary** | **All\_Valid** | **All\_Consist** | **All\_PrimOut** | **All\_ImpOut** | **All\_FundSource** | **Adherence Reported** | **Infection CDC** | **Device Adju** | **Postsurveillance** | **QE\_IndependentQI** | **QE\_DataTimePoint** | **UnivarYN** | **UnivarModel** | **MultivarYN** | **MultivarModel** | **MultivarControl** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Gurskis, Lithuania - 2009 | VAP | No | No | Yes | Yes | Yes | No | No | Yes | Yes |  | Yes | Yes | TRUE | chi-square, Mann-Whitney U test, Kolmogorov-Smirnov tests, kaplan-meier survival with log-rank and Breslow tests | TRUE | binary logistic regression | not specified |
| Jimenez, Puerto Rico - 2009 | VAP | Uncertain | Yes | Yes | No | Yes | No |  |  |  |  | Yes | No | TRUE | Pearson Chi-square test | FALSE |  |  |
| Jain, United States - 2006 | VAP | Uncertain | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes |  | No | No | TRUE | Chi-square test | FALSE |  |  |
| Garcia, United States - 2009 | VAP | Uncertain | Yes | Yes | Yes | Yes | No | Uncertain | Yes | Yes |  | No | Yes | TRUE | t-test, Mann-Whitney | FALSE |  | Adjusted for time |
| Ross, United States - 2007 | VAP | Uncertain | Yes | Yes | No | Yes | No |  |  |  |  | Yes | No | TRUE | 2 sample t-test | FALSE |  |  |
| Assanasen, - 2008 | VAP | Uncertain | Yes |  | Yes | Yes | No |  |  |  |  | Uncertain | No | TRUE | Chi-square test | FALSE |  |  |
| Berriel-Cass, United States - 2006 | VAP | Uncertain | Yes | Yes | Yes | Yes | Yes | No | Yes | Yes |  | Uncertain | Yes | TRUE | independent 2-tailed t-test, assuming different variances | FALSE |  |  |
| Abbott, United States - 2006 | VAP | No | Uncertain | Yes | No | Yes | Yes | Yes | Yes | Yes |  | Uncertain | No | TRUE | t-test | TRUE | MANCOVA | APACHE-II, years of respiratory disease, enteral tube feeding, in-hospital transfer events |
| Sona, United States - 2009 | VAP | No | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes |  | No | No | TRUE | Mantel-Haenszel chi-square test and Mann-Whitney test | FALSE |  |  |
| Rogers, Ireland - 2010 | VAP | Uncertain | Yes | Yes | No | No | No | Yes | Yes | Yes |  | Yes | No | TRUE | Exact Poisson rate incidence test, paired t-test | FALSE |  |  |
| Bigham, United States - 2009 | VAP | Uncertain | Yes | Yes | Yes | No | No | Yes | Yes | Yes |  | Yes | No | TRUE | Chi-square test; Fisher exact test; One-way ANOVA | FALSE |  |  |
| Bird, United States - 2010 | VAP | No | Yes | Yes | Yes | No | No | Yes | Yes | Yes |  | No | Yes | TRUE | Chi-square test | FALSE |  |  |
| Bloos, Germany - 2009 | VAP | Uncertain | Yes | Yes | Yes | Yes | No | Yes | No | No |  | No | No | TRUE | Mann-Whitney U-test; Chi-square test | TRUE | stepwise Cox regression | Cox regression had tracheostomy rates, angle of HOB elevation, number of patients receiving propofol, days with deep vein thrombosis prophylaxis (DVTP), and days where DVTP was contraindicated |
| Cocanour, United States - 2006 | VAP | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes |  | Yes | Yes | TRUE | Two sample t-test | FALSE |  |  |
| Heimes, United States - 2011 | VAP | Yes | Yes | Yes | Yes | Yes | No | No | Yes | Yes |  | Yes | No | TRUE | Fisher Kruskal-Wallis two-tailed test; Satterthwaite test; chi-square test | FALSE |  |  |
| Landrum, Afghanistan - 2008 | VAP | No | No | Yes | No | Yes | No | No | Yes | Yes |  | Yes | No | TRUE | Mantel-Haenszel chi-square test | FALSE |  |  |
| Blamoun, United States - 2009 | VAP | Uncertain | Yes | Yes | Yes | Yes | No | No | Yes | Yes |  | No | Yes | TRUE | Mann-Whitney, Chi-Square | FALSE |  |  |
| Quenot, France - 2007 | VAP | No | No | Uncertain | Yes | Yes | No | No | Uncertain | Yes |  | No | No | TRUE | chi-square test, Fisher’s exact test, Mann-Whitney test, Cox proportional hazard | FALSE |  | Cox was controlled for SAPS II score |
| Rosenthal, Argentina - 2006 | VAP | No | No | Yes | Yes | Yes | No | No | Yes | Yes |  | No | No | TRUE | Student’s t-test, Fisher exact test | FALSE |  |  |
| Venkatram, United States - 2010 | VAP | Uncertain | No | Yes | Yes | Yes | No | No | Yes | Yes |  | Yes | No | TRUE | Mann-Whitney U test | TRUE | incidence rate ratios | device utilization |

All\_Vary Did the execution of the study vary from the original protocol?  
All\_Valid Is the intervention assessed using valid and reliable measures, implemented consistently across all study participants?  
All\_Consist Are outcomes assessed using valid and reliable measures, implemented consistently across all study participants?  
All\_PrimOut Is the length of followup sufficient to support the evaluation of primary outcomes and harms?  
All\_ImpOut Are any important primary outcomes missing from the results?  
All\_FundSource Is the Source of funding Identified?  
AdherenceReported If infection rates reported, did study also report adherence rates?  
InfectionCDC If infection rates reported, was CDC/NNIS\* methodology used?  
DeviceAdju For CLABSI, VAP, CAUTI: were infection rates adjusted for device utilization?  
Postsurveillance For SSI: was post-discharge surveillance for infections performed?  
QE\_IndependentQI Was the intervention performed independent of other QI efforts or other changes?  
QE\_DataTimePoint Did the study report data at more than one time point both before and after the intervention?  
QE\_InfectionRate If the study reported infection rates, were process measurements also reported?  
CON\_Rand Were study subjects randomized  
CON\_RandDesc was randomization process described?  
CON\_NonRandRationale For non-randomized studies, was rationale for comparison group selection explained?  
CON\_Assessor Were outcome assessor blinded to treatment group assignment  
CON\_Unit Was a unit of analysis error present?  
CON\_Corrected Was a unit of analysis error present and corrected by appropriate statistical methods?  
UnivarYN Was Univariate Analysis Conducted?  
UnivarModel What model was used?  
UnivarControl What variables were controlled for?  
MultivarYN Was Multivariate Analysis Conducted?  
MultivarModel What model was used?