**Supplemental Digital Content**

Figure A1. Pooled odds ratios and 95% confidence intervals for in-hospital mortality across 1,000 simulations for the Missing at Random (MAR) and Missing Not at Random (MNAR) missing data mechanisms at 10%, 20%, and 30% missing SOFA score variables



Figure A2. Comparison of relative bias of parameter estimates of the SOFA score among the methods for handling missingness at the composite-level in the logistic regression model predicting *Death*, with the *MAR* missing data mechanism



Figure A3. Comparison of relative bias of parameter estimates of the SOFA score among the methods for handling missingness at the composite-level in the logistic regression model predicting *Death*, with the *MNAR* missing data mechanism

