**Appendix**

Table 1A: Sources of data

| Data role | Data | Measurement level | Source within EPOCH | Comment |
|---|---|---|---|---|
| Outcomes | Clinical outcomes (mortality, clinical deterioration events, late ICU admissions, duration of hospital stay, etc.) | One outcome per patient | Clinical trial outcomes database | All 217,174 patients in the trial had these outcomes documented |
| | Vital signs documentation | One value per patient | Random selection of 5 patients each week for the 26 weeks of each study period at each site | 8,282 patients were assessed for documentation of vital signs |
| | Documentation and Interaction Survey | One survey per nurse | Nurses at enrolled hospitals | All nurses were approached |
| Predictors | Patient to nurse ratio | One value per site per time period | Random selection of 5 patients each week for the 26 weeks of each of three study periods at 22 sites | The ratio was based on the average number of patients being cared for by nurses of the selected 8,282 patients. |
| | Site-specific descriptors (Mean BP,Medical team,PM MD/Fellow,Transplant) | One value per site per time period | Clinical trial site descriptors database | Mean BP could vary by study period. Other descriptors were constant |

Table 2A: Vital Signs Monitoring sensitivity analysis (excluding site 21)

| Outcome | Univariable | | Multivariable | |
|---|---|---|---|---|
| | RR (95% CrI) | Pr(RR<1) | RR (95% CrI) | Pr(RR<1) |
| Heart Rate | 0.98 [0.86, 1.13] | 60.4% | 0.96 [0.83, 1.10] | 74.0% |
| Respiratory Rate | 1.01 [0.88, 1.17] | 43.3% | 0.98 [0.83, 1.14] | 62.5% |
| Systolic blood pressure | 1.01 [0.79, 1.31] | 45.6% | 0.89 [0.71, 1.13] | 83.4% |
| Oxygen saturation | 1.06 [0.89, 1.27] | 25.7% | 0.98 [0.81, 1.19] | 57.8% |
| Capillary refill time | 0.97 [0.17, 4.77] | 52.0% | 0.27 [0.06, 1.18] | 95.8% |
| Oxygen therapy | 0.92 [0.73, 1.15] | 77.8% | 0.89 [0.70, 1.14] | 81.8% |
| Respiratory effort | 1.04 [0.52, 2.32] | 45.6% | 0.86 [0.34, 2.01] | 63.3% |
| All of above collected | 1.11 [0.76, 1.62] | 28.9% | 0.78 [0.57, 1.07] | 94.1% |
| Temperature | 0.99 [0.89, 1.09] | 60.3% | 1.00 [0.89, 1.13] | 51.3% |

Vital signs monitoring -random effects negative binomial models. Estimates are rate ratios (RR) for the relative change in the rate of documentation with one additional patient per nurse, 95% CrIs and P(RR < 1), the probability that the rate of documentation is reduced with an increasing patient-nurse ratio.