**Supplemental Table 1. Demographic Information**

|  |  |  |
| --- | --- | --- |
|  | Cases (n=273) | Controls (n=984) |
| Age, years (mean) | 54.4 | 55.0 |
| Gender (%)  Male  Female | 185 (68)  88 (32) | 609 (62)  375 (38) |
| ICU type (%)  Trauma  Cardiovascular  Medical  Neurosurgical  Surgical  Burn | 85 (31)  46 (17)  45 (16)  44 (16)  36 (13)  17 (6) | 301 (31)  170 (17)  169 (17)  158 (16)  126 (13)  60 (6) |
| Time to VAE, days (mean) | 7 | N/A |

**Supplemental Table 2. Mean Ventilator Bundle Adherence (%), Three Days Prior to Event**

|  |  |  |
| --- | --- | --- |
|  | Cases | Controls |
| Overall Bundle Score | 0.73 | 0.70 |
| SBT Screen | 0.99 | 0.99 |
| SBT | 0.96 | 0.96 |
| RASS Target | 0.97 | 0.96 |
| RASS Observed | 0.95 | 0.96 |
| HOB Elevation | 0.95 | 0.95 |
| All Oral Care Score | 0.80 | 0.79 |
| Teethbrushing | 0.97 | 0.96 |
| Hypopharyngeal Suctioning | 0.84 | 0.83 |
| Mouth Swab | 0.90 | 0.88 |

SBT, spontaneous breathing trial; RASS, Richmond Agitation Sedation Score; HOB, head of bed

**Supplemental Table 3. Mean Ventilator Bundle Adherence (%), Seven Days Prior to Event**

|  |  |  |
| --- | --- | --- |
|  | Cases | Controls |
| Overall Bundle Score | 0.73 | 0.71 |
| SBT Screen | 0.99 | 0.99 |
| SBT | 0.97 | 0.96 |
| RASS Target | 0.96 | 0.96 |
| RASS Observed | 0.96 | 0.94 |
| HOB Elevation | 0.94 | 0.95 |
| All Oral Care Score | 0.80 | 0.79 |
| Teethbrushing | 0.97 | 0.97 |
| Hypopharyngeal Suctioning | 0.84 | 0.83 |
| Mouth Swab | 0.89 | 0.88 |

SBT, spontaneous breathing trial; RASS, Richmond Agitation Sedation Score; HOB, head of bed

**Supplemental Table 4. IVACs/PVAPs only: Mean Ventilator Bundle Adherence (%), Three Days Prior to Event**

|  |  |  |
| --- | --- | --- |
|  | Cases | Controls |
| Overall Bundle Score | 0.74 | 0.70 |
| SBT Screen | 0.99 | 0.99 |
| SBT | 0.97 | 0.96 |
| RASS Target | 0.97 | 0.96 |
| RASS Observed | 0.96 | 0.93 |
| HOB Elevation | 0.95 | 0.95 |
| All Oral Care Score | 0.81 | 0.79 |
| Teethbrushing | 0.98 | 0.97 |
| Hypopharyngeal Suctioning | 0.84 | 0.83 |
| Mouth Swab | 0.90 | 0.89 |

IVAC, infection-related ventilator-associated condition; PVAP, probable ventilator-associated pneumonia; SBT, spontaneous breathing trial; RASS, Richmond Agitation Sedation Score; HOB, head of bed