**Supplemental Table 1**: Descriptive statistics for day and night shift extubations the level of the subject (no repeat subjects permitted, only first ventilation encounter included)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Day Shift** | **Night Shift** | **Both Shifts** | **p-value** |
| **N (%)** | 351 (67.9) | 166 (32.1) | 517 (100) | n/a |
| **Median Age in Months (IQR)** | 40 (9-124) | 37 (8-105) | 39 (9-116) | 0.40 |
| **Male (%)** | 194 (55.3) | 109 (65.7) | 303 (58.6) | **0.025** |
| **Race (%)** |   |   |   |   |
| *Caucasian* | 179 (51) | 80 (48.2) | 259 (50.1) | 0.95 |
| *African American* | 151 (43) | 75 (45.2) | 226 (43.7) |
| *Hispanic* | 15 (4.3) | 8 (4.8) | 23 (4.4) |
| *Other* | 6 (1.7) | 3 (1.8) | 9 (1.7) |
| **Primary Indication for Mechanical Ventilation (%)** |   |   |   |   |
| *Infectious LRTI* | 140 (39.9) | 59 (35.5) | 199 (38.5) | 0.34 |
| *Status Epilepticus* | 31 (8.8) | 27 (16.3) | 58 (11.2) | **0.01** |
| *Altered Mental Status* | 31 (8.8) | 18 (10.8) | 49 (9.5) | 0.47 |
| *Post-Operative State* | 35 (10) | 11 (6.6) | 46 (8.9) | 0.21 |
| *Traumatic Brain Injury* | 18 (5.1) | 7 (4.2) | 25 (4.8) | 0.65 |
| *Shock* | 28 (8) | 12 (7.2) | 40 (7.7) | 0.77 |
| *Other* | 68 (19.4) | 32 (19.3) | 100 (19.3) | 0.98 |
| **Median PIM-3 Score (IQR)** | 4.4 (4.7-3.5) | 4.4 (4.7-3.5) | 4.4 (4.7-3.5) | 0.66 |
| **Extubation Failure Co-Morbidity Present (%)** |   |   |   |   |
| *Age ≤ 24 Months* | 139 (39.6) | 72 (43.4) | 211 (40.8) | 0.42 |
| *Dysgenetic/Syndromic Condition* | 45 (12.8) | 16 (9.6) | 61 (11.8) | 0.30 |
| *Chronic Neurologic Condition* | 89 (25.4) | 34 (20.5) | 123 (23.8) | 0.22 |
| *Chronic Respiratory Condition* | 97 (27.6) | 42 (25.3) | 139 (26.9) | 0.58 |
| *Acute Surgical Airway Condition* | 18 (5.1) | 2 (2.1) | 20 (3.9) | **0.031** |
| *Acute or Chronic Medical Airway Condition* | 16 (4.6) | 6 (3.6) | 22 (4.3) | 0.62 |
| *Chronic NIV* | 12 (3.4) | 6 (3.6) | 18 (3.5) | 0.91 |
| **Cumulative Number of Extubation Failure Co-Morbidities Present (%)** |   |   |   |   |
| *0* | 87 (24.8) | 41 (24.7) | 128 (24.8) | 0.25 |
| *1* | 159 (45.3) | 91 (54.8) | 250 (48.4) |
| *2* | 65 (18.5) | 19 (11.4) | 84 (16.2) |
| *3* | 34 (9.7) | 12 (7.2) | 46 (8.9) |
| *4* | 5 (1.4) | 2 (1.2) | 7 (1.4) |
| *5* | 1 (0.3) | 1 (0.6) | 2 (0.4) |

Legend: LRTI – lower respiratory tract infections, IQR – interquartile range, NIV – non-invasive ventilation