**Supplementary Data Files**

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| **Outcome** | **OR** | **95% CI** | **p-value** |
| Reintubation (routine excluded) | 0.84 | 0.45, 1.56 | 0.58 |
| Reintubation (routine and unplanned excluded) | 0.78 | 0.41, 1.49 | 0.46 |
| Mortality (routine excluded) | 0.85 | 0.33, 2.19 | 0.73 |
| Mortality (routine and unplanned excluded) | 0.86 | 0.33, 2.22 | 0.75 |
|  | **Ratio of Geometric Means** | **95% CI** | **p-value** |
| Mechanical Ventilation, days (routine excluded) | 0.61 | 0.53, 0.7 | <0.001 |
| Mechanical Ventilation, days (routine and unplanned excluded) | 0.60 | 0.52, 0.70 | <0.001 |
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| ICU length of stay, days (routine excluded) | 0.62 | 0.53, 0.73 | <0.001 |
| ICU length of stay, days (routine and unplanned excluded) | 0.61 | 0.52, 0.72 | <0.001 |
| Hospital length of stay, days (routine excluded) | 0.59 | 0.51, 0.69 | <0.001 |
| Hospital length of stay, days (routine and unplanned excluded) | 0.58 | 0.50, 0.68 | <0.001 |

Table 1. The results of logistic and linear regression models examining associations between nighttime extubation and patient outcomes compared to daytime extubation excluding routine and routine and unplanned extubations.

All regression models were adjusted for the *a priori* defined coviariates of age, sex, BMI, admission type, and CCI. Routine and unplanned extubations were also included as adjustors in all models unless noted otherwise. Nighttime extubation was defined as that occurring between 1900-0659 the next day; Daytime extubation was defined as that occurring between 0700-1859; BMI=Body Mass Index; CCI=Charleson Comrbidity Index; A routine post-op was one not intubated prior to operation, then returned to ICU intubated and extubated <24 hours later. Days of mechanical ventilation and lengths of stay were log transformed before analysis then back-transformed to the original scale and reported as the ratio of geometric means.

Table 2. Baseline characteristics of the study cohort by the time of day at which they were extubated, daytime or evening.

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|  | **DTE****(N=1871)** | **Evening****(N=370)** | **p-value** |
| Age, yrs | 51.5+17.8 | 48.6+18.2 | 0.006a |
| Sex, n (%) |  |  | 0.88b |
| M | 1291 (69) | 252(69) |  |
| F | 578(31) | 115(31) |  |
| BMI, kg/m2 | 28.3+7.4 | 28.7+8.5 | 0.37a |
| CCI  |  |  | 0.069c |
| 0 | 809 (45) | 179 (51) |  |
| 1 | 355 (20) | 64 (18) |  |
| 2 | 241 (13) | 39 (11) |  |
| 3  | 163 (9) | 28 (8) |  |
| >4 | 223 (12) | 41 (12) |  |
| Unplanned extubation, n (%) | 56 (3) | 41 (11) | <0.0001b |
| Admissions type, n(%) |  |  | 0.87b |
| Medical | 463 (25) | 90 (25) |  |
| Surgical | 370 (20) | 66 (18) |  |
| Trauma/Burns | 569 (30) | 116 (32) |  |
| Neuroscience | 467 (25) | 94 (26) |  |
| Routine post-op, n (%) | 220 (12) | 49 (13) | 0.42b |

Evening=extubated between 1700-0659 the next day; DTE, Daytime extubation=extubated between 0700-1659; BMI=Body Mass Index; CCI=Charleson Comrbidity Index; Routine post-op=patient not intubated prior to operation, returns to ICU intubated, extubated <24 hours later. at-test. bpearson chi-squares test. cMann-Whitney test.

Table 3. The results of logistic and linear regression models examining associations between evening extubation and patient outcomes compared to daytime extubation.

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| **Outcome** | **OR** | **95% CI** | **p-value** |
| Reintubation | 0.78 | 0.51, 1.19 | 0.25 |
| Mortality | 0.95 | 0.53, 1.69 | 0.86 |
|  | **Ratio of Geometric Means** | **95% CI** | **p-value** |
| Mechanical Ventilation, days | 0.64 | 0.58, 0.71 | <0.001 |
| ICU length of stay, days | 0.77 | 0.69, 0.86 | <0.001 |
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| Hospital length of stay, days | 0.77 | 0.69, 0.85 | <0.001 |

All regression models were adjusted for the *a priori* defined coviariates of age, sex, BMI, admission type, CCI, whether the extubation was routine, and if it was unplanned. Evening extubation was defined as that occurring between 1700-0659 the next day; Daytime extubation was defined as that occurring between 0700-1659; BMI=Body Mass Index; CCI=Charleson Comrbidity Index; A routine post-op was one not intubated prior to operation, then returned to ICU intubated and extubated <24 hours later. Days of mechanical ventilation and lengths of stay were log transformed before analysis then back-transformed to the original scale and reported as the ratio of geometric means.