**Impact of Frailty on Persistent Critical Illness: A Population-based Cohort Study**

**Electronic supplementary material**

**Darvall et al.**

**Supplementary Figure 1.** Odds of death for patients with high frailty degree (CFS 7-8) versus those with low frailty degree (CFS 1-2) still in an ICU on any given day, adjusted for both acute and antecedent risk of death. Error bars are 95% CIs.

**Supplementary Figure 2:** Predictiveness of acute illness (orange) and antecedent characteristics (blue) for hospital mortality, whole cohort.

**Supplementary Figure 3:** Predictiveness of acute illness (orange) and antecedent characteristics (blue) for hospital mortality stratified by Clinical Frailty Scale in the 76 ICUs with ≥ 80% complete frailty data.

**Supplementary Table 1.** Baseline demographics and outcomes for included patients and those without recorded frailty scores.

|  |  |  |
| --- | --- | --- |
| **Variable** | **Included patients**  **n = 269 785** | **Missing patients**  **n = 253 003** |
| Age, years, mean (SD) | 62·7 (17·7) | 61·9 (17·6) |
| Sex (male), n (%) | 147723 (54·8%) | 144004 (56·9%) |
| APACHE III score, mean (SD) | 50·3 (23·9) | 48·3 (22·5) |
| ANZROD %, median (IQR) | 1·5 (0·5 – 5·6) | 1·4 (0·5 – 5·3) |
| *ICU diagnostic category, n (%)*  Sepsis  Trauma  Cardiac surgery  Other cardiovascular  Respiratory  Neurological  Gastrointestinal  Other | 19088 (7·1%)  9958 (3·7%)  23502 (8·7%)  33815 (12·5%)  40647 (15·1%)  31999 (11·9%)  48583 (18·0%)  62193 (23·1%) | 17657 (7·0%)  11487 (4·5%)  28169 (11·1%)  32022 (12·7%)  36385 (14·4%)  32307 (12·8%)  42034 (16·6%)  52942 (20·9%) |
| *Length of stay, days, median (IQR)*  ICU  Hospital | 1·6 (0·9 – 2·9)  7·2 (4·0 – 13·0) | 1·6 (0·9 – 2·9)  7·9 (4·23 – 14·)] |
| *Mortality, n (%)*  ICU  Hospital | 9901 (3·7%)  16372 (6·1%) | 11334 (4·5%)  17980 (7·1%) |

**Supplementary Table 2.** Resource utilisation for patients with and without PerCI, stratified by frailty status.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Patients without PerCI**  **n = 260 971** | | **Patients with PerCI**  **n = 8814** | |
|  | **No frailty**  **(CFS 1 – 4)**  **n = 212 347** | **Frailty**  **(CFS 5 – 8)**  **n = 48 624** | **No frailty**  **(CFS 1 – 4)**  **n = 6624** | **Frailty**  **(CFS 5 – 8)**  **n = 2190** |
| Invasive mechanical ventilation, n (%) | 52691/188706 (27.9%) | 8531/42902 (19.9%) | 5336/6428 (83.0%) | 1461/2058 (71.0%) |
| Non-invasive ventilation, n (%) | 14025/177553 (7.9%) | 8474/41149 (20.6%) | 1492/5958 (25.0%) | 776/1928 (40.2%) |
| Renal replacement therapy, n (%) | 3868/176439 (2.2%) | 1809/40499 (4.5%) | 1454/5902 (24.6%) | 499/1889 (26.4%) |
| Vasoactive infusions, n (%) | 52208/180188 (29.0%) | 14762/41599 (35.5%) | 4889/6205 (78.8%) | 1518/2011 (75.5%) |

(p<0.001 for all comparisons with and without frailty, except for patients with PerCI: renal replacement therapy [p=0.12] and vasoactive infusions [p=0.002]).

(Missing resource utilisation data affected some patients; denominators are raw numbers of those with complete data for each variable).

**Supplementary Table 3: Parameter estimates (standard errors) for the prediction of in hospital mortality using Model 1) Antecedent Risk of death, Illness severity Risk of death and an interaction between the two.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day** | **Antecedent** | **Severity** | **Antecedent X Severity** |
| 1 | 0.482(0.009) | 0.665(0.006) | -0.051(0.003) |
| 2 | 0.432(0.010) | 0.564(0.007) | -0.046(0.003) |
| 3 | 0.398(0.013) | 0.489(0.008) | -0.042(0.004) |
| 4 | 0.385(0.015) | 0.428(0.009) | -0.040(0.004) |
| 5 | 0.381(0.018) | 0.368(0.009) | -0.038(0.005) |
| 6 | 0.378(0.021) | 0.323(0.010) | -0.035(0.006) |
| 7 | 0.377(0.024) | 0.281(0.012) | -0.030(0.007) |
| 8 | 0.389(0.028) | 0.250(0.013) | -0.028(0.008) |
| 9 | 0.394(0.032) | 0.228(0.014) | -0.027(0.008) |
| 10 | 0.401(0.037) | 0.211(0.015) | -0.020(0.010) |
| 11 | 0.454(0.043) | 0.203(0.016) | -0.030(0.011) |
| 12 | 0.477(0.048) | 0.182(0.018) | -0.033(0.012) |
| 13 | 0.452(0.052) | 0.162(0.019) | -0.026(0.013) |
| 14 | 0.416(0.057) | 0.155(0.020) | -0.021(0.014) |
| 15 | 0.356(0.061) | 0.143(0.022) | -0.012(0.015) |
| 16 | 0.333(0.067) | 0.137(0.023) | -0.004(0.016) |
| 17 | 0.305(0.074) | 0.115(0.025) | 0.016(0.019) |
| 18 | 0.302(0.079) | 0.122(0.026) | 0.008(0.020) |
| 19 | 0.283(0.081) | 0.113(0.027) | 0.010(0.020) |
| 20 | 0.324(0.089) | 0.109(0.029) | -0.001(0.023) |
| 21 | 0.304(0.095) | 0.108(0.031) | 0.003(0.025) |

**Supplementary Table 4: Parameter estimates (standard errors) for the prediction of in hospital mortality using Model 2) Antecedent Risk of death, Illness severity Risk of death and an interaction between the two (Ante X Severity), Frailty, Antecedent X Frailty, Severity X Frailty and Antecedent X Severity X Frailty**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Day** | **Antecedent** | **Severity** | **Antecedent X**  **Severity** | **Frailty** | **Antecedent X**  **Frailty** | **Severity X**  **Frailty** | **Antecedent X Severity**  **X Frailty** |
| 1 | 0.796(0.031) | 0.899(0.017) | -0.104(0.010) | 0.520(0.014) | -0.092(0.006) | -0.065(0.004) | 0.015(0.002) |
| 2 | 0.726(0.036) | 0.773(0.019) | -0.097(0.011) | 0.453(0.016) | -0.083(0.007) | -0.056(0.005) | 0.013(0.002) |
| 3 | 0.702(0.043) | 0.664(0.021) | -0.088(0.013) | 0.403(0.018) | -0.083(0.008) | -0.046(0.005) | 0.012(0.003) |
| 4 | 0.717(0.051) | 0.585(0.024) | -0.087(0.015) | 0.381(0.020) | -0.088(0.010) | -0.041(0.006) | 0.012(0.003) |
| 5 | 0.730(0.059) | 0.501(0.026) | -0.083(0.016) | 0.349(0.023) | -0.090(0.012) | -0.035(0.006) | 0.011(0.003) |
| 6 | 0.722(0.070) | 0.428(0.029) | -0.069(0.019) | 0.342(0.025) | -0.089(0.014) | -0.027(0.007) | 0.008(0.004) |
| 7 | 0.745(0.080) | 0.360(0.032) | -0.054(0.021) | 0.340(0.028) | -0.094(0.016) | -0.021(0.008) | 0.006(0.004) |
| 8 | 0.749(0.091) | 0.319(0.035) | -0.049(0.024) | 0.333(0.031) | -0.093(0.018) | -0.018(0.008) | 0.005(0.005) |
| 9 | 0.742(0.101) | 0.291(0.038) | -0.055(0.026) | 0.338(0.034) | -0.092(0.021) | -0.016(0.009) | 0.007(0.006) |
| 10 | 0.661(0.114) | 0.276(0.041) | -0.039(0.029) | 0.341(0.037) | -0.075(0.024) | -0.017(0.010) | 0.005(0.006) |
| 11 | 0.670(0.133) | 0.246(0.045) | -0.038(0.032) | 0.327(0.040) | -0.066(0.028) | -0.011(0.011) | 0.002(0.007) |
| 12 | 0.647(0.152) | 0.222(0.049) | -0.037(0.036) | 0.317(0.044) | -0.057(0.032) | -0.010(0.012) | 0.002(0.008) |
| 13 | 0.551(0.161) | 0.199(0.052) | -0.017(0.038) | 0.307(0.046) | -0.040(0.034) | -0.010(0.013) | -0.001(0.008) |
| 14 | 0.484(0.173) | 0.182(0.055) | -0.009(0.040) | 0.304(0.050) | -0.033(0.038) | -0.007(0.014) | -0.002(0.009) |
| 15 | 0.454(0.183) | 0.181(0.059) | -0.001(0.044) | 0.333(0.053) | -0.041(0.041) | -0.010(0.015) | -0.002(0.010) |
| 16 | 0.455(0.201) | 0.244(0.063) | -0.038(0.049) | 0.392(0.058) | -0.055(0.046) | -0.029(0.016) | 0.011(0.012) |
| 17 | 0.371(0.213) | 0.235(0.068) | 0.001(0.058) | 0.399(0.062) | -0.040(0.050) | -0.033(0.018) | 0.006(0.014) |
| 18 | 0.354(0.227) | 0.253(0.070) | -0.018(0.060) | 0.393(0.064) | -0.036(0.054) | -0.036(0.018) | 0.008(0.015) |
| 19 | 0.375(0.231) | 0.276(0.072) | -0.033(0.060) | 0.409(0.068) | -0.046(0.056) | -0.045(0.019) | 0.013(0.015) |
| 20 | 0.315(0.244) | 0.250(0.076) | 0.013(0.066) | 0.389(0.072) | -0.018(0.059) | -0.039(0.020) | -0.002(0.017) |
| 21 | 0.232(0.257) | 0.232(0.079) | 0.038(0.071) | 0.374(0.075) | 0.003(0.065) | -0.034(0.021) | -0.008(0.018) |

**Supplementary Table 5: Comparison of AUROC (95%CI) for prediction of in-hospital mortality with and without the inclusion of frailty**

|  |  |  |  |
| --- | --- | --- | --- |
| **Day** | **Model 1**  **(Excluding frailty)** | **Model 2**  **(Including Frailty)** | **P-value** |
| 1 | 0.88(0.88-0.89) | 0.89(0.88-0.89) | 0.49 |
| 2 | 0.85(0.84-0.85) | 0.85(0.84-0.85) | 0.16 |
| 3 | 0.81(0.81-0.82) | 0.81(0.81-0.82) | 0.07 |
| 4 | 0.78(0.78-0.79) | 0.79(0.78-0.79) | 0.02 |
| 5 | 0.75(0.75-0.76) | 0.76(0.75-0.77) | 0.006 |
| 6 | 0.73(0.72-0.74) | 0.74(0.73-0.75) | 0.0001 |
| 7 | 0.71(0.70-0.72) | 0.72(0.71-0.73) | <0.0001 |
| 8 | 0.70(0.69-0.71) | 0.71(0.70-0.72) | <0.0001 |
| 9 | 0.69(0.68-0.70) | 0.71(0.69-0.72) | <0.0001 |
| 10 | 0.69(0.67-0.70) | 0.71(0.69-0.72) | <0.0001 |
| 11 | 0.68(0.67-0.70) | 0.70(0.69-0.72) | <0.0001 |
| 12 | 0.67(0.66-0.69) | 0.69(0.68-0.71) | 0.0001 |
| 13 | 0.67(0.65-0.68) | 0.69(0.67-0.71) | 0.0003 |
| 14 | 0.66(0.64-0.68) | 0.68(0.67-0.70) | 0.0005 |
| 15 | 0.65(0.63-0.67) | 0.68(0.66-0.70) | 0.0002 |
| 16 | 0.65(0.63-0.67) | 0.68(0.66-0.70) | 0.0001 |
| 17 | 0.65(0.63-0.67) | 0.68(0.66-0.71) | 0.0004 |
| 18 | 0.64(0.62-0.67) | 0.68(0.65-0.70) | 0.001 |
| 19 | 0.64(0.61-0.66) | 0.67(0.65-0.70) | 0.003 |
| 20 | 0.63(0.60-0.66) | 0.67(0.64-0.69) | 0.01 |
| 21 | 0.63(0.60-0.66) | 0.66(0.63-0.69) | 0.01 |

**Supplementary Table 6: Multivariable analysis of characteristics of patients with PERCI (ICU stay 10+ days) – individual variable associations. Ref = Reference Category**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variable Name** | **Variable Values** | **Less than 10 full days (n=260971)** | **More than 10 full days (n=260971)** | **Effect being compared** | **Odds ratio (95% CI)** |
| Albumin Score |  | 1.18 (2.8) | 2.7 (3.95) | 1 unit increased in score | 1.05(1.04-1.06) |
| Bilirubin Score |  | 0.31 (1.52) | 0.99 (2.7) | 1 unit increased in score | 1.05(1.04-1.06) |
| Creatinine Score |  | 1.19 (2.58) | 2.89 (3.73) | 1 unit increased in score | 1.07(1.06-1.08) |
| Frailty |  | 3.36 (1.44) | 3.62 (1.53) | 1 unit increased in CFS score | 1.08(1.06-1.10) |
| Haematocrit Score |  | 2.47 (1.14) | 2.63 (0.99) | 1 unit increased in score | 1.05(1.02-1.07) |
| Heart Rate Score |  | 2.2 (3.55) | 4.41 (4.72) | 1 unit increased in score | 1.05(1.04-1.05) |
| Neurological Score |  | 2.67 (9.13) | 8.53 (15.48) | 1 unit increased in score | 1.00(1.00-1.00) |
| Oxygenation Score |  | 2.33 (3.78) | 5.71 (4.88) | 1 unit increased in score | 1.06(1.05-1.06) |
| PH Score |  | 0.84 (1.98) | 2.1 (3.08) | 1 unit increased in score | 1.02(1.01-1.02) |
| Respiratory Rate Score |  | 7 [0-8] | 6 [0-8] | 1 unit increased in score | 1.00(1.00-1.01) |
| Urea Score |  | 3.16 (3.95) | 5.16 (4.39) | 1 unit increased in score | 1.04(1.03-1.05) |
| White Cell Count Score |  | 0 [0-0] | 0 [0-1] | 1 unit increased in score | 1.02(1.01-1.02) |
| Age group | 1.<=44 | 16.6%(43430) | 17.4%(1532) | ref | 1 |
| Age group | 2.45-64 | 28.6%(74726) | 32.6%(2871) | Age group 2.45-64 vs 1.<=44 | 1.05(0.97-1.13) |
| Age group | 3.65-84 | 46.2%(120532) | 45.5%(4010) | Age group 3.65-84 vs 1.<=44 | 0.98(0.91-1.06) |
| Age group | 4.>=85 | 8.5%(22283) | 4.5%(401) | Age group 4.>=85 vs 1.<=44 | 0.59(0.51-0.67) |
| All Physiological data Missing | No | 99.9%(260694) | 100%(8813) | ref | 1 |
| All Physiological data Missing | Yes | 0.1%(277) | 0%(1) | Yes vs No | 0.47(0.06-3.34) |
| ApacheIII diagnosis | 101 | 0.6%(1455) | 1.5%(134) | 101 vs 1207 | 3.19(2.06-4.94) |
| ApacheIII diagnosis | 102 | 1.5%(3856) | 4.2%(374) | 102 vs 1207 | 1.98(1.32-2.98) |
| ApacheIII diagnosis | 103 | 0.1%(256) | 0.2%(20) | 103 vs 1207 | 8.7(4.69-16.13) |
| ApacheIII diagnosis | 104 | 1.1%(2916) | 1.3%(114) | 104 vs 1207 | 3.56(2.3-5.51) |
| ApacheIII diagnosis | 105 | 0.1%(175) | 0.1%(5) | 105 vs 1207 | 3.21(1.15-8.98) |
| ApacheIII diagnosis | 106 | 1.1%(2936) | 0.5%(40) | 106 vs 1207 | 1.84(1.11-3.05) |
| ApacheIII diagnosis | 107 | 0.5%(1269) | 0.5%(44) | 107 vs 1207 | 2.77(1.68-4.57) |
| ApacheIII diagnosis | 108 | 0.2%(465) | 0.1%(7) | 108 vs 1207 | 2.16(0.91-5.08) |
| ApacheIII diagnosis | 109 | 1.8%(4715) | 0.9%(83) | 109 vs 1207 | 2.32(1.48-3.63) |
| ApacheIII diagnosis | 110 | 0.1%(199) | 0.2%(14) | 110 vs 1207 | 4.12(2.04-8.31) |
| ApacheIII diagnosis | 111 | 0.1%(193) | 0%(2) | 111 vs 1207 | 2.04(0.47-8.8) |
| ApacheIII diagnosis | 201 | 0.5%(1373) | 1.8%(163) | 201 vs 1207 | 7.01(4.57-10.75) |
| ApacheIII diagnosis | 202 | 0.1%(223) | 0.1%(13) | 202 vs 1207 | 5.97(2.92-12.24) |
| ApacheIII diagnosis | 203 | 0.2%(439) | 0.6%(50) | 203 vs 1207 | 3.44(2.09-5.66) |
| ApacheIII diagnosis | 204 | 0.3%(847) | 0.8%(68) | 204 vs 1207 | 5.61(3.5-9) |
| ApacheIII diagnosis | 206 | 2%(5156) | 1.7%(153) | 206 vs 1207 | 3.58(2.33-5.48) |
| ApacheIII diagnosis | 207 | 0.7%(1832) | 0.5%(41) | 207 vs 1207 | 3.21(1.93-5.33) |
| ApacheIII diagnosis | 208 | 0.3%(880) | 0.3%(29) | 208 vs 1207 | 3.72(2.15-6.41) |
| ApacheIII diagnosis | 209 | 0.7%(1754) | 0.6%(53) | 209 vs 1207 | 4.07(2.51-6.6) |
| ApacheIII diagnosis | 210 | 0%(91) | 0.3%(27) | 210 vs 1207 | 23.15(12.48-42.93) |
| ApacheIII diagnosis | 211 | 1.6%(4112) | 2.9%(259) | 211 vs 1207 | 6.2(4.11-9.36) |
| ApacheIII diagnosis | 212 | 2.1%(5483) | 6.4%(568) | 212 vs 1207 | 7.74(5.18-11.57) |
| ApacheIII diagnosis | 213 | 0.6%(1590) | 2.6%(232) | 213 vs 1207 | 12.7(8.35-19.31) |
| ApacheIII diagnosis | 301 | 0.3%(751) | 1.1%(99) | 301 vs 1207 | 4.34(2.73-6.89) |
| ApacheIII diagnosis | 303 | 0.1%(208) | 0.1%(12) | 303 vs 1207 | 2.27(1.1-4.72) |
| ApacheIII diagnosis | 305 | 0.5%(1353) | 0.4%(35) | 305 vs 1207 | 1.62(0.96-2.74) |
| ApacheIII diagnosis | 306 | 0.2%(563) | 0.1%(10) | 306 vs 1207 | 2.35(1.11-4.99) |
| ApacheIII diagnosis | 307 | 0.3%(826) | 0.2%(18) | 307 vs 1207 | 1.9(1.02-3.54) |
| ApacheIII diagnosis | 308 | 0.1%(306) | 0.4%(39) | 308 vs 1207 | 5.55(3.24-9.52) |
| ApacheIII diagnosis | 309 | 0.2%(517) | 0.4%(37) | 309 vs 1207 | 4.71(2.77-8) |
| ApacheIII diagnosis | 310 | 0%(102) | 0.1%(8) | 310 vs 1207 | 1.98(0.84-4.69) |
| ApacheIII diagnosis | 311 | 0.4%(1099) | 1.7%(147) | 311 vs 1207 | 11.23(7.24-17.4) |
| ApacheIII diagnosis | 312 | 0.1%(149) | 0.1%(7) | 312 vs 1207 | 3.51(1.43-8.62) |
| ApacheIII diagnosis | 313 | 0.2%(627) | 0.2%(20) | 313 vs 1207 | 2.71(1.47-5) |
| ApacheIII diagnosis | 401 | 0.3%(882) | 0.8%(72) | 401 vs 1207 | 5.31(3.34-8.45) |
| ApacheIII diagnosis | 402 | 0.1%(339) | 1.3%(117) | 402 vs 1207 | 35.22(22.32-55.58) |
| ApacheIII diagnosis | 403 | 0.7%(1928) | 0.5%(46) | 403 vs 1207 | 3.11(1.9-5.08) |
| ApacheIII diagnosis | 404 | 0.2%(504) | 0.9%(76) | 404 vs 1207 | 8.68(5.44-13.87) |
| ApacheIII diagnosis | 405 | 0.1%(147) | 0.1%(8) | 405 vs 1207 | 4.16(1.81-9.55) |
| ApacheIII diagnosis | 406 | 0.1%(266) | 1%(84) | 406 vs 1207 | 33.55(20.78-54.17) |
| ApacheIII diagnosis | 407 | 1.2%(3072) | 1.3%(117) | 407 vs 1207 | 2.44(1.58-3.77) |
| ApacheIII diagnosis | 408 | 0.4%(955) | 0.7%(60) | 408 vs 1207 | 6.44(3.99-10.37) |
| ApacheIII diagnosis | 409 | 0%(128) | 0.1%(10) | 409 vs 1207 | 6.64(3.03-14.56) |
| ApacheIII diagnosis | 410 | 0.5%(1312) | 0.7%(65) | 410 vs 1207 | 2.85(1.78-4.55) |
| ApacheIII diagnosis | 501 | 2.8%(7279) | 4.6%(408) | 501 vs 1207 | 4.93(3.28-7.39) |
| ApacheIII diagnosis | 502 | 1%(2610) | 0.6%(52) | 502 vs 1207 | 2.16(1.33-3.5) |
| ApacheIII diagnosis | 503 | 2.3%(6115) | 7%(616) | 503 vs 1207 | 4.31(2.88-6.46) |
| ApacheIII diagnosis | 504 | 0.7%(1935) | 0.8%(73) | 504 vs 1207 | 2.81(1.77-4.47) |
| ApacheIII diagnosis | 601 | 0.6%(1618) | 2.7%(234) | 601 vs 1207 | 10.03(6.61-15.22) |
| ApacheIII diagnosis | 602 | 1.2%(3205) | 1.6%(140) | 602 vs 1207 | 5.73(3.74-8.79) |
| ApacheIII diagnosis | 603 | 0.1%(198) | 0.5%(42) | 603 vs 1207 | 11.94(7.01-20.33) |
| ApacheIII diagnosis | 604 | 0.2%(610) | 0.6%(57) | 604 vs 1207 | 7.78(4.79-12.64) |
| ApacheIII diagnosis | 605 | 0%(84) | 0.2%(15) | 605 vs 1207 | 19.38(9.53-39.44) |
| ApacheIII diagnosis | 701 | 0.2%(471) | 0.3%(25) | 701 vs 1207 | 4.26(2.39-7.6) |
| ApacheIII diagnosis | 702 | 1.6%(4219) | 0.4%(37) | 702 vs 1207 | 1.27(0.76-2.12) |
| ApacheIII diagnosis | 703 | 3.8%(10040) | 1.5%(130) | 703 vs 1207 | 0.94(0.61-1.44) |
| ApacheIII diagnosis | 704 | 1.7%(4467) | 0.8%(73) | 704 vs 1207 | 2.14(1.35-3.38) |
| ApacheIII diagnosis | 801 | 0.2%(431) | 0.3%(23) | 801 vs 1207 | 4.25(2.34-7.71) |
| ApacheIII diagnosis | 802 | 0.2%(644) | 0.4%(39) | 802 vs 1207 | 4.55(2.66-7.78) |
| ApacheIII diagnosis | 901 | 1.2%(3009) | 1.7%(149) | 901 vs 1207 | 3.65(2.37-5.6) |
| ApacheIII diagnosis | 902 | 0.1%(362) | 0%(0) | 902 vs 1207 | 0(0-.)) |
| ApacheIII diagnosis | 1002 | 0%(27) | 0%(1) | 1002 vs 1207 | 5.95(0.77-46.3) |
| ApacheIII diagnosis | 1101 | 0.1%(313) | 0.2%(15) | 1101 vs 1207 | 7.04(3.55-13.92) |
| ApacheIII diagnosis | 1102 | 0.1%(367) | 0.1%(13) | 1102 vs 1207 | 4.45(2.21-8.96) |
| ApacheIII diagnosis | 1202 | 0.5%(1338) | 0.2%(22) | 1202 vs 1207 | 4.22(2.67-6.67) |
| ApacheIII diagnosis | 1203 | 0.3%(877) | 0.2%(14) | 1203 vs 1207 | 4.31(2.46-7.55) |
| ApacheIII diagnosis | 1204 | 0.5%(1255) | 0.4%(32) | 1204 vs 1207 | 3.52(2.38-5.19) |
| ApacheIII diagnosis | 1205 | 0.8%(2017) | 0.1%(5) | 1205 vs 1207 | 1.04(0.43-2.55) |
| ApacheIII diagnosis | 1206 | 3.2%(8432) | 2.5%(216) | 1206 vs 1207 | 1.83(1.5-2.24) |
| ApacheIII diagnosis | 1207 | 4.6%(11881) | 2.1%(184) | ref | 1 |
| ApacheIII diagnosis | 1208 | 2.6%(6788) | 2.2%(194) | 1208 vs 1207 | 3.54(2.87-4.36) |
| ApacheIII diagnosis | 1209 | 0.1%(268) | 0.6%(57) | 1209 vs 1207 | 11.94(8.5-16.77) |
| ApacheIII diagnosis | 1210 | 0.1%(169) | 0.3%(26) | 1210 vs 1207 | 8.46(5.29-13.53) |
| ApacheIII diagnosis | 1211 | 0.1%(311) | 0.1%(6) | 1211 vs 1207 | 3.92(1.69-9.1) |
| ApacheIII diagnosis | 1212 | 1%(2686) | 1.2%(103) | 1212 vs 1207 | 2.32(1.81-2.97) |
| ApacheIII diagnosis | 1213 | 0.4%(1151) | 0.1%(13) | 1213 vs 1207 | 3.6(2.02-6.43) |
| ApacheIII diagnosis | 1301 | 0.3%(736) | 0.3%(28) | 1301 vs 1207 | 4.93(3.24-7.48) |
| ApacheIII diagnosis | 1302 | 2%(5187) | 0.4%(38) | 1302 vs 1207 | 3.65(2.55-5.22) |
| ApacheIII diagnosis | 1303 | 0.8%(2152) | 0.5%(48) | 1303 vs 1207 | 3.86(2.77-5.36) |
| ApacheIII diagnosis | 1304 | 2.6%(6862) | 1.8%(160) | 1304 vs 1207 | 5.05(4.02-6.34) |
| ApacheIII diagnosis | 1401 | 0.8%(2215) | 1.8%(155) | 1401 vs 1207 | 5.56(4.39-7.03) |
| ApacheIII diagnosis | 1403 | 0.7%(1956) | 0.8%(70) | 1403 vs 1207 | 3.02(2.24-4.06) |
| ApacheIII diagnosis | 1404 | 1.4%(3714) | 1.5%(131) | 1404 vs 1207 | 4.7(3.69-5.98) |
| ApacheIII diagnosis | 1405 | 4.7%(12237) | 2.2%(192) | 1405 vs 1207 | 4.53(3.66-5.61) |
| ApacheIII diagnosis | 1406 | 1%(2708) | 0.2%(20) | 1406 vs 1207 | 1.4(0.87-2.26) |
| ApacheIII diagnosis | 1407 | 0.1%(267) | 0.2%(21) | 1407 vs 1207 | 2.66(1.64-4.34) |
| ApacheIII diagnosis | 1408 | 5.8%(15118) | 1.6%(138) | 1408 vs 1207 | 2.91(2.3-3.67) |
| ApacheIII diagnosis | 1409 | 0.2%(583) | 0.2%(15) | 1409 vs 1207 | 3.53(2.03-6.14) |
| ApacheIII diagnosis | 1410 | 0.2%(525) | 0.4%(39) | 1410 vs 1207 | 5.56(3.81-8.12) |
| ApacheIII diagnosis | 1411 | 0.1%(146) | 0.1%(5) | 1411 vs 1207 | 5.21(2.04-13.35) |
| ApacheIII diagnosis | 1412 | 0.1%(363) | 0.4%(34) | 1412 vs 1207 | 5.65(3.76-8.49) |
| ApacheIII diagnosis | 1413 | 0.4%(976) | 0.2%(22) | 1413 vs 1207 | 5.46(3.43-8.7) |
| ApacheIII diagnosis | 1501 | 0.1%(268) | 1%(92) | 1501 vs 1207 | 34.82(25.79-47.03) |
| ApacheIII diagnosis | 1502 | 0.2%(498) | 0.4%(31) | 1502 vs 1207 | 11.17(7.37-16.92) |
| ApacheIII diagnosis | 1503 | 0.2%(637) | 1.4%(123) | 1503 vs 1207 | 42.52(32.66-55.36) |
| ApacheIII diagnosis | 1504 | 4.6%(12000) | 0.5%(40) | 1504 vs 1207 | 1.38(0.97-1.96) |
| ApacheIII diagnosis | 1505 | 1.7%(4418) | 0.6%(52) | 1505 vs 1207 | 4.68(3.4-6.43) |
| ApacheIII diagnosis | 1506 | 1.4%(3595) | 0.6%(57) | 1506 vs 1207 | 6.3(4.63-8.58) |
| ApacheIII diagnosis | 1601 | 0.2%(500) | 3.2%(285) | 1601 vs 1207 | 53.88(42.72-67.97) |
| ApacheIII diagnosis | 1602 | 1%(2491) | 1.3%(112) | 1602 vs 1207 | 7.1(5.51-9.15) |
| ApacheIII diagnosis | 1603 | 0%(64) | 0.3%(25) | 1603 vs 1207 | 29.34(17.4-49.49) |
| ApacheIII diagnosis | 1604 | 0.1%(182) | 0.4%(32) | 1604 vs 1207 | 20.89(13.53-32.25) |
| ApacheIII diagnosis | 1605 | 0%(52) | 0.1%(12) | 1605 vs 1207 | 35.41(17.7-70.84) |
| ApacheIII diagnosis | 1701 | 1.2%(3142) | 0.2%(19) | 1701 vs 1207 | 1.65(1.02-2.67) |
| ApacheIII diagnosis | 1703 | 0.8%(2054) | 0.3%(28) | 1703 vs 1207 | 2.77(1.83-4.18) |
| ApacheIII diagnosis | 1704 | 0.1%(252) | 0%(3) | 1704 vs 1207 | 1.44(0.44-4.69) |
| ApacheIII diagnosis | 1705 | 0.6%(1649) | 0.1%(11) | 1705 vs 1207 | 1.54(0.83-2.87) |
| ApacheIII diagnosis | 1801 | 0.6%(1594) | 0.1%(7) | 1801 vs 1207 | 1.69(0.79-3.63) |
| ApacheIII diagnosis | 1802 | 0.9%(2254) | 0%(4) | 1802 vs 1207 | 0.42(0.15-1.14) |
| ApacheIII diagnosis | 1803 | 0.4%(935) | 0.1%(6) | 1803 vs 1207 | 2.31(1.01-5.27) |
| ApacheIII diagnosis | 1902 | 7.2%(18852) | 0.6%(56) | 1902 vs 1207 | 1.22(0.89-1.66) |
| ApacheIII diagnosis | 1903 | 0.9%(2426) | 0.2%(17) | 1903 vs 1207 | 2.27(1.37-3.77) |
| ApacheIII diagnosis | 1904 | 0.4%(1073) | 0.9%(81) | 1904 vs 1207 | 6.96(5.22-9.3) |
| ApacheIII diagnosis | 2101 | 0%(68) | 0%(1) | 2101 vs 1207 | 3.53(0.47-26.36) |
| ApacheIII diagnosis | 2201 | 1.1%(2796) | 0.1%(10) | 2201 vs 1207 | 1.31(0.69-2.49) |
| Chronic cardiovascular | No | 89.1%(232580) | 88.5%(7804) | ref | 1 |
| Chronic cardiovascular | Yes | 10.9%(28391) | 11.5%(1010) | Yes vs No | 1.17(1.09-1.27) |
| Chronic Renal | No | 96.1%(250848) | 94.5%(8328) | ref | 1 |
| Chronic Renal | Yes | 3.9%(10123) | 5.5%(486) | Yes vs No | 0.89(0.8-0.99) |
| Chronic Respiratory | No | 90.6%(236502) | 87.8%(7738) | ref | 1 |
| Chronic Respiratory | Yes | 9.4%(24469) | 12.2%(1076) | Yes vs No | 1.21(1.12-1.31) |
| Care Type | HDU | 37.6%(98176) | 13.5%(1192) | ref | 1 |
| Care Type | ICU | 62.4%(162795) | 86.5%(7622) | ICU vs HDU | 1.51(1.4-1.63) |
| Hospital admission source | Chronic Care | 1.5%(4009) | 1.4%(119) | Chronic Care vs Home | 0.74(0.61-0.9) |
| Hospital admission source | Home | 97%(253078) | 95.9%(8456) | ref | 1 |
| Hospital admission source | Unknown | 1.5%(3884) | 2.7%(239) | Unknown vs Home | 1.23(1.04-1.45) |
| Hospital Level | Metropolitan | 17.7%(46159) | 20.7%(1822) | Metro vs Private | 0.96(0.87-1.05) |
| Hospital Level | Private | 38.7%(100989) | 15.2%(1338) | ref | 1 |
| Hospital Level | Rural | 14.9%(39004) | 12.1%(1063) | Rural vs Private | 0.82(0.73-0.92) |
| Hospital Level | Tertiary | 28.7%(74819) | 52.1%(4591) | Tertiary vs Private | 1.23(1.13-1.33) |
| ICU source | Emergency | 28.3%(73743) | 40.4%(3561) | Emergency vs OT | 1.98(1.38-2.83) |
| ICU source | Operating theatre | 59.2%(154479) | 34.7%(3062) | ref | 1 |
| ICU source | Ward | 12.5%(32749) | 24.9%(2191) | Ward vs OT | 2.11(1.47-3.02) |
| Immunosuppressed | No | 95.2%(248322) | 92.3%(8137) | ref | 1 |
| Immunosuppressed | Yes | 4.8%(12649) | 7.7%(677) | Yes vs No | 0.97(0.88-1.07) |
| Indigenous | No | 96.4%(251590) | 95.3%(8399) | ref | 1 |
| Indigenous | Yes | 3.6%(9381) | 4.7%(415) | Yes vs No | 0.88(0.78-0.99) |
| Leukaemia | No | 98.9%(258220) | 97.7%(8615) | ref | 1 |
| Leukaemia | Yes | 1.1%(2751) | 2.3%(199) | Yes vs No | 1.04(0.87-1.24) |
| Metastatic cancer | No | 95.7%(249838) | 97.2%(8565) | ref | 1 |
| Metastatic cancer | Yes | 4.3%(11133) | 2.8%(249) | Yes vs No | 0.7(0.61-0.8) |
| Patients Per Year | 0-250 | 16.1%(42101) | 14.7%(1293) | 0-250 vs over1000 | 1.42(1.24-1.62) |
| Patients Per Year | 250-500 | 34.1%(88993) | 27.7%(2442) | 250-500 vs over1000 | 0.97(0.87-1.07) |
| Patients Per Year | 500-750 | 26.9%(70305) | 25.7%(2263) | 500-750 vs over1000 | 0.97(0.88-1.07) |
| Patients Per Year | 750-1000 | 14.5%(37801) | 19.6%(1724) | 750-1000 vs over1000 | 0.99(0.89-1.1) |
| Patients Per Year | over1000 | 8.3%(21771) | 12.4%(1092) | ref | 1 |
| Sex | Female | 45.4%(118455) | 37.4%(3295) | ref | 1 |
| Sex | Male | 54.5%(142209) | 62.6%(5514) | Sex Male vs Female | 1.1(1.05-1.16) |
| Sex | unknown | 0.1%(307) | 0.1%(5) | Sex unknown vs Female | 0.64(0.25-1.65) |
| State | ACT | 3.2%(8297) | 1.8%(160) | State ACT vs NT | 0.74(0.58-0.95) |
| State | NSW | 35.7%(93184) | 37.3%(3290) | State NSW vs NT | 0.9(0.75-1.09) |
| State | NT | 1.4%(3649) | 2.1%(187) | ref | 1 |
| State | NZ | 5.4%(14141) | 6.9%(607) | State NZ vs NT | 0.58(0.47-0.71) |
| State | QLD | 17.4%(45348) | 15.4%(1359) | State QLD vs NT | 0.6(0.49-0.73) |
| State | SA | 7.8%(20244) | 6.6%(581) | State SA vs NT | 0.68(0.55-0.84) |
| State | TAS | 0.5%(1359) | 0.8%(70) | State TAS vs NT | 0.85(0.62-1.16) |
| State | VIC | 22.4%(58401) | 22.5%(1979) | State VIC vs NT | 0.66(0.55-0.8) |
| State | WA | 6.3%(16348) | 6.6%(581) | State WA vs NT | 0.8(0.65-0.98) |
| Treatment goals | Full active | 92.2%(240634) | 93.5%(8239) | ref | 1 |
| Treatment goals | Treatment | 7.6%(19934) | 6.4%(568) | Treatment vs Full active | 0.47(0.43-0.52) |
| Treatment goals | Unknown | 0.2%(403) | 0.1%(7) | Unknown vs Full active | 0.47(0.22-1.03) |
| Year | 2017 | 5.4%(14121) | 5.9%(520) | 2017 vs 2020 | 1.12(1.01-1.25) |
| Year | 2018 | 28.5%(74479) | 28.9%(2550) | 2018 vs 2020 | 1.1(1.03-1.17) |
| Year | 2019 | 37.1%(96945) | 38.3%(3375) | 2019 vs 2020 | 1.1(1.04-1.17) |
| Year | 2020 | 28.9%(75426) | 26.9%(2369) | ref | 1 |
| day | Saturday | 8.7%(22813) | 12.6%(1114) | Sat vs Tues | 1.17(1.07-1.28) |
| day | Sunday | 7.2%(18759) | 12.4%(1095) | Sun vs Tues | 1.17(1.07-1.28) |
| day | Monday | 17.1%(44602) | 14.6%(1291) | Mon vs Tues | 1.02(0.94-1.11) |
| day | Tuesday | 17.5%(45799) | 14.4%(1269) | ref | 1 |
| day | Wednesday | 17.4%(45374) | 15.2%(1339) | Wed vs Tues | 1.08(1-1.18) |
| day | Thursday | 16.5%(42950) | 15.6%(1378) | Thur vs Tues | 1.13(1.04-1.23) |
| day | Friday | 15.6%(40674) | 15.1%(1328) | Fri vs Tues | 1.11(1.02-1.2) |
| hour | 0 | 2.8%(7317) | 4.1%(359) | 0 vs 12 | 1.05(0.9-1.23) |
| hour | 1 | 2.4%(6225) | 3.4%(302) | 1 vs 12 | 1(0.85-1.18) |
| hour | 10 | 3.1%(7985) | 2.9%(258) | 10 vs 12 | 1(0.85-1.19) |
| hour | 11 | 5.1%(13208) | 3.7%(323) | 11 vs 12 | 0.91(0.77-1.06) |
| hour | 12 | 6.5%(16889) | 4.8%(421) | ref | 1 |
| hour | 13 | 6.9%(18042) | 5.3%(466) | 13 vs 12 | 1.03(0.89-1.19) |
| hour | 14 | 7.2%(18781) | 5.8%(513) | 14 vs 12 | 1.07(0.93-1.23) |
| hour | 15 | 7%(18334) | 6.1%(539) | 15 vs 12 | 1.12(0.97-1.29) |
| hour | 16 | 7.4%(19307) | 6.1%(537) | 16 vs 12 | 1.06(0.92-1.22) |
| hour | 17 | 7.5%(19604) | 6.2%(545) | 17 vs 12 | 1.07(0.93-1.23) |
| hour | 18 | 7.4%(19295) | 6.5%(576) | 18 vs 12 | 1.13(0.99-1.3) |
| hour | 19 | 6.5%(17066) | 5.7%(499) | 19 vs 12 | 1.03(0.89-1.18) |
| hour | 2 | 1.9%(4870) | 2.9%(255) | 2 vs 12 | 1.01(0.85-1.2) |
| hour | 20 | 6%(15567) | 5.6%(490) | 20 vs 12 | 1.07(0.93-1.24) |
| hour | 21 | 4.9%(12813) | 5.6%(492) | 21 vs 12 | 1.17(1.01-1.35) |
| hour | 22 | 4.3%(11239) | 5.2%(456) | 22 vs 12 | 1.11(0.96-1.28) |
| hour | 23 | 3.9%(10159) | 4.5%(401) | 23 vs 12 | 0.96(0.82-1.12) |
| hour | 3 | 1.6%(4123) | 2.5%(218) | 3 vs 12 | 0.97(0.81-1.16) |
| hour | 4 | 1.4%(3654) | 2.6%(225) | 4 vs 12 | 1(0.83-1.2) |
| hour | 5 | 1.3%(3282) | 2.2%(194) | 5 vs 12 | 0.97(0.8-1.18) |
| hour | 6 | 1.2%(3089) | 2.2%(192) | 6 vs 12 | 1(0.83-1.22) |
| hour | 7 | 1%(2487) | 1.7%(149) | 7 vs 12 | 0.98(0.8-1.21) |
| hour | 8 | 1.3%(3353) | 2.1%(184) | 8 vs 12 | 1.02(0.84-1.24) |
| hour | 9 | 1.6%(4282) | 2.5%(220) | 9 vs 12 | 1.14(0.95-1.37) |
| Lead time in hospital prior to ICU | 1-8hrs | 41.2%(107539) | 44.2%(3892) | ref | 1 |
| Lead time | 8-24hrs | 30.1%(78669) | 22.6%(1989) | 8-24 vs 1-8 | 1.08(1.01-1.16) |
| Lead time | 24-48hrs | 13.1%(34280) | 10.7%(942) | 24-48 vs 1-8 | 1.16(1.05-1.27) |
| Lead time | 48-96hrs | 6.2%(16187) | 8.5%(746) | 48-96 vs 1-8 | 1.39(1.26-1.55) |
| Lead time | >96hrs | 9.3%(24296) | 14.1%(1245) | >96 vs 1-8 | 1.42(1.3-1.56) |