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| **Supplemental Table 1. Baseline characteristics of included versus excluded patients**  |
|   | **All patients** | **Included** | **Excluded** | **p-value** |
| Number of patients | 69636 | 36660 | 32976 |   |
| **Demographics** |   |   |   |   |
| Age, mean (SD), years | 61.4 (15.5) | 60.9 (15.6) | 62.0 (15.5) | <0.001 |
| Age, median (IQR), years | 64 (53-73) | 64 (52-72) | 65 (54-73) |   |
| Sex, n (%), female | 25543 (36.7) | 13621 (37.2) | 32968 (36.2) | 0.006 |
| **Admission type n (%)** |   |   |   | <0.001 |
| Pneumonia | 3935 (5.7) | 3129 (8.5) | 806 (2.4) |  |
| Trauma | 3428 (4.9) | 2401 (6.5) | 1027 (3.1) |  |
| Cardiac arrest | 3997 (5.7) | 3188 (8.7) | 809 (2.5) |  |
| Sepsis | 3129 (4.5) | 2355 (6.4) | 774 (2.3) |  |
| Intracerebral pathology | 6870 (9.9) | 3733 (10.2) | 3137 (9.5) |  |
| Other urgent surgery | 6683 (9.6) | 4402 (12.0) | 2281 (6.9) |  |
| Other elective surgery | 28341 (40.7) | 9016 (24.6) | 19325 (58.6) |  |
| Other medical | 12971 (18.6) | 8268 (22.6) | 4703 (14.3) |  |
| Other | 282 (0.4) | 168 (0.5) | 114 (0.3) |  |
| **Severity of illness** |   |   |   |   |
| APACHE-III score, mean (SD) | 63.1 (30.6) | 73.0 (30.3) | 52.2 (26.8) | <0.001 |
| APACHE-III score, median (IQR) | 57 (41-79) | 68 (51-90) | 46 (35-61) |   |
| **Comorbidities, n (%)** |   |   |   |   |
| COPD | 8863 (12.7) | 5278 (14.4) | 3585 (10.9) | <0.001 |
| Renal insufficiency or dialysis | 4117 (5.9) | 2666 (7.3) | 1451 (4.4) | <0.001 |
| Cirrhosis | 1454 (2.1) | 1032 (2.8) | 422 (1.3) | <0.001 |
| Cardiovascular disease | 4847 (7.0) | 2701 (7.4) | 2146 (6.5) | <0.001 |
| Malignancy (hematological) | 4441 (6.4) | 2589 (7.1) | 1852 (5.6) | <0.001 |
| Aids or immune deficiency | 6310 (9.1) | 4174 (11.4) | 2136 (6.5) | <0.001 |
| **Laboratory values** |  |  |  |  |
| [Na]1st, mean (SD), mmol/L | 137.3 (4.4) | 137.3 (5.0) | 137.2 (3.7) | 0.001 |
| [Na]1st, median (IQR), mmol/L | 137 (135-140) | 137 (135-140) | 137 (135-139) |  |
| **Diagnosis on admission, n (%)** |   |   |   |   |
| CPR and dysrhythmia | 7460 (10.7) | 5423 (14.8) | 2037 (6.2) | <0.001 |
| Mechanical ventilation | 48162 (69.2) | 26490 (72.3) | 21672 (65.7) | <0.001 |
| CVA | 3757 (5.7) | 2697 (7.9) | 1060 (3.4) | <0.001 |
| Intracranial mass | 4170 (6.4) | 2788 (8.1) | 1382 (4.4) | <0.001 |
| Gastro-intestinal bleeding | 1151 (1.7) | 704 (1.9) | 447 (1.4) | <0.001 |
| Diabetes | 11422 (16.4) | 6003 (16.4) | 5419 (16.4) | 0.84 |
| **24 hours after admission, n (%)** |   |   |   |   |
| Acute renal failure | 5752 (8.3) | 4611 (12.6) | 1141 (3.5) | <0.001 |
| Invasive mechanical ventilation | 52817 (75.8) | 29893 (81.5) | 22924 (69.5) | <0.001 |
| Confirmed infection | 9149 (13.1) | 7129 (19.4) | 2020 (6.1) | <0.001 |
| Vasoactive drugs | 40360 (58.0) | 24634 (67.2) | 15726 (47.7) | <0.001 |
| **Entire admission** |  |  |  |  |
| Length of stay ICU, mean (SD), hours | 111.9 (209.0) | 180.3 (257.2) | 36.0 (87.8) | <0.001 |
| Length of stay ICU, median (IQR), hours | 44.8 (21.8-111.8) | 93 (50.7-195.5) | 21.5 (17.9-24.7) |   |
| Excluded were patients with no sodium measurement 24-48 hours after ICU admission, but with a sodium measurement in the first 24 hours of admission.[Na]1st: first serum sodium measurement at ICU admission, COPD: chronic obstructive pulmonary disease, CPR: cardiopulmonary resuscitation, CVA: cerebrovascular accident. Data are presented separately for survivors and non-survivors. Continuous data are presented as mean with standard deviation (SD) and median with interquartile range (IQR). Categorical data are presented as number with percentages (%).The p-values represent the difference between survivors and non-survivors, a p-value of <0.05 was considered statistically significant. |