**Supplementary Table**

Supplementary Table 1. Characteristics of study participants

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristics | All patients | Readmission | Non–readmission | P–value |
| All | Early readmission (≤ 72 hours) | Delayed readmission (> 72 hours) | P–value |
| Patients (n) | 29503 | 2711 | 1000 | 1711 |  | 26792 |  |
| Nonoperative admission dx. |  |  |  |  | 0.471 |  | <0.001 |
| Cardiovascular | 5101 (40.9) | 699 (52.2) | 266 (55.4) | 433 (50.4) |  | 4402 (19.6) |  |
| Respiratory | 2400 (19.2) | 260 (19.4) | 93 (19.4) | 167 (19.4) |  | 2140 (19.2) |  |
| Gastrointestinal & hepatobiliary | 899 (7.2) | 75 (5.6) | 25 (5.2) | 50 (5.8) |  | 824 (7.4) |  |
| Nephrologic | 457 (3.7) | 51 (3.8) | 15 (3.1) | 36 (4.2) |  | 406 (3.6) |  |
| Oncologic | 633 (5.1) | 47 (3.5) | 19 (4.0) | 28 (3.3) |  | 586 (5.3) |  |
| Infection | 365 (2.9) | 37 (2.8) | 9 (1.9) | 28 (3.3) |  | 328 (2.9) |  |
| Hematologic | 199 (1.6) | 29 (2.2) | 7 (1.5) | 22 (2.6) |  | 170 (1.5) |  |
| Rheumatologic | 3 (<0.1) | 0(0) | 0 (0) | 0 (0) |  | 3 (<0.1) |  |
| Neurologic | 1953 (15.7) | 133 (9.9) | 43 (9.0) | 90 (10.5) |  | 1820 (16.4) |  |
| Others | 458 (3.7) | 8 (0.6) | 3 (0.6) | 5 (0.6) |  | 450 (4.0) |  |
| Operative admission diagnoses |  |  |  |  | 0.038 |  | <0.001 |
| Cardiovascular | 5740 (33.7) | 523 (38.8) | 194 (37.3) | 338 (39.7) |  | 5208 (33.3) |  |
| Gastrointestinal & hepatobiliary | 3624 (21.3) | 416 (30.3) | 152 (29.2) | 264 (31.0) |  | 3208 (20.5) |  |
| Orthopedic | 547 (3.2) | 46 (3.4) | 17 (3.3) | 29 (3.4) |  | 501 (3.2) |  |
| Renal | 469 (2.8) | 27 (2.0) | 9 (1.7) | 18 (2.1) |  | 442 (2.8) |  |
| Neurologic | 3529 (20.7) | 233 (17.0) | 86 (16.5) | 147 (17.3) |  | 3296 (21.0) |  |
| Respiratory | 2540 (14.9) | 71 (5.2) | 41 (7.9) | 30 (3.5) |  | 2469 (15.8) |  |
| Gynecologic | 134 (0.5) | 7 (0.5) | 2 (0.4) | 5 (0.6) |  | 127 (0.8) |  |
| Others | 452 (2.7) | 40 (2.9) | 19 (3.7) | 21 (2.5) |  | 412 (2.6) |  |

Data are presented as number (%), unless otherwise indicated.

Supplementary Table 2. Outcomes and service use

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristics | Readmission(n=2711) | Early readmission (≤72 hours) | Delayed readmission (>72 hours) | P–value |
| ICU mortality | 326 (12.0) | 106 (10.6) | 220 (12.9) | 0.081 |
| 28–day ICU mortality | 241 (8.9) | 78 (7.8) | 163 (9.5) | 0.127 |
| In–hospital mortality | 515 (19.0) | 162 (16.2) | 353 (20.6) | 0.005 |
| Support during index ICU stay |  |  |  |  |
| Mechanical ventilation | 1928 (71.1) | 680 (68.0) | 1248 (72.9) | 0.006 |
| Noninvasive ventilation | 39 (1.4) | 8 (0.8) | 31 (1.8) | 0.033 |
| Vasopressors | 846 (31.2) | 306 (30.6) | 540 (31.6) | 0.603 |
| Renal replacement therapy | 263 (9.7) | 82 (8.2) | 181 (10.6) | 0.044 |
| ICU LOS, days | 3 (2 – 7) | 3 (2 – 6) | 3 (2 – 7) | <0.001 |
| Hospital LOS, days | 33 (18 – 64) | 23.5 (14 – 49) | 40 (22 – 72) | <0.001 |

Data are presented as mean ± standard deviation or number (%) and median and interquartile range, unless otherwise indicated.

ICU, intensive care unit; LOS, length of stay

Supplementary Table 3. Univariate and multivariate logistic regression analysis addressing the risk factors for in–hospital mortality

|  |  |  |
| --- | --- | --- |
|  | Univariate analysis | Multivariate analysis |
| OR | 95% CI | P–value | OR | 95% CI | P–value |
| Age (over 85 years) | 1.598 | 1.066 – 2.397 | 0.023 | 1.885 | 1.222 – 2.906 | 0.004 |
| Men | 1.272 | 1.038 – 1.558 | 0.020 | 0.894 | 0.723 – 1.105 | 0.298 |
| SOFA score | 1.072 | 1.050 – 1.095 | <0.001 | 1.081 | 1.058 – 1.1015 | <0.001 |
| Medical ICU admission | 1.369 | 1.129 – 1.660 | 0.001 | 1.169 | 0.942 – 1.451 | 0.155.0 |
| Admission source |  |  |  |  |  |  |
| Ward | –reference– |  |  |  |  |  |
| Emergency room | 1.195 | 0.984 – 1.452 | 0.072 | 0.980 | 0.797 – 1.204 | 0.844 |
| Others | 0.179 | 0.024 – 1.329 | 0.093 | 0.170 | 0.022 – 1.312 | 0.089 |
| Underlying disease |  |  |  |  |  |  |
| Chronic heart disease | 1.097 | 0.867 – 1.386 | 0.441 |  |  |  |
| Hematologic malignancy | 2.341 | 0.862 – 6.361 | 0.095 | 2.750  | 0.956 – 7.913 | 0.061 |
| Solid tumor | 1.221 | 0.760 – 1.960 | 0.409 |  |  |  |
| Chronic liver disease | 1.034 | 0.475 – 2.253 | 0.932 |  |  |  |
| Chronic lung disease | 0.989 | 0.639 – 1.533 | 0.962 |  |  |  |
| DM | 1.186 | 0.971 – 1.449 | 0.094 | 1.102 | 0.892 – 1.361 | 0.367 |
| CKD | 1.779 | 1.193 – 2.653 | 0.005 | 1.491 | 0.976 – 2.277 | 0.064 |
| CKD on HDa | 2.465 | 1.349 – 4.504 | 0.003 |  |  |  |
| CVA | 1.190 | 0.856 – 1.653 | 0.300 |  |  |  |
| Transplantation | 0.671 | 0.198 – 2.277 | 0.523 |  |  |  |
| Support during index ICU stay |  |  |  |  |  |  |
| Mechanical ventilation | 5.020 | 3.672 – 6.863 | <0.001 | 5.482 | 3.995 – 7.524 | <0.001 |
| Vasopressors | 1.145 | 0.933 – 1.404 | 0.194 |  |  |  |
| Delayed readmission | 1.345 | 1.095 – 1.651 | 0.005 | 1.210 | 0.978 – 1.498 | 0.079 |

a CKD on HD was not included in the multivariate analysis due to co–linearity with CKD (r = 0.509, p < 0.001).

CI, Confidence interval; CKD, chronic kidney disease; CVA, cerebrovascular accident; DM, diabetes mellitus; HD, hemodialysis; ICU, intensive care unit; OR, Odds ratio; SOFA, sequential organ failure assessment