

Table S5. Clinical utility of early warning scores for in-hospital mortality and mortality within 7 days of admission among subgroups

| | Sensitivity (95%CI) | Specificity (95%CI) | PPV (95%CI) | NPV (95%CI) | LR+ (95%CI) | LR- (95%CI) |
|---------------------------------------|--------------------------------|--------------------------------|------------------------|------------------------|------------------------|------------------------|
| In-hospital mortality | | | | | | |
| Age < 70 | | | | | | |
| SIR \geq 2 | 85.5 (78.9, 90.7) | 14.0 (10.9, 17.7) | 25.9 (24.4, 27.3) | 73.5 (63.9, 81.3) | 1.0 (0.9, 1.1) | 1.0 (0.7, 1.6) |
| qSOFA \geq 2 | 39.5 (31.7, 47.7) | 68.1 (63.4, 72.4) | 30.2 (25.4, 35.4) | 76.3 (73.6, 78.8) | 1.2 (1.0, 1.6) | 0.9 (0.8, 1.0) |
| NEWS \geq 8 | 69.1 (61.1, 76.3) | 44.6 (39.9, 49.4) | 30.4 (27.6, 33.3) | 80.5 (76.1, 84.3) | 1.3 (1.1, 1.4) | 0.7 (0.5, 0.9) |
| REMS \geq 9 | 44.1 (36.0, 52.4) | 70.8 (66.3, 75.0) | 34.5 (29.5, 39.9) | 78.4 (75.7, 80.9) | 1.5 (1.2, 1.9) | 0.8 (0.7, 0.9) |
| Age \geq 70 | | | | | | |
| SIR \geq 2 | 85.6 (81.1, 89.3) | 23.4 (20.3, 26.5) | 31.8 (30.5, 33.1) | 79.4 (74.0, 84.0) | 1.1 (1.1, 1.2) | 0.6 (0.5, 0.8) |
| qSOFA \geq 2 | 48.2 (42.5, 54.0) | 69.6 (66.1, 72.9) | 39.8 (36.1, 43.7) | 76.3 (74.1, 78.4) | 1.6 (1.4, 1.9) | 0.7 (0.7, 0.8) |
| NEWS \geq 8 | 67.5 (62.0, 72.8) | 49.6 (45.9, 53.3) | 35.9 (33.5, 38.4) | 78.5 (75.4, 81.4) | 1.3 (1.2, 1.5) | 0.7 (0.6, 0.8) |
| REMS \geq 9 | 80.3 (75.4, 84.6) | 35.6 (32.1, 39.2) | 34.3 (32.5, 36.0) | 81.3 (77.2, 84.7) | 1.3 (1.2, 1.4) | 0.6 (0.4, 0.7) |
| Without chronic comorbidities | | | | | | |
| SIR \geq 2 | 83.1 (72.3, 91.0) | 18.8 (14.8, 23.3) | 20.0 (18.2, 21.9) | 82.0 (72.2, 88.9) | 1.0 (0.9, 1.1) | 0.9 (0.5, 1.6) |
| qSOFA \geq 2 | 47.9 (35.9, 60.1) | 70.1 (64.5, 75.3) | 28.1 (22.5, 34.5) | 84.7 (81.3, 87.5) | 1.6 (1.2, 2.2) | 0.7 (0.6, 0.9) |
| NEWS \geq 8 | 71.8 (60.0, 81.9) | 46.1 (40.2, 52.0) | 24.5 (21.3, 28.0) | 87.0 (81.9, 90.8) | 1.3 (1.1, 1.6) | 0.6 (0.4, 0.9) |
| REMS \geq 9 | 70.4 (58.4, 80.7) | 53.6 (47.7, 59.5) | 27.0 (23.4, 31.0) | 88.1 (83.6, 91.5) | 1.5 (1.2, 1.8) | 0.6 (0.4, 0.8) |
| At least 1 chronic comorbidity | | | | | | |
| SIR \geq 2 | 86.0 (82.1, 89.3) | 19.1 (16.6, 21.9) | 32.0 (30.8, 33.1) | 75.6 (70.0, 80.4) | 1.1 (1.0, 1.1) | 0.7 (0.6, 1.0) |
| qSOFA \geq 2 | 44.8 | 68.7 | 38.7 | 73.8 | 1.4 | 0.8 |

| | | | | | | |
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| | (40.0, 49.9) | (65.5, 71.7) | (35.3, 42.3) | (71.8, 75.7) | (1.2, 1.7) | (0.7, 0.9) |
| NEWS \geq 8 | 67.4 (62.4, 72.0) | 48.3 (44.9, 51.7) | 36.5 (34.4, 38.7) | 77.0 (74.1, 79.7) | 1.3 (1.2, 1.4) | 0.7 (0.6, 0.8) |
| REMS \geq 9 | 67.9 (63.0, 72.5) | 47.1 (43.8, 50.5) | 36.2 (34.1, 38.4) | 76.9 (73.9, 79.6) | 1.3 (1.2, 1.4) | 0.7 (0.6, 0.8) |
| Mortality within 7 days of admission | | | | | | |
| Age < 70 | | | | | | |
| SIR \geq 2 | 90.1 (82.1, 95.4) | 14.9 (11.9, 18.4) | 16.3 (15.2, 17.4) | 89.2 (81.0, 94.1) | 1.1 (0.9, 1.1) | 0.7 (0.3, 1.3) |
| qSOFA \geq 2 | 42.9 (32.5, 53.7) | 67.7 (63.4, 71.8) | 19.6 (15.7, 24.2) | 86.6 (84.3, 88.6) | 1.3 (1.0, 1.7) | 0.8 (0.7, 1.0) |
| NEWS \geq 8 | 71.4 (61.0, 80.4) | 43.4 (38.9, 47.8) | 18.8 (16.6, 21.2) | 89.2 (85.5, 92.1) | 1.3 (1.1, 1.5) | 0.7 (0.5, 0.9) |
| REMS \geq 10 | 36.3 (26.4, 47.0) | 77.0 (73.1, 80.7) | 22.5 (17.4, 28.4) | 86.8 (84.9, 88.6) | 1.6 (1.2, 2.2) | 0.8 (0.7, 1.0) |
| Age \geq 70 | | | | | | |
| SIR \geq 2 | 87.8 (82.3, 92.1) | 22.6 (19.8, 25.6) | 20.2 (19.2, 21.3) | 89.3 (84.7, 92.6) | 1.1 (1.1, 1.2) | 0.5 (0.4, 0.8) |
| qSOFA \geq 2 | 52.4 (45.0, 59.7) | 68.1 (64.8, 71.2) | 26.8 (23.7, 30.3) | 86.5 (84.6, 88.2) | 1.6 (1.4, 1.9) | 0.7 (0.6, 0.8) |
| NEWS \geq 8 | 69.3 (62.2, 75.8) | 47.6 (44.2, 51.1) | 22.8 (20.9, 24.9) | 87.4 (84.7, 89.7) | 1.3 (1.2, 1.5) | 0.6 (0.5, 0.8) |
| REMS \geq 10 | 67.7 (60.6, 74.3) | 51.3 (47.8, 54.7) | 23.7 (21.6, 26.0) | 87.7 (85.1, 89.8) | 1.4 (1.2, 1.6) | 0.6 (0.5, 0.8) |
| Without chronic comorbidities | | | | | | |
| SIR \geq 2 | 81.8 (67.3, 91.8) | 21.4 (17.0, 26.3) | 12.6 (11.0, 14.3) | 89.5 (81.5, 94.3) | 1.0 (0.9, 1.2) | 0.9 (0.4, 1.7) |
| qSOFA \geq 2 | 52.3 (36.7, 67.5) | 69.2 (65.8, 74.2) | 19.0 (14.5, 24.5) | 91.3 (88.4, 93.5) | 1.7 (1.2, 2.4) | 0.7 (0.5, 1.0) |
| NEWS \geq 8 | 65.9 (50.1, 79.5) | 43.7 (38.2, 49.4) | 13.9 (11.4, 17.0) | 90.3 (85.8, 93.4) | 1.2 (0.9, 1.5) | 0.8 (0.5, 1.2) |
| REMS \geq 10 | 61.4 (45.5, 75.6) | 63.8 (58.3, 69.1) | 19.0 (15.1, 23.6) | 92.3 (89.1, 94.6) | 1.7 (1.3, 2.2) | 0.6 (0.4, 0.9) |
| At least 1 chronic comorbidity | | | | | | |
| SIR \geq 2 | 89.8 (85.3, 93.4) | 19.2 (16.9, 21.8) | 20.4 (19.6, 21.3) | 89.1 (84.6, 92.5) | 1.1 (1.1, 1.2) | 0.5 (0.4, 0.8) |

| | | | | | | |
|----------------|----------------------|----------------------|----------------------|----------------------|-------------------|-------------------|
| qSOFA ≥ 2 | 48.7 (42.2, 55.3) | 67.6 (64.6, 70.4) | 25.7 (22.8, 28.9) | 85.1 (83.4, 86.7) | 1.5 (1.3, 1.8) | 0.8 (0.7, 0.9) |
| NEWS ≥ 8 | 70.8 (64.5, 76.5) | 46.8 (43.7, 49.9) | 23.5 (21.7, 25.3) | 87.4 (84.9, 89.5) | 1.3 (1.2, 1.5) | 0.6 (0.5, 0.8) |
| REMS ≥ 10 | 56.8 (50.2, 63.2) | 59.9 (56.8, 62.9) | 24.6 (22.2, 27.2) | 85.7 (83.7, 87.5) | 1.4 (1.2, 1.6) | 0.7 (0.6, 0.8) |

Notes: n of mortality outcome/subgroup N for in-hospital mortality: < 70 years-old = 152/587; ≥ 70 years-old = 305/1035; no chronic comorbidities = 71/362; at least one chronic comorbidity = 386/1260 and for mortality within 7 days of admission n/N: < 70 years-old = 91/587; ≥ 70 years-old = 189/1035; no chronic comorbidities = 44/362; at least one chronic comorbidity = 236/1260

Abbreviations: CI, confidence interval; SIRS, systemic inflammatory response syndrome; qSOFA, quick Sequential Organ Failure Assessment; NEWS, National Early Warning Score; REMS, Rapid Emergency Medicine Score.