

Appendix. Test characteristics for qSOFA- Shock Index- and NEWS2 with varying binary cut-points. The

standard cutoff appears in bold and the cut-point with the highest AUROC appears italicized. 95% confidence intervals are included for each value.

Table A. Test characteristics for various binary cut-points of qSOFA

Cut-point	Proportion of cohort meeting cut-point	Sensitivity	Specificity	PPV	NPV	AUROC (95% CI)
In-Hospital Mortality						
<i>qSOFA≥1</i>	36.5%	74.0% (71.6-76.3%)	65.8% (65.2-66.5%)	12.1% (11.4-12.8%)	97.5% (97.3-97.8%)	0.699 (0.687-0.711)
qSOFA≥2	8.0%	31.5% (29.1-33.9%)	93.4% (93.1-93.8%)	23.4% (21.5-25.3%)	95.5% (95.3-95.8%)	0.626 (0.614-0.638)
qSOFA=3	1.0%	6.38% (5.2-7.8%)	99.3% (99.2-99.4%)	36.7% (30.7-43.0%)	94.3% (94.0-94.6%)	0.528 (0.522-0.535)
ED-to-ICU Transfer						
<i>qSOFA≥1</i>	36.5%	74.0% (72.4-75.5%)	69.2% (68.5-69.8%)	26.7% (25.8-27.7%)	94.6% (94.2-94.9%)	0.716 (0.707-0.724)
qSOFA≥2	8.0%	29.3% (27.7-30.9%)	95.2% (94.9-95.5%)	48.0% (45.4-50.3%)	89.8% (89.4-90.2%)	0.625 (0.617-0.634)
qSOFA=3	1.0%	5.4% (4.6-6.3%)	99.6% (99.5-99.7%)	68.5% (62.4-74.3%)	87.4% (86.9-87.8%)	0.525 (0.521-0.529)

Table B. Test characteristics for various binary cut-points of the Shock Index

Cut-point	Proportion of cohort meeting cut-point	Sensitivity	Specificity	PPV	NPV	AUROC (95% CI)
In-Hospital Mortality						
<i>Shock Index > 0.7</i>	17.9%	45.8% (43.2-48.5%)	83.9% (83.4-84.3%)	15.3% (14.2-16.4%)	96.0% (95.8-96.3%)	0.649 (0.636-0.662)

Shock Index > 0.8	14.6%	41.0% (38.4-43.6%)	87.0% (86.6-87.5%)	16.8% (15.5-18%)	95.9% (95.6-96.1%)	0.640 (0.627-0.653)
Shock Index > 0.9	11.3%	35.9% (33.5-38.5%)	90.3% (89.9-90.6%)	19.0% (17.6-20.6%)	95.7% (95.4-95.9%)	0.631 (0.618-0.644)
Shock Index > 1.0	8.4%	29.2% (26.9-31.7%)	92.9% (92.6-93.3%)	20.9% (19.1-22.7%)	95.4% (95.1-95.6%)	0.611 (0.599-0.623)
Shock Index > 1.1	6.3%	24.5% (22.3-26.8%)	94.9% (94.6-95.2%)	23.3% (21.2-25.6%)	95.2% (94.9-95.5%)	0.597 (0.586-0.608)
Shock Index > 1.2	4.6%	19.1% (17.1-21.2%)	96.3% (96.1-96.6%)	25.0% (22.4-27.6%)	94.9% (94.6-95.2%)	0.577 (0.567-0.587)
Shock Index > 1.3	3.4%	15.1% (13.3-17.1%)	97.3% (97.1-97.6%)	26.6% (23.6-29.8%)	94.7% (94.4-95.0%)	0.562 (0.553-0.572)
Shock Index > 1.4	2.4%	12.3% (10.7-14.2%)	98.2% (98.0-98.4%)	30.4% (26.7-34.4%)	94.6% (94.3-94.9%)	0.553 (0.544-0.561)
Shock Index > 1.5	1.7%	9.25% (7.8-10.9%)	98.8% (98.6-98.9%)	32.1% (27.6-36.9%)	94.5% (94.2-94.8%)	0.540 (0.532-0.548)
Shock Index > 1.6	1.3%	7.2% (5.9-8.6%)	99.1% (98.9-99.2%)	32.7% (27.5-38.2%)	94.4% (94.1-94.7%)	0.531 (0.524-0.538)
Shock Index > 1.7	1.0%	5.6% (4.5-6.9%)	99.3% (99.2-99.4%)	33.6% (27.6-40.0%)	94.3% (94.0-94.6%)	0.525 (0.519-0.531)
Shock Index > 1.8	<1%	3.9% (3.0-5.1%)	99.5% (99.4-99.6%)	33.1% (26.1-40.8%)	94.2% (93.9-94.5%)	0.517 (0.512-0.522)
Shock Index > 1.9	<1%	3.2% (2.3-4.2%)	99.7% (99.6-99.7%)	36.9% (28.3-46.1%)	94.2% (93.9-94.5%)	0.514 (0.509-0.519)
Shock Index > 2.0	<1%	2.3% (1.6-3.23%)	99.7% (99.6-99.8%)	34.4% (25-44.8%)	94.1% (93.8-94.4%)	0.510 (0.506-0.514)
ED-to-ICU Transfer						
Shock Index > 0.7	17.9%	49.2% CI: 47.5-51.0%	86.8% CI: 86.4-87.3%	36.3% CI: 34.8-37.7%	91.8% CI: 91.4-92.2%	0.679 (0.670-0.688)
Shock Index > 0.8	14.6%	41.8% (40.1-43.6%)	89.5% (89.1-89.9%)	37.7% (36.1-39.4%)	91.0% (90.6-91.4%)	0.657 (0.648-0.665)
Shock Index > 0.9	11.3%	35.5% (33.8-37.2%)	92.4% (92-92.7%)	41.4% (39.6-43.3%)	90.4% (90-90.8%)	0.639 (0.631-0.648)
Shock Index > 1.0	8.4%	28.8%	94.7%	45.3%	89.7%	0.617

		(27.2-30.4%)	(94.4-95%)	(43.1-47.5%)	(89.3-90.1%)	(0.609-0.625)
Shock Index > 1.1	6.3%	23.7%	96.4%	49.7%	89.2%	0.600
		(22.2-25.2%)	(96.1-96.6%)	(47.1-52.3%)	(88.8-89.6%)	(0.593-0.608)
Shock Index > 1.2	4.6%	18.8%	97.6%	54.2%	88.8%	0.582
		(17.4-20.2%)	(97.4-97.8%)	(51.2-57.2%)	(88.3-89.2%)	(0.575-0.589)
Shock Index > 1.3	3.4%	14.6%	98.3%	56.6%	88.3%	0.564
		(13.4-15.9%)	(98.1-98.5%)	(53.1-60%)	(87.9-88.7%)	(0.558-0.571)
Shock Index > 1.4	2.4%	11.3%	98.9%	61.6%	88%	0.551
		(10.2-12.5%)	(98.8-99.1%)	(57.5-65.6%)	(87.6-88.4%)	(0.546-0.557)
Shock Index > 1.5	1.7%	8.6%	99.3%	66.2%	87.7%	0.540
		(7.68-9.67%)	(99.2-99.4%)	(61.4-70.7%)	(87.3-88.1%)	0.535-0.545
Shock Index > 1.6	1.3%	6.9%	99.5%	69.6%	87.5%	0.532
		(6.0-7.8%)	(99.4-99.6%)	(64.1-74.6%)	(87.1-88%)	(0.528-0.537)
Shock Index > 1.7	1.0%	5.5%	99.7%	72.3%	87.4%	0.526
		(4.7-6.3%)	(99.6-99.8%)	(66.1-77.9%)	(87-87.8%)	(0.522-0.53)
Shock Index > 1.8	<1%	4.0%	99.8%	74.6%	87.2%	0.519
		(3.3-4.8%)	(99.7-99.8%)	(67.3-80.9%)	(86.8-87.7%)	(0.516-0.522)
Shock Index > 1.9	<1%	2.8%	99.8%	72.1%	87.1%	0.513
		(2.3-3.4%)	(99.8-99.9%)	(63.3-79.9%)	(86.7-87.5%)	(0.51-0.516)
Shock Index > 2.0	<1%	2.25%	99.9%	74%	87%	0.511
		(1.8-1.84%)	(99.8-99.9%)	(64.0-82.4%)	(86.6-87.5%)	(0.508-0.513)

Table C. Test characteristics for various binary cut-points of NEWS2

Cut-point	Proportion of cohort meeting cut-point	Sensitivity	Specificity	PPV	NPV	AUROC (95% CI)
In-Hospital Mortality						
NEWS2 ≥ 3	92.8%	99.8%	7.6%	6.4%	99.8%	0.537
		(99.4-100%)	(7.3-8.0%)	(6.1-6.8%)	(99.5-100%)	(0.535-0.539)
NEWS2 ≥ 4	60.8%	83.8%	40.7%	8.3%	97.5%	0.622
		(81.8-85.7%)	(40.0-41.3%)	(7.8-8.7%)	(97.2-97.8%)	(0.612-0.632)

NEWS2 ≥ 5	49.6%	76.0% (73.7-78.2%)	52.0% (51.4-52.7%)	9.2% (8.65-9.7%)	97.1% (96.8-97.4%)	0.640 (0.628-0.652)
NEWS2 ≥ 6	40.2%	66.5% (64.0-69.0%)	61.5% (60.9-62.1%)	9.9% (9.3-10.5%)	96.6% (96.3-96.9%)	0.640 (0.627-0.653)
<i>NEWS2 ≥ 7</i>	<i>20.3%</i>	<i>49.1%</i> <i>(46.4-51.7%)</i>	<i>81.5%</i> <i>(81.0-82.0%)</i>	<i>14.5%</i> <i>(13.5-15.5%)</i>	<i>96.2%</i> <i>(95.9-96.4%)</i>	<i>0.653</i> <i>(0.640-0.666)</i>
NEWS2 ≥ 8	14.5%	41.6% (39.1-44.2%)	87.3% (86.8-87.7%)	17.2% (16.0-18.5%)	95.9% (95.6-96.2%)	0.644 (0.632-0.657)
NEWS2 ≥ 9	8.8%	28.6% (26.3-31.0%)	92.4% (92.1-92.8%)	19.4% (17.7-21.1%)	95.3% (95.0-95.6%)	0.605 (0.593-0.617)
NEWS2 ≥ 10	4.9%	18.9% (16.9-21.1%)	96.0% (95.7-96.2%)	23.0% (20.6-25.5%)	94.9% (94.6-95.2%)	0.574 (0.564-0.585)
ED to ICU Transfer						
NEWS2 ≥ 3	92.8%	99.3% (98.9-99.5%)	8.1% (7.8-8.53%)	14.1% (13.7-14.6%)	98.7% (98.0-99.1%)	0.537 (0.535-0.539)
NEWS2 ≥ 4	60.8%	85.0% (83.7-86.2%)	42.9% (42.2-43.6%)	18.5% (17.8-19.1%)	94.9% (94.5-95.4%)	0.639 (0.632-0.646)
NEWS2 ≥ 5	49.6%	78.9% (77.5-80.4%)	54.8% (54.1-55.5%)	21.0% (20.3-21.8%)	94.5% (94.1-94.9%)	0.669 (0.661-0.677)
NEWS2 ≥ 6	40.2%	68.5% (66.9-70.1%)	64.1% (63.5-64.8%)	22.5% (21.7-23.4%)	93.1% (92.6-93.5%)	0.663 (0.655-0.672)
<i>NEWS2 ≥ 7</i>	<i>20.3%</i>	<i>51.1%</i> <i>(49.3-52.9%)</i>	<i>84.4%</i> <i>(83.9-84.9%)</i>	<i>33.2%</i> <i>(31.9-34.6%)</i>	<i>91.9%</i> <i>(91.5-92.3%)</i>	<i>0.677</i> <i>(0.668-0.686)</i>
NEWS2 ≥ 8	14.5%	41.4% (39.7-43.2%)	89.6% (89.2-90.1%)	37.8% (36.2-39.5%)	91.0% (90.5-91.3%)	0.655 (0.646-0.664)
NEWS2 ≥ 9	8.8%	29.1% (27.5-30.7%)	94.2% (93.9-94.6%)	43.5% (41.3-45.6%)	89.7% (89.3-90.1%)	0.617 (0.609-0.625)
NEWS2 ≥ 10	4.9%	19.5% (18.1-20.9%)	97.3% (97.1-97.5%)	52.3% (49.4-55.2%)	88.8% (88.4-89.2%)	0.584 (0.577-0.591)