

**Supplementary Table 1a. Reclassification table for PSI and CAPE<sup>®</sup>+PSI at a 30-day mortality risk threshold of 0.20.**

PSI	Survivors (n=61)		Total
	CAPE <sup>®</sup> +PSI		
	<0.20 risk	≥0.20 risk	
<0.20 risk	13	8	21
≥0.20 risk	4	36	40
Total	17	44	61

  

PSI	Non-survivors (n=254)		Total
	CAPE <sup>®</sup> +PSI		
	<0.20 risk	≥0.20 risk	
<0.20 risk	169	26	195
≥0.20 risk	21	38	59
Total	190	64	254

CAPE<sup>®</sup>=Community-acquired pneumonia Artificial intelligence Predictive Engine.

PSI=Pneumonia Severity Index.

Net reclassification index (NRI) for addition of CAPE to PSI:  $(8-4)/61 - (26-21)/254 = 4.6\%$  (95%CI, 3.9%-5.3%).

**Supplementary Table 1b. Reclassification table for CURB-65 and CAPE+CURB-65 at a 30-day mortality risk threshold of 20%.**

CURB-65	Survivors (n=61)		Total
	CAPE <sup>®</sup> +CURB-65		
	<0.20 risk	≥0.20 risk	
<0.20 risk	5	5	10
≥0.20 risk	9	42	51
Total	14	47	61

  

CURB-65	Non-survivors (n=254)		Total
	CAPE <sup>®</sup> +CURB-65		
	<0.20 risk	≥0.20 risk	
<0.20 risk	141	10	151
≥0.20 risk	38	65	103
Total	179	75	254

CAPE<sup>®</sup>=Community-acquired pneumonia Artificial intelligence Predictive Engine.

CURB-65: Confusion of new onset, blood Urea nitrogen, Respiratory rate, Blood pressure, 65 years old.

Net reclassification index (NRI) for addition of CAPE to CURB-65:  $(5-9)/61 - (10-38)/254 = 4.5\%$  (95%CI, 3.8%-5.2%).

**Supplementary Table 2. Characteristics of patients with discordant and concordant 30-day mortality risk categories based on CAPE<sup>®</sup> and PSI in the prospective dataset.**

Variable	Discordant CAPE <sup>®</sup> and PSI		Concordant CAPE <sup>®</sup> and PSI	
	CAPE <sup>®</sup> >0.20 risk, PSI <0.20 risk n= 69	CAPE <sup>®</sup> <0.20 risk, PSI >0.20 risk n= 36	CAPE <sup>®</sup> >0.20 risk, PSI >0.20 risk n= 63	CAPE <sup>®</sup> <0.20 risk, PSI <0.20 risk n= 147
30-day mortality	17 (24.6)	10 (27.8)	30 (47.6)	4 (2.7)
Age, years	77.6 ± 13.0	78.8 ± 11.7	80.3 ± 9.1	62.8 ± 20.2
Male	35 (50.7)	19 (52.8)	44 (69.8)	81 (55.1)
BMI <sup>a</sup>	21.2 ± 5.1	22.0 ± 3.70	19.7 ± 3.9	25.4 ± 6.9
Smoking <sup>b</sup>				
- Never	37 (77.1)	19 (79.2)	28 (73.7)	93 (77.5)
- Former	4 (8.3)	2 (8.3)	4 (10.5)	19 (12.9)
- Current	7 (14.6)	3 (12.5)	6 (15.8)	8 (5.4)
Residing in long-term care facility	16 (23.2)	15 (41.7)	26 (41.3)	6 (4.1)
Hospitalisation in prior 30 days	25 (36.2)	6 (16.7)	19 (30.2)	19 (12.9)
Antibiotic therapy in prior 30 days	21 (30.9)	6 (16.7)	20 (31.8)	24 (16.3)
<b>Comorbid chronic diseases</b>				
- Diabetes Mellitus	21 (30.4)	16 (44.4)	28 (44.4)	45 (30.6)
- Hypertension	46 (66.7)	26 (72.2)	46 (73.0)	72 (49.0)
- Ischaemic heart disease	21 (30.4)	15 (41.7)	24 (38.1)	26 (17.7)
- Congestive cardiac failure	3 (4.4)	5 (13.9)	3 (4.8)	6 (4.1)
- Asthma	3 (4.4)	2 (5.6)	4 (6.4)	13 (8.8)
- Chronic obstructive lung disease	22 (7.0)	1 (2.8)	5 (7.9)	11 (7.5)
- Bronchiectasis	7 (10.1)	0 (0.0)	5 (7.9)	10 (6.8)
- Dementia	24 (34.8)	14 (38.9)	23 (36.5)	24 (16.3)
- Parkinson's disease	11 (15.9)	0 (0.0)	4 (6.4)	8 (5.4)
- Chronic kidney disease	8 (11.6)	13 (36.1)	18 (28.6)	9 (6.1)
- Chronic liver disease	3 (4.4)	3 (8.3)	2 (3.2)	3 (2.0)
- Active cancers	2 (2.9)	6 (16.7)	21 (33.3)	5 (3.4)
<b>Vital signs on admission</b>				
- Fever ≥ 38.0 °C	44 (63.8)	20 (55.6)	41 (65.1)	86 (58.5)
- Heart rate/minute	94.9 ± 21.5	95.3 (22.0)	105.1 (28.1)	94.8 (19.6)
- Respiratory rate/minute	21.6 ± 4.2	20.7 ± 3.8	24.8 ± 7.6	19.8 ± 3.2
- Systolic blood pressure (mmHg)	127.3 ± 20.6	135.2 ± 36.3	122.3 ± 31.6	135.0 ± 23.4
- Diastolic blood pressure (mmHg)	70.2 ± 13.0	70.3 ± 14.9	68.8 ± 16.4	74.8 ± 13.3
- Pulse capillary oxygenation (%)	94.5 ± 4.5	93.8 ± 5.5	92.6 ± 6.9	96.5 ± 4.3
- Fraction of inspired oxygen required	32.5 ± 21.9	28.4 ± 18.2	41.3 ± 29.6	23.8 ± 11.5
<b>Respiratory symptoms</b>				
- Cough	44 (63.8)	18 (50.0)	26 (41.3)	90 (61.2)
- Dyspnea	34 (49.3)	12 (33.3)	33 (52.4)	51 (34.7)
- Sputum	19 (27.5)	7 (19.4)	17 (27.0)	37 (25.2)
- Haemoptysis	0 (0.0)	0 (0.0)	0 (0.0)	4 (2.7)
- Rhinorrhea	0 (0.0)	1 (2.8)	0 (0.0)	10 (6.8)
- Throat pain	0 (0.0)	1 (2.8)	1 (1.6)	14 (9.5)
- Chest pain	8 (11.6)	3 (8.3)	3 (4.8)	17 (11.6)
- Wheeze	1 (1.5)	0 (0.0)	1 (1.6)	0 (0.0)
- Myalgia	1 (1.5)	0 (0.0)	0 (0.0)	9 (6.1)
- Lethargy	11 (15.9)	5 (13.9)	15 (23.8)	12 (8.2)
- Fall	5 (7.3)	1 (2.8)	5 (7.9)	9 (6.1)
- Nausea or vomiting	2 (2.9)	4 (11.1)	6 (9.5)	16 (10.9)
<b>Pneumonia complications</b>				
- Acute myocardial injury	3 (4.4)	6 (16.7)	11 (17.7)	2 (1.4)
- Acute kidney injury	16 (23.2)	13 (36.1)	33 (53.2)	11 (7.5)
- Delirium	3 (4.4)	6 (16.7)	13 (20.6)	4 (2.7)
- Critical care admission	4 (5.8)	2 (5.6)	4 (6.3)	2 (1.4)
<b>Laboratory Indices</b>				
- Serum C-reactive Protein (mg/L)	71.7 ± 63.8	88.6 ± 96.9	97.0 ± 103.7	49.8 ± 60.4
- Serum Procalcitonin (ug/L)	2.4 (12.3)	4.8 (15.2)	8.3 (23.5)	1.1 (3.5)
- White cell count (cells/uL)	69 (11.9)	36 (15.2)	16.4 (28.7)	11.0 (4.8)

Data are presented as number (%), mean ± standard deviation, median [interquartile range]. CAPE<sup>®</sup>= Community-acquired pneumonia artificial intelligence predictive engine. <sup>a</sup>Data missing for 102 subjects. <sup>b</sup>Data missing for 85 subjects.