

Supplementary file for Kostakis et al. ‘The performance of the National Early Warning Score and National Early Warning Score 2 in hospitalised patients infected by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)’

Supplementary Figure 1: National Early Warning Score [NEWS] (2012)

PHYSIOLOGICAL PARAMETERS	3	2	1	0	1	2	3
Respiration Rate	≤8		9 - 11	12 - 20		21 - 24	≥25
Oxygen Saturations	≤91	92 - 93	94 - 95	≥96			
Any Supplemental Oxygen		Yes		No			
Temperature	≤35.0		35.1 - 36.0	36.1 - 38.0	38.1 - 39.0	≥39.1	
Systolic BP	≤90	91 - 100	101 - 110	111 - 219			≥220
Heart Rate	≤40		41 - 50	51 - 90	91 - 110	111 - 130	≥131
Level of Consciousness				A			V, P, or U

Reproduced from: Royal College of Physicians. National Early Warning Score (NEWS): Standardising the assessment of acute-illness severity in the NHS. Updated report of a working party. London: RCP, 2012.

Supplementary Figure 2: National Early Warning Score 2 [NEWS2] (2017)

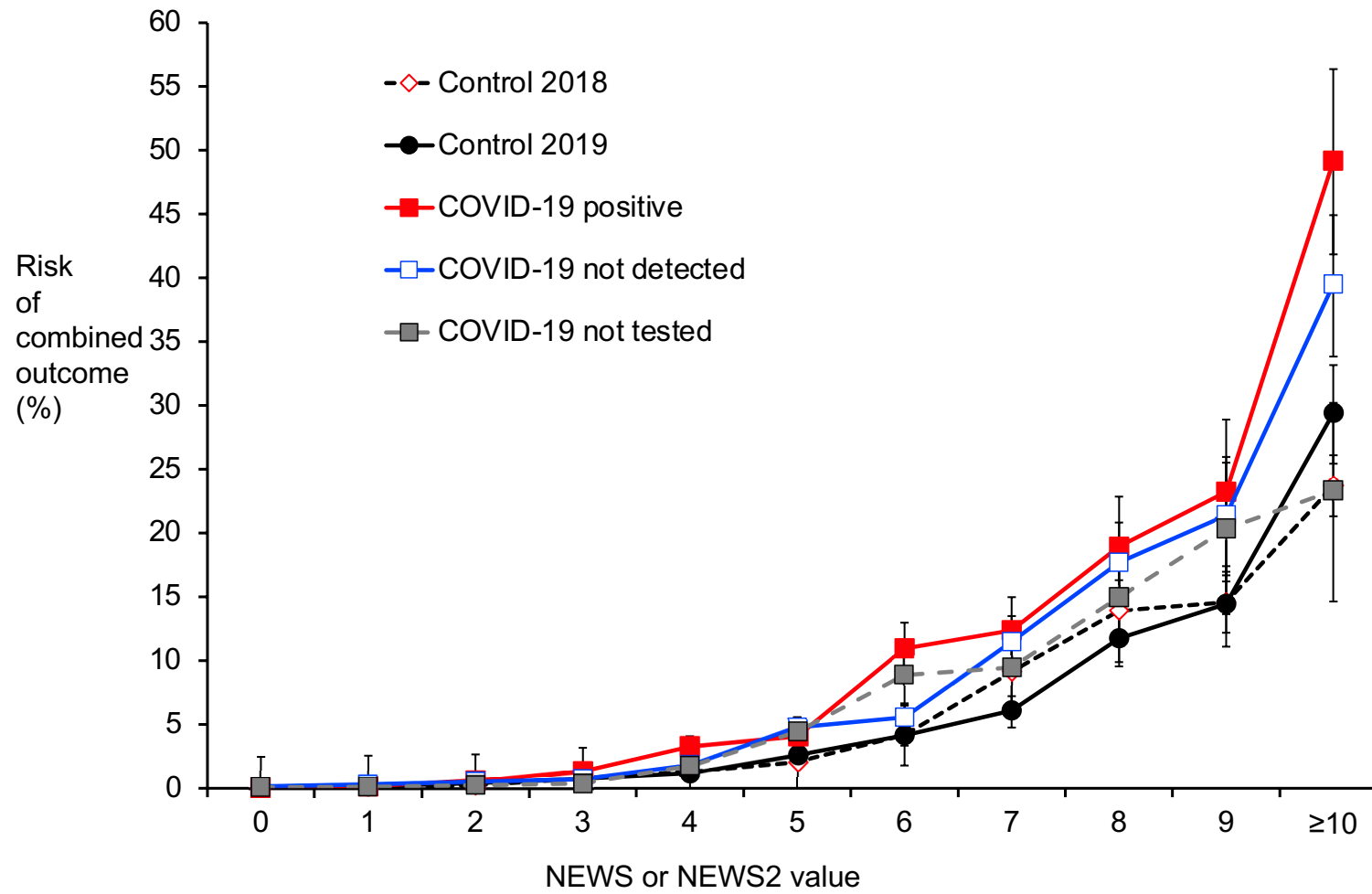
Physiological parameter	Score						
	3	2	1	0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO ₂ Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO ₂ Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	

Reproduced from: Royal College of Physicians. National Early Warning Score (NEWS) 2: Standardising the assessment of acute-illness severity in the NHS. Updated report of a working party. London: RCP, 2017.

Supplementary Table 1: Categorisation of admissions to Medical, Surgical and Other groups

MEDICINE	SURGERY	OTHER
Emergency Medicine	General Surgery	Anaesthetics
Pain Management	Urology	Intensive Care Medicine
General Internal Medicine	Transplant Surgery	Audio Vestibular Medicine
Gastroenterology	Breast Surgery	Respiratory Physiology
Endocrinology	Colorectal Surgery	Paediatric
Clinical Haematology	Hepatobiliary and Pancreatic Surgery	Obstetrics
Hepatology	Upper Gastrointestinal Surgery	Midwifery
Rehabilitation Medicine	Vascular Surgery	Adult Mental Health
Cardiology	Bariatric Surgery	Interventional Radiology
Acute Internal Medicine	Trauma and Orthopaedic	Not a treatment function
Stroke Medicine	ENT	
Transient Ischaemic Attack	Ophthalmology	
Dermatology	Oral Surgery	
Respiratory Medicine	Restorative Dentistry	
Specialist Rehabilitation	Orthodontic	
Renal Medicine	Maxillofacial Surgery	
Medical Oncology	Plastic Surgery	
Neurology	Thoracic Surgery	
Rheumatology	Gynaecology	
Elderly Medicine		
Clinical Oncology		

Supplementary Figure 3: Relationship between NEWS or NEWS2 value and risk of combined outcome (%) [with 95% confidence intervals]



Supplementary Table 2: Relationship between NEWS or NEWS2 value and risk of combined outcome (%) [with 95% confidence intervals]

Observed risk (CI) of combined outcome					
NEWS or NEWS2 value	CONTROL 2018	CONTROL 2019	COVID-19 POSITIVE	COVID-19 NOT DETECTED	COVID-19 NOT TESTED
0	0.07 (0.05-0.1)	0.15 (0.12-0.18)	0.07 (0.01-0.26)	0.17 (0.11-0.26)	0.11 (0.07-0.16)
1	0.16 (0.12-0.2)	0.2 (0.16-0.25)	0.2 (0.07-0.47)	0.33 (0.23-0.47)	0.14 (0.08-0.22)
2	0.26 (0.2-0.33)	0.43 (0.35-0.51)	0.61 (0.34-1)	0.52 (0.37-0.7)	0.27 (0.16-0.42)
3	0.78 (0.64-0.93)	0.77 (0.64-0.92)	1.33 (0.9-1.9)	0.73 (0.52-0.99)	0.38 (0.21-0.63)
4	1.32 (1.08-1.59)	1.17 (0.96-1.42)	3.27 (2.46-4.26)	1.82 (1.41-2.32)	1.76 (1.21-2.48)
5	2.06 (1.7-2.47)	2.6 (2.18-3.08)	4.06 (3-5.37)	4.76 (3.91-5.74)	4.4 (3.1-6.04)
6	4.17 (3.51-4.92)	4.14 (3.44-4.95)	10.95 (8.8-13.41)	5.56 (4.38-6.93)	8.9 (6.52-11.8)
7	9.16 (7.84-10.61)	6.08 (4.93-7.41)	12.38 (9.67-15.53)	11.48 (9.34-13.9)	9.47 (6.22-13.66)
8	13.92 (12.04-15.97)	11.76 (9.77-14)	18.94 (14.81-23.66)	17.7 (14.4-21.38)	14.97 (9.93-21.3)
9	14.58 (12.09-17.36)	14.46 (11.5-17.83)	23.24 (17.36-30)	21.4 (16.67-26.77)	20.33 (13.61-28.52)
≥10	23.71 (20.69-26.95)	29.42 (25.66-33.41)	49.18 (41.73-56.66)	39.51 (33.8-45.44)	23.33 (15.06-33.43)