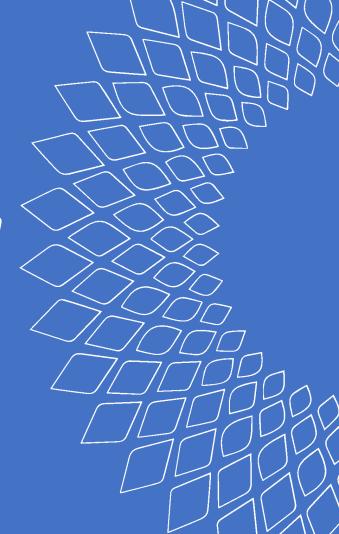


The National Early Warning Score From Concept to NHS Implementation

Professor Bryan Williams OBE MD FRCP FMedSci Chair of Medicine | University College London Consultant Physician | University College London Hospitals Chairman | RCP London NEWS & NEWS2 Development Groups Clinical Advisor on NEWS | RCP London until December 2023

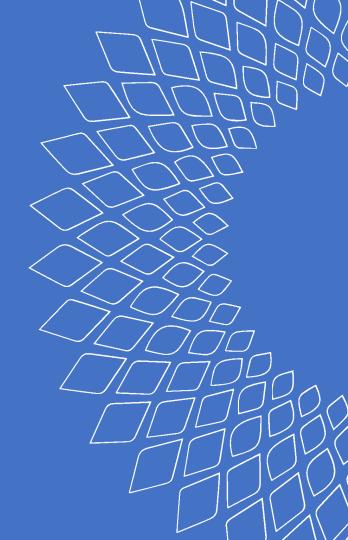




Declaration for Bryan Williams

I was the Chairman of the RCP NEWS/NEWS2 Development Groups

I have no financial interests to disclose with regard to the subject matter of this presentation



Launch of NEWS July 27th 2012



Home > News > New National Early Warning Score could save 6,000 lives

New National Early Warning Score could save 6,000 lives

A new working party report from the Royal College of Physicians (RCP) says there should be a national system for recognising very sick patients whose condition is deteriorating and who need more intensive medical or nursing care. The working party also developed and piloted a National Early Warning Score for this purpose, which if implemented across the NHS, would result in a step-change upwards in patient safety.

Visit the NEWS pages of the RCP website to download the report and resources

Speaking at a press conference to launch the National Early Warning Score, Professor Bryan Williams, chair of the working party, estimated that 6,000 lives could be saved by its use.*

The report, *National early warning score (NEWS); standardising the assessment of acuteillness severity in the NHS*, was produced by a multidisciplinary working group including doctors, nurses and managers. Clinical observation charts and elearning materials were also produced by the NEWS educational programme, a collaborative project funded by the RCP, the Royal College of Nursing (RCN), the National Outreach Forum, and NHS Training for Innovation.

RCP Regional Conference Loughborough October 10th 2024

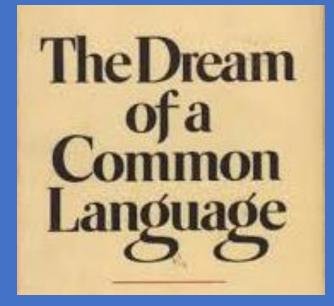
londor SES O Wonder London 2012 Olympic Games **Opening Ceremony**

Why a National Early Warning Score ?

- > A standardised method to characterise acute illness severity
- > A standardised method to detect patient deterioration
- > A common language of illness severity for the NHS
- > System-wide unitary documentation instantly recognisable
- > A standardised system for education, training and accreditation for all staff in the NHS

National Early Warning Score

NEWS Everyone in the NHS speaking a common language



NEWS | The Levers for Change

"A number of basic assessment tools or early warning scores are currently in use nationwide

... there is no justification for the continued use of multiple different early warning scores to assess illness severity"...

Professor Bryan Williams Chairman | RCP Acute Medicine Task Force 2007

RCP Regional Conference Loughborough October 10th 2024



Acute medical care The right person, in the right setting – first time

Report of the Acute Medicine Task Force

October 2007



Royal College of Physicians Acute Medicine Task Force London 2007

National Early Warning Score (NEWS)

The NEWS was created to standardise the process of recording, scoring and responding to changes in routinely measured physiological parameters in acutely ill patients.....

> The key principle underpinning the NEWS is standardisation

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National Early Warning Score (NEWS)

Setting higher standards

Royal College of Physicians

Standardising the assessment of acute-illness severity in the NHS

Report of a working party July 2012

Original NEWS report July 2012

Standardisation

"Systems operating with similar levels of risk use universal means of communication to reduce the chance of failure......

Air traffic control systems the world over adhere to common standards and language to prevent disasters....Imagine what would happen if each airport pursued its own way of working?..."

Sir Bruce Keough National Medical Director NHS England

Introduction to NEWS2 Report December 2017





Sir Bruce Keough National Medical Director NHS England 2017

Principles of the NEWS

In patients with acute illness or clinical deterioration, time is of the essence

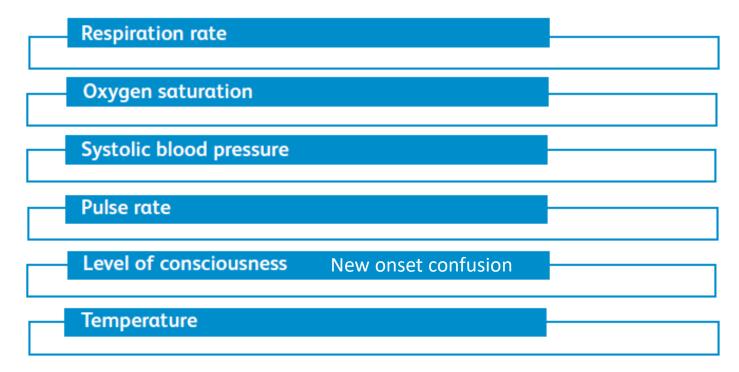
A key Triad - determines clinical outcomes

- Early detection
- Speed of response
- Competencies of the responder/s

Frequency of clinical monitoring
Most appropriate setting for ongoing clinical care

Royal College of Physicians Setting higher standards **National Early Warning** Score (NEWS) Standardising the assessment of acute-illness severity in the NHS Report of a working party July 2012

Physiological Parameters included in the NEWS / NEWS2



NEWS2 Physiological Parameter Score Chart

Physiological	Score							
parameter	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		

Using NEWS / NEWS 2

Measure and record the score for each physiological parameter

Add up the score and add 2 for any use of oxygen to derive the final NEWS2 score

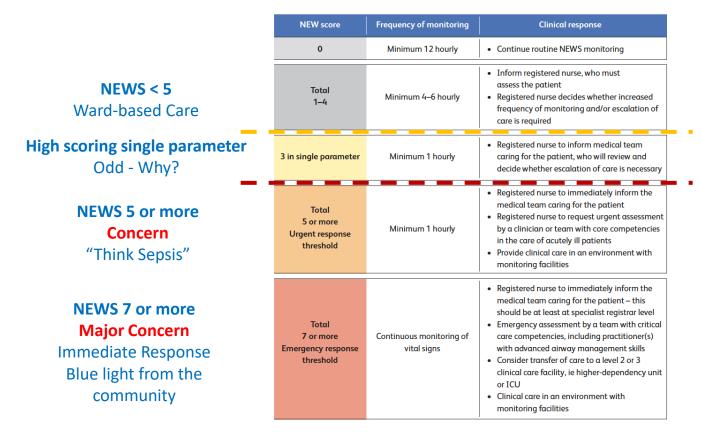
Use the NEWS2 score to define and record:

- Whether escalation of clinical care is required
- The urgency of the escalation of care
- The competency level of the clinical responders
- The frequency of monitoring required
- The most appropriate setting for ongoing clinical care

NEWS key		FUL											_					_		_		
0 1 2 3		DAT	E O	FBI	RTH								DA	TE O	FAD	MISS	ON					
	DATE									Τ										Т		DATE
	TIME																					TIME
	≥25											3										≥25
A+B	21-24					-				-		2									-	21-24
Respirations	18-20																					18-20
BreathsImin	15-17		_		_	_				_						_					_	15-17
	12-14 9-11		_	_	-	-		_	_	-				_	_	-				-	-	12-14 9-11
	9–11 ≤8		-	_	-	-		_		-		1				-				+	-	9–11 ≤8
												3										
Δ+R	≥96																	_				≥96
	94-95 92-93		_	_	_	-		_	_	-		1			_	-		_		+	-	94-95 92-93
SpO ₂ Scale 1 Oxygen saturation (%)	92-93		-	-		-		-	-	-		2	-		-			_		+	-	92-93 ≤91
				_	_	-	_	_	_	-		_			_	_	_	_	_	-	-	
SpO ₂ Scale 21	≥97 on O ₂		_	_		_				-		3			_			_		+	_	≥97 on O2
Oxygen saturation (%) Use Scale 2 if target range is 88–82%, eg in hypercapric respiratory falure	95-96 on Oz 93-94 on Oz		_	-	-	-		_	_	-		2			-	-		_		+	-	95-96 on 93-94 on
range is 88–92%, eg in hypercapric	293 on 3ir		-	-		-		-		-		1			-	-		_		+	-	293 on air
respiratory failure	88-92		-	+	+	+		-	-	+			⊢		-	+	+	-	-	+	+	88-92
	86-87											1										86-87
"ONLY use Scale 2 under the direction of a qualified clinician	84-85											2										84-85
a qualified clinician	≤83%											3										≤83%
A	A=Air		_	-		-				-					-	-		_	-	T	-	A=Air
Air or oxygen?	O ₂ L/min											2										O ₂ L/min
	Device					-				-						-					-	Device
	≥220		_									3		_				_				>220
	201-219									-												201-219
Blood	181-200				-	-			-	-						-				+	-	181-200
Blood pressure mmHg	161-180																					161-180
mmHg Score uses syntolic BP only	141-160																					141-160
systolic BP only	121-140		_	_	_	+-		_	_	-				_	_	_		_	_	+	_	121-140
	111-120		-	_	-	-				-		1			-	-		_		+	-	101-110
	91-100		-		-	-		-		-		2		-	-	-				+	-	91-100
	81-90				+	-				-		-			-	-					-	81-90
	71-80					-				-										+	-	71-80
	61-70											3										61-70
	51-60																					51-60
	≤50																					≤50
~	≥131											3										≥131
	121-130											2										121-130
Pulse	111-120											-										111-120
Beats/min	101-110 91-100		-		-				-			1			-	-			_	-		101-110
	91-100 81-90		-																	-		91-100 81-90
	81-90	\vdash	+	-	-	+	+	-	-	+	+			-	+	+	+	-	-	+	-	81-90 71-80
	61-70		+	+	+	+		-	-	+	\square			-	+	+		-	-	+	+	61-70
	51-60		+		-	+		-		+					-	-				t	-	51-60
	41-50											1										41-50
	31-40											3										31-40
	≤30											3										≤30
D	Alert																					Alert
D	Confusion																					Confusio
Consciousness	V											3										V
Score for NEW onset of confusion (to score if chronic)	P								-						-							P
(no score il chronic)	U																					U
—	≥39.1°											2										≥39.1°
E	38.139.0°											1										38.1-39.
Temperature	37.1-38.0°		_		1	1			_						1	1				1		37.1-38.
	36.137.0°		_		-	-		_		-				_	-	-		_		+	-	36.1-37.
	35.1-36.0° ≤35.0*											1										35.1-36. ≤35.0*
	530.0"											3										
NEWS TOTAL					T											T				T		TOTAL
Monitorio	g frequency		1	1		T				1		1000				1		1		T		Monitori
		\rightarrow	_	_	_	-	+ +		_		-				_	_	+ +		_	-	-	
Escalation	of care Y/N		- 1															- 1				Escalatio

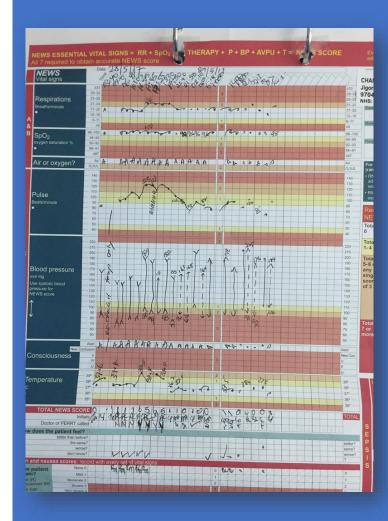
NEWS 2 Observations Chart

Clinical response to the NEWS2





"Aggregated scores are vastly superior for early detection of clinical deterioration..."



NEWS2 is only part of the assessment....

"...Concern about a patient's clinical condition should always override the NEWS if the attending healthcare professional considers it necessary to escalate care...."

"NEWS is not a substitute for clinical experience..."

"This is not medicine by numbers....."

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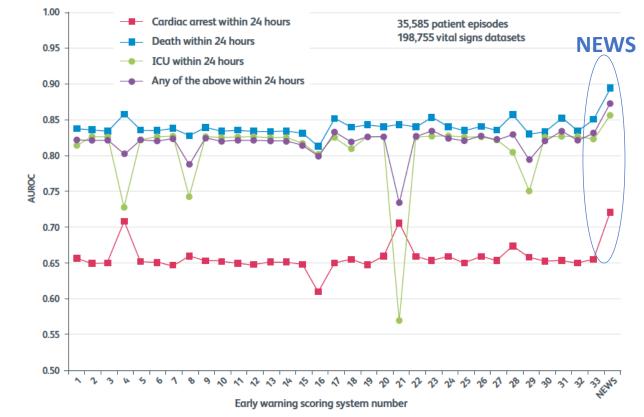
If you get that gut feeling that something isn't right about a person or situation, trust it. NEWS does not replace disease-specific validated scoring systems.....

The NEWS should be **used alongside** validated scoring systems such as the Glasgow Coma Scale or diseasespecific systems as dictated by patient need.

Glasgow coma scale Score Eye opening spontaneously 4 to speech 3 to pain 2 1 none Verbal response orientated 5 confused 4 inappropriate 3 2 incomprehensible 1 none Motor response obeys commands 6 5 localises to pain withdraws from pain 4 3 flexion to pain extension to pain 2 1 none Maximum score 15



Comparing 33 EWS systems with the NEWS



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Smith GB, et al Resuscitation, 2013

Progression of NEWS to NEWS2



What's New in NEWS2 ?

- > Observation chart re-odered to reflect the resuscitation council ABCDE format
- > Chart colours changed from red/amber/green
- > New section for scoring oxygen saturations for patients with <u>hypercaphic respiratory failure</u>
- > "New confusion / delirium" added and scores 3
- > Strong emphasis use of NEWS to raise suspicion of potential sepsis as a cause for a NEWS score of 5 or more

National Early Warning Score (NEWS) 2 Standardising the assessment of acute-illness severity in the NHS

500 years of medicine

1518 2018

Royal College of Physicians

Updated report of a working party **December 2017**

Using NEWS2 in COPD with Hypercapnic Respiratory failure - safer oxygen use

	≥96							
A+B	94–95							1
SpO₂ Scale 1	92–93							2
Oxygen saturation (%)	≤91							3
Cro Coolo Ot	≥97 on O ₂							3
SpO ₂ Scale 2 [†] Oxygen saturation (%) Use Scale 2 if target range is 88–92%,	95-96 on O2							2
	93-94 on O ₂							1
eg in hypercapnic respiratory failure	≥93 on air							
respiratory randic	88–92							
Only on Sach 2	86-87							1
Only use Scale 2 under the direction of	84-85							2
a qualified clinician	≤83%							3

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October 10th 2024

Using NEWS2 in COPD - safer oxygen use



Arterial blood gas on Air

Measure	Value
рН	7.51
pO ₂	7.2
pCO ₂	3.7
SpO ₂	90%

Hypoxic with hyperventilation Use NEWS scale 1 Treatment with Oxygen to increase sats to normal range



Arterial blood gas on Air

Measure	Value
рН	7.27
pO ₂	7.2
pCO ₂	7.8
SpO ₂	90%

Hypercapnic Respiratory failure SpO₂ in target range **NEWS scale 2** Does not need Oxygen Target Sats 88-92

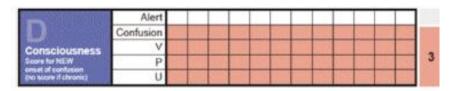
NEWS2 Acute Confusion / Delirium

A<u>C</u>VPU

C = acute Confusion or delirium

C = Potent sign of acute clinical deterioration

Score = 3



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If you don't know that the confusion is new, assume it is until confirmed otherwise

NEWS2 and Sepsis



NEW score of 5 or more? Think sepsis!

In a patient with a **NEW score** of **5 or more** and a known infection, signs and symptoms of infection, or at risk of infection, think **'Could this be sepsis?'** and **escalate care immediately.**



NEWS2 and Sepsis

Initial NEW score	ICU admission and/or mortality (%)
<5	8
5–6	23
7–8	27
9–20	35

Data from 20 UK Emergency Departments - first NEWS in patients with sepsis and subsequent outcomes (n = 2,003)

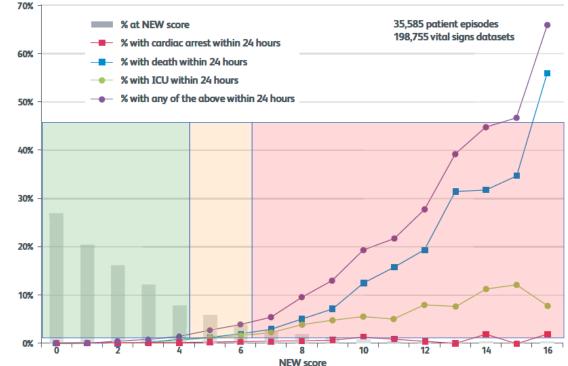


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Corfield AR, et al. Emerg Med J 2014

NEWS Score versus Outcomes

"It is not just Sepsis"

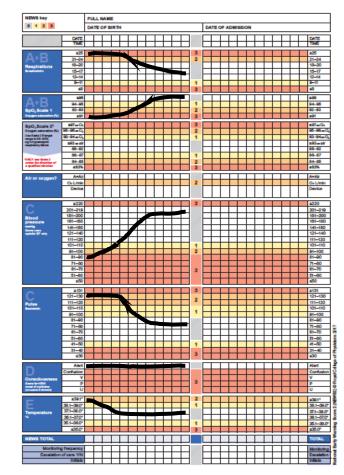


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Smith GB, et al Resuscitation, 2013

Danger of just Improving Physiology but not the Underlying Disease

- > Improving an initially high NEWS score usually reflects emergency remedial measures that corrects abnormal physiology, e.g. rehydration, oxygen supplementation, temperature control, pain control
- > It doesn't fix the underlying cause of the deterioration
- > The patient still needs a diagnosis and definitive treatment
- > Handover the NEWS score on admission to emphasise the illness severity at presentation



NEWS2 Additional Implementation Guidance 2020

- > Enhanced guidance on new confusion
- > Enhanced guidance assessment times
- > Within 60mins if NEWS2 5 or 6
- > Within 30 mins if NEWS2 is 7 or more
- > by a clinician competent in the assessment of acute illness
- > Using spO2 Scale 2 (hypercapnic Respiratory failure
- > Decision must be made by a competent decision-maker
- > Not to be used for COPD without hypercapnic respiratory failure
- > Incomplete Physiological Scores
- > Still record the score but mark as incomplete
- > Values unrecordable should trigger an immediate review
- > NEWS2 and Covid (April 2020)

National Early Warning Score (NEWS) 2 Standardising the assessment of acute-illness severity in the NHS

Royal College

of Physicians

Additional implementation guidance

Update: March 2020

Setting higher standards

NEWS and Covid



Methods: Using an area under the receiver operating curve (AUROC) analysis, evaluating NEWS or NEWS2 to discriminate the combined outcome of either death or ICU admission within 24hrs of a vital sign set, in 5 cohorts; (i) Covid-19 +ve, n=405, Covid-19 not detected, n = 1716, Covid-19 not tested, n = 2686, Controls 2018, n= 6273, Controls 2019, n=6523.

Conclusions: The finding that NEWS or NEWS2 performance was good and similar in all five cohorts (AUROC range=0.842 -0.894) suggests that amendments to NEWS or NEWS2, such as the addition of new covariates or the need to change the weighting of existing parameters, are unnecessary when evaluating patients with COVID-19. Our results support the national and international recommendations for the use of NEWS or NEWS2 for the assessment of acute-illness severity in patients with COVID-19.



Rapid response systems

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)

Ina Kostakis^a, Gary B. Smith^{5,*}, David Prytherch^a, Paul Meredith^c, Connor Price^a, Ancop Chauhan⁴, On behalf of the Portsmouth Academic Consortium For Investigating COVID-19 (ACIFIC-19)

* Centre for Healthcare Modelling & Informatics, University of Portsmouth, Portsmouth, UK

^b Centre of Postgraduate Medical Research & Education (CoPMRE), Faculty of Health and Sodal Sciences, Bournemouth University, Bournemouth, BH1 SLT, UK

^c Research & Innovation Department, Portsmouth Hospitals University NHS Trust, Portsmouth, UK

Portsmouth Technologies Trials Unit, Portsmouth Hospitals University NHS Trust, University of Portsmouth, Portsmouth, U

Abstract

Introduction: Since the introduction of the UNE National Early Warning Score (NEWS) and Is modification, NEWS2, commarise datasea 2019 (COVID-19), has asseed aworkdwide pandemic. NEWS and NEWS2 have goodpredic two abilities in patients with other infections and expire, however there is this existence of their particular control of the 19-19.

Methods: Using non-invergenting characteristic analysis, we used the ansa under the non-invergenting characteristic (AUROC) on v6 to evaluate the partomators of VEWS of NMS10 to continuis the control evaluation and method and under the second use (CULANTING WITH 2016) and the second use (CULANTING VEWS 100 TESTED, n = 40%; COVID-19 NOT DETECTED, n = 17%; COVID-19 NOT TESTED, n = 286; COVITROL 2016, n = 17%; COVID-19 NOT TESTED, n = 286; COVID-19 NOT TESTED,

Results: The AUROC values for NEWS or NEWS2 for the combined outcome ware: COVID-19 POSITVE, 0.882 (0.886–0.895); COVID-19 NOT DETECTED, 0.875 (0.6861–0.89); COVID-19 NOT TESTED, 0.878 (0.85–0.902); CONTROL 2014, 0.894 (0.884–0.894); CONTROL 2019, 0.842 (0.859–0.855).

Conclusions: The finding that NEWS or NEWS2 performance was good and similar in all five cohoots (sunge=0.542=0.364) suggests that amendments to NEWS or NEWS2, such as thread/otion frave covariate or the need to change the weighting of enking parameters, are unnecessary when evaluating patients with COVID-19. Our sector support the national and International recommendations for the use of NEWS or NEWS2 for the assessment of auto-lines servicity patients with COVID-19.

Keywords: Early warning scores, Adverse events, Rapid response systems, Mortality, Intensive care unit admission

 Comsponding author. E-mail address: granit@boursemouth.ac.uk (G.B. Smith). https://doi.org/10.1016/j.resuschation.2020.10.039 ; Accepted 28 October 2020 (300-9572)@ 2020 Elsevier R.V. All rights reserved.

NEWS and Covid



Home > News > NEWS2 and deterioration in COVID-19

NEWS2 and deterioration in COVID-19

This guidance emphasises the place of NEWS2 in managing patients with COVID-19.

NEWS2 should be used when managing patients with COVID 19. The use of NEWS2 will ensure that patients who are deteriorating, or at risk of deteriorating, will have a timely initial assessment by a competent clinical decision maker. NEWS2 should supplement clinical judgement in assessing the patient's condition.

The NEWS2 scoring system for oxygen supplementation is binary (yes/no). In patients with COVID-19 infection, once hospitalised and treated with oxygen, their oxygen requirement might increase rapidly if their respiratory function deteriorates but this may not result in any additional significant increase in the NEWS2 score. Therefore, in patients with COVID 19, all staff should be aware that ANY increase in oxygen requirements should trigger an escalation call to a competent clinical decision maker. This should be accompanied by an initial increase in observations to at least hourly until a clinical review happens, if this has not already happened as a result of NEWS2.

For further information on the use of NEWS2 see our <u>NEWS2 resource page</u> and implementation guidance.





NEWS scoring for supplemental oxygen is binary

Score does not increase with increasing oxygen requirement, which could occur rapidly in patients with Covid-19

All staff should be aware that ANY increase in oxygen requirement should trigger an escalation



NEWS Uptake by the NHS





95% of Acute Hospitals

100% of Ambulance Services

NEWS2 Resources

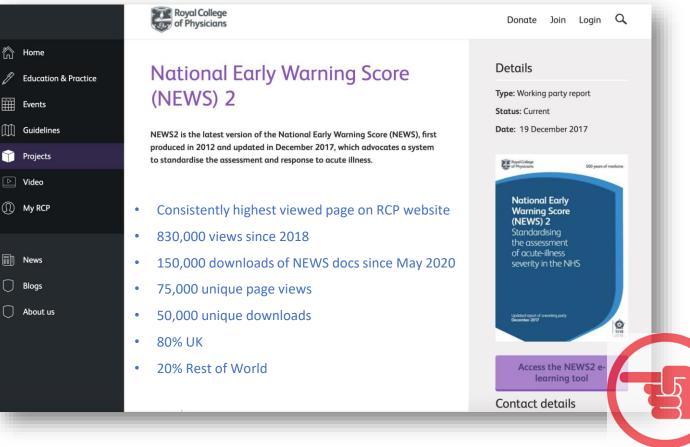
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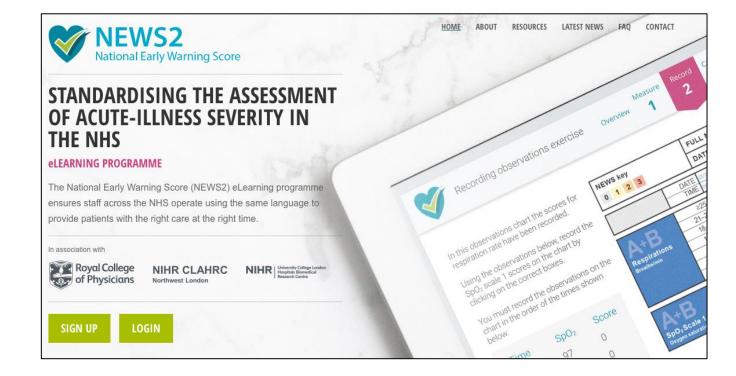
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Analytics rcplondon.ac.uk

NEWS2 eLearning Platform



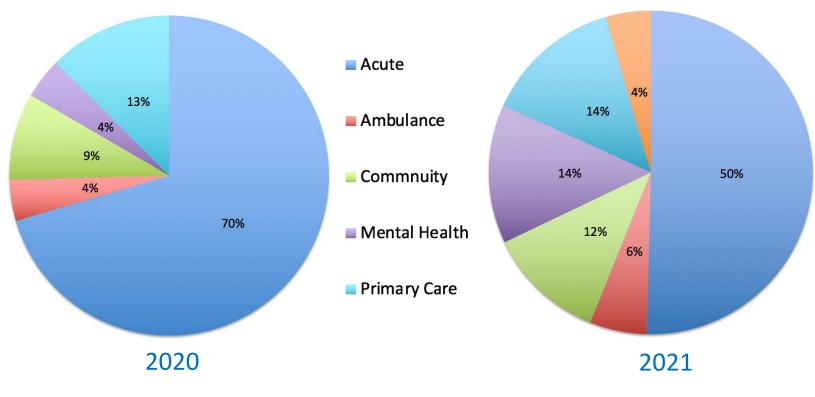
NEWS learners and completions since programme launch (01/05/2012)

Headlines

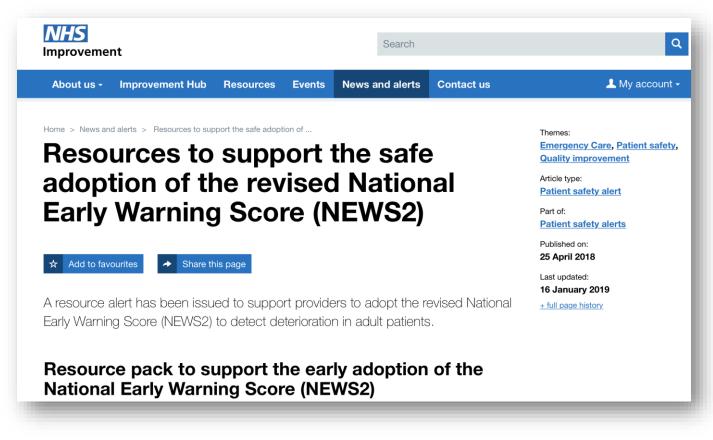
- NHS platform is now approaching 400,000 completed modules.
- 3,000 4,000 NHS staff are currently completing modules per month.
- The completion rate is now hovering around the 86% mark.
- There is an increase in users using the Mental Health (10%) and Community (5%) variants, equivalent to ~46,000 users.
- 55 NHS Trusts have now 'graduated' from the NHS platform and are using the NEWS2 modules directly through their local Learning Management Systems or ESR/OLM.

01/08/2013 01/11/2013 01/02/2014 01/05/2014 01/08/2014 01/02/2015 01/02/2015 01/08/2015 01/08/2015 01/01/2015 01/02/2016 -01/05/2016 -01/05/2016 -01/02/2017 -01/02/2017 -01/11/2018 01/02/2019 01/05/2019 01/08/2019 01/05/2012 1/08/2012 1/11/2012 1/02/2013 01/05/2013 01/08/2017 01/11/2017 01/02/2018 01/05/2018 .6102/11/10 07/02/2020 01/05/2020 01/11/2020 01/02/2021 01/05/2021 01/08/2021 1707/11/10 2202/20/10

NEWS2 Educational Module Completions by Area of Practice



NHS NEWS2 Resource Pack





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https://improvement.nhs.uk/news-alerts/safe-adoption-of-NEWS2/

NHSE NEWS2 Video on youtube





Free NEWS2 APP iOS and Android

NEWS2 CALCULATION APP RELEASED

DEC 18, 2018





NEWS Calculator 17+ National Early Warning Score

OCB Media

Uptake of the NEWS









The Good NEWS

Implementation by NHS Wales of the National Early Warning Score (NEWS)



NEWS across the healthcare system



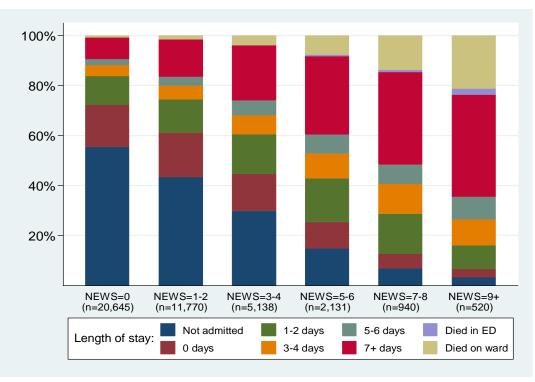
Impact of the NEWS / NEWS2



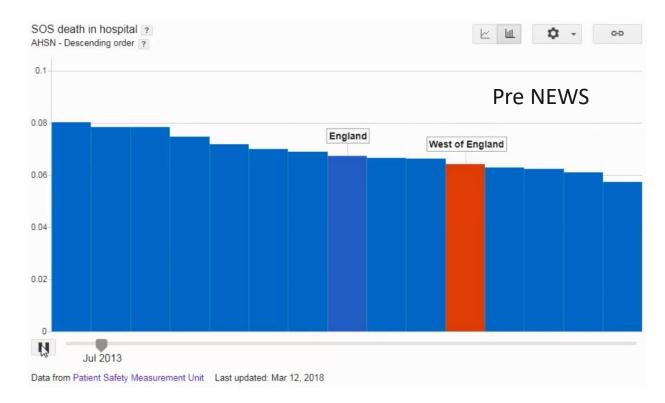
- > Increased focus on documenting vital signs
- > Prompting system redesign ensuring a 24/7 response to the NEWS2 to improve patient safety and outcomes
- > Reports from many regions of significant reductions (20%) in mortality from sepsis and acute illness after implementation of the NEWS
- > Reports of major (50%) reductions in cardiac arrest rates in hospitals
- > Reports of reduced hospital length of stay
- > Emerging reports of benefits from use in Primary and Community Care

NEWS in the Emergency Department

Outcomes and Length of Hospital Stay

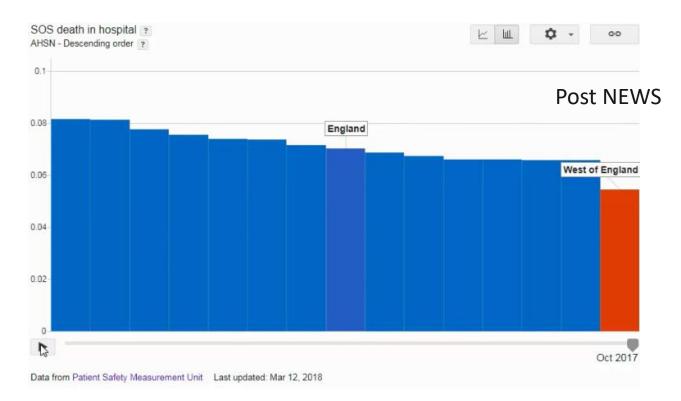


System Wide Implementation of the National Early Warning Score Reduces Mortality in Patients with Suspicion of Sepsis



RCP Regional Conference Loughborough October 10th 2024 Data from Dr. Alison Tavare West of England Academic Health Science Network

System Wide Implementation of the National Early Warning Score Reduces Mortality in Patients with Suspicion of Sepsis



RCP Regional Conference Loughborough October 10th 2024 Data from Dr. Alison Tavare West of England Academic Health Science Network

NEWS Completes the Implementation Cycle



CCG3: Recording of NEWS2 score, escalation time and response time for unplanned critical care admissions

Applicability:	The NEWS2 protocol is the RCP and NHS-endorsed best practice for
Acute	spotting the signs of deterioration, the importance of which has been
CQUIN goal: 20% to 60%	emphasised during the pandemic. This measure would incentivise adherence to evidence-based steps in the identification and recording of deterioration, enabling swifter response, which will reduce the rate of
Supporting ref: NICE CG50 ⁶	cardiac arrest and the rate of preventable deaths in England.
Royal College of Physicians (RCP) London guidance ⁷	As many as 20,000 deaths in hospitals each year could be preventable and this CQUIN aims to reduce that figure by 4,000. Deterioration is linked to 90% of NHS bed days. Reducing the need for higher levels of care will free up capacity particularly in ICU by avoiding admissions and reducing lengths of stay, both of which are significant factors in the NHS's recovery efforts.

Classification: Official

Publication approval reference: PAR1477_i



Commissioning for Quality and Innovation (CQUIN): 2022/23

Guidance

Version 1.2, 17 March 2022

NEWS Driving System Transformation

- > Enhanced profile for clinical deterioration
- > Provision of, or reorganisation of 24/7 care
- > Improved recording of vital signs
- > Clearer expectations around response times
- > Driving decision making and Treatment escalation plans
- > Development of national Maternity and Paediatric Early Warning Scores (MEWS and PEWS)



Conclusions

The NEWS set out to standardise

- > Standardised assessment, recording and response
- > Standardised education and training
- > A common language for illness severity across the NHS
- > Nationally improved standards of recognition and response to acutely ill and deteriorating patients
- > NEWS is validated and outperforms other systems
- > NEWS is recognised by NICE as the national early warning score endorsed by NHSE and NHSI and is already deployed in the devolved nations
- > NEWS is improving patient outcomes



NEWS and the NHS

The NHS is the first health care system in the world to have a system-wide common language for acute clinical illness severity and clinical deterioration....

