

Introduction The Modified Early Warning Score (MEWS) was developed and validated as an objective scoring system to aid healthcare staff in identifying patients at risk of “catastrophic deterioration” in the acute hospital setting⁽¹⁾. At the Royal Liverpool and Broadgreen University Hospitals NHS Trust (RLBUHT), the Acute Response Team (ART) is led by advanced nurse practitioners, who respond to calls when patients have a MEWS of 4 or more. It was noted that a large proportion of calls were to respiratory patients, many requiring no intervention.

Methods Details of every ART call to medical patients throughout 2012 (n = 883) were recorded on clinical proforma and collated on an Excel database. Data were analysed using STATA 12, as part of a service evaluation. Outcomes measured were: numbers of ART calls made to respiratory and remaining medical wards, numbers of Do Not Attempt Resuscitation (DNAR) orders in place, MEWS, investigations performed by the ART, critical care transfer and the 7 and 30 day mortality.

Results The 53 respiratory beds account for only 14% of the medical bed-base but generated 25% of ART calls. Respiratory patients scored more highly on respiratory rate (RR) and oxygen saturations (SpO₂) MEWS parameters than other medical patients. ART investigation rates were similar in all patients but only 1% were transferred from respiratory to critical care. There were more DNAR orders and both 7 and 30 day mortality were higher on the respiratory wards (see Table 1).

Abstract M27 Table 1. Summary of ART calls for all of medicine, medicine (not respiratory) and respiratory only.

Variable	All medicine	Medicine (not resp)	Respiratory
ART call total n, (%)	883 (100)	663 (75.1)	220 (24.9)
DNAR in place	206 (23.3)	135 (20.4)	71 (32.3)
MEWS			
MEWS (Respiratory Rate)			
0	194 (22.3)	158 (24.2)	36 (16.7)
1	286 (32.9)	213 (32.6)	73 (33.8)
2	177 (20.4)	130 (19.9)	47 (21.7)
3	206 (23.7)	147 (22.5)	59 (27.3)
MEWS (SpO₂)			
0	112 (13.0)	99 (15.3)	13 (6.0)
1	252 (29.2)	214 (33.1)	38 (17.5)
2	203 (23.5)	145 (22.4)	58 (26.7)
3	296 (34.6)	189 (29.2)	107 (49.3)
ITU/HDU referral	18 (2.0)	16 (2.4)	1 (1.0)
BiPaP commenced	10 (1.1)	2 (0.3)	8 (3.6)
7 day mortality	237 (26.8)	164 (24.7)	73 (33.2)
30 day mortality (cumulative)	239 (27.1)	183 (28.0)	76 (36.0)

Discussion Many respiratory patients score highly on RR and SpO₂ MEWS parameters due to their chronic disease. The increased use of DNAR orders in respiratory patients reflects a greater burden of chronic disease and therefore a poorer prognosis. This may explain the low rates of transfer to critical care and high mortality rates. We suggest a respiratory-specific MEWS may reduce ART calls to stable respiratory patients and, for respiratory patients with DNAR orders, automatic exemption from ART calls should be considered.

REFERENCES

1. Subbe, Kruger and Rutherford. *QJM* (2001) 94 (10): 521–526.

M28 FROM NEWS TO CREWS: THE CHRONIC RESPIRATORY EARLY WARNING SCORE FOR PATIENTS WITH CHRONIC HYPOXAEMIA

¹SR Eccles, ²C Subbe, ³D Hancock, ³N Thompson; ¹Wrexham Maelor Hospital, Wrexham, Wales; ²Ysbyty Gwynedd, Bangor, Wales; ³Cardiff University School of Medicine, Cardiff, Wales³

10.1136/thoraxjnl-2013-204457.438

Introduction In patients with respiratory conditions associated with chronic hypoxaemia such as COPD, use of the National Early Warning Score (NEWS)[1] leads to a high number of triggers. We designed a simple variant of NEWS for patients with chronic hypoxaemia.

Methods Data was collected from respiratory wards at two hospitals in North Wales over a three-month period. Patients were categorised into those with chronic hypoxaemia (CH, target oxygen saturations 88–92%) and others (O, target saturations 94–98%). Vital signs were recorded on admission to hospital, at the peak NEWS score during admission, and during a period of stability/at discharge.

Results 196 admissions were included in the analysis. 98 (50%) were male, 91 had COPD, 26 received long-term oxygen therapy. Mean age was 70 (range 19–102). 78 patients had target saturations of 88–92% (CH patients). The mean NEWS for all patients on admission was 5 (SD 3), mean peak NEWS was 7 (SD 3), and median hospital length of stay was 10 days (IQR 6:17).

23 patients died within 30 days; 12 with CH. Of these, all patients with CH scored 6 + using NEWS compared to 9/11 O patients. When stable/at discharge, 32% of CH patients scored 6 + using NEWS (Welsh trigger) and 50% scored 5 + (RCP trigger). By using a recalibrated scoring system (CREWS, table 1), patients triggering during stability/at discharge were reduced to 14% (5 + trigger) and 8% (6 + trigger). All patients who subsequently died still triggered at peak CREWS scores.

Conclusion Patients with chronic respiratory conditions have altered baseline parameters that lead to a high number of NEWS triggers. CREWS reduces triggers, which may reduce unnecessary reviews and alarm fatigue, without compromising safety.

REFERENCE

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

Abstract M28 Table 1. Scores allocated for oxygen saturations (%) for NEWS, and for CREWS for CH patients.

Scoring system	Score for oxygen saturations			
	3	2	1	0
NEWS	≤91	92–93	94–95	≥96
CREWS	≤85	86–87	88–89	≥90

M29 NATIONAL EARLY WARNING SCORE (NEWS): IS IT BAD NEWS FOR OUR PATIENTS?

E Cheetham, R Pais, M Wijesinghe; Royal Cornwall Hospital NHS Trust, Truro, United Kingdom

10.1136/thoraxjnl-2013-204457.439

Background Titrated oxygen has been shown to significantly reduce mortality in patients presenting with acute exacerbations

of chronic obstructive pulmonary disease (COPD)¹. All patients at risk of type 2 respiratory failure (T2RF) should be administered oxygen in accordance with British Thoracic Society Guidelines. However, the NEWS system proposed by the Royal College of Physicians makes no allowance for patients at risk of T2RF and may lead to potential over oxygenation in this group of patients².

Objective To assess the use of the NEWS in patients with T2RF in our district general hospital and to assess the safety of a modified system.

Methods Patients were selected from the Medical Admissions Unit. Inclusion criteria were oxygen prescription or oxygen *in situ*. Data were collected over 5 consecutive days. Conventional NEWS for these patients were compared with a system currently being piloted at Salford Royal Foundation Trust with modified oxygen saturation levels (SpO₂) for patients at risk of T2RF (Table 1)

Results 69 patients were assessed. 32% (22/69) had risk factors for T2RF. 21 had COPD and one had sleep apnoea. 55% (12/22) had oxygen saturations in their target range or were above target saturations but on air. 32% (7/22) were on oxygen and had saturations above 92%. 14% (3/22) had saturations below 88%.

73% (16/22) of at risk patients had their scores altered when using the Salford EWS system. 69% (11/16) of these patients had their scores reduced. 4 patient's scores were reduced by 3, 4 were reduced by 2 and 3 were reduced by 1. 31% (5/16) of patient's scores were increased. 4 scores were increased by 2 and 1 increased by 1. The score differences were due to over oxygenation.

Conclusions The current NEWS system appears to increase the risk of over oxygenation in patients at risk of T2RF. Using a modified score for patients at risk of T2RF will reduce this risk.

With thanks Ronan O'Driscoll, Salford Foundation Trust for use of the modified Salford NEWS chart