Developing and Implementing a National Early Warning Score NEWS and NEWS2

Professor Bryan Williams MD FRCP
Chair of Medicine | University College London
Chairman | RCP NEWS & NEWS2 Development Groups

Medicine 2019
25–26 April | Manchester Central
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
“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
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**
“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
Physiological Parameters included in the NEWS / NEWS2

- Respiration rate
- Oxygen saturation
- Systolic blood pressure
- Pulse rate
- Level of consciousness: New onset confusion
- Temperature
<table>
<thead>
<tr>
<th>Physiological parameter</th>
<th>Score</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Respiration rate (per minute)</strong></td>
<td>≤8</td>
<td>9–11</td>
<td>12–20</td>
<td>21–24</td>
<td>≥25</td>
<td></td>
</tr>
<tr>
<td><strong>SpO₂ Scale 1 (%)</strong></td>
<td>≤91</td>
<td>92–93</td>
<td>94–95</td>
<td>≥96</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SpO₂ Scale 2 (%)</strong></td>
<td>≤83</td>
<td>84–85</td>
<td>86–87</td>
<td>88–92</td>
<td>93–94 on air</td>
<td>95–96 on oxygen</td>
</tr>
<tr>
<td><strong>Air or oxygen?</strong></td>
<td>Oxygen</td>
<td>Air</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Systolic blood pressure (mmHg)</strong></td>
<td>≤90</td>
<td>91–100</td>
<td>101–110</td>
<td>111–219</td>
<td>≥220</td>
<td></td>
</tr>
<tr>
<td><strong>Pulse (per minute)</strong></td>
<td>≤40</td>
<td>41–50</td>
<td>51–90</td>
<td>91–110</td>
<td>111–130</td>
<td>≥131</td>
</tr>
<tr>
<td><strong>Consciousness</strong></td>
<td>Alert</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CVPU</td>
</tr>
<tr>
<td><strong>Temperature (°C)</strong></td>
<td>≤35.0</td>
<td>35.1–36.0</td>
<td>36.1–38.0</td>
<td>38.1–39.0</td>
<td>≥39.1</td>
<td></td>
</tr>
</tbody>
</table>
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
## Clinical response to the NEWS2

<table>
<thead>
<tr>
<th>NEWS score</th>
<th>Frequency of monitoring</th>
<th>Clinical response</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Minimum 12 hourly</td>
<td>• Continue routine NEWS monitoring</td>
</tr>
</tbody>
</table>
| 1–4        | Minimum 4–6 hourly      | • Inform registered nurse, who must assess the patient  
• Registered nurse decides whether increased frequency of monitoring and/or escalation of care is required |
| 3 in single parameter | Minimum 1 hourly | • Registered nurse to inform medical team caring for the patient, who will review and decide whether escalation of care is necessary |
| 5 or more Urgent response threshold | Minimum 1 hourly | • Registered nurse to immediately inform the medical team caring for the patient  
• Registered nurse to request urgent assessment by a clinician or team with core competencies in the care of acutely ill patients  
• Provide clinical care in an environment with monitoring facilities |
| 7 or more Emergency response threshold | Continuous monitoring of vital signs | • Registered nurse to immediately inform the medical team caring for the patient – this should be at least at specialist registrar level  
• Emergency assessment by a team with critical care competencies, including practitioner(s) with advanced airway management skills  
• Consider transfer of care to a level 2 or 3 clinical care facility, i.e. higher-dependency unit or ICU  
• Clinical care in an environment with monitoring facilities |

**NEWS < 5**  
Ward-based Care

**High scoring single parameter**  
Odd - Why?

**NEWS 5 or more**  
Concern  
“Think Sepsis”

**NEWS 7 or more**  
Major Concern  
Immediate Response  
Blue light from the community

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25–26 April  Manchester Central*
NEWS Scoring system

Aggregate Score vs. Single High score

“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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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 disease-specific systems as dictated by patient need.
What’s New in NEWS2?
What’s New in NEWS2?

- Observation chart re-ordered to reflect the resuscitation council ABCDE format
- Chart colours changed from red/amber/green
- New section for scoring oxygen saturations for patients with hypercapnic respiratory failure
- “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
Using NEWS2 in COPD with Hypercapnic Respiratory failure - safer oxygen use

**A+B**

**SpO₂ Scale 1**

<table>
<thead>
<tr>
<th>Oxygen saturation (%)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>94–95</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>92–93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤91</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SpO₂ Scale 2**

<table>
<thead>
<tr>
<th>Oxygen saturation (%)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥97 on O₂</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95–96 on O₂</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>93–94 on O₂</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥93 on air</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>88–92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>86–87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>84–85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤83%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Only use Scale 2 under the direction of a qualified clinician
Using NEWS2 in COPD - safer oxygen use

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.51</td>
</tr>
<tr>
<td>pO₂</td>
<td>7.2</td>
</tr>
<tr>
<td>pCO₂</td>
<td>3.7</td>
</tr>
<tr>
<td>SpO₂</td>
<td>90%</td>
</tr>
</tbody>
</table>

Arterial blood gas on Air

Hypoxic with hyperventilation

*Use NEWS scale 1*

Treatment with Oxygen to increase sats to normal range

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.27</td>
</tr>
<tr>
<td>pO₂</td>
<td>7.2</td>
</tr>
<tr>
<td>pCO₂</td>
<td>7.8</td>
</tr>
<tr>
<td>SpO₂</td>
<td>90%</td>
</tr>
</tbody>
</table>

Arterial blood gas on Air

Hypercapnic Respiratory failure

SpO₂ in target range

*NEWS scale 2*

Does not need Oxygen

Target Sats 88-92
NEWS2
Acute Confusion / Delirium

ACVPU

C = acute Confusion or delirium

C = Potent sign of acute clinical deterioration

Score = 3

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.

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NEWS2 and Sepsis

<table>
<thead>
<tr>
<th>Initial NEWS score</th>
<th>ICU admission and/or mortality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5</td>
<td>8</td>
</tr>
<tr>
<td>5–6</td>
<td>23</td>
</tr>
<tr>
<td>7–8</td>
<td>27</td>
</tr>
<tr>
<td>9–20</td>
<td>35</td>
</tr>
</tbody>
</table>

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

“It is not just Sepsis”
Comparing 33 EWS systems with the NEWS

NEWS2 Resources

National Early Warning Score (NEWS) 2

NEWS2 is the latest version of the National Early Warning Score (NEWS), first produced in 2012 and updated in December 2017, which advocates a system to standardise the assessment and response to acute illness.

In the past 10 weeks

- Almost 100,000 page views
- 75,000 unique page views
- 50,000 unique downloads
- 83% UK
- 17% Rest of World

https://www.rcplondon.ac.uk/projects/outputs/national-early-warning-score-news-2
NEWS2 eLearning Platform

STANDARDISING THE ASSESSMENT OF ACUTE-ILLNESS SEVERITY IN THE NHS

eLEARNING PROGRAMME

The National Early Warning Score (NEWS2) eLearning programme ensures staff across the NHS operate using the same language to provide patients with the right care at the right time.

In association with

Royal College of Physicians  NIHR CLAHRC  NIHR

SIGN UP  LOGIN

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https://news.ocbmedia.com
NEWS learners and completions since programme launch (01/05/2012)

Over 250,000 NHS Staff Trained in NEWS
NEWS2 Educational Module Completions by Area of Practice
(February 2019)

- **Primary Care**: 32,500
- **Mental Health**: 10,000
- **Community**: 22,500
- **Ambulance**: 10,000
- **Acute Hospitals**: 175,000

- **Completed**
  - 70%
  - 13%
  - 9%
  - 4%
  - 4%
Resources to support the safe adoption of the revised National Early Warning Score (NEWS2)

A resource alert has been issued to support providers to adopt the revised National Early Warning Score (NEWS2) to detect deterioration in adult patients.

Resource pack to support the early adoption of the National Early Warning Score (NEWS2)
NHSE NEWS2 Video on youtube

National Early Warning Score (NEWS2)
9,869 views

https://www.youtube.com/watch?v=ujHhqTbS1xg
Free NEWS2 APP iOS and Android

NEWS2 CALCULATION APP RELEASED

DEC 18, 2018

News Calculator
National Early Warning Score
OCB Media
Uptake of the NEWS

Have I got NEWS for you
Order your FREE NEWS resources now

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

NHS England
NHS Improvement
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
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 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....
Thank you