Recognising a Deteriorating Patient

Study guide
Recognising and responding to clinical deterioration

**Background**

Clinical deterioration can occur at any time in a patient’s illness. Evidence suggests that patients who are or become acutely unwell in hospital may receive suboptimal care.

Reviews of adverse events demonstrate the presence of physiological derangements lasting, in many cases, hours to days prior to the event (cardiac arrest, death or admission to critical care), which suggests that acute clinical deterioration is rarely sudden, unexpected, and/or occurs without warning. Instead it appears that signs of deterioration are either:

- Not recognised, or
- There is a failure to appreciate the significance of clinical signs or
- There is a lack or delay in appropriate response.

Failure to recognise or respond in a timely and appropriate manner to signs of clinical deterioration where the patient suffers avoidable harm is termed “failure to rescue”.

Key interventions which have been identified as fundamental to reducing harm from deterioration are included in Figure 1.

**Fig. 1 Reducing harm from deterioration**

**Patient Safety First Campaign**

All adult patients in an acute hospital setting, including patients in the Emergency Department for whom a clinical decision to admit has been made, should have an initial assessment of physiological observations which includes:

- Heart rate
- Respiratory rate
- Systolic blood pressure
- Level of consciousness (CAVPU or GCS)
- Oxygen saturation
- Core temperature.

It is also recommended that consideration be given to other physiological parameters, for example, serum lactate, urine output and fluid balance monitoring.
Following initial assessment there should be a clear written monitoring plan that specifies which physiological observations should be recorded and how often. The plan should take account of:

- **Patient’s diagnosis**
- **Presence of comorbidities**
- **Agreed clinical management plan.**

As a minimum physiological observations should be monitored **at least every 12 hours**, unless a decision has been made at senior level to increase or decrease this frequency for an individual patient.

Patients who may require more comprehensive and frequent observations include:

- **New admissions to hospital, especially patients admitted as an emergency**
- **Patients post procedures in the first 48 hours after the intervention**
- **Patients requiring additional monitoring secondary to specialist treatment or blood product transfusion**
- **Patients with a tracheostomy**
- **Patients recently discharged from ICU or HDU care**
- **Patients who are giving cause for concern.**

Other key reasons for patients’ deterioration during a hospital episode includes the development of sepsis and/or an acute kidney injury (AKI). Staff must be vigilant for observing for such complications and have a low threshold for monitoring an accurate fluid balance.

The physiological monitoring plan should also include instructions for type of continuous monitoring, for example, continuous cardiac monitoring and/or pulse oximetry.

When continuous monitoring is required the patient should be in a location which:

- **Permits continuous observation and response by nursing staff**
- **Have alarm limit thresholds set as appropriate for the patient and**
- **Have the alarm volume set at a level which is audible to staff at all times.**

**Additional guidance may be required for medical outliers where the parent team outline specific care requirements and escalation thresholds for certain physiological parameters.**

**Staff training and competence**

Physiological observations should only be recorded and acted upon by staff who have been trained and have been deemed competent to undertake these procedures and understand their clinical relevance.

**Early Warning Systems**

Physiological “track and trigger” systems are early warning systems (EWS) designed to detect and monitor acutely unwell and/or ‘at-risk’ patients in the general hospital wards and departments, including Emergency Departments.

These systems use physiological variables routinely recorded as part of patient observations.

- Temperature
- Pulse
- Systolic blood pressure
- Respiratory rate
- Oxygen saturations and level of consciousness etc.) as a basis for deriving an aggregate illness severity “score” or “risk band”. 
Within Barts Health, for adult inpatients (excluding pregnant women over 17 weeks gestations), the National Early Warning Score (NEWS) is used.

Please refer to local guidance.

The National Early Warning score should be used to monitor all patients and be performed as an integral part of each set of observations recorded.

An early warning score will not however detect all patients who are becoming acutely unwell. Patients may present with signs & symptoms suggestive of risk, but not necessarily with altered associated physiology.

Failure to recognise these patients can have serious adverse clinical consequences. Be vigilant for red flags such as:

- Cardiac chest pain at rest lasting longer than 20 minutes
- Headache of dramatically sudden onset
- Palpitations associated with syncope
- Cauda equina syndrome
- Painful swollen calf

Similarly, patients on certain medications eg beta blockers may not “trigger” the NEWS but may still be at risk and require urgent attention and escalation. The NEWS therefore should be used as a tool to aid clinical assessment but must never replace competent clinical judgment.

Other scoring systems used in the trust include:

Modified Early Obstetric Warning Score [MEOWS]
- Currently used in maternity
- Reviews the same adult parameters
- Additional triggers for eclampsia included

Paediatric Early Warning Score [PEWS]
- Currently used children services
- Considers age specific cardiovascular, respiratory and behavioural responses. The score is also colour coded into red, amber and green.

### National Early Warning Score (NEWS)

<table>
<thead>
<tr>
<th>PHYSIOLOGICAL PARAMETERS</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiration Rate</td>
<td>≤8</td>
<td>9-11</td>
<td>12-20</td>
<td>21-24</td>
<td>≥25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen Saturations</td>
<td>≤91</td>
<td>92-93</td>
<td>94-95</td>
<td>≥96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Supplemental Oxygen</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</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>
<td></td>
</tr>
<tr>
<td>Systolic BP</td>
<td>≤90</td>
<td>91-100</td>
<td>101-110</td>
<td>111-219</td>
<td>≥220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Rate</td>
<td>≤40</td>
<td>41-50</td>
<td>51-90</td>
<td>91-110</td>
<td>111-130</td>
<td>≥131</td>
<td></td>
</tr>
<tr>
<td>Level of Consciousness</td>
<td>A</td>
<td>V, P, or U</td>
<td></td>
<td></td>
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#### Table 1 National Early Warning Score (NEWS)

NB Oxygen therapy scores additional NEWS points

BH iteration of NEWS included new onset confusion which scores 1 point

### Adjustment of NEWS triggers

<table>
<thead>
<tr>
<th>Modification of NEWS for patients with respiratory conditions associated with chronic hypoxemia</th>
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<tbody>
<tr>
<td>Chronic Respiratory Early Warning Score — CREWS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implement Crews for this patient?</th>
<th>YES NO</th>
<th>Name:</th>
<th>Designation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scoring System</td>
<td>Score for oxygen saturations %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CREWS</td>
<td>3 2 1 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEWS</td>
<td>≤85 86-87 88-889 ≥90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEWS</td>
<td>≤91 92-93 94-95 ≥96</td>
<td></td>
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</table>

#### Table 2 Chronic Respiratory Early Warning Score CREWS

Many patients have chronically deranged physiological variables, which means they may trigger NEWS unnecessarily (e.g. patients with chronic respiratory disease may have chronically elevated respiratory rate). In these circumstances, parameters may be adjusted on the front cover of the observation chart to ones which are acceptable for the individual patient and the specific clinical scenario.

A variation of the NEWS for patients with respiratory conditions associated with chronic hypoxemia has been developed alongside the NEWS, to ensure track and trigger score for oxygen saturations are specific for this client group. The CREWS – Chronic Respiratory Early Warning Score is a simple modification of the NEWS and will prevent persistent triggers and unnecessary reviews whilst still ensuring that acutely unwell patients are identified.
**NEWS RESPONSE**

<table>
<thead>
<tr>
<th>NEWS Score</th>
<th>Frequency of Monitoring</th>
<th>Clinical response</th>
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<tbody>
<tr>
<td>0</td>
<td>Minimum 12 hourly</td>
<td>• Continue routine NEWS monitoring with every set of observations</td>
</tr>
<tr>
<td>Total: 1-4</td>
<td>Minimum 4-6 hourly</td>
<td>• Registered nurse to assess patient and decide if increased frequency of monitoring and/or escalation of care is required; • Check for other adverse signs, eg. new confusion, new/worsening pain, oliguria, change in colour; • Consider need for fluid balance charting</td>
</tr>
<tr>
<td>Total: 5 or more or any single score of 3</td>
<td>Increased frequency to minimum of 1 hourly Continuous pulse oximetry Continuous cardiac monitor</td>
<td>• Urgently inform medical team caring for patient; • Refer to CCOT/H@N/Acute Response Team (WXUH) • RLH: Bleep CCOT team 1294. H@N 1572/1573 • Barts: Bleep CCOT team 0264. H@N bleep 0287 • Mile End: Call medical team • Newham: Bleep 118 • Whipps Cross: Call Acute Response Team (ART) and medical team • Commence fluid balance chart</td>
</tr>
<tr>
<td>Total: 7 or more</td>
<td>Continuous monitoring of vital signs</td>
<td>• Immediately inform patient's medical team – at least at Registrar Level and CCOT/H@N/Acute Response Team (WXUH); • Consider transfer of clinical care to a level 2 or 3 care facility, i.e. HDU or ICU.</td>
</tr>
</tbody>
</table>

**Graded response to NEWS**

NEWS is linked to a graded response which should be activated in response to the “triggering” of the system. The level of response is related to the degree of physiological derangement and directs the frequency of observation and identifies who should respond and within what time frame.

**Adult patients [except those on an end of life care pathway] MUST have a minimum 12 hourly observations recorded. This is a national standard.**

More information and training in recognition and management of the deteriorating patient, and the use of the NEWS and CREWS are provided by the Acute Care Skills (ACS) – Critical Care Outreach Team (CCOT). See link below for all available ACS training for clinical bands 2 – 7 staff.


**Communication tool for escalation of concern**

All communication between healthcare professionals regarding patients at risk of deterioration should be carried out using the **SBAR** communication tool.

**Explain:**

➤ The patient’s current **Situation**
➤ Relevant medical **Background**
➤ Your **Assessment of the patient**
➤ What you have done and what are your **Recommendations** to the health professional regarding their assistance, including agreeing **time frame** for review.

**Before you call:**

➤ Assess the patient using **A to E** systematic approach
  – Assessment of the unwell adult patient is based on a structured systematic assessment incorporating airway, breathing, circulation, disability and exposure, the ABCDE approach
  ➤ Discuss the situation with a senior ward nurse/ward team
  ➤ Know the admitting diagnosis, key events and progress since admission.

**Have available:**

➤ Patient’s medical and nursing notes
➤ Drug chart, allergies, IV fluids
➤ Observation and fluid balance charts
➤ Recent lab results/recent investigations.
If you do not get the help you need from the first person you call continue to escalate until you do.

IF THERE IS A LIFE THREATENING OR OTHER EMERGENCY SITUATION CALL 2222

Summary

Any patient in hospital may become acutely ill. Failure in the recognition and/or response to signs of the clinical deterioration may result in suboptimal care, delayed referral or avoidable admissions to critical care and may lead to unnecessary patient deaths. Key elements to reducing harm from deterioration have been described which if applied appropriately by all healthcare practitioners have the potential to save lives and improve outcomes for your patients in your care.

Reading

Barts Health Observation and Escalation Policy; Neurological Observation Policy; Resuscitation/ DNACPR Policy; Oxygen Delivery; Tracheostomy Policy/Guideline


Royal College of Physicians (2012) National Early Warning Score (NEWS) standardising the assessment of acute illness severity in the NHS. London: RCP