Example policy*: Adult vital sign and early warning score measurement, recording, and escalation

Purpose
To define minimum standards for measuring and recording vital signs, calculating the early warning score, and using the escalation pathway. The purpose of these processes is to ensure timely recognition of, and response to, physiological deterioration.

Scope
Includes all nursing and medical staff working in inpatient wards of the hospital.

Definitions
Vital signs
A core vital sign set includes respiratory rate (RR), documentation of supplemental oxygen administration, oxygen saturation determined by pulse oximetry (SpO₂), body temperature (Temp), blood pressure (BP), heart rate (HR), and level of consciousness (using the ‘AVPU’ scale). The core vital sign set is used to calculate an early warning score. Note that while both systolic and diastolic blood pressures are measured and recorded, only systolic blood pressure is used to calculate the early warning score.

Additional observations include pain score and urine output.

Early warning score
Early warning scores (EWS) help to identify acutely ill and deteriorating patients. The EWS is calculated based on the core vital sign set. The EWS increases the further a patient’s vital signs are from the normal range. Higher EWS are associated with increased patient morbidity and mortality.

Possible scores for each core vital sign parameter range from 0 (normal range) to 4 (grossly abnormal). The individual scores for each core vital sign parameter are added together to calculate the total EWS. The total EWS is used to trigger escalation of care.

The EWS also allows for a single vital sign parameter to trigger escalation. If any single vital sign falls into a coloured zone, the associated action must be taken. For example, extreme deviation from the normal range in a core vital sign triggers mandatory escalation to the rapid response team.

Escalation pathway
The escalation pathway outlines the actions to be taken when a calculated EWS or single vital sign parameter indicates deviation from the normal range. The escalation pathway outlines a tiered clinical response to increasingly abnormal early warning scores or single vital sign parameters.

Monitoring plan
A monitoring plan specifies the required frequency of vital sign monitoring and any observations that may be required additional to the core observation set. This should be agreed by the clinical team with overall accountability for the patient’s care and recorded in the patient’s clinical record.

*Adapted with permission from Capital and Coast DHB Vital Sign and Early Warning Score Policy
Shared as part of sector feedback April – May 2017
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Rapid response team
The rapid response team (RRT) includes doctors and nurses with skills in critical care. They attend when critical physiological deterioration is recognised and provide immediate bedside clinical support 24-hours-a-day, 7 days a week.

[insert details of local RRT – team members, contact details, availability]

Policy
General principles and procedure
At all times staff should use their clinical judgement regarding the frequency and interpretation of vital signs. Patients who are acutely ill or post-procedure may need continual monitoring of vital signs until they are stable or transferred to a higher acuity clinical area.

Each time vital signs are measured:
- the complete core set must be performed
- they must be documented directly on the vital signs chart at the time of measurement
- the EWS must be calculated
- the relevant escalation actions must be taken (or a clear rationale for not taking action must be immediately documented in the clinical record).

Frequency
For patients with acute illness a minimum frequency of four hourly vital sign measurement is required. More frequent measurement may be needed depending on the clinical status of the patient, treatment provided, or procedure performed.

If the EWS is increasing or there are concerns about the patient’s clinical condition, the frequency of vital sign measurement should be increased.

This frequency of monitoring required by this policy is superseded by other guidelines or directives requiring more frequent vital sign measurement (for example: blood transfusion; epidural; post-anaesthetic or post procedure recovery; medication infusion).

Reduced frequency of vital sign measurement may be agreed with the clinical team accountable for the patient’s care or in accordance with agreed clinical pathways or standing orders. This must be documented clearly in a monitoring plan in the patient’s clinical record.

For patients who are expected to die within a period of days, it may be appropriate to discontinue measurement of the core set of vital signs and early warning score. An alternative monitoring plan must be documented indicating triggers for escalating care if concerns about the patient’s comfort or progress arise.

High acuity areas that do not routinely record vital signs on the EWS chart (for example intensive care, the emergency department, post-anaesthetic recovery or coronary care) must measure and document the core set of vital signs and calculate the EWS within an hour of planned transfer to ward areas. If the vital signs indicate that an escalation of care is warranted the issue must be resolved before transfer (either through commencing appropriate treatment or documenting a modification to the EWS if this is clinically appropriate).

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Vital sign measurement must not be withheld or delayed in an attempt to avoid disturbing the sleeping patient.

**Measurement and documentation of vital signs and EWS**

All vital signs must be documented directly onto the vital sign and EWS chart at the time of measurement.

The core set of vital signs that must be measured and documented every time are:

- respiratory rate (breaths per minute)
- presence or absence of supplemental oxygen administration (litres per minute if applicable)
- oxygen saturation determined by pulse oximetry (% as determined by pulse oximetry)
- body temperature (°C)
- blood pressure (mmHg)
- heart rate (beats per minute)
- level of consciousness (AVPU).

For routine vital sign measurement the patient should be settled and at rest. Unless there is clinical concern about the patient wait twenty minutes following physical activity before measuring vital signs.

Recommended best practice is that blood pressure, heart rate, and respiratory rate should be measured manually.

The Registered or Enrolled nurse caring for the patient is responsible for measuring and documenting vital signs.

Document vital signs according to the instructions on the chart.

**Modification to EWS triggers**

Some clinically stable unwell patients or patients with chronic disease may have abnormal vital signs that are ‘normal’ for them. To accommodate this and prevent over-triggering of the response system, the EWS associated with an individual vital sign parameter can be modified. For example, a patient with chronic obstructive pulmonary disease on home oxygen may have a modification made to indicate an EWS of 0 for supplemental oxygen.

Any modification must be made by a consultant or registrar and reviewed regularly (preferably every 24 hours) by the consultant with overall accountability for the patient’s care. All modifications must be signed and dated. Modifications cannot be carried over to a new chart and must be newly documented. If a modification is not signed and dated it should be ignored and the usual EWS applied.

Modification to the EWS associated with a vital sign parameter must never be used to normalise abnormal vital signs in clinically unstable patients or to prevent appropriate escalation of care.

**Escalation**

The escalation pathway is mandatory and must be followed for a patient with an EWS of 1 or more. Action must be taken at the time that the triggering EWS is documented. If the mandated response
Example policy: Adult vital sign and early warning score measurement, recording, and escalation

does not occur within the time frame specified, escalation should proceed to the action specified in the next coloured zone.

Details of actions taken to escalate care must be documented in the patient’s clinical record.

Anyone may place a rapid response call if they are seriously concerned about a patient, regardless of vital signs or EWS.

**Rapid response calls: documentation and communication**

When a rapid response call is triggered:

- a rapid response activation sticker must be completed and placed in the patient record
- details of the reason for the call, any investigations or interventions provided, and the plan for ongoing follow up must be documented in the patient record
- the patient, whanau, and team with primary accountability for the patient’s care must be informed as soon as practicable.

**EWS and escalation compliance audits**

All clinical areas that use the EWS vital sign chart must conduct and report compliance audits (see ‘Recognising deterioration audit tool’). Audit frequency can be determined according to ongoing compliance rates as detailed in the table below.

**Table 1: EWS compliance audit frequency**

<table>
<thead>
<tr>
<th>EWS compliance results</th>
<th>Required audit frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>Quarterly</td>
</tr>
<tr>
<td>80-89%</td>
<td>2 monthly</td>
</tr>
<tr>
<td>&lt;80%</td>
<td>Minimum monthly until compliance sustained 90% or more for 2 consecutive months</td>
</tr>
</tbody>
</table>

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