

# National Early Warning Score

National Clinical Guideline No. 1

**Summary**

## National Clinical Effectiveness Committee (NCEC)

The National Clinical Effectiveness Committee (NCEC) was established as part of the Patient Safety First Initiative in September 2010. The NCEC's mission is to provide a framework for national endorsement of clinical guidelines and audit to optimise patient and service user care. The NCEC has a remit to establish and implement processes for the prioritisation and quality assurance of clinical guidelines and clinical audit so as to recommend them to the Minister for Health to become part of a suite of National Clinical Guidelines and National Clinical Audit.

National Clinical Guidelines are **“systematically developed statements, based on a thorough evaluation of the evidence, to assist practitioner and service users’ decisions about appropriate healthcare for specific clinical circumstances across the entire clinical system”**. The implementation of clinical guidelines can improve health outcomes, reduce variation in practice and improve the quality of clinical decisions.

The aim of National Clinical Guidelines is to provide guidance and standards for improving the quality, safety and cost effectiveness of healthcare in Ireland. The implementation of these National Clinical Guidelines will support the provision of evidence based and consistent care across Irish healthcare services.

The oversight of the National Framework for Clinical Effectiveness is provided by the National Clinical Effectiveness Committee (NCEC). The NCEC is a partnership between key stakeholders in patient safety and its Terms of Reference are to:

- Apply criteria for the prioritisation of clinical guidelines and audit for the Irish health system
- Apply criteria for quality assurance of clinical guidelines and audit for the Irish health system
- Disseminate a template on how a clinical guideline and audit should be structured, how audit will be linked to the clinical guideline and how and with what methodology it should be pursued
- Recommend clinical guidelines and national audit, which have been quality assured against these criteria, for Ministerial endorsement within the Irish health system
- Facilitate with other agencies the dissemination of endorsed clinical guidelines and audit outcomes to front-line staff and to the public in an appropriate format
- Report periodically on the implementation of endorsed clinical guidelines.

It is recognised that the health system as a whole, is likely to be able to effectively implement and monitor only a small number of new national clinical guidelines each year. Not all clinical guidelines will be submitted for national endorsement and clinical guideline development groups can continue to develop clinical guidelines using an evidence based methodology in response to the needs of their own organisations.

Information on the NCEC and endorsed national clinical guidelines is available on the Patient Safety First website at [www.patientsafetyfirst.ie](http://www.patientsafetyfirst.ie)



The National Early Warning Score and COMPASS® Education programme project is a work stream of the National Acute Medicine Programme, HSE, in association with the National Critical Care Programme, HSE, the National Elective Surgery Programme, HSE, the National Emergency Medicine Programme, HSE, the Quality and Patient Safety Directorate, HSE, Patient Representative Groups, Nursing and Midwifery Services Directorate, HSE, the Clinical Indemnity Scheme (State Claims Agency), the Irish Association of Directors of Nursing and Midwifery (IADNAM), and the Therapy Professionals Committee.

The project is supported by the Royal College of Physicians and the Royal College of Surgeons in Ireland.

### **Using this National Clinical Guideline**

This document is intended to be relevant to healthcare professionals in acute hospitals nationally who are involved in the direct clinical care of patients. It is also relevant for hospital managers, risk managers and quality and patient safety personnel. The target group is adult patients in acute hospitals. This summary version, in addition to the full version, which provides more detail on the National Clinical Guideline, are available on the websites [www.hse.ie/go/nationalearlywarningscore/](http://www.hse.ie/go/nationalearlywarningscore/) and [www.patientsafetyfirst.ie](http://www.patientsafetyfirst.ie). The references, bibliography and appendices are available in the full version document.

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Update August 2014: Practical guidance inserted following Recommendations 8, 16, 45.

### **Disclaimer**

The National Governance/National Clinical Guideline Development Group's expectation is that healthcare professionals will use clinical judgement, medical and nursing knowledge in applying the general principles and recommendations contained in this document. Recommendations may not be appropriate in all circumstances and decisions to adopt specific recommendations should be made by the practitioner taking into account the circumstances presented by individual patients and available resources.

# Table of Contents

<b>1.0 Definition of Early Warning Scores and scope of the National Clinical Guideline</b>	<b>4</b>
1.1 Definition of Early Warning Scores	4
1.2 Scope of the National Clinical Guideline	4
<b>2.0 National Clinical Guideline Recommendations</b>	<b>5</b>
2.1 Measurement and documentation of observations	5
2.2 Escalation of care	7
2.3 Emergency Response Systems	8
2.4 Clinical communication	10
2.5 Implementation - Organisational supports	10
2.6 Education	11
2.7 Evaluation and audit	12
<b>3.0 National Clinical Guideline</b>	<b>15</b>
3.1 Background	15
3.2 Using this National Clinical Guideline	15
3.3 How Early Warning Scores work in practice	15
3.4 Aim of the National Early Warning Score project	16
3.5 Purpose/objectives of the National Clinical Guideline	16
3.6 Methodology	16
3.7 Legislation/other related policies	17
3.8 Guiding principles for the National Clinical Guideline	17
3.9 Essential elements of the National Clinical Guideline	18
3.10 Implementation and dissemination	18
3.11 Roles and responsibilities	18
3.12 Conclusion	19
<b>Glossary of Terms</b>	<b>20</b>
<b>Resources</b>	<b>23</b>

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## 1.0 Definition of Early Warning Scores and scope of the National Clinical Guideline

### 1.1 Definition of Early Warning Scores

Early Warning Scores facilitate early detection of deterioration by categorising a patient's severity of illness and prompting nursing staff to request a medical review at specific trigger points utilising a structured communication tool while following a definitive escalation plan. Adopting a National Early Warning Score (NEWS) is beneficial for standardising the assessment of acute illness severity, enabling a more timely response using a common language across acute hospitals nationally.

### 1.2 Scope of the National Clinical Guideline

The National Clinical Guideline relates to the situation in an acute hospital setting, where an adult patient's physiological condition is deteriorating. The general provision of care in an acute hospital is outside the scope of this document. The National Clinical Guideline focuses on ensuring that a 'track and trigger' system is in place for adult patients whose condition is deteriorating, and outlines the clinical processes and organisational supports required to implement the guideline.

**The National Clinical Guideline does not apply to children or patients in obstetric care, as early detection of deterioration in these two groups of patients are identified by different physiological parameters and signs to those of adult patients in acute hospitals.**

The National Clinical Guideline applies to all adult patients in acute hospitals. This includes:

- All inpatients on initial assessment, and as per clinical condition and clinical treatment.
- Any outpatients/day services patients who attend acute hospitals for an invasive procedure or who receive sedation.
- All patients attending an Acute Medical Unit/Acute Medical Assessment Unit/Medical Assessment Unit.

The National Clinical Guideline applies to healthcare professionals, doctors, nurses, physiotherapists and other staff involved in the clinical care of patients. These include healthcare assistants, under the supervision of nursing staff, and managers responsible for the development, implementation, review and audit of deteriorating patient recognition and response systems in individual hospitals or groups of hospitals. The National Clinical Guideline also applies to training and education support staff involved in the organisation and delivery of the education programme.

## 2.0 National Clinical Guideline Recommendations

The recommendations are numbered 1 to 60 under seven headings as follows:

### **Clinical processes:**

- Measurement and documentation of observations.
- Escalation of care.
- Emergency Response Systems.
- Clinical communication.

### **Organisational prerequisites for implementation:**

- Organisational supports.
- Education.
- Evaluation, audit and feedback.

The recommendations are linked to the best available evidence and/or expert opinion using the Scottish Intercollegiate Guidelines Network (SIGN, 2002) levels of evidence, and grades for recommendations (Appendices 1 and 2).

### 2.1 Measurement and documentation of observations

The following are responsible for implementation of recommendations 1-11: doctors and nurses in consultation with the NEWS multi-disciplinary group/committee in an acute hospital.

#### **Recommendation 1**

Observations should be taken on all patients admitted to an acute hospital.

#### **Recommendation 2**

Observations should be taken on patients at the time of admission or initial assessment if appropriate or as per organisation guideline/protocol, and then documented in the patient's healthcare record and recorded on a chart that incorporates the NEWS System.

#### **Recommendation 3**

For every patient, a clear monitoring plan should be developed and documented, that specifies the observations to be recorded and the frequency of observations, taking into account the patient's diagnosis and proposed treatment.

#### **Recommendation 4**

The frequency of observations should be consistent with the clinical situation and history of the patient. In the hospital setting the minimum standard for the assessment of vital signs, utilising the NEWS parameters, is every 12 hours. The frequency of patient observations must be reconsidered and modified according to changes in the patient's clinical condition. This should be documented in the monitoring plan and detailed in the medical notes and nursing care plan. This decision should be made in collaboration between nursing staff and the medical team.

**Recommendation 5**

Physiological observations should include:

- Respiratory rate
- Oxygen saturation - SpO<sub>2</sub>
- Heart rate
- Blood pressure
- Temperature
- Level of consciousness
- Where a patient is on inspired oxygen (F<sub>i</sub>O<sub>2</sub>, ) a score of 3 is added.

**Recommendation 6**

In some circumstances, and for some groups of patients, some observations will need to be measured more or less frequently than others, and this should be specified in the monitoring plan, and documented in the medical notes and nursing care plan.

**Recommendation 7**

The minimum observations should be documented in a structured observation chart, incorporating the NEWS System.

**Recommendation 8**

Patient observation charts should display physiological information in the form of a graph. A patient observation chart should include:

1. A system for tracking changes in physiological parameters over time.
2. Thresholds for each physiological parameter or combination of parameters that indicate abnormality.
3. Information about the response or action required when thresholds for abnormality are reached or deterioration identified.
4. The key NEWS parameters are based on the ViEWS system as per the NEWS Observation Chart (Appendix 3).

**Practical Guidance**

Screen for Sepsis using the Sepsis Screening Form when a patient's NEWS is  $\geq 4$  or (5 on supplementary O<sub>2</sub>) or if infection is suspected.

**Recommendation 9**

Clinical staff may choose to document other observations and assessments to support timely recognition of deterioration. Examples of additional information that may be required include; fluid balance, occurrence of seizures, pain, chest pain, respiratory distress, Glasgow Coma Scale, pallor, capillary refill, pupil size and reactivity, sweating, nausea and vomiting, as well as additional biochemical and haematological analyses.

**Recommendation 10**

There are also patients for whom the use of the NEWS may be inappropriate, such as during the end stages of life and advanced palliative care. Although the majority of patients will benefit from utilisation of NEWS the clinician's own clinical judgement dictates whether the patient will require to be regularly scored for the NEWS, and how regularly vital signs assessment is required. A note should also be made in the patient's healthcare record documenting why the decision was made not to use the NEWS.

**Recommendation 11**

When a patient is being continuously monitored using electronic technology, a full set of vital signs must be documented on the observation chart.

See Appendix 3 for NEWS Observation Chart, and Appendix 4 for recommended audit tools with specific audit criteria.

## 2.2 Escalation of care

The following are responsible for implementation of recommendations 12-22: doctors and nurses in consultation with the NEWS multi-disciplinary group/committee in an acute hospital.

### Recommendation 12

A formal documented escalation protocol is required that applies to the care of all patients at all times.

### Recommendation 13

The escalation protocol should authorise and support the clinician at the bedside to escalate care until the clinician is satisfied that an effective response has been made.

### Recommendation 14

The escalation protocol should be tailored to the characteristics of an acute hospital, including consideration of issues such as:

1. Size and role (e.g. a tertiary referral centre or a small community hospital).
2. Location (relative to other acute hospitals).
3. Available resources (e.g. staffing mix and skills, equipment, telemedicine facilities and external resources such as ambulances).
4. Potential need for transfer to another acute hospital.

### Recommendation 15

The escalation protocol should allow for a graded response commensurate with the level of abnormal physiological measurements, changes in physiological measurements or other identified deterioration. The graded response should incorporate options such as:

1. Increasing the frequency of observations.
2. Appropriate interventions from nursing and medical staff on wards and review by the primary medical practitioner or team in an acute hospital.
3. Obtaining emergency assistance or advice.
4. Transferring patients to a higher level of care locally, or to another acute hospital.

### Recommendation 16

The escalation protocol should specify:

1. The levels of physiological abnormality or abnormal observations at which patient care is escalated.
2. The response that is required for a particular level of physiological or observed abnormality.
3. How the care of the patient is escalated.
4. To whom care of the patient is escalated, noting the responsibility of the primary medical practitioner or team in an acute hospital.
5. Who else is to be contacted when care of the patient is escalated.
6. The timeframe in which a requested response should be provided.
7. Alternative or back up options for obtaining a response.

### Practical Guidance

In the 4-6 score section of the Escalation Protocol an alert to screen for Sepsis should be included.



**Recommendation 17**

The way in which the NEWS protocol for escalation is applied should take into account the clinical circumstances of the patient, including both the absolute change in physiological measurements and abnormal observations, as well as the rate of change over time for an individual patient.

**Recommendation 18**

The escalation protocol may specify different actions depending on the time of day or day of the week, or for other circumstances.

**Recommendation 19**

The escalation protocol should allow for the capacity to escalate care based only on the concern of the clinician at the bedside in the absence of other documented abnormal physiological measurements ('staff member worried' criterion).

**Recommendation 20**

The escalation protocol should allow for the concerns of the patient, family or carer to trigger an escalation of care.

**Recommendation 21**

The escalation protocol should include consideration of the needs and wishes of patients where treatment-limiting decisions (ceilings of care) have been made.

**Recommendation 22**

The escalation protocol should be disseminated widely and included in education programmes. On induction to an organisation all staff should be made aware of the escalation protocol.

See Appendix 5 for the escalation protocol and Appendix 4 for the recommended audit tool with specific criteria.

## 2.3 Emergency Response Systems

The following are responsible for implementation of recommendations 23-33: doctors and nurses in consultation with the NEWS multi-disciplinary group/committee in an acute hospital.

**Recommendation 23**

Some form of Emergency Response System should exist to ensure that specialised and timely care is available to patients whose condition is deteriorating.

**Recommendation 24**

Criteria for triggering the Emergency Response System should be included in the escalation protocol. Where severe deterioration occurs it is important to ensure that the capacity exists to obtain appropriate emergency assistance or advice prior to the occurrence of an adverse event such as a cardiac arrest.

**Recommendation 25**

The nature of the Emergency Response System needs to be appropriate to the size, role, resources and staffing mix of a hospital.

**Recommendation 26**

The clinicians providing emergency assistance as part of the Emergency Response System should:

1. Be available to respond within agreed timeframes.
2. Be able to assess a patient and provide a provisional diagnosis.
3. Be able to undertake appropriate initial therapeutic intervention.
4. Be able to stabilise and maintain a patient, pending decisions on further management.
5. Have authority to make transfer decisions and to access other care providers to deliver definitive care.

**Recommendation 27**

As part of the Emergency Response System there should be access, at all times, to at least one clinician, either on-site or accessible, who can practice advanced life support.

**Recommendation 28**

The clinicians providing emergency assistance should have access to medical staff members of sufficient seniority to make treatment-limiting decisions. Where possible these decisions should be made with input from the patient, family and the primary medical practitioner or team in an acute hospital.

**Recommendation 29**

In cases where patients need to be transferred to another acute hospital to receive emergency care, appropriate care needs to be provided until such assistance is available.

**Recommendation 30**

When a call is made for emergency assistance, the attending medical practitioner or team should be notified at the same time that the call has been made, and where possible, they should attend to provide relevant medical information regarding their patient, provide support and learn from the clinicians providing assistance.

**Recommendation 31**

All opportunities should be taken by the clinicians providing emergency assistance to use the call as an educational opportunity for ward staff and pre-registered medical, nursing and therapies students.

**Recommendation 32**

The clinicians providing emergency assistance should communicate in an appropriate, detailed and structured way with the primary medical practitioner or team in an acute hospital about the consequences of the call for emergency assistance, including documenting information in the healthcare record.

**Recommendation 33**

Events surrounding a call for emergency assistance and actions resulting from a call should be documented in the healthcare record and considered as part of on-going quality improvement processes. Records should be suitable for audit purposes.

## 2.4 Clinical communication

The following are responsible for implementation of recommendations 34-36: doctors and nurses in consultation with the NEWS multi-disciplinary group/committee in an acute hospital.

### Recommendation 34

Formal communication protocols should be used to improve the functioning of teams when caring for a patient whose condition is deteriorating.

### Recommendation 35

The value of information about possible deterioration from a patient, family or carer should be recognised.

### Recommendation 36

Information about deterioration should be communicated to the patient, family or carer in a timely and ongoing way, and documented as appropriate in the healthcare record.

See Appendix 6 for the clinical communication tool ISBAR and Appendix 4 for audit tools with specific criteria for use of the ISBAR Tool.

## 2.5 Implementation - Organisational supports

The following are responsible for implementation of recommendations 37-43: the NEWS multi-disciplinary group/committee and senior management of an acute hospital.

### Recommendation 37

This National Clinical Guideline should be implemented across all acute hospitals, and the planned variations in the escalation protocol and responses that might exist in different circumstances (such as for different times of day or at night) identified.

### Recommendation 38

A formal guideline/policy framework for the implementation of the National Clinical Guideline should include issues such as:

1. Governance arrangements.
2. Roles and responsibilities.
3. Communication processes.
4. Resources for the Emergency Response System, such as staff and equipment.
5. Education and training requirements.
6. Evaluation, audit and feedback processes.
7. Arrangements with external organisations that may be part of a rapid response system.
8. Documentation regulation and management of records.
9. Patient and service user involvement.

### Recommendation 39

Any new recognition and response systems or procedures should be integrated into existing organisational safety and quality systems to support their sustainability and opportunities for organisational learning.

**Recommendation 40**

Recognition and response systems should encourage healthcare staff to react positively to escalation of care, irrespective of circumstances or outcome.

**Recommendation 41**

There should be appropriate policies and documentation regarding 'Do Not Resuscitate' decisions; treatment-limiting decisions (ceilings of care); and end-of-life decision making as they are critical in ensuring that the care delivered in response to deterioration is consistent with appropriate clinical practice and the patient's expressed wishes.

**Recommendation 42**

A formal governance process (such as a NEWS System group/committee) should oversee the development, implementation and ongoing review of recognition and response systems locally. It should:

1. Have appropriate responsibilities delegated to it and be accountable for its decisions and actions.
2. Monitor the effectiveness of interventions and education.
3. Have a role in reviewing performance data, and audits.
4. Provide advice about the allocation of resources.
5. Include service users, clinicians, managers and executives.

**Recommendation 43**

Organisations should have systems in place to ensure that the resources required to provide emergency assistance (such as equipment and pharmaceuticals) are always operational and available.

## 2.6 Education

The following are responsible for the implementation of recommendations 44-47: doctors, nurses, senior management, healthcare educators and physiotherapists (where appropriate) in consultation with the NEWS multi-disciplinary group/committee in an acute hospital.

**Recommendation 44**

The education programme recommended by the National Governance/National Clinical Guideline Development Group is the COMPASS® programme and must be delivered in full. All clinical and non-clinical staff should receive education about the local escalation protocol relevant to their position. They should know how to call for emergency assistance if they have any concerns about a patient, and know that they should call under these circumstances. This information should be provided at the commencement of employment and as part of regular refresher education and training.

**Recommendation 45**

All medical and nursing staff should be able to:

1. Systematically assess a patient.
2. Understand and interpret abnormal physiological parameters and other abnormal observations.
3. Understand and operationalise the NEWS system and NEWS protocol for escalation of care.
4. Initiate appropriate early interventions for patients who are deteriorating.
5. Respond with life-sustaining measures in the event of severe or rapid deterioration pending the arrival of emergency assistance.
6. Communicate information about clinical deterioration in a structured and effective way to the primary medical practitioner or team in an acute hospital, to clinicians providing emergency assistance and to patients, families and carers.
7. Understand the importance of, and discuss, end-of-life care planning with the patient, family and/or carer.
8. Undertake tasks required to properly care for patients who are deteriorating such as developing a clinical management plan, writing plans and actions in the healthcare record and organising appropriate follow up.

**Practical Guidance**

Commence Sepsis Screening using the Sepsis Screening Form when the patient has a NEWS of  $\geq 4$  (5 on supplementary  $O_2$ ) or if infection is suspected.

**Recommendation 46**

As part of the Emergency Response System, competency in advanced life support should be ensured for a sufficient number of clinicians who provide emergency assistance to guarantee access to these skills according to local protocols.

**Recommendation 47**

A range of methods should be used to provide the required knowledge and skills to staff. These may include provision of information at orientation and regular refresher programmes using face-to-face and online techniques, as well as simulation centres and scenario-based education and training.

See Appendix 7 for more detail on the COMPASS<sup>®</sup> Education Programme.

## 2.7 Evaluation and audit

Evaluation and audit are an important part of the implementation of this National Clinical Guideline. Both process and outcome audits should be conducted. The following are responsible for the implementation of recommendations 48-60: doctors, nurses, senior managers and audit staff, in consultation with the NEWS multi-disciplinary group/committee in an acute hospital.

**Recommendation 48**

Evaluation of new systems is important to establish their efficacy and determine what changes might be needed to optimise performance. Therefore on-going monitoring is necessary to track changes in outcomes over time and to check that these systems are operating as planned.

**Recommendation 49**

Data should be collected and reviewed locally and over time regarding the implementation and effectiveness of recognition and response systems, namely the NEWS system.

**Recommendation 50**

The NEWS and escalation of care protocol should be evaluated to determine whether it is operating as planned. Evaluation may include checking the existence of required documentation, guidelines, policies and protocols and compliance with same (such as completion rates of observation charts or proportion of staff who have received education and training).

**Recommendation 51**

Clinical audit is recommended to support the continuous quality improvement process in relation to implementation of the NEWS system (Appendix 4). The recommended minimum for audit includes:

1. Utilization of the ISBAR communication tool.
2. Utilization and accuracy of completion of the patient observation chart incorporating the NEWS.
3. Utilization of the 'track and trigger' response – the NEWS protocol.

**Recommendation 52**

Systems should be evaluated to determine whether they are improving the recognition of, and response to, clinical deterioration. Evaluation may include collecting and reviewing data about calls for emergency assistance, and adverse events such as cardiac arrests, unplanned admissions to intensive care and hospital deaths.

**Recommendation 53**

The following data should be collated for each call for emergency assistance that is made to the Emergency Response System:

1. Patient demographics.
2. Date and time of call.
3. Response time.
4. Reason for the call.
5. The treatment or intervention required.
6. Outcomes of the call, including disposition of the patient.

**Recommendation 54**

Regular audits of triggers and outcomes should be conducted for patients who are the subject of calls for emergency assistance. Where these data are available, this could include longer-term outcomes for patients (such as 30 and 60 day hospital mortality).

**Recommendation 55**

Evaluation of the costs and potential savings associated with recognition and response systems could also be considered.

**Recommendation 56**

Information about the effectiveness of the recognition and response systems may also come from other clinical information such as incident reports, root-cause analyses, cardiac arrest calls and death reviews. A core question for every death review should be whether the escalation criteria for the Emergency Response System were met, and whether care was escalated appropriately.

**Recommendation 57**

As part of the implementation of new systems, feedback should be obtained from frontline staff about the barriers and enablers to change. Issues and difficulties regarding implementation should be considered for different acute hospitals.

**Recommendation 58**

Consistent with any implementation process, information collected as part of ongoing evaluation and audit should be:

1. Part of a feedback process to ward staff and the primary medical practitioner or team in an acute hospital regarding their own calls for emergency assistance.
2. Part of a feedback process to the clinicians providing emergency assistance.
3. Reviewed to identify lessons that can improve clinical and organisational systems.
4. Used in education and training programmes.
5. Used to track outcomes and changes in performance over time.
6. Used to implement remedial actions.

**Recommendation 59**

Indicators of the implementation and effectiveness of recognition and response systems should be monitored at senior governance levels within the organisation (such as by senior executives or relevant quality committees). It is recommended that the audit process in each acute hospital is overseen by the NEWS group/committee at local level.

**Recommendation 60**

It is recommended that the NEWS parameters are reviewed annually and updated as new information becomes available either from national or international audits or research.

## 3.0 National Clinical Guideline

### 3.1 Background

Recent evidence has identified that a systematic approach to early detection and management of patients whose condition deteriorates improves outcomes for patients (Steen, 2010). The body of evidence from numerous studies and reports is increasing with regard to failure to recognise and manage deteriorating patients effectively.

In 2007, the National Institute for Health and Clinical Excellence (UK) recommended that physiological 'track and trigger' systems should be used to monitor all adult patients in acute hospital settings. More recently, in Ireland, the Health Information and Quality Authority and the Clinical Indemnity Scheme recommended the use of a nationally agreed early warning score.

The National Acute Medicine Programme, HSE identified 'agreement of a NEWS and associated education programme' as a work stream in early 2011, giving priority to patient safety and quality of care. A National Lead was identified and National Governance/National Clinical Guideline Development and Advisory Groups were set up incorporating key stakeholders from within and outside the HSE. The overall aim of the NEWS and associated education programme was to develop one integrated solution for a NEWS and associated education programme.

The scope of the work includes adult patients in acute hospital services and does not apply to children or patients in obstetric care, as early detection of deterioration in these two groups of patients are identified by different physiological parameters and signs to those of adult patients in general acute healthcare settings.

The NEWS ensures standardisation in the assessment and response to acute illness severity across all acute hospitals in the country. Standardisation of an education programme was identified as a priority where staff moving between services would be familiar with practices and charts thus reducing risks for patients.

### 3.2 Using this National Clinical Guideline

This document is intended to be relevant to healthcare professionals in acute hospitals nationally who are involved in the direct clinical care of patients. It is also relevant for hospital managers, risk managers and quality and patient safety personnel. The target group is adult patients in acute hospitals. This summary version, in addition to the full version, provides more detail on the National Clinical Guideline, which are available from the websites: [www.hse.ie/go/nationalearlywarningscore/](http://www.hse.ie/go/nationalearlywarningscore/) and [www.patientsafetyfirst.ie](http://www.patientsafetyfirst.ie). The references and bibliography as well as the appendices are available in the full version document.

### 3.3 How Early Warning Scores work in practice

Patient's vital signs are routinely recorded in acute hospitals. With the early warning score system each vital sign is allocated a numerical score from 0 to 3, on a colour coded observation chart (a score of 0 is most desirable and a score of 3 is least desirable). These scores are added together and a total score is recorded on the patient's observation chart which is their early warning score. A trend can be seen whether the patient's condition is improving, with a lowering of the score or dis-improving, with an increasing score. Care can be escalated to senior medical staff with observation frequency increased, depending on the score and guided by a pre-determined



escalation protocol. Recognition of deterioration in the patient's condition is more easily identified than previously and where possible a catastrophic event such as a cardio-respiratory arrest may be avoided.

### 3.4 Aim of the National Early Warning Score project

The overall aim of the NEWS project and National Governance/National Clinical Guideline Development Group was to develop one integrated solution for a NEWS and associated education programme and to develop a National Clinical Guideline in support of this.

### 3.5 Purpose/objectives of the National Clinical Guideline

The purpose of the National Clinical Guideline is to describe the elements that are essential for prompt and reliable recognition of, and response to, clinical deterioration of patients in acute hospitals.

The National Clinical Guideline guides acute hospitals in developing recognition and response systems tailored to their patient population, and to the resources and personnel available.

The National Clinical Guideline supports the implementation of the NEWS, the multidisciplinary education programme COMPASS®, and the standard communication tool 'ISBAR' (Identification; Situation; Background; Assessment; Recommendation).

### 3.6 Methodology

The methodology for the development of NEWS and associated education programme is outlined below.

- A national lead was identified.
- Multi-disciplinary National Governance/National Clinical Guideline Development and Advisory Groups were set up.
- Evidence was gathered to aid in the decision making process for agreeing the NEWS and associated education programme and in developing the clinical guideline to support implementation.

This included:

- A baseline audit of early warning scores and education programmes in use in acute hospitals nationally.
  - A strengths, weaknesses, opportunities and threats analysis along with a risks identification.
  - A systematic search and review of literature.
  - A comparative analysis of education programmes.
  - An economic impact study.
  - Identification of the levels of evidence and grading of recommendations.
  - Linking evidence to recommendations.
- Sign off of the NEWS and education programme.
    - Following the discovery of new evidence on early warning scores this was included in the education programme
    - The importance of the early detection and treatment of sepsis was identified by the National Governance/National Clinical Guideline Development Group. This was incorporated into the education programme. Sepsis prompts were included on the national patient observation chart.
  - International consultation with experts in other countries.
    - Clinical guideline external review on elements of the programme including national and international expert opinion and consultation.

- Development of a National Patient Observation Chart.
- Identification of barriers and enablers for implementation.
- The clinical guideline was developed with recommendations grouped under the following headings: patient observations, escalation of care, emergency response systems, clinical communication, implementation (organisational supports required), education, audit and evaluation.
- Audit and evaluation recommendations with specific criteria were identified.
- Programme launch took place in March 2012.
- A Website was developed.

### 3.7 Legislation/other related policies

- An Bord Altranais (2000), The Code of Professional Conduct for each Nurse and Midwife.
- An Bord Altranais (2000), Scope of Nursing and Midwifery Practice Framework.
- An Bord Altranais (2002), Recording Clinical Practice Guidance to Nurses and Midwives.
- Government of Ireland, The Health Act 2004.
- Health Information and Quality Authority (2012), National Standards for Safer Better Healthcare.
- Health Service Executive (2007), Quality and Risk Management Standard.
- Health Service Executive (2008), Code of Practice for Integrated Discharge Planning HSE.
- Health Service Executive (2009), Framework for the Corporate and Financial Governance of the HSE, Document 1.1 (V3).
- Health Service Executive (2010), Report of the National Acute Medicine Programme.
- National Hospitals Office (2007), Code of Practice Standards for Healthcare Records Management.

### 3.8 Guiding Principles for the National Clinical Guideline

The following are guiding principles identified as part of the National Clinical Guideline:

- Recognising patients whose condition is deteriorating and responding to their needs in an appropriate and timely way are essential components of safe and high quality care.
- Recognition and response systems should, apply to all adult patients, in all patient care areas, at all times in acute hospitals.
- Primary responsibility for caring for the patient rests with the primary medical practitioner or team in an acute hospital. The utilisation of a NEWS system and the NEWS escalation protocol/response system should therefore promote effective action by ward staff and the primary medical practitioner or team, or the attending medical practitioner or team. This includes calling for emergency assistance when required utilising the Emergency Response System as appropriate.
- Effectively recognising and responding to patient deterioration requires appropriate communication of diagnosis, including documentation of diagnosis in the healthcare record and verbal handover. Ideally the ISBAR tool should be used as this promotes effective communication (Appendix 6).
- Effectively recognising and responding to patient deterioration requires development and communication of plans for monitoring of observations and ongoing management of the patient.
- Recognition of, and response to, patient deterioration requires access to appropriately qualified, skilled and experienced staff.
- Recognition and response systems should encourage a positive, supportive response to escalation of care, irrespective of circumstances or outcome.

- Care should be patient-focused and appropriate to the needs and wishes of the individual and their family or carer.
- Organisations should regularly review the effectiveness of the recognition and response systems they have in place.

### 3.9 Essential elements of the National Clinical Guideline

These elements describe the essential features of the systems of care required to implement the NEWS System, and the NEWS escalation protocol to recognise and respond to clinical deterioration. Four elements relate to clinical processes that need to be locally delivered, and are based on the circumstances of an acute hospital in which care is provided. A further three elements relate to the structural and organisational prerequisites that are essential for recognition and response systems to operate effectively. The seven core elements to implement the NEWS System are as follows:

#### **Clinical processes:**

- 1 Measurement and documentation of observations.
- 2 Escalation of care.
- 3 Emergency Response Systems.
- 4 Clinical communication.

#### **Organisational prerequisites for implementation:**

- 5 Organisational supports.
- 6 Education.
- 7 Evaluation, audit and feedback.

The elements do not prescribe how this care should be delivered. Hospitals need to have systems in place to address all elements in the National Clinical Guideline; however the application of the elements in an individual acute hospital will need to be carried out in a way that is relevant to its specific circumstances.

Action required when a patient's condition is deteriorating does not present options for staff who should follow an escalation protocol and act swiftly to prevent further patient deterioration.

### 3.10 Implementation and dissemination

The HSE is in the process of dissemination and implementation of the NEWS and COMPASS<sup>®</sup> education programme.

### 3.11 Roles and responsibilities

The NEWS system is a clinical assessment tool and does not replace the clinical judgement of a qualified healthcare professional. Where there are concerns regarding a patient's condition, staff should not hesitate in contacting a senior member of the patient's medical team to review the patient, irrespective of the NEWS.

#### 3.11.1 Organisational responsibility

Within each organisation corporate responsibility is required for the implementation of the NEWS to ensure that there is a system of care in place for the prompt identification and management of clinically deteriorating patients.

### 3.11.1.1 Senior managers

- Assign personnel with responsibility, accountability and autonomy to implement the NEWS.
- Provide managers with support to implement the NEWS.
- Ensure local policies and procedures are in place in each acute hospital to support implementation.
- Monitor the implementation of the NEWS System to support ongoing evaluation and remedial action.
- Link the implementation group/committee with corporate responsibility.

### 3.11.1.2 Senior management – acute hospitals

- Provide a local governance structure to support the implementation and ongoing evaluation of the NEWS.
- Ensure clinical and educational staff are supported to implement the NEWS.
- Ensure development of local policies to support the NEWS implementation, management of the clinically deteriorating patient, and associated audit and evaluation.

### 3.11.1.3 Heads of department

- Ensure all relevant staff members are aware of this National Clinical Guideline and supporting policies.
- Monitor local implementation of the NEWS System, incorporating the NEWS Protocol and its outcomes.
- Ensure staff are supported to undertake the COMPASS® education programme and related training, as appropriate to an acute hospital.

## 3.11.2 All clinical staff

All clinical staff should comply with this National Clinical Guideline and related policies, procedures and protocols. Clinical staff should adhere to their professional scope of practice guidelines and maintain competency, in recognising and responding to patients with clinical deterioration, including the use of the NEWS System, where this is within their scope of practice. In using this guideline professional healthcare staff must be aware of the role of appropriate delegation.

## 3.12 Conclusion

The NEWS is a significant safety and quality initiative for patients. NEWS does not replace clinical judgement of experienced staff where care can be escalated regardless of the score if they have concerns about a patient. Studies identify reduction in cardio-respiratory arrests, unplanned admissions to ICU and unexpected deaths following the introduction of the initiative. The National Clinical Guideline is a significant development as part of a generational change in how acute hospitals in Ireland deliver care by standardising the assessment of acute illness severity, enabling a more timely response using a common language. Change needs to be supported by education and requires leadership at all levels in each acute hospital. The body of knowledge for this intervention can be increased by further research on clinical outcomes to continually improve the safety record for patients. Specific audit criteria are outlined in sample audit tools provided in Appendix 4.



## Glossary of Terms

**This glossary details key terms and a description of their meaning within the context of this document.**

**Acute hospital:** A hospital providing healthcare services to patients for short periods of acute illness, injury or recovery.

**Advanced life support:** The preservation or restoration of life by the establishment and/or maintenance of airway, breathing and circulation using invasive techniques such as defibrillation, advanced airway management, intravenous access and drug therapy.

**ALERT™:** Acronym for Acute Life-threatening Events, Recognition and Treatment) and education programme developed in the United Kingdom (UK) in 2000 for the early detection and management of deteriorating patients.

**Acute Medical Unit (AMU):** A facility whose primary function is the immediate and early specialist management of adult patients (i.e. aged 16 and older) with a wide range of medical conditions who present to a model 4 (tertiary) hospital ((refer to hospital models in the *Report of National Acute Medicine Programme (HSE, 2010)*). Its aim is to provide a dedicated location for the rapid assessment, diagnosis and commencement of appropriate treatment.

**Acute Medical Assessment Unit (AMAU):** Operates as an AMU with the following exceptions: It will be located in a model 3 (general) hospital ((refer to hospital models in the *Report of National Acute Medicine Programme (HSE, 2010)*); the hours of operation may vary from 12 to 24 hours, 7 days per week, depending on service need; and it will not have contiguous short stay medical beds.

**Attending medical practitioner or team:** The medical practitioner or team who is responsible for the medical care of a patient at a given time. This may or may not be the primary medical practitioner, this may occur at weekends or out of hours, and includes locums.

**AWTTS: Aggregate Weighted Track and Trigger System.** An aggregate score is a collection of scores from individual physiological observations that are added together to form a total score. Each of the physiological parameters are weighted e.g. for the most part physiological observations considered normal are allocated a score of 0, those outside this are allocated higher scores, i.e. they are weighted according to the deviation from the norm. See Track and Trigger explanation.

**Ceiling of care:** Limit of care. The aim is to provide guidance to staff, so that there is clarity about the patients' previously expressed wishes, and/or limitations to their treatment. It may need review from time to time in line with the organisation's guidelines and the wishes of the patient and/or family as appropriate.

**Clinician:** A health professional, such as a physician, or nurse, involved in clinical practice.

**COMPASS®:** An education programme for the early detection and management of deteriorating patients developed in Australia in 2006.

**Early Warning Score (EWS):** A bedside score and 'track and trigger' system that is calculated by clinical staff from the observations taken, to indicate early signs of deterioration of a patient's condition.

**Emergency Response System:** A generic name given to the emergency assistance provided as a response to patient deterioration in acute hospitals. The Emergency Response System should form part of an organisation's escalation protocol and be identified in each acute hospital for daytime, out-of-hours and weekends as appropriate to the hospital model ((refer to hospital models in the *Report of the National Acute Medicine Programme (HSE, 2010)*)).

**Escalation protocol:** A protocol that sets out the organisational response required for different early warning scores identified or other observed deterioration. The protocol applies to the care of all patients at all times. Minor local modifications may be required within an acute hospital based on available resources.

**HDU:** A High Dependency Unit is an area in a hospital usually located close to the intensive care unit, where patients can be cared for more extensively than on a normal ward, but not to the point of intensive care.

**HSE:** Health Service Executive. The organisation was established under the Health Act 2004 as the single body with statutory responsibility for the management and delivery of health and personal social services in Ireland.

**ICU:** Intensive Care Unit is a specialist department of an acute hospital that provides intensive care to patients with the most serious injuries and illnesses, most of which are life-threatening and need constant, close monitoring and support from specialist staff, equipment and medication in order to maintain normal bodily functions.

**ISBAR:** An acronym for Identify, Situation, Background, Assessment, and Recommendation. The tool consists of five standardised prompt questions to ensure staff are sharing focused and concise information reducing the need for repetition.

- **IDENTIFY:** Identify yourself, who you are talking to and who you are talking about.
- **SITUATION:** What is the current situation, concerns, observation and NEWS.
- **BACKGROUND:** What is the relevant background? This helps set the scene to interpret the situation above accurately.
- **ASSESSMENT:** What do you think the problem is? This requires the interpretation of the situation and background information to make an educated conclusion about what is going on.
- **RECOMMENDATION:** What do you need them to do? What do you recommend should be done to correct the current situation?

**LOC:** Loss of Consciousness is the condition of being not conscious i.e. in a mental state that involves complete or near-complete lack of responsiveness to people and other environmental stimuli.

**Medical Assessment Unit (MAU):** Located in a model 2 (local) hospital and will see GP referred, differentiated medical patients who have a low risk of requiring full resuscitation ((refer to hospital models in the *Report of National Acute Medicine Programme (HSE, 2010)*)). It will have assessment beds in a defined area and serve a clinical decision support function. Admissions will be to in-patient beds in a model 2 hospital. Patients who deteriorate unexpectedly will have guaranteed transfer to a model 3 or model 4 hospital.

**Monitoring plan:** A written plan that documents the type and frequency of observations to be recorded in the patients medical records and progress notes in the healthcare record.



**Observations:** A patient's physiological observations such as Blood Pressure, Pulse, Temperature, Respirations, Oxygen Saturation and Central Nervous System (CNS) Status. In addition it is noted that if the patient is on supplemental oxygen, for the purposes of the NEWS system, a score of 3 is added to the patients score.

**Primary medical practitioner or medical team:** The treating doctor or team with primary responsibility for caring for the patient in an acute hospital.

**Track and trigger (TT):** A 'track and trigger' tool refers to an observation chart that is used to record vital signs or observations graphically so that trends can be 'tracked' visually and which incorporates a threshold (a 'trigger' zone) beyond which a standard set of actions is required by health professionals if a patient's observations breach this threshold (Clinical Excellence Commission NSW Health, 2010).

**Treatment-limiting decisions:** Decisions that involve the reduction, withdrawal or withholding of life-sustaining treatment. These may include 'no cardiopulmonary resuscitation' (CPR), 'not for resuscitation' and 'do not resuscitate' orders.

**VitalPAC Early Warning Score (ViEWS):** This is the evidenced based early warning score, the parameters of which, have been agreed as the NEWS.

**References and Bibliography, in addition to the appendices are provided in the full version National Clinical Guideline.**



## Resources

The material and resources, developed as part of this project, are publically available from the following website: [www.hse.ie/go/nationalearlywarningscore/](http://www.hse.ie/go/nationalearlywarningscore/)

Additional Resources include:

### **An Education Toolkit**

- Education Facilitators Guide
- Programme Education Equipment List
- Sample Education Programme Equipment List
- Sample Education Programme Evaluation Forms
- Training Manual
- Interactive CD
- Quiz Questions
- Power point Presentation for Education Programme Facilitator
- Power point Presentation in Hand-out Format for Education Programme participants
- Four Case Studies to be worked through at the Education Programme Sessions

### **Implementation Resources**

- Sample Project Plan
- Deteriorating Patient Flow Chart for display in Ward/Unit areas
- ISBAR Communication Tool Chart for display in Ward/Unit areas







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