Recognition and Management of Patients who are Clinically Deteriorating

Summary  This document describes the standards and principles of the NSW Between the Flags (BTF) System for improving the recognition, response to and management of patients who are clinically deteriorating. These standards and principles are to be implemented by NSW Public Health Organisations (as defined in this Policy Directive).

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Secretary, NSW Health
This Policy Directive may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for NSW Health and is a condition of subsidy for public health organisations.
RECOGNITION AND MANAGEMENT OF PATIENTS WHO ARE CLINICALLY DETERIORATING

PURPOSE
This document describes the standards and principles of the NSW Between the Flags (BTF) System for improving the recognition, response to and management of patients who are clinically deteriorating. These standards and principles are to be implemented by NSW Public Health Organisations (as defined in this Policy Directive).

MANDATORY REQUIREMENTS
All Public Health Organisations must:

• Have a governance structure to support all elements of Between the Flags (BTF)
• Introduce and implement the NSW Health Standard Observation Charts (paper or electronic) and ensure that all patients have their vital sign observations recorded on one of these charts
   
   NOTE: Intensive care units, high dependency units, coronary care units and operating theatres where patients are appropriately monitored, and care is escalated as required by BTF calling criteria, may be exempted from this requirement. The determination of whether an exemption should apply to any such unit is to be made by the Director of Clinical Governance on the basis of whether appropriate monitoring and escalation systems are in place.
• Implement and formalise a local Clinical Emergency Response System (CERS), including Clinical Review and Rapid Response, for prompt review and treatment of patients who are clinically deteriorating with referral to higher levels of care where necessary.
   
   This formalised system must:
   
   o Clearly define who is responsible for obtaining and providing assistance
   o Operate 24 hours per day, 7 days per week
   o Ensure the provision of core emergency equipment
   o Be available for all inpatients
   o Be known and understood by all clinical staff.
   
   NOTE: Initial urgent resuscitation may include The Ambulance Service of NSW ‘CERS Assist’ and the consequent referral systems may also include formal liaison and assistance from the Aeromedical and Medical Retrieval Services (AMRS), Royal Flying Doctor Service (RFDS), Newborn and paediatric Emergency Transport Service (NETS) or the Perinatal Advice Line (PAL) as required.
• Ensure that all staff are aware of Between the Flags and know how to activate their local Clinical Emergency Response System
• Ensure that all clinicians providing direct patient care must complete both Tier 1 and Tier 2 of the BTF education curriculum
• Ensure that registers are kept of staff who have completed the mandatory training requirements including those authorised to participate in Rapid Response calls
• Collect and provide performance data including the BTF key performance indicators for reporting to clinical units and the NSW Ministry of Health.
IMPLEMENTATION

NSW Ministry of Health:

- Ensure compliance with the mandatory requirements of this policy
- Monitor implementation of policy by Public Health Organisations through the Local Health District Service Agreements.

Clinical Excellence Commission:

- Continue to advise the Ministry and Public Health Organisations on the strategies, standards and tools required for the continued development of BTF
- Support clinical staff and the Directors of Clinical Governance (DCGs) to implement BTF across NSW
- Evaluate BTF and make changes as required to improve the system.

Local Health District & Specialty Network Chief Executives:

- Assign responsibility, personnel and resources to implement this policy
- Ensure all elements of BTF required by this policy are effectively implemented including effective governance, Standard Observation Charts, CERS, education and evaluation.

Ambulance Service of NSW:

- Incorporate the core principles of BTF and Clinical Handover into Ambulance clinical practice, where appropriate
- Support Public Health Organisations with the implementation of BTF
- Work with Public Health Organisations in the development of local Clinical Emergency Response Systems including the provision of CERS Assist, where required.

REVISION HISTORY

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<th>Version</th>
<th>Approved by</th>
<th>Amendment notes</th>
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<td>December 2013</td>
<td>Deputy Director General, Governance, Workforce</td>
<td>Replaces PD2011_077. Additional guidance for paediatric, maternity and emergency</td>
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<td>and Corporate</td>
<td>department implementation.</td>
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<td>Director-General</td>
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<td>May 2010</td>
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1. BACKGROUND

Failure to recognise and appropriately manage deteriorating patients is a contributing factor in many adverse events in hospitals and health care organisations around the world\textsuperscript{1-4}. Evidence derived from the NSW Patient Safety and Clinical Quality Program has demonstrated the same problem exists in NSW hospitals.

*Between the Flags* (BTF) was implemented in response to a recommendation from a major health review, the Garling Commission of Inquiry\textsuperscript{5}, which identified the Clinical Excellence Commission’s program as an opportunity to improve recognition and response to deteriorating patients.

In January 2010, NSW Health introduced *Between the Flags* statewide, with the aim to: 
*Improve early recognition and response to clinical deterioration and thereby reduce potentially preventable deaths and serious adverse events in patients who receive their care in NSW public hospitals.*

The system uses the analogy of Surf Life Saving Australia’s lifeguards and lifesavers who keep swimmers safe by observing them and ensuring they don’t venture into unsafe areas; and if they get into trouble, that rescue occurs rapidly.

*Between the Flags* has been designed by the Clinical Excellence Commission (CEC) with advice from clinical experts and is based on research initiated in NSW and published in the international literature\textsuperscript{6-7}.

A five-element strategy was introduced in all public hospitals across the state which together provides a safety net for deteriorating patients.

The five elements of the System are:

- **Governance**: structures and processes to support implementation at State, Local Health District/Specialty Network, facility and clinical unit level
- **Standard Calling Criteria**: observation charts with standard criteria for Clinical Review and Rapid Response
- **Clinical Emergency Response System (CERS)**: established procedures for escalation of clinical concern to a Clinical Review or Rapid Response, in every facility
- **Education**: Tiered education for clinical staff to reinforce their skill in recognising and responding to patients who are clinically deteriorating
- **Evaluation**: Key Performance Indicators for measuring the performance of the Between the Flags Program.

BTF addresses the Australian Commission on Safety and Quality in Health Care National Standard 9 - Recognising and Responding to Clinical Deterioration in Acute Health Care\textsuperscript{8-9}.
1.1 Key definitions

<table>
<thead>
<tr>
<th><strong>A-G Assessment</strong></th>
<th>Structured approach to physical assessment. Airway, Breathing, Circulation, Disability, Exposure, Fluids, Glucose.</th>
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</thead>
<tbody>
<tr>
<td><strong>AMRS</strong></td>
<td>The NSW Aeromedical and Medical Retrieval Service.</td>
</tr>
<tr>
<td><strong>Attending Medical Officer</strong></td>
<td>The Attending Medical Officer (AMO) is the senior medical practitioner who has primary responsibility for the patient during admission. This medical officer is a consultant who may be a visiting medical officer or a staff specialist.</td>
</tr>
<tr>
<td><strong>Attending Medical Team</strong></td>
<td>The AMO may lead an ‘attending medical team’ (AMT) and this team plays a critical role in the Clinical Review of the patient.</td>
</tr>
<tr>
<td><strong>Blue Zone</strong></td>
<td>Used on paediatric and newborn Standard Observation Charts. Observation range requiring an increase in the frequency of observations. Staff should consider calling for an early Clinical Review.</td>
</tr>
<tr>
<td><strong>Calling Criteria</strong></td>
<td>An observation range that triggers an escalation of care to a Clinical Review or Rapid Response or increasing the frequency of observations.</td>
</tr>
<tr>
<td><strong>Child</strong></td>
<td>Any person under 16 years.</td>
</tr>
<tr>
<td><strong>Clinical Emergency Response System (CERS)</strong></td>
<td>A formalised system for obtaining urgent assistance when a patient is clinically deteriorating. The CERS includes the facility based response (Clinical Review and Rapid Response) as well as the formalised referral and escalation steps to obtain expert assistance and/or request for transfer to other levels of care within the facility or to another facility.</td>
</tr>
<tr>
<td><strong>CERS Assist</strong></td>
<td>The Ambulance Service of NSW program whereby urgent additional clinical assistance is provided in response to a rapidly deteriorating patient (Red Zone observations or additional criteria) in a public health care facility.</td>
</tr>
<tr>
<td><strong>Clinical Review</strong></td>
<td>A patient review undertaken within 30 minutes by the attending medical team, or designated responder, as defined in the local CERS protocol.</td>
</tr>
<tr>
<td><strong>Clinical Staff</strong></td>
<td>Clinicians who provide direct patient care.</td>
</tr>
<tr>
<td><strong>Facility</strong></td>
<td>Hospital or Multi-purpose Service (MPS).</td>
</tr>
<tr>
<td><strong>FONT</strong></td>
<td>The Fetal welfare assessment, Obstetric emergencies and Neonatal resuscitation Training (FONT) Program.</td>
</tr>
<tr>
<td><strong>ISBAR</strong></td>
<td>Acronym for the following structured communication tool: Introduction, Situation, Background, Assessment, Recommendation.</td>
</tr>
<tr>
<td><strong>Must</strong></td>
<td>Indicates a mandatory action requiring compliance.</td>
</tr>
<tr>
<td><strong>NETS</strong></td>
<td>The Newborn and paediatric Emergency Transport Service.</td>
</tr>
</tbody>
</table>
1.2 Implementation in LHDs/Specialty Networks

Directors of Clinical Governance are to:

- Lead the successful implementation and continual improvement of BTF within their LHD/Specialty Network
- Ensure BTF key performance indicators are monitored and made available to relevant staff within facilities and clinical units so that they can use this to inform improvement to systems
Recognition and Management of Patients who are Clinically Deteriorating

**PROCEDURES**

- Inform the Clinical Excellence Commission of opportunities to improve BTF based on experience with implementation.

**Hospital/Facility Managers are to:**

- Ensure the successful implementation of BTF within their facility
- Implement approved NSW Health Standard Observation Charts
- Ensure that all staff complete Tier 1 ‘awareness’ training of the BTF education curriculum and that a record is kept of those who have completed training.
- Ensure that all clinical staff complete Tier 2 training of the BTF education curriculum and that a record is kept of those who have completed training.
- Ensure that all staff who are members of Rapid Response Teams (RRTs) have the skills in advanced life support as defined in local CERS protocols with a record kept of any relevant training undertaken.
- Implement a Clinical Emergency Response System (CERS) including training, rostering and staffing. Ensure that local CERS protocols are available and understood by staff.
- Ensure that the local CERS protocol defines how to access speciality paediatric/neonatal/obstetric expertise and the escalation process to obtain the expert assistance where the facility has paediatric/neonatal and obstetric inpatients.
- Ensure that core emergency equipment as outlined in this policy is available.
- Ensure data collection and auditing procedures are undertaken and resourced to evaluate their programs to manage improvement and sustainability.

**Attending Medical Officers (AMO) are to:**

- Complete Tier 1 and Tier 2 of the BTF education.
- Lead their medical team to ensure they provide the Clinical Review required in response to a patient’s observations falling within the Yellow Zone on the Standard Observation Chart, as per local CERS protocol.
- Ensure a member of their Attending Medical Team attends patients within 30 minutes when required to undertake a Clinical Review.
- Ensure the required frequency of observations is formally authorised, and reviewed for appropriateness, on the NSW Health Standard Observation Charts.
- Ensure any alterations to calling criteria are formally authorised, and reviewed for appropriateness, on the NSW Health Standard Observation Charts.
- Ensure medical management plans for acute care patients are reviewed and documented after Clinical Review and Rapid Response calls so that patients are never left without a documented management plan.
- Ensure treatment/resuscitation plans are formally agreed to and documented in the patient’s health care record, where appropriate.
• Ensure that the Attending Medical Team (AMT) understand their obligation to escalate to a Rapid Response call if they are concerned, and/or if they are unable to reverse clinical deterioration in a patient, or if a patient’s observations deteriorate.

**Attending Medical Team (AMT) is to:**

• Complete Tier 1 and Tier 2 of the BTF education program

• Ensure the required frequency of observations is prescribed on the NSW Health Standard Observation Charts in consultation with the AMO

• Ensure any alterations to calling criteria are discussed with the AMO before being formally authorised on the NSW Health Standard Observation Charts and the rationale is documented in the patient’s health care record

• Ensure patients are attended within 30 minutes when required to undertake a Clinical Review

• Ensure Clinical Review calls attended are documented in the patient’s health care record so that patients are never left without a documented management plan and outcomes are communicated to the AMO and clinical staff as appropriate

• Complete appropriate data collection of any Clinical Review call attended

• Communicate outcomes of Clinical Review calls to the patient and their family as appropriate

• Escalate to a Rapid Response call if they are concerned, and/or if they are unable to reverse clinical deterioration in a patient, or if a patient’s observations deteriorate.

**Nursing/Midwifery Unit Manager (or delegate/Team Leader) is to:**

• Complete Tier 1 and Tier 2 of the BTF education program

• Assess patients whose observations are in the Yellow Zone to determine if a Clinical Review is required

• Ensure that care is escalated to a Rapid Response in the event that a Clinical Review is not attended within 30 minutes

• Ensure that there is a plan to release staff to attend BTF education

• Provide feedback to the facility BTF/ CERS/quality committee regarding implementation of the 5 elements of the BTF Program.

**Nursing/Midwifery/Allied Health staff, within their scope of practice, are to:**

• Complete Tier 1 and Tier 2 of the BTF education program

• Conduct a patient assessment including a full set of observations at least every 8 hours

• Increase the frequency of observations and initiate appropriate clinical care when a patient’s observations are in the Blue Zone on the Standard Observation Charts

• Consult promptly with the Nurse/Midwife in-charge to determine if a Clinical Review is required when a patient’s observations are in the Yellow Zone on the Standard Observation Charts
• Call for a Rapid Response and inform the Nurse/Midwife in-charge when a patient’s observations are in the Red Zone on the Standard Observation Charts
• Know how to activate their local Clinical Emergency Response System (CERS)
• Document actions taken in the patient’s health care record
• Inform the Nurse/Midwife in-charge and the AMT of the outcome of the Clinical Review call if they are not involved in the process.

Rapid Response Teams are to:

• Ensure patients are attended urgently when required as part of the local CERS
• Ensure Rapid Response calls attended are documented in the patient’s health care record and outcomes are handed over to the AMO/AMT and ward staff to ensure continuity of patient care
• Complete appropriate data collection of any Rapid Response call attended
• Communicate outcomes of Rapid Response calls to the patient and their family as appropriate
• **Never** leave the patient without a documented management plan following a Rapid Response call.

All other staff, visiting clinicians and students:

• Compliance with this policy is mandatory.

Public Health Organisations may wish to use the *Between the Flags: Guidelines and implementation toolkit*¹¹ to assist in the implementation of this policy.

2. GOVERNANCE

All Public Health Organisations (PHO) must have a clearly defined governance structure to oversee the implementation and sustainability of the BTF Program.

Each PHO must identify governance structures at the following levels:

**Local Health District/Specialty Network Level**

• Executive Sponsor
• Program Coordinator
• Clinical Champions
• Quality Committee overseeing implementation and sustainability of the BTF Program.

**Facility Level**

• Executive Sponsor
• Clinical Champion
• Quality Committee to oversee the operation and management of the facility CERS.
3. NSW HEALTH STANDARD OBSERVATION CHARTS

The Standard Observation Charts are designed using human factors principles, incorporate colour-coded calling criteria and a ‘track and trigger’ format to highlight those patients who are clinically deteriorating by graphically ‘tracking’ their observations over time and ‘triggering’ an appropriate response based on the coloured calling criteria.

All Public Health Organisations must introduce and implement the NSW Health Standard Observation Charts approved for use in NSW by the Director-General.

The Standard Observation Charts currently approved for use in NSW are the:

- Standard Adult General Observation (SAGO) Chart
- Standard Paediatric Observations Charts (SPOC)
- Standard Newborn Observation Chart (SNOC)
- Standard Maternity Observation Chart (SMOC)
- Adult Emergency Department Observation Chart
- Paediatric Emergency Department Observation Charts

NOTE: For those Emergency Departments who choose to use the paper SAGO chart or SPOC to document patient’s observations instead of using the Adult or Paediatric Emergency Department Observation Charts they must have an established process to collect all the information required (including the screening tools, and authorisation for departure/discharge checklists) on pages 4, 5 & 6 of these charts.

- Standard Observation Charts developed in the electronic Medical Record (eMR) across the FirstNet, PowerChart and SurgiNet platforms.

NOTE: Where the facility has implemented the Standard Observation Charts in the eMR the paper based charts will be used as eMR downtime forms. In facilities where a hybrid medical record (eMR and paper) is used, local business rules apply as to how observations are transcribed between the two systems.

The Standard Observation Charts may not be appropriate when a patient is in the last days of their life where other end of life care plans may be more appropriate.

Local Health Districts and Specialty Networks will be advised of any new charts that are approved, and will be required to comply with their implementation.

For more details on the Standard Observation Charts see the CEC website

3.1 Calling Criteria

The colour coded zones on the Standard Observation Charts indicate when a patient is showing early and late warning signs of clinical deterioration and outline the appropriate escalation of care to a Clinical Review or Rapid Response.

For example in the charts:

- The Blue Zones (where applicable) represent criteria for which increasing the frequency of observations is required
- The Yellow Zones represent early warning signs of deterioration and the criteria for which a Clinical Review (or other CERS) call may be required
• The Red Zones represent late warning signs of deterioration and the criteria for which a Rapid Response Call is required.

3.2 Observations

Unless stated otherwise in section 3.2.3, the core physiological observations are to include respiratory rate, oxygen saturations, blood pressure, heart rate, level of consciousness, temperature and pain score as a minimum and are to be recorded (graphed) at the time the observations are taken on the appropriate Standard Observation Chart.

A full set of observations must be conducted just prior to and on transfer of care from:
• One ward/unit or procedural area to another
• Emergency Department/High Dependency/ICU to general clinical units
• One facility to another facility.

A full set of observations must be conducted prior to a patient’s discharge from a facility.

Observations that fall into the coloured zones are to trigger an escalation of care consistent with the CERS protocols in each facility, UNLESS there are documented alterations to the calling criteria (see section 3.3) or documented “Not for Rapid Response or Clinical Review calls”.

3.2.1 Frequency of Observations

In the absence of a documented monitoring plan the patient must have a complete set of vital sign observations conducted at least three (3) times per day, at eight hourly intervals.

The frequency of observations should be increased as indicated by the patient’s condition and clinical judgement of the clinical staff.

The frequency of observations must be increased for patients who have observations in the Blue, Yellow or Red Zones on a Standard Observation Chart, unless they have documented altered calling criteria (see section 3.3) for these observations.

The required frequency of observations should be discussed and determined during the multidisciplinary ward round and prescribed on the relevant Standard Observation Chart.

3.2.2 Variations to the Frequency of Observations

Decreasing the frequency of observations to below the minimum requirement may only be authorised by a medical officer following consultation with the Attending Medical Officer and must be prescribed on the relevant Standard Observation Chart and the rationale documented in the patient’s health care record.

Where an approved Clinical Pathway sets out a schedule for varying the frequency of observations, a medical officer (following consultation with the AMO) may document this as “consistent with clinical pathway for [insert title of pathway]” in the relevant section of the Standard Observation Charts. Varying observation frequency in this manner may only occur provided that this does not reduce the frequency to less than the minimum of three (3) times per day, at eight hourly intervals.
3.2.3 Standard variations to observations for patients in specialist services

<table>
<thead>
<tr>
<th>Service</th>
<th>Minimum required frequency of observations</th>
<th>Minimum set of vital signs</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paediatrics and Special Care Nursery Service</td>
<td>Six (6) times per day at four hourly intervals</td>
<td>Respiratory rate, respiratory distress, oxygen saturation, heart rate, temperature, level of consciousness, pain score</td>
<td>BP is required at least once during the admission, (PD2010 _032)(^2)</td>
</tr>
<tr>
<td>Acute Mental Health Facility</td>
<td>Three (3) times per day at eight hourly intervals for first 48 hours then daily thereafter</td>
<td>Respiratory rate, oxygen saturation, heart rate, blood pressure, temperature, level of consciousness, pain score</td>
<td>If patients develop an acute medical problem the required frequency of observations reverts to a minimum of three (3) times per day at eight hourly intervals</td>
</tr>
<tr>
<td>Sub-acute / long stay/ rehabilitation / palliative care</td>
<td>Twice a day</td>
<td>Respiratory rate, oxygen saturation, heart rate, blood pressure, temperature, level of consciousness, pain score</td>
<td>If patients develop an acute medical problem the required frequency of observations reverts to a minimum of three (3) times per day at eight hourly intervals</td>
</tr>
<tr>
<td>Maternity</td>
<td>Three (3) times per day at eight hourly intervals for women who have risk factors identified on the SMOC</td>
<td>Respiratory rate, oxygen saturation, heart rate, blood pressure, temperature, level of consciousness</td>
<td>The SMOC chart does not replace the use of the partogram for women during the intrapartum period</td>
</tr>
<tr>
<td>Newborn</td>
<td>All newborns must have one (1) full set of observations documented before discharge from the “birthing” environment</td>
<td>Respiratory rate, heart rate and temperature</td>
<td>If perinatal risk factors are identified based on local guidelines and/or an observation is abnormal, further observations should be recorded on a Standard Newborn Observation Chart (SNOC). The frequency of such further observations should be determined by local guidelines or as directed by the most senior medical officer responsible</td>
</tr>
</tbody>
</table>
3.3 Alterations to Calling Criteria

Standard calling criteria can be altered for Yellow or Red Zone observations and must be clearly documented by a medical officer, in consultation with the AMO, on the appropriate Standard Observation Chart. If the AMO is unable to countersign the order at the time of the consultation, this should be noted in the patient’s healthcare record by the medical officer and attended to as soon as practical.

The rationale for altering the calling criteria must be documented in the patient’s healthcare record. Altered calling criteria should be formally reviewed as per the time frames on the Standard Observation Charts by the Attending Medical Team.

The thresholds for the calling criteria may be altered up or down based on a patient’s health care requirements. For example, the threshold for the calling criterion for systolic blood pressure may be altered downwards to alert to re-bleeding of a cerebral aneurysm or may be altered upwards to better reflect the patient’s usual observation patterns.

Special treatment plans which may alter calling criteria such as a ‘Resuscitation Plan’ must also be documented in the patient’s health care record and noted on the front page of the Standard Observation Chart, where appropriate.

3.4 Interventions / Comments / Actions

This section should be used to briefly note what actions and interventions have taken place in response to an observation being charted in the Yellow or Red Zones or meeting Additional Calling Criteria. All actions and interventions must be documented in the patient’s health care record.

4. CLINICAL EMERGENCY RESPONSE SYSTEM

A Clinical Emergency Response System (CERS) is a formalised system for obtaining urgent assistance when a patient is clinically deteriorating, and ensures that the required skills, knowledge and equipment are available to the deteriorating patient as needed. All facilities must have a Clinical Emergency Response System protocol that includes a clearly defined escalation process for a patient who is clinically deteriorating.

The local CERS protocol must include:

- A defined escalation process, which is accessible and known by all clinicians, for a patient who requires a Clinical Review. This must include clear instructions on who will respond to a Clinical Review and how they will be contacted 24 hours a day
- A defined escalation process, accessible and known by all clinicians, for a patient who requires a Rapid Response. This must include clear instructions on who will respond to a Rapid Response and how they will be contacted 24 hours a day
- For facilities which use the Ambulance Service of NSW ‘CERS Assist’ program, the point at which a CERS Assist call is to be made
- How to access speciality paediatric/neonatal and obstetric expertise and the stepped escalation process to obtain expert assistance, e.g. NETS, AMRS, PAL (see section 4.3 and Appendices 8.1, 8.2)
• The process for transfer to other levels of care within the facility or to another facility
• How to access the equipment to support advanced resuscitation including specialist equipment for paediatric/neonatal and obstetric patients cared for at the facility.

Based on the local CERS protocol, facilities should develop a local CERS and Beyond Facility Escalation Algorithm, as a one page flowchart, that clearly identifies the local escalation processes and these flowcharts should be displayed in all clinical units.

In addition, each LHD should have a designated regional specialist paediatric service, which is a point of advice, referral and paediatric expertise, with a 24hour / 7 days a week on call specialist paediatric (medical) consultation available (see Section 4.3.1).

NOTE: A Guide to Paediatric CERS and Beyond Facility Escalation Documentation (Appendix 8.1) and NSW Health BTF Paediatric CERS and Escalation Matrix (Appendix 8.2) are included as Appendices.

Each level of escalation within the local CERS requires a ‘fresh set of eyes’ to review the patient who is clinically deteriorating.

As facilities introduce Patient and Family Escalation of Care Response programs (e.g. CEC’s REACH program) as part of the National Safety and Quality Health Service Standard 9, these should be incorporated into local CERS protocols.

4.1 Clinical Review

This is a patient review undertaken within 30 minutes by the attending medical team, or designated responder, as defined in the local CERS protocol.

NOTE: Depending on the local CERS protocol, the Clinical Review may be undertaken by a medical officer on call or an appropriately experienced Registered Nurse/Midwife (RN/RM), preferably First Line Emergency Care Course (FLECC) accredited or with post graduate qualifications in emergency/critical care nursing.

Prompt and effective Clinical Review is an essential element in managing patients who are clinically deteriorating and should be undertaken or supervised by experienced staff.

4.1.2 Clinical Review Process

If a patient has any Yellow Zone observations or Additional Criteria on a Standard Observation Chart you must:

• Initiate appropriate clinical care
• Repeat and increase the frequency of observations, as indicated by your patient’s condition
• Consult promptly with the Nurse in Charge to decide whether a Clinical Review (or other CERS) call should be made.

Together with the Nurse in Charge consider the following:

• What is usual for your patient and are there documented ‘alterations to calling criteria’?
• Does the trend in observations suggest deterioration?
• Is there more than one Yellow Zone observation or additional criterion?
• Are you concerned about your patient?
If a Clinical Review is called:

- Reassess your patient and escalate according to your local CERS if the call is not attended within 30 minutes or you are becoming more concerned
- Document an A-G assessment, reason for escalation, treatment and outcome in your patient’s health care record
- Inform the Attending Medical Officer that a call was made as soon as it is practicable.

Where required, outcomes of the Clinical Review call should also be entered into any relevant NSW Health, LHD/Specialty Network or local database for capturing key performance indicators.

When providing clinical handover to the designated responder(s) a structured communication tool (ISBAR) must be used.

At an appropriate time, the patient and their family or carer are to be informed that a Clinical Review was activated and the outcomes of this review.

4.2 Rapid Response

This is an urgent review for patients who have Red Zone observations or Additional Criteria on a Standard Observation Chart undertaken by a Rapid Response Team, or designated responder(s), as defined in the local CERS protocol.

The Rapid Response Team (RRT) members or designated responder(s) must have an advanced level of competence in the management of the clinically deteriorating patient.

The Rapid Response Team (RRT) must have a designated team leader who has an advanced level of competence in resuscitation and stabilisation of patients, and has completed all three tiers of the Between the Flags Education Curriculuma.

NOTE: In small or rural public health facilities, the designated responder may be a Registered Nurse/Midwife with First Line Emergency Care Course (FLECC) training or a paramedic who attends as a result of a CERS Assist call.

Where the case mix of the facility includes obstetric, paediatric and neonatal patients the RRT (or designated responder) must have a member of the team who is competent in obstetric, paediatric and neonatal resuscitation.

A facility may implement a graded Rapid Response (e.g. two tiers) to a patient with Red Zone observations or Additional Criteria on a Standard Observation Chart that is activated based on the severity of the patient’s condition. This graded response must be risk assessed by the local peak safety and quality committee and clearly defined in the local CERS protocol. For example, patients with an immediately life threatening condition (cardio-respiratory arrest, airway obstruction or stridor, patient unresponsive – see Standard Observation Chart) are prioritised to a Rapid Response Team, and patients with Red Zone observations or Additional Criteria that are not immediately life threatening must be attended by a senior registrar or equivalent.

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a If it can be demonstrated that a clinician has already undertaken advanced clinical and resuscitation skills training equivalent to content and learning outcomes of the relevant module of BTF Education then the clinician may be exempt from the requirement to undertake this level of BTF training.
4.2.1 Rapid Response Process

If a patient has any Red Zone observations or Additional Criteria on a Standard Observation Chart you must call for a Rapid Response (as per local CERS) and:

- Initiate appropriate clinical care
- Inform the nurse in charge that you have called for a Rapid Response
- Repeat and increase the frequency observations, as indicated by your patient’s condition
- Document an A-G assessment, reason for escalation, treatment and outcome in your patient’s health care record
- Inform the Attending Medical Officer that a call was made as soon as it is practicable.

Designated providers of the Rapid Response must attend urgently (as defined by local CERS protocol) to assess the patient; treat the underlying cause of clinical deterioration and/or provide interventions to resuscitate the patient.

The RRT Leader is responsible for ensuring the outcome of the Rapid Response and the resultant medical management plan is entered into the patient’s health care record.

Where required, outcomes of the Rapid Response call should also be entered into any relevant NSW Health, LHD/Specialty Network or local database for capturing key performance indicators.

When providing clinical handover to the designated responder(s) a structured communication tool (ISBAR) must be used.

At an appropriate time, the patient and their family or carer are to be informed when a Rapid Response has been activated and the outcomes of this review.

4.3 Escalation beyond facility and transfer processes

Patients must not be transferred between clinical units, to another facility or to their usual place of residence when their observations indicate the need for a Clinical Review or Rapid Response. The transfer may occur as part of the escalation of care process, or where the transferring AMO approves the transfer (and/or the alterations to calling criteria) and has advised the receiving AMO/AMT and nursing staff.

If following a Clinical Review or Rapid Response call a patient requires transfer to another facility the local CERS protocol and algorithm must:

- outline the escalation steps to obtain expert advice and request for transfer
- the roles and responsibilities of the transferring and accepting facility
- how they will be contacted 24 hours a day
- the process for transfer to another facility.

PD2011_031 - Inter-facility Transfer Process for Adults Requiring Specialist Care provides a process for the inter-facility transfer of adult patients requiring time critical access to specialised care. It states that safe, timely and efficient transfer of patients who are not critically ill or injured, but who clinically require urgent specialist assessment and care, is fundamental in the provision of safe medical services across NSW.
The policy mandates that each Local Health District (LHD) must have a process outlining policy and operational guidelines on inter-LHD transfer for patients requiring access to specialist care.

PD2010_021 - Critical Care Tertiary Referral Networks & Transfer of Care (Adults)\textsuperscript{14} states that it is a mandatory requirement that access to emergency care and/or surgical intervention for time-urgent critically ill/injured patients is not to be delayed due to “no-available” ICU bed. Aeromedical and Medical Retrieval Service (AMRS) is to be contacted immediately should this situation arise (1800 650 004).

PD2009_060 - Clinical Handover - Standard Key Principles\textsuperscript{15} should be used in handover of patients to other levels of care.

4.3.1 Paediatric escalation beyond facility and transfer processes

There must be a paediatric specific CERS and escalation response relevant to all units and departments within any facility where children are cared for or may present.

The NSW Health Paediatric CERS and Escalation Matrix (Appendix 8.2) describes the response and escalation process for all facilities (medical role delineation 1-6). Local CERS and Escalation algorithms must be developed based on this matrix and be clearly displayed in all clinical units.

\textit{NOTE: A Guide to Paediatric CERS and Beyond Facility Escalation Documentation can be found in Appendix 8.1}

In the first instance, local/regional escalation plans should promote a stepped approach to services within the LHD; accordingly, step 1 is the most senior available expertise within the local facility of presentation. Step 2 is the designated regional specialist paediatric service, as described in Section 4. Step 3 in escalation of consultation and/or request for transfer is consistently the NETS service (1300 36 2500) across NSW.

Escalation of care or request for advice should not be delayed by failure to reach the nominated clinician on the CERS algorithm. Where the case is time critical, the clinician at the presenting facility should continue to escalate through the algorithm until an appropriate level of advice and/or support is achieved within the required timeframe.

The most senior Attending Medical Officer must review and seek specialist paediatric consultation (local or regional) for:

- all paediatric patients whose observations fall within the Yellow Zone on the Standard Paediatric Observation Chart and are identified for transfer and/or retrieval
- all paediatric patients whose observations fall within the Red Zone on the Standard Paediatric Observation Chart
- major trauma patients
- whenever other clinical factors or level of concern indicate it is appropriate (including history or severity of pain).

PD2010_032 \textit{Children and Adolescents - Admission to Services Designated Level 1-3 Paediatrić Medicine & Surgery (p5)}\textsuperscript{12} indicates when a consultation with a specialist paediatrician/or appropriate other specialist is required.
PD2010_030 - *Critical Care Tertiary Referral Networks (Paediatrics)* (p6)\(^{16}\) and PD2010_031 - *Children and Adolescents Inter-facility Transfer (p12)*\(^{17}\) provide summaries of the conditions requiring consultation regarding management and/or transfer by NETS. PD 2010_031 emphasises that NETS need to be consulted for all children with a triage category 1 or 2 and all children with a triage category 3 who are not improving.

In recognition of the 3 steps of escalation described, NETS will seek to establish simultaneous telephone (and/or video) contact between local, regional and statewide expertise and, when appropriate, the relevant Children’s Hospital.

In addition, any significant change in the condition of a patient should result in further consultation with NETS, even after retrieval has been arranged to discuss any required modification in management strategy.

Where LHDs have alternative (to NETS) consultation/retrieval and/or cross border arrangements these should be clearly stated in the local CERS and Escalation protocols and algorithms, and be developed in consultation with NETS.

All transfers between facilities, including non-urgent transfers to access inpatient beds, should be notified to the designated regional specialist paediatric service, unless there is a paediatrician available at the transferring and/or receiving facilities.

### 4.4 Equipment and Support

All facilities must have equipment to support advanced resuscitation.

Each facility must have an agreed, age appropriate, minimum set of emergency equipment and drug listing developed with reference to current best practice that is approved and reviewed by the facility’s resuscitation or other Quality Committee.

Hospitals must also have access to the following equipment in patient care areas and non-patient care areas frequented by the public:

- Barrier devices for expired air resuscitation (sizes depending on the age profiles of the hospital’s patients)
- A controllable supply of oxygen
- A high pressure suction source
- Disposable gloves.

### 5. EDUCATION

All facilities must have an education program in place, based on the *Between the Flags* Education Strategy and Curriculum\(^{18,19}\), which supports their staff to recognise and appropriately manage patients who are clinically deteriorating.

*Between the Flags* provides a tiered approach to education which includes an introduction to the NSW BTF system and the Standard Observation Charts, a structured approach to clinical assessment of the patient, the local CERS escalation protocol and appropriate care to provide while waiting for assistance.

All staff must have an awareness of the NSW BTF system and know how to activate their local Clinical Emergency Response System.
All clinicians providing direct patient care must complete both Tier 1 and Tier 2 of the BTF education curriculum.

The BTF Education Strategy contains a “Guidance for Prioritisation of Clinical Staff to attend Tier 2 face-to-face workshops” to assist LHDs/Specialty Networks to identify staff that should be prioritised to attend Tier 2 training.

Some clinical staff may have completed courses/specialty training whose core curriculum exceeds the requirements of the Tier 2 face-to-face workshop. The BTF Education Strategy document contains information to assist LHDs/Specialty Networks to identify those staff to which ‘Recognition of Prior Learning’ can be granted for the Tier 2 face-to-face workshop.

All Public Health facilities must establish systems to ensure regular educational updates for existing staff and the training of new staff.

The three tiers of the BTF education are:

**Tier 1 - Awareness Training**

All clinical staff and students must be aware of the BTF Program. They should also be able to recognise a patient who is clinically deteriorating, identify the key features of the Standard Observation Charts and explain how to apply the principles of the Clinical Emergency Response System.

The Tier 1 ‘awareness’ training is available online at [http://nswhealth.moodle.com.au](http://nswhealth.moodle.com.au)

**Tier 2 – DETECT / DETECT Junior**

These programs are aimed at enhancing clinical assessment and management skills for the early intervention for patients who are clinically deteriorating. All clinicians providing direct patient care should develop the theoretical and practical knowledge to recognise and provide appropriate care for patients who are clinically deteriorating and incorporate appropriate communication, escalation and handover processes into their practice.

As a prerequisite for Tier 2 training and to align with action 9.6.1 of the National Safety and Quality Health Service Standards the clinical workforce must be trained and proficient in basic life support.

The Tier 2 education resources include:

- Online e-learning modules
- DETECT and DETECT Junior manuals
- A face-to-face practical session.

The Fetal welfare assessment, Obstetric emergencies and Neonatal resuscitation Training (FONT) Program has been developed by the NSW Pregnancy and newborn Services Network (PSN) and is mandatory for all NSW Health maternity clinicians including Obstetricians, General Practitioner Obstetricians, Trainees in Obstetric Medicine, Registered Midwives and Midwifery Students. The principles of BTF have been incorporated into FONT education.

**NOTE:** Clinicians working solely in maternity services, who complete all aspects of the FONT program, will not be required to attend the BTF Tier 2 education program (DETECT). Those clinicians who work across both general and maternity will be required to attend both FONT and the DETECT education program.
Tier 3 - Advanced clinical and resuscitation skills

Members of the RRT are required to have advanced clinical and resuscitation skills, for example Advanced Life Support. The Clinical Excellence Commission is developing learning objectives for BTF Tier 3 education\(^b\).

6. EVALUATION

All Public Health Organisations must collect and monitor data to assess performance and evaluate the implementation of the *Between the Flags* system. The results of data analysis should be fed back in a timely manner to clinical units, facility/LHD/Specialty Network quality and safety committees and through the Public Health Organisation to the NSW Ministry of Health.

Standard Observation Chart audits to monitor compliance and the regular review of Clinical Review and Rapid Response calls should form the basis of the facilities evaluation, along with the collection and analysis of the key performance indicators.

6.1 Key Performance Indicators

Since July 2010, public health facilities have been required to collect data for two key performance indicators to evaluate *Between the Flags*:

- Rapid Response call rate per 1000 acute separations
- Cardio-respiratory arrest rate per 1000 acute separations.

Separate advice on key performance indicators, including definitions and methods for collection will be provided to Public Health Organisations by the NSW Ministry of Health as part of the LHD/Specialty Network service agreements.

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\(^b\) If it can be demonstrated that a clinician has already undertaken advanced clinical and resuscitation skills training equivalent to content and learning outcomes of the relevant module of DETECT then the clinician may be exempt from the requirement to undertake this level of DETECT training.
7. REFERENCE DOCUMENTS


5. Peter Garling SC, Special Commission of Inquiry: Acute Care Services in NSW Public Hospitals, November 2008, State of NSW.


17. NSW Department of Health (2010), Policy Directive PD2010_031, *Children and Adolescents Inter-facility Transfer*  


**Related documents**


NSW Department of Health (2005), Guideline - GL2005_057, *End-of-Life Care and Decision-Making*  

NSW Department of Health (2010), Policy Directive - PD2010_034, *Children and Adolescents: Guidelines for Care in Acute Care Settings*  


8. APPENDICES

8.1 Guide to Paediatric CERS and Beyond Facility Escalation Documentation

The local Paediatric CERS and Beyond Facility Escalation Algorithm should:

- Be applicable and readily available to all departments within all facilities, where a child might be seen
- Be based on the NSW Health ‘Between the Flags’ Paediatric CERS & Escalation Matrix (provided as Appendix 8.2) and consistent with all other aspects of PD – Recognition and Management of Patients who are Clinically Deteriorating
- Developed as a one page flow-chart (although LHDs may choose to have accompanying documentation such as a policy directive, guidance, procedures)
- Clearly link to the Standard Paediatric Observation Chart (SPOC) coloured zones and additional calling criteria (Blue Zone: “Increased Vigilance,” Yellow Zone: “Clinical Review,” Red Zone: “Rapid Response”)
- Include a list of actions consistent with the three coloured zones
- Be consistent with response timeframes outlined in PD – Recognition and Management of Patients who are Clinically Deteriorating for Clinical Review and Rapid Response
- Include the hierarchy of internal responses (step 1: local mechanisms to gain help) and beyond facility escalation (step 2: regional and step 3: tertiary/state)
- Outline the role of, and how to contact, the regional specialist paediatric service (step 2), which is a point of referral and paediatric expertise, with a 24hour / 7 days a week on call specialist paediatric (medical) consultation available
- Outline the role of Ambulance Service of NSW in the LHD CERS Assist response and external escalation (including transport)
- Outline the role of, and how to contact, NETS (step 3) as the consistent NSW wide expert resource
- Clearly state that urgency supersedes the hierarchy
- Be paediatric specific: where it is identified that a more generic algorithm is required, the algorithm must include a set of paediatric specific instructions that are clearly identified.
### 8.2 NSW Health *Between the Flags* Paediatric CERS and Escalation Matrix

<table>
<thead>
<tr>
<th>Paediatric Medical Role Delineation</th>
<th>Paediatric Blue Zone ‘Increased Vigilance’</th>
<th>Paediatric Yellow Zone ‘Clinical Review’</th>
<th>Paediatric Red Zone ‘Rapid Response’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 (FLEC RN only)</td>
<td>Immediate treatment as per NSW Rural Emergency Clinical Guidelines for Children</td>
<td>Immediate treatment as per NSW Rural Emergency Clinical Guidelines for Children</td>
<td>Immediate treatment / Resuscitation as per NSW Rural Emergency Clinical Guidelines for Children</td>
</tr>
<tr>
<td></td>
<td>Seek Senior nursing advice either locally or at local referral hospital</td>
<td>Consultation within 30 minutes with local medical referral network or RFDS where applicable</td>
<td>Initialise local mechanism to gain additional help i.e. CERS Assist/ on-call staff</td>
</tr>
<tr>
<td></td>
<td>Complete a full set of observations and increase the frequency of observations</td>
<td>Complete a full set of observations and increase the frequency of observations</td>
<td>Depending on need for immediate resuscitation call NETS on 1300 36 2500 or immediate consultation with local medical referral network.</td>
</tr>
<tr>
<td></td>
<td>If clinician or parental concern escalate to ‘Clinical Review’</td>
<td>Consider consultation with Paediatrician at local referral facility</td>
<td>Continuous Monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If Clinical Review mechanisms fail or time frames not met escalate to a Rapid Response</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Paediatric Medical Role Delineation</th>
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<th>Paediatric Yellow Zone ‘Clinical Review’</th>
<th>Paediatric Red Zone ‘Rapid Response’</th>
</tr>
</thead>
</table>
| Level 1 - 3 (RN / GP VMO / CMO)    | - Immediate treatment as per NSW Rural Emergency Clinical Guidelines for Children  
- Seek Senior Nursing advice either locally or at local referral hospital  
- Complete a full set of observations and increase the frequency of observations  
- If clinician or parental concern escalate to ‘Clinical Review’ | - Immediate treatment as per NSW Rural Emergency Clinical Guidelines for Children  
- Consultation within 30 minutes with On-call GP VMO or allocated proxy where applicable  
- Complete a full set of observations and increase the frequency of observations  
- Consider consultation with Paediatrician at local referral facility  
- If Clinical Review mechanisms fail or time frames not met escalate to a Rapid Response | - Immediate treatment / Resuscitation as per NSW Rural Emergency Clinical Guidelines for Children  
- Initialise local mechanism to gain additional help i.e. CERS Assist/ on-call staff  
- Immediate consultation with GP VMO or allocated proxy and/or Initialise RRT where available and/or  
- Consultation ASAP with NETS on 1300 36 2500 or Interstate retrieval service where applicable  
- Continuous Monitoring |
### Paediatric Medical Role Delineation

<table>
<thead>
<tr>
<th>Level 3 (RN / VMO Paed/ CMO Non-training hospital)</th>
<th>Paediatric Blue Zone ‘Increased Vigilance’</th>
<th>Paediatric Yellow Zone ‘Clinical Review’</th>
<th>Paediatric Red Zone ‘Rapid Response’</th>
</tr>
</thead>
</table>
| ▪ Immediate treatment as per NSW Rural Emergency Clinical Guidelines for Children or local paediatric protocols  
▪ Seek Senior Nursing advice  
▪ Complete a full set of observations and increase the frequency of observations  
▪ If clinician or parental concern escalate to ‘Clinical Review’ | ▪ Immediate treatment as per NSW Rural Emergency Clinical Guidelines for Children or local paediatric protocols  
▪ Consultation within 30 minutes with On-call CMO or Paediatrician where applicable  
▪ Contact on-call paediatrician or specialty consultant if delays or specific concerns  
▪ Complete a full set of observations and increase the frequency of observations  
▪ If Clinical Review mechanisms fail or time frames not met escalate to a Rapid Response | ▪ Immediate treatment / Resuscitation as per RECG, ARC or NSW Health paediatric guidelines or local paediatric protocols  
▪ Initialise local mechanism to gain additional help  
▪ Initialise RRT including on call paediatrician OR consultation within 5 minutes with On-call Paediatrician  
▪ Always initialise RRT if ANY delays  
▪ Continuous Monitoring  
▪ Consultation ASAP with NETS on 1300 36 2500 (or Interstate retrieval service where applicable) |
<table>
<thead>
<tr>
<th>Paediatric Medical Role Delineation</th>
<th>Paediatric Blue Zone ‘Increased Vigilance’</th>
<th>Paediatric Yellow Zone ‘Clinical Review’</th>
<th>Paediatric Red Zone ‘Rapid Response’</th>
</tr>
</thead>
</table>
| Level 4 (RN / Res / Reg / Paed / Staff Paed / CMO / FACEM) | - Immediate treatment as per local/NSW Health paediatric protocols or guidelines  
- Seek Senior Nursing advice  
- Complete a full set of observations and increase the frequency of observations  
- If clinician or parental concern escalate to ‘Clinical Review’ | - Immediate treatment as per local/NSW Health paediatric protocols or guidelines  
- Consultation within 30 minutes with paediatric, emergency or specialty resident/registrar where applicable  
- Contact on-call paediatrician or specialty consultant if delays or specific concerns  
- Complete a full set of observations and increase the frequency of observations  
- If Clinical Review mechanisms fail or time frames not met escalate to a Rapid Response | - Immediate treatment / Resuscitation as per RECG, ARC or NSW Health paediatric guidelines or local paediatric protocols  
- Initialise local mechanism to gain additional help  
- If immediate resuscitation required initialise RRT including on call paediatrician OR  
- Consultation within 5 minutes with On-call paediatrician/FACEM  
- Always initialise RRT if ANY delays or concerns  
- Continuous Monitoring  
- Consultation ASAP with NETS on 1300 36 2500 (or Interstate retrieval service where applicable) |
<table>
<thead>
<tr>
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<th>Paediatric Blue Zone ‘Increased Vigilance’</th>
<th>Paediatric Yellow Zone ‘Clinical Review’</th>
<th>Paediatric Red Zone ‘Rapid Response’</th>
</tr>
</thead>
</table>
| Level 5-6 (Tertiary/Quaternary Service) | Immediate treatment as per local/NSW Health paediatric protocols or guidelines  
Seek Senior Nursing advice  
Complete a full set of observations and increase the frequency of observations  
If clinician or parental concern escalate to ‘Clinical Review’ | Immediate treatment as per local/NSW Health paediatric protocols or guidelines  
Consultation within 30 minutes by specialty resident/registrar where applicable  
Contact on-call specialty consultant if delays or specific concerns  
Complete a full set of observations and increase the frequency of observations  
If Clinical Review mechanisms fail or time frames not met escalate to a Rapid Response | Immediate treatment / Resuscitation as per RECG, ARC or NSW Health paediatric guidelines or local protocols  
Initialise local mechanism to gain additional help  
If immediate resuscitation required initialise RRT OR consultation within 5 minutes from RRT  
Always initialise RRT if ANY delays  
Continuous Monitoring |