# BETWEEN THE FLAGS (BTF) - CLINICAL EMERGENCY RESPONSE SYSTEM (CERS)

## PROCEDURE ©

## DOCUMENT SUMMARY/KEY POINTS

- The Between the Flags (BTF) program has been implemented in all public health care facilities throughout NSW, to support clinical staff to better recognise and manage patients who are clinically deteriorating.
- A range of NSW Health Standard Observation Charts incorporating a colour coded 'track and trigger' tool have been implemented as part of this program including the Standard Paediatric Observation Chart (SPOC) and the Standard Adult General Observation (SAGO) chart. The appropriate chart is automatically selected within the electronic medical record (eMR).
- If a patient's observations are documented in either the blue, yellow or red zone on the Standard Observation Chart, care must be escalated as per the Clinical Emergency Response System (CERS) protocol. The CERS protocol is a facility specific process for escalation of care and the response to be activated as a result of patients' clinical deterioration. Patients in the Emergency Departments (ED), Intensive Care Units (ICU), Post Anaesthetic Care Units (PACU) and Neonatal intensive Care Units (NICU) have their care escalated as per departmental protocols.
- When the CERS is activated, this must be documented in the patients' eMR.
- Patient and Family Activated Rapid Response (REACH) has been implemented throughout all general wards in SCHN. It is a system that helps patients, their family and carer/s to escalate their concerns with staff about worrying changes in their child's condition. REACH empowers families to engage with staff if they are concerned that 'something is not right', and to independently activate a Rapid Response if the concern is serious.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.



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- The BTF program is supported by a mandatory education program. The education program includes aspects of clinical assessment of the patient, the CERS protocol and appropriate care to provide while waiting for assistance.
- The site specific CERS Committees provide the governance structure for the overarching BTF program including processes for escalation of care for patients who are clinically deteriorating and/or require resuscitation, as outlined in the NSW Health Policy Directive 'Recognition and Management of Patients Who Are Deteriorating' (PD2020_018). Compliance with this policy is mandatory.

# CHANGE SUMMARY

- Creation of a Network document incorporating site specific procedures where appropriate.
- Incorporation of the electronic Standard Observation Charts in the Electronic Medical Records (eMR)
- Inclusion of the SAGO chart for use across the Network for patients 16 years and over.
- Inclusion of the Patient and Family escalation of care process for Sydney Children's Hospital Network.
- Minor clarification of Medical Officer responsibility in documenting reviews.
- Added existing REACH poster and updated the wording around the 'parent/carer activated rapid response
- C – Confusion has been added to the ACVPU assessment criteria
- **4/3/21: Appendix 3** - minor amendment to add Mandatory Responder information for CHW CASB.
- **26/5/22**: **Addition** of Activation of ECMO in Theatres (CHW ONLY) p15 and Appendix 4

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# READ ACKNOWLEDGEMENT

**Training/Assessment Required**

- All clinical staff and students must complete 'BTF- Tier 1: Awareness, Charts and Escalation' and 'BTF- Tier 2: Communication, Teamwork and Documentation' e-learning via HETI online, every five years.
- All Nursing staff involved in direct patient care must complete 'DETECT Junior' e-learning and practical components.
- Members of the Rapid Response Team are required to have current advanced clinical and resuscitation skills, for example Advanced Life Support.

**Read Acknowledgement**

- All Medical, Nursing and Allied Health staff and students (including VMO's) working in clinical areas should read and acknowledge this document.
- References to the NSW PD2020_018 will be made throughout this document using section/page numbers and must be read in conjunction with this policy.

**Discretionary**

- Local managers to determine which Medical, Nursing and Allied Health staff and students working in non-clinical areas should read and acknowledge this document.

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# 1 Purpose

The purpose of this document is to describe the Between the Flags (BTF) and R.E.A.C.H programs, and associated procedures for recognising and responding to a deteriorating patient at the Sydney Children's Hospitals Network (SCHN): The Children's Hospital at Westmead (CHW) and Sydney Children's Hospital, Randwick (SCH).

A deteriorating patient refers to any patient whose clinical condition is felt to be worsening; such deterioration will often be accompanied by alterations in one or several of their clinical observations outside of the normal range for their age. The purpose of this policy is to describe how the NSW PD2020_018 Recognition and Management of Patients who are deteriorating applies to the SCHN.

# 2 Background

- Failure to recognise and appropriately manage deteriorating patients has been identified as a contributing factor in many adverse events in hospitals and health care organisations around the world.
- The BTF program has been designed by the Clinical Excellence Commission (CEC) in consultation with clinical experts to establish a 'safety net' that reduces the risks of patients deteriorating unnoticed and ensures they receive appropriate care in response if they do.
- The BTF program is based on investigation of adverse events involving failure to identify and respond to patients who are clinically deteriorating and has been implemented in all public health care facilities in NSW. The program incorporates a track and trigger tool and uses the analogy of Surf Life Saving Australia's lifeguards and life savers, who keep people safe by ensuring they are under close observation and rapidly rescue them should something go wrong.
- As a part of this program, a range of NSW Health Standard Observation Charts have been implemented to support early identification of patients at risk of and/or clinically deteriorating.
- Facility specific Clinical Emergency Response System (CERS) protocols outline the process for escalating care of deteriorating patients.
- The five key elements of the BTF program are:
    i. Governance
    ii. Standard Clinical Tools
    iii. Clinical Emergency Response System (CERS)
    iv. Education
    v. Evaluation

For additional information refer to Section 1 of the NSW PD2020-018


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# 3 Governance - Clinical Emergency Response System (CERS) Committee

- The site specific multidisciplinary CERS Committees provides the governance structure for the BTF program including clear processes for escalation of care for patients who are clinically deteriorating and/ or require resuscitation.
- The Committees provides a forum to review and discuss all urgent and strategic issues relating to the CERS and resuscitation at SCHN, in accordance with the NSW Health Policy Directive 'Recognition and Management of Patients who are Deteriorating NSW PD2020-018'
- The Director of Clinical Governance and Medical Administration (DCGMA) provides Executive sponsorship for the Committees and the overall BTF program.
- The Committees reports to the Quality and Safety Committee (QSC) and the Ministry of Health on Key Performance Indicators (KPIs) on a monthly basis.
- The Committees reviews regular reports and monitors performance of the Deteriorating Patient Safety Net System across facilities, clinical services and clinical units.
- Ensures compliance with mandatory training requirements for all staff involved in the management and continuous improvement of the deteriorating patient safety net system.

# 4 NSW Health Standard Observation Charts

## 4.1 Standard Observation Charts

Standard Observation Charts are located within the eMR and observations are documented electronically. There are six age specific Standard Observation Charts available and will automatically adjust to the patient's age.

- All Standard Observation Charts incorporate colour coded zones which are part of a 'track and trigger' tool designed to alert to early signs of clinical deterioration and the action required when a physiological threshold is breached.
- Clinical observations are recorded graphically so that trends can be 'tracked' visually. The coloured zones are the physiological thresholds ('trigger' zones) beyond which a standard set of actions are required if a patient's observations breach this threshold.
- Standard Observation Charts incorporate three colour coded zones:
    - The *blue zone* represents criteria for which increased patient observation and surveillance is required (SAGO charts do not have a blue zone)
    - The *yellow zone* represents early warning signs of deterioration and the criteria for which a Clinical Review (or other CERS) call may be required


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- The *red zone* represents late warning signs of deterioration and criteria for which a Rapid Response call is required

- Additional criteria for activating a Clinical Review or Rapid Response call can be accessed via the 'Additional Criteria' tab within the BTF Observation Chart.
- The age chart can be altered by Medical officers only with direct approval from the treating Consultant, this is not within the Scope of Nurses at the Sydney Children's Hospital Network.

### 4.1.1 Supplementary Observation Charts

Other NSW Health, CHW, SCH and/or SCHN approved charts that are designed to monitor clinical condition, should be used in collaboration with the Standard Observation Charts to assess the patients overall clinical status. Some of these charts will be available electronically and others will remain paper based until full integration into the electronic domain is achieved.

## 4.2 Monitoring Observations

- Monitoring observations is an essential component of patient care in order to identify early signs of clinical deterioration, assess treatment efficacy and detect procedural complications.
- All inpatients must have their observations recorded in the BTF Observation Chart at a frequency appropriate to clinical need or at the minimum standard frequency.
- Observations must be recorded at the time they are taken.

### 4.2.1 Special Considerations

***Emergency Department (ED)***

Decision to assess the neurological state for any patient is made by a clinician (medical, nursing or nurse practitioner). The GCS is recorded when clinically relevant. The AVPU may be used for initial urgent assessment.

***Intensive Care Unit (ICU)***

Patients in the Intensive Care Unit (ICU) and the Grace Centre for Newborn Care receive closer monitoring and surveillance and do not require observations to be recorded on the Standard Observation Chart until they are ready for transfer to a general ward or an external facility. At least one set of observations must be documented prior to transfer.

***Resuscitation and Critical Events***

The Standard Observation Chart is not for use during resuscitation or critical events. The paper based State wide Paediatric Ward Resuscitation Form or Paediatric Emergency Resuscitation Form should be used.

***Post Anaesthetic Care Units***

Observations are to be recorded in the PACU band in 'Interactive View' on PowerChart, this auto records into BTF however observations must be checked in the BTF chart prior to


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discharge to the ward. Any clinical escalation are to occur as per other areas if observations are in the yellow or red zones as described in this policy.

## 4.3 Minimum observation requirements

- In the absence of a valid Variation to Frequency of Observations order, all patients must have a complete set of observations conducted six (6) times per day, at four (4) hourly intervals.
- In addition to the minimum requirements, a full set of vital signs (including Blood Pressure if clinically indicated) must be taken and recorded in the patients eMR:
  - At the time of admission or initial assessment (excluding the triaging process conducted on arrival to the ED)
  - Within one (1) hour prior to discharge from the facility or clinical unit (including ED and ICU)
  - Prior to and after transfer from facility or clinical unit (including ED and ICU)
- The frequency of assessment is to be increased above the minimum requirements as per colour coded zones
  - The patient's vital signs fall within a coloured zone on a Standard Observation Chart:
    - Blue Zone criteria, consider repeating within two (2) hours
    - Yellow Zone criteria, consider repeating within one (1) hour
    - Red Zone criteria, considering conducting 5 to15 minutely observations.
  - Assessment identifies other signs of deterioration
  - A CERS call has been made.
- The frequency of observations should also be increased as indicated by the patient's condition, treatment specific practice guidelines/protocols and clinical judgment of the clinicians, but may not be decreased below the minimum frequency unless there is a documented Variation to Frequency of Observations order.
- A full set of observations includes:
  - Respiratory rate
  - Respiratory distress
  - Oxygen saturation
  - Heart rate
  - Pain Score
  - New onset confusion or behaviour change* **
  - Blood pressure – baseline is required within 24hours of admission and then when clinically indicated
  - Level of consciousness (ACVPU)
  - Temperature


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* includes an assessment of the patient's behaviour in the context of their developmental age and/or baseline assessment, noting changes in cognitive function, activity/tone, perception, or emotional state such as abnormal thinking, irritability, agitation, inconsolability and/or delirium.

** Assessment form in SCHN under development

- ACVPU (Alert, Confusion, Verbal, Pain, Unresponsive) is a tool for rapid assessment of level of consciousness (alertness and arousal) – this excludes the ED Unit. If a more detailed neurological assessment is required, an age appropriate Glasgow Coma Scale (GCS) score should be obtained.
- Abnormal blood pressure readings that have been measured on an automated machine should be checked manually.
- Physiotherapists are also required to document observations included in the physiotherapy assessment in the Standard Observation Chart. Please refer to site specific local work practice for more information.

***Minimum observation requirements for patients admitted to the child and adolescent mental health service***

The child and adolescent inpatient mental health service *(Hall Ward and C3SW - Saunders Unit)* is classified as a designated acute psychiatric unit and as such patients in these wards require a complete set of observations three (3) times a day at eight (8) hourly intervals for the first 48 hours and then daily thereafter.

***Minimum observations frequency for Hospital in the Home patients***

Patients admitted to Hospital in the Home (HITH) require an assessment of observations at least once during each consultation/visit. The vital signs to be measured are determined by the services' model of care and assessment of risk.

***Minimum observations frequency for patients admitted to Rehabilitation service***

The minimum required frequency of children admitted under the Rehabilitation service is twice a day as per the NSW Health Policy "Recognition and Management of Patients who are Deteriorating NSW PD2020-018".

### 4.3.1 Varying the frequency of observations

- Variations to the frequency of observations may be made based on a patient's clinical condition and health care requirements.
- Decreasing the frequency of observations from the minimum required may only be performed if it is ordered by a Medical Officer via the 'ACC/Vary Freq.' button in the BTF Observation Chart. Any prescriptions varying the frequency of observations must be made in consultation with the Attending Medical Officer (AMO).
- Any clinician may increase in the frequency of observations as indicated by a patient's clinical condition. A variation to frequency of observations order is not required when increasing the frequency.
- Orders varying the minimum frequency should be re-evaluated if there is a change in clinical condition and at all times clinicians should use their clinical judgement regarding


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the frequency and timing of observations. Unstable patients may need frequent or continual assessment of observations until they are reviewed and stabilised.

- The Medical Officer prescribing the Variation to Frequency of Observations must be logged into eMR using their own login when completing the order.

# 5 Clinical Emergency Response System (CERS)

- The CERS is a clearly defined process for escalation of care and the response required for patients identified as clinically deteriorating. If a patient's observations are graphed in the blue, yellow or red zone on the BTF Observation Chart, a pop-up alert will be activated and care must be escalated as per the CERS protocol (Appendices 1 and 2).
- Care must also be escalated as per the CERS protocol if a patient is assessed as meeting any of the *additional* colour-coded escalation criteria as listed within the 'Additional Criteria' tab in the BTF Observation Chart. You will not receive a pop-up alert notification when a patient meets an additional calling criteria- you must review this section of the chart independently and escalate as required.

If a pop-up alert appears, you MUST select 'Immediately' from the re-alert options. The 'After 15 minutes' and 'After 30 minutes' re-alerts MUST NOT be selected.

- Patients in the ED, ICU, theatres and in Post Anaesthetic Care Unit/Post Anaesthetic Recovery Unit have access to closer surveillance and higher level care, and as such, care is escalated as per existing departmental protocols.

Escalation of care should also occur when clinical deterioration occurs, other than that identified by the BTF Observation Chart, or where sound clinical judgement would suggest that escalation is in the best interest of the patient.

- For patient with an active Allow a Natural Death / Resuscitation Plan – Paediatric, refer to the End of Life Care Section.
- For patients admitted to Hospital in the Home services, refer to procedural document Admission to Hospital in the Home Service for escalation of care processes.

## 5.1 Earlier escalation of patients at risk

Earlier escalation should be considered for the following patients as they are particularly vulnerable to physiological instability and therefore are at a greater risk of rapid deterioration:

- Preterm/ neonates - outside the ICU environment
- Patients less than 3 months of age
- Patients with chronic or complex conditions
- Post-operative patients
- Patients with pre-existing cardiac or respiratory conditions
- Patients receiving parental opioids


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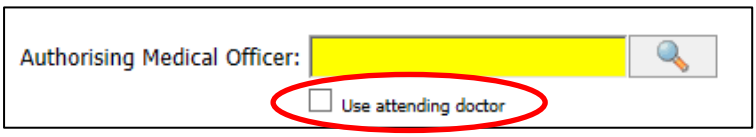
## 5.2 Ordering Alterations to Calling Criteria (ACC)

- Standard calling criteria thresholds (i.e. coloured zones) for Clinical Review and Rapid Response may be altered, based on assessment of the patient's condition and with input from carers and families.
- Altered calling criteria are only to be used:
  - To align calling criteria with the patient's baseline vital sign observation parameters when they are above or below the standard calling criteria.
  - If the course of the patient's disease or condition, or recovery from a particular intervention, is expected to be above or below the standard calling criteria
  - If the proposed changes to the standard calling criteria will improve detection of patient deterioration.
- Alterations to calling criteria must be prescribed by a medical officer via the 'ACC/Vary Freq.' button in the BTF Observation Chart. Any prescriptions altering the calling criteria **must be made in consultation with the Attending Medical Officer (AMO)/ delegated clinician responsible.**
- The medical officer prescribing the ACC must be logged into eMR using their own login when completing the order.
- A clear rationale for the ACC must be documented as part of the order.

Alterations to red zone calling criterion should be undertaken with great caution. Red zone calling criterions are late signs of deterioration and may indicate acute on chronic changes.

- The following clinicians are able to order alterations to calling criteria:
  - Admitting Medical Officer (AMO)
  - A treating Medical Officer (MO) in consultation with the AMO
  - A member of the PICU Outreach Team (CHW only)
- The ***Authorising*** Medical Officer in the ACC/Vary Freq. form refers to the ***Admitting*** Medical Officer and when the 'Use attending doctor' check box is selected, this is YOUR confirmation that you have discussed the ACC order with the ***Admitting*** Medical Officer.




### 5.2.1 Chronic changes in physiological parameters

- A 'chronic' alteration may be set to align the calling criteria with the patient's baseline vital sign observation parameters i.e.: where the predetermined 'abnormal' observations are in fact normal for that individual and do not reflect an acute deterioration in clinical condition. For example: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- An infant with cyanotic congenital heart disease whose normal oxygen saturation level is significantly lower than healthy infants
- A young, fit adolescent with a resting heart rate that is normally low for them

- Clinicians should assess the patient and obtain a thorough history, in order to identify possible effects of a chronic disease/diagnosis that would be expected to effect the patient's clinical observations.
- ***A chronic alteration may be set for the duration of the patient's episode of care and needs to be reviewed by the clinical team responsible for the patient's care during routine assessments***.
- A chronic alteration may be set for patients admitted to Hospital in the Home (HITH), however time limits for the duration of the alteration must be set at the time the alteration is ordered and documented in the patients' medical record.

### 5.2.2 Acute changes in physiological parameters

- An 'acute' alteration may be set to align the calling criteria with the expected progression of a patient's disease or condition i.e.: where a patient's abnormal observations do reflect a change in normal status, but active treatment measures have been initiated. For example:
  - A normal physiological change post-surgery and influenced by the effects of anaesthetic may indicate a change in calling criteria for 4 hours post operatively
  - A child receiving regular salbutamol therapy with an expected increased heart rate during the treatment regime
- An acute alteration must be set for a defined period of time, **not longer than 8 hours**, before the eMR system will revert back to the standard calling criteria on the Standard Observation Chart. At the end of the acute review period, the patient's treating team must reassess the patient prior to setting further acute alterations to calling criteria.

  Acute alterations are not intended to be used for patients who are admitted to Hospital in the Home (HITH) services.

| Alterations to calling criteria in peri-procedural patients should be made with caution, being aware that the patient may actually be deteriorating. |
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- At all times staff should use their clinical judgement and re-evaluate the ACC order and/or escalate care if there is a change in a patient's clinical condition.

### 5.2.3 End of life care

- Where a patient's abnormal observations reflect deterioration in clinical condition but escalation of care is not required, the calling criteria and/or frequency of observations should be ordered via the 'ACC/Vary Freq.' button in the BTF Observation Chart. This should reflect the patient's management plan as documented in the Allow Natural Death (AND)/Resuscitation Plan – Paediatric. In the absence of a documented variance on the BTF Observation Chart, care must be escalated as per the CERS escalation process.


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- In circumstances where cardiopulmonary arrest or death is considered a likely possibility in a child with a known condition, treatment decisions should be discussed with the family and outcomes documented on the AND/Resuscitation Plan - Paediatric form.

## 5.3 Escalations in Care

### 5.3.1 Clinical Review

- If one or more yellow zone observations or additional criteria are breached, interventions should be put in place to reverse and/or halt the deterioration. If the patient's clinical condition does not stabilise and/or staff or family are concerned, care should be escalated to a Clinical Review. A Clinical Review must be attended by the medical officer/team within 30 minutes of the request being made.
- If any 3 or more yellow zone criteria are met during a single assessment of clinical observations, this must be escalated to a Rapid Response.
- If the patient's observations enter the red zone whilst awaiting a Clinical Review, a Rapid Response must be activated.
- The patient's family should be informed when a Clinical Review has been activated.

**Refer to Appendix 1 and Appendix 2 for facility specific CERS Posters**

**Refer to Appendix 3 for the Mandatory Responders List**

### 5.3.2 Rapid Response

- If one or more red zone observations or additional criteria are breached, staff must initiate appropriate clinical care and activate a Rapid Response. A Rapid Response must be attended by the medical officer/team within 5 minutes of the request being made.
- The Registrar is responsible for notifying the AMO of any Rapid Response calls for their patients, including subsequent treatment instigated and all outcomes of treatment as soon as possible.
- The patient's family should be informed when a Rapid Response has been activated.
- All patients requiring a Rapid Response during the previous shift should be tabled at the hospital wide evening to night shift handover and individual interdepartmental handovers.

**Refer to Appendix 1 and Appendix 2 for facility specific CERS Posters**

**Refer to Appendix 3 for the Mandatory Responders List**


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### 5.3.3 Simultaneous Rapid Response calls

In the event that a Rapid Response call is activated while another is still in progress, the following response is required:

- The Rapid Response Team attending to the initial call will conduct a clinical assessment and then negotiate who is the most appropriate person to remain with the patient (usually the medical team involved in the patient's care).
- The remaining available member/s of the Rapid Response Team will attend the second call.

### 5.3.4 Code Blue/Arrest Call

- A Code Blue/Arrest Call must be activated for any patient in an established or imminent arrest state. Any staff member can activate a Code Blue/Arrest Call for significant clinical concern.
- The Code Blue/Arrest Team will respond to all emergency calls and is made up of various expert clinicians including intensive care.
- **At SCH:** All Paediatric Code Blue Calls at The Sydney Children's Hospital Randwick campus are responded to by CICU. CICU respond to mobile Paediatric Code Blues at Prince of Wales Hospital (POWH) and Prince of Wales Private Hospital. CICU can be requested on an adhoc case by case basis to support the Neonate teams at Prince of Wales Private Hospital. For all paediatric Code Blue calls occurring within POWH, including the Bright Alliance Building, the adult Code Blue Team will attend until the paediatric team has arrived to assume care.
- Refer to SCHN Cardiopulmonary Resuscitation and Equipment guideline for further information.

**Refer to Appendix 1, Appendix 2 and Appendix 3 for facility specific CERS information including mandatory responders**

### 5.3.5 Activation of ECMO in Theatres (CHW ONLY)

- In the event a patient in the Operating Theatre (excluding cardiac theatre) is in an arrest state, then a Code Blue is activated by theatre staff.
- The PICU Outreach team will respond and initiate ECMO activation
- Refer to the Activation of ECMO activation pathway Appendix 4

**Refer to Appendix 4 for Activation of ECMO in OT (CHW Only) pathway**

### 5.3.6 Medical Officer's roles and responsibilities

- The Medical Officer/team must conduct a patient assessment, review the management plan and implement interventions to reverse or halt the clinical deterioration. Assistance from more senior staff, in a timely manner, should be sought if required.


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- The admitting team Registrar or After Hours Registrar assumes the Team Leader role and is responsible for ensuring there is an agreed management plan before leaving the patient.
- The Registrar is responsible for notifying the AMO of any reviews on their patients, including subsequent treatment instigated and all outcomes of treatment as soon as possible. The primary responsibility for the clinical care of the patient rests with the Admitting Medical Officer (AMO).

**Prompt and effective review is an essential element in managing patients who are clinically deteriorating.**

***Documenting Reviews***

- All CERS calls must documented in the appropriate adhoc eMR form by the responding team/s, in which the responsible person for documentation is to be identified at the time of the review. Documentation includes treatment provided, changes to care plans and/or new criteria for escalation.
  - **Document a Clinical Review on the following form:**

    Clinical Review (Yellow Zone)
  - **Document a Rapid Response, Code Blue or REACH call on the following form:**

    Rapid Response Team (Red Zone)

  **Note:** The NSW Health paper based Paediatric Resuscitation form should be used in addition to the above form as required.
- Documentation on the above forms is a mandatory requirement and no additional documentation is necessary.

### 5.3.7 Computer Downtime

- If the eMR is unavailable to document escalations in care, the paper based 'Clinical Review Downtime Form' or 'Rapid Response Downtime Form' should be used to record this information. The nominated SOS are to maintain a list of patients who have had Rapid Responses or Hospital Watcher for handover until the eMR is available again.
- Clinical Review and Rapid Response Downtime Forms can be accessed from:
  - The Disaster Kit/Downtime folder
  - Via the eMR/Forms on the SCHN Intranet Page

***Paper based Standard Observation Charts (for downtime use only)***

Paper versions of the Standard Observation Charts and other related forms are available in circumstances where there is no access to the electronic medical record (e.g. eMR downtime). Charts available for use during downtime includes:

- Five Standard Paediatric Observation Charts (SPOCs)
  - Under 3 months
  - 3-12 months


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  - 1-4 years
  - 5-11 years
  - 12 years and over (for patients up to 15 years old)
- Five Paediatric Emergency Department Observation Charts (PEDOCs)
  - Under 3 months
  - 3-12 months
  - 1-4 years
  - 5-11 years
  - 12 years and over
- Standard Adult General Observation Chart (SAGO) (for patients 16 years and over)
- Adult Emergency Department Observation Chart (ED SAGO) (for patients 16 years and over)
- Clinical Review Form
- Rapid Response Form
- HHFNP$O_2$ – Equipment Chart [Humidified High Flow Nasal Prong Oxygen]
- Paediatric Neurological Observation Form

# 6 REACH Calls

- REACH, are a patient and family-centred approach to escalating care which acknowledges that parents and carers often recognise subtle changes in their child's condition even before it becomes clinically evident. It stands for Recognise, Engage, Act, Call, Help is on its way. The REACH Call model is a graded approach to patient and family activated escalation. See Appendix 7 for the facility specific escalation posters for patients and families. The Clinical Governance Unit (CGU) will follow up with the family and staff following a REACH call.
- The call is to be documented in the patients' eMR using the Rapid Response ad-hoc form.
- Patients and families can activate a Rapid Response call independently and are supported to do so. Responders will be notified by page when the call is a patient or family activated Rapid Response call.

  Further resources for patients, carers and their families (including Culturally and Linguistically Diverse (CALD) groups) are located on the intranet page https://intranet.schn.health.nsw.gov.au/clinical-emergency-response-system-cers/reach
- Patients, carers and their families can also access the internet page https://www.schn.health.nsw.gov.au/hospitals/parents-carers/reach


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### 6.1 REACH Calls at CHW

- If a family member or career requests a Clinical Review, Rapid Response or REACH Call, nursing staff must activate this request in the same way as they would a staff activated review. The staff must specify to the switch board that this is a family activated call.
- The Patient Flow Nurse Manager or Afterhours Nurse Manager, Nursing Unit Manager or Nursing TL and Admitting Team Registrar are to attend the call.
- The treating consultant is to be notified immediately that a REACH call has been activated.
- The registrar and nursing team leader of the area are to facilitate a discussion with the family regarding their concerns.
- This response to this call and any subsequent discussions are to be documented by the responding Registrar in the eMR.

### 6.2 REACH Calls at SCH

- If a family member or career requests a REACH Call, nursing staff must activate this request in the same way as they would a staff activated review. The staff must specify to the switch board that this is a family activated call.
- The Switch Board will activate this as they would activate a Rapid Response
- The Patient Flow Nurse Manager or Afterhours Nurse Manager and the Nursing Unit Manager or Nursing TL are to also attend the call
- The treating consultant is to be notified immediately that a REACH call has been activated.
- The treating consultant is to be notified immediately that a REACH call has been activated.
- The staff who respond to this REACH must document this call and any subsequent discussions in the eMR in the Rapid Response ad-hoc form.

## 7 Intensive Care Unit Services

Admissions to the intensive care unit are a significant event for the patient, the family and health care team. The Intensive Care Units provide assessment, treatment, management and support for patients outside of the intensive care environment. Any nurse or doctor can contact the ICU teams if they are concerned about a patient. The AMO should be contacted when considering and/or requesting ICU services.

For information on the intensive care outreach service and review processes refer to:

**Appendix 5 – CHW**

**Appendix 6 – SCH**


This Policy/Procedure may be varied, withdrawn or replaced at any time. Compliance with this Policy/Procedure is mandatory.

The teams can be contacted on the following AFTER reviewing the process in the Appendices:

- **CHW PICU Outreach Service**

  Pager 6664

- **SCH CICU Consult Line**

  0484 609 156

An ICU review is a request for additional expertise and support, rather than a request for an ICU bed. Every effort will be made to keep the patient on the ward as along as it is safe to do so.

## 7.1 Patient Transfer process

- Patients must not be transferred between wards, to home or other health care facilities when clinical judgment has identified the need for a Clinical Review or, the patient's clinical observations indicate the need for a Rapid Response (unless as part of the escalation of care process).
- If following a Clinical Review or Rapid Response the patient requires transfer to another location for continued management, this should occur in consultation.
- Patients with observations in the red or yellow zones can **only** be transferred between clinical units when:
  - The clinician responsible for the transfer approves the transfer
  - There is a monitoring plan in place, which may include altered calling criteria
  - The receiving clinical team responsible for the patient's care is advised of the plan
  - There is appropriate clinical support during transportation
- For patients being transferred from one ward area to another (including ICU and Grace Centre for Newborn Care), this includes consultation with the AMO, Patient Flow Manager/After Hours Nurse Manager and Nurse Unit Manager/Team Leader from both ward areas.
- For patients being transferred from Post Anaesthetic Care Unit/Post Anaesthetic Recovery Unit to a ward area, this includes consultation with the Anaesthetist and Nurse Unit Manager/Team Leader of Post Anaesthetic Care Unit/Post Anaesthetic Recovery Unit and the receiving ward.
- For patients being transferred home, this includes consultation with the AMO.


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# 8 Education

The BTF program is supported by a specifically designed education program for all clinicians involved in the detection and management of patients at risk of clinical deterioration.

***Mandatory elements***

The education program includes an introduction to the BTF program, use of the Standard Observation Charts, CERS protocols, clinical assessment, basic life support and advanced life support. The education program is structured in three tiers and completion of each tier is a mandatory requirement for clinicians identified in the target audience.

- **Tier 1**
  - Awareness, Charts and Escalation
- **Tier 2**
  - Communication, Teamwork and Documentation
  - Systematic Assessment – Paediatric
  - Case Studies – Paediatric
  - Between the Flags- DETECT Junior
  - Allied Health Workshop
  - Senior Medical Officer Workshop
- **Tier 3**
  - Resus4Kids (or equivalent)
  - Advanced clinical and resuscitation skills, for example Advanced Paediatric Life Support.

Elements of the education program have been included in the 'pre-employment education program', and Nursing and Medical Orientation programs. Regular education sessions and updates are also provided periodically throughout the year and clinicians are encouraged to attend.


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# 9 Evaluation

- All public health care facilities are required to collect and monitor data to assess performance and outcomes of the BTF program. At SCHN data is extracted from eMR for Clinical Review, Rapid Response, PICU Outreach (CHW *only*), REACH and Arrest/Code Blue call activations.
- At CHW, ward specific activity reports are generated from the data each month and includes details of all Clinical Review and Rapid Response calls. These reports are automatically generated and are sent to the main printer on the corresponding ward on the 1st day of each month, for the preceding month.
- At SCH, a weekly calls report is sent to the Director of Nursing, Nursing Unit Managers/Nurse Managers, Clinical Program Directors and Clinical Nurse Educators.
- At SCH, ICU Consultation data is collected and tabled at the Committee each month.
- At CHW, a 'shift summary' report is automatically generated for the After Hours Nurse Mangers to support identification and management of at risk and/or deteriorating patients after hours. These reports are automatically generated and sent to the printer in the Nursing Liaison Office at 3pm and 9pm each day.
- Hospital wide activity data is reviewed by the facility specific CERS Committees monthly.
- The CERS Committee provides Key performance Indicators (KPI's) to the Quality and Safety Committee monthly
- The following KPI's for SCHN are collated by the CGU and submitted to the Ministry of Health monthly:
    - Number of Rapid Responses per 1000 admissions
    - Number of cardiorespiratory arrests per 1000 admissions
- All inpatient units are expected to participate in regular audits of the Standard Observation Chart to ensure compliance with monitoring of observations and the escalation of care process as per the CERS protocol.
- Any incidents relating to a Standard Observation Chart and/or escalations in care must be documented on an incident notification form, in the state-wide incident management system IMS+.

## 9.1 Related intranet/ websites

- Clinical Excellence Commission – Between the Flags
- SCHN Clinical Emergency Response Systems Intranet Page


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## 9.2 Abbreviations

- **AHNM** - After Hours Nurse Manager
- **AMO** - Admitting Medical Officer
- **ACVPU**- Alert, Confused, Verbal, Pain, Unresponsive
- **BTF** - Between the Flags
- **CALD** – Culturally and Linguistically Diverse
- **CEC** - Clinical Excellence Commission
- **CERS** - Clinical Emergency Response Systems
- **CHW** – The Children's Hospital Westmead
- **CICU** – Children's Intensive Care Unit (SCH)
- **IIMS** - Incident Information Management System
- **KPIs** - Key Performance Indicators
- **MO** - Medical Officer
- **PEDOC**- Paediatric Emergency Department Observation Chart
- **PICU** - Paediatric Intensive Care Unit (CHW)
- **RRT** - Rapid Response Team
- **SAGO** – Standard Adult General Observation chart
- **SOS** – Senior on Site
- **SCH** - Sydney Children's Hospital
- **SCHN** - Sydney Children's Hospitals Network
- **SPOC** - Standard Paediatric Observation Chart
- **VMO** – Visiting Medical Officer

## 9.3 Related policies

Children and Adolescents - Admission to Services Designated Level 1-3 Paediatric Medicine & Surgery:
http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2010_032.pdf

- Cardiopulmonary Resuscitation & Equipment:
http://webapps.schn.health.nsw.gov.au/epolicy/policy/4947

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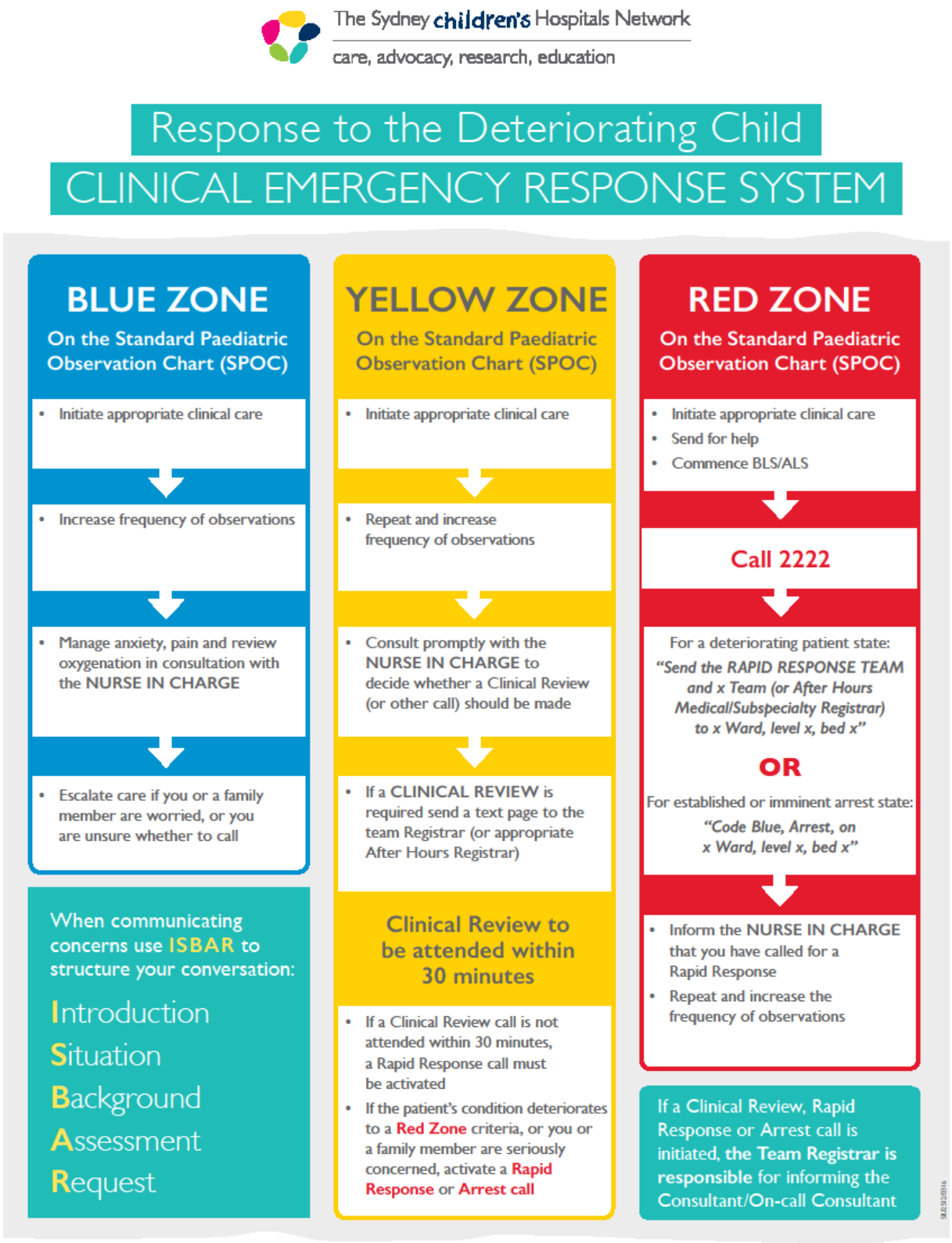
# Appendix 1: CHW CERS Escalation Process





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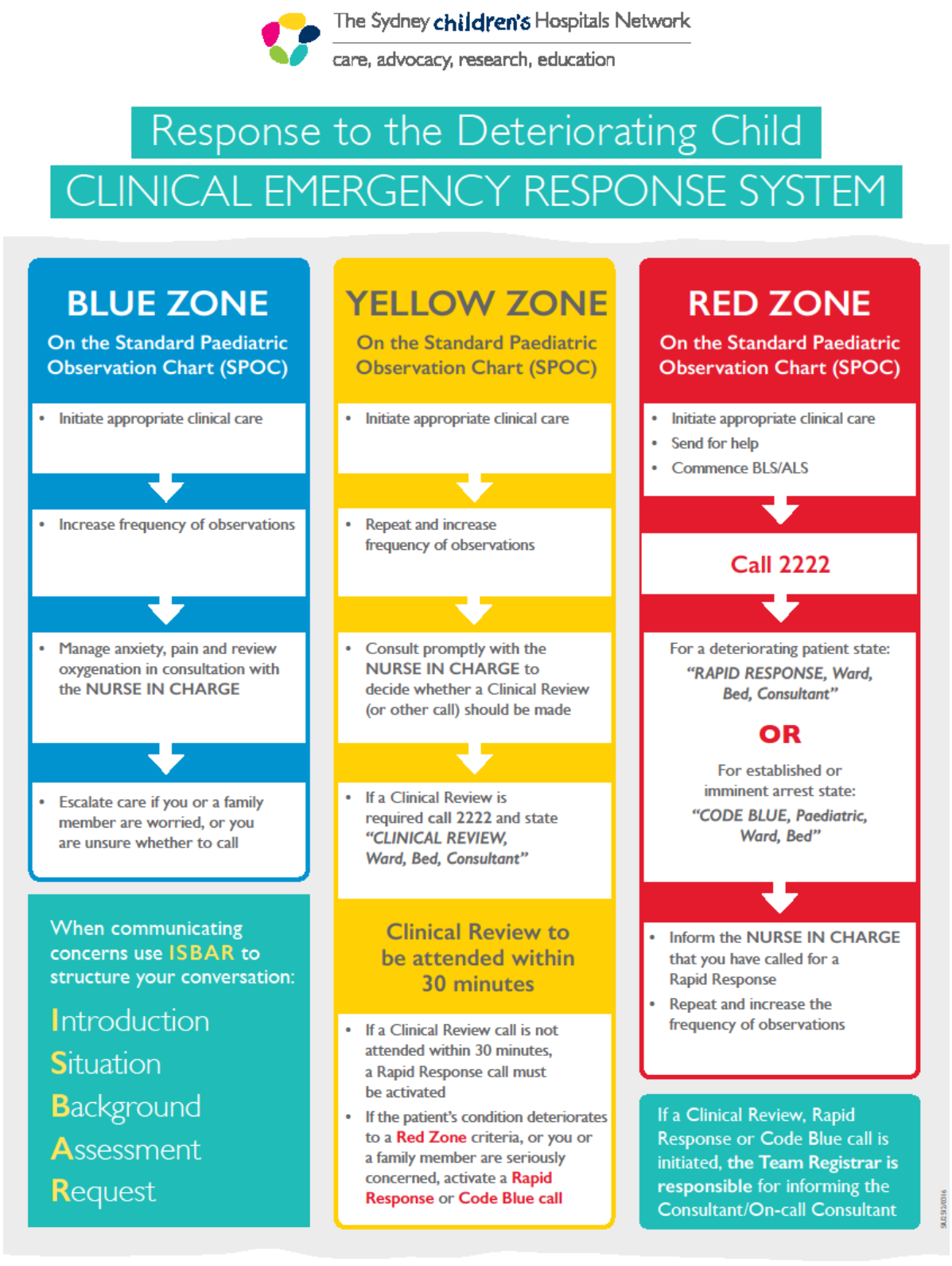
# Appendix 2: SCH CERS Escalation





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# Appendix 3: Mandatory Responders List

***Sydney Children's Hospital, Randwick (SCH)***

| | SCH | |
|---|---|---|
| | **In-hours** | **After-hours** |
| **Clinical Review** | - Admitting team JMO (Resident/Registrar) and/or Fellow | - Medical Officer allocated to the ward. |
| **Rapid Response** | - Admitting team JMO (Resident/Registrar) and/or Fellow | - Medical Officer allocated to the ward.<br>- Senior on Site (SOS) Registrar |
| **Code Blue/Arrest Call** | - CICU Code Blue Team<br>- Admitting Officer<br>- Anaesthetics<br>- JMO/Consultant<br>- Site CRMO | - CICU Code Blue Team<br>- AHNM<br>- Afterhours Medical team<br>- SOS Registrar<br>- Anaesthetics<br>- JMO/ Consultant |

***The Children's Hospital, Westmead (CHW) Main Building***

| CHW – Main Building | | |
|---|---|---|
| | In hours (0800-1630 weekdays) | After hours (>1630 & w/ends) |
| Clinical Review | Team resident/registrar | Covering medical officer |
| Rapid Response | Team registrar, PICU outreach | Subspec registrar, medical registrar/resident, PICU outreach, SOS |
| Code Blue | Team registrar, PICU outreach, Anaesthetics registrar | Subspec registrar, medical registrar/resident, surgical resident, PICU outreach, SOS, anaesthetics registrar |
| Mobile Arrests | ED senior doctor and nurse, anaesthetics registrar, Admitting registrar | ED senior doctor and nurse, SOS, anaesthetics registrar, admitting registrar/medical resident |
| Mobile Arrests in medical imaging | ED senior doctor and nurse, PICU outreach, admitting registrar, anaesthetics registrar | ED senior doctor and nurse, PICU outreach, admitting registrar, medical resident, anaesthetics registrar |
| Code Black | Security, registrar from admitting team. CRMO/gen med fellows as extra support if required | Security, SOS |


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***The Children's Hospital, Westmead (CHW) CASB***

| CHW CASB | | |
|---|---|---|
| | **In hours (0800-1630 weekdays)** | **After hours (>1630 & w/ends)** |
| **Clinical Review** | CSSU resident or team resident (if admitted to non CSSU team) | CSSU resident |
| **Rapid Response** | CSSU resident, CSSU registrar and/or admitting team registrar, PICU outreach | CSSU resident, CSSU registrar, PICU outreach, SOS |
| **Code Blue** | CSSU resident, CSSU registrar and/or admitting team registrar, PICU outreach, anaesthetics registrar | CSSU resident, CSSU registrar, PICU outreach, SOS, anaesthetics registrar |
| **External Rapid Response ED (admitted patients)** | ED medical officer, CSSU registrar and/or team registrar, contact PICU outreach if required | ED medical officer, CSSU registrar, SOS, contact PICU outreach if required |
| **Internal Rapid Response ED (non-admitted patients)** | ED allocated medical officer and ED consultant/fellow | Both ED JMOs in the area, contact PICU outreach and SOS if required |
| **Code Blue ED** | ED consultant/fellow, ED registrar, CSSU registrar, PICU outreach, Anaesthetics registrar | Both ED registrars, CSSU registrar, CSSU resident, PICU outreach, SOS, Anaesthetics registrar |
| **Mobile Arrests** | Adult mobile arrest team | Adult mobile arrest team |
| **Mobile Arrests in medical imaging** | ED Dr, ED nurse, anaesthetics registrar. Contact PICU and SOS if required | ED Dr, ED nurse, anaesthetics registrar. Contact PICU and SOS if required |
| **Code Black CSSU** | Security, CSSU registrar | Security, CSSU registrar, Contact SOS if required |
| **Code Black ED** | ED Dr, ED Nurse, security | ED Dr, ED nurse, security |


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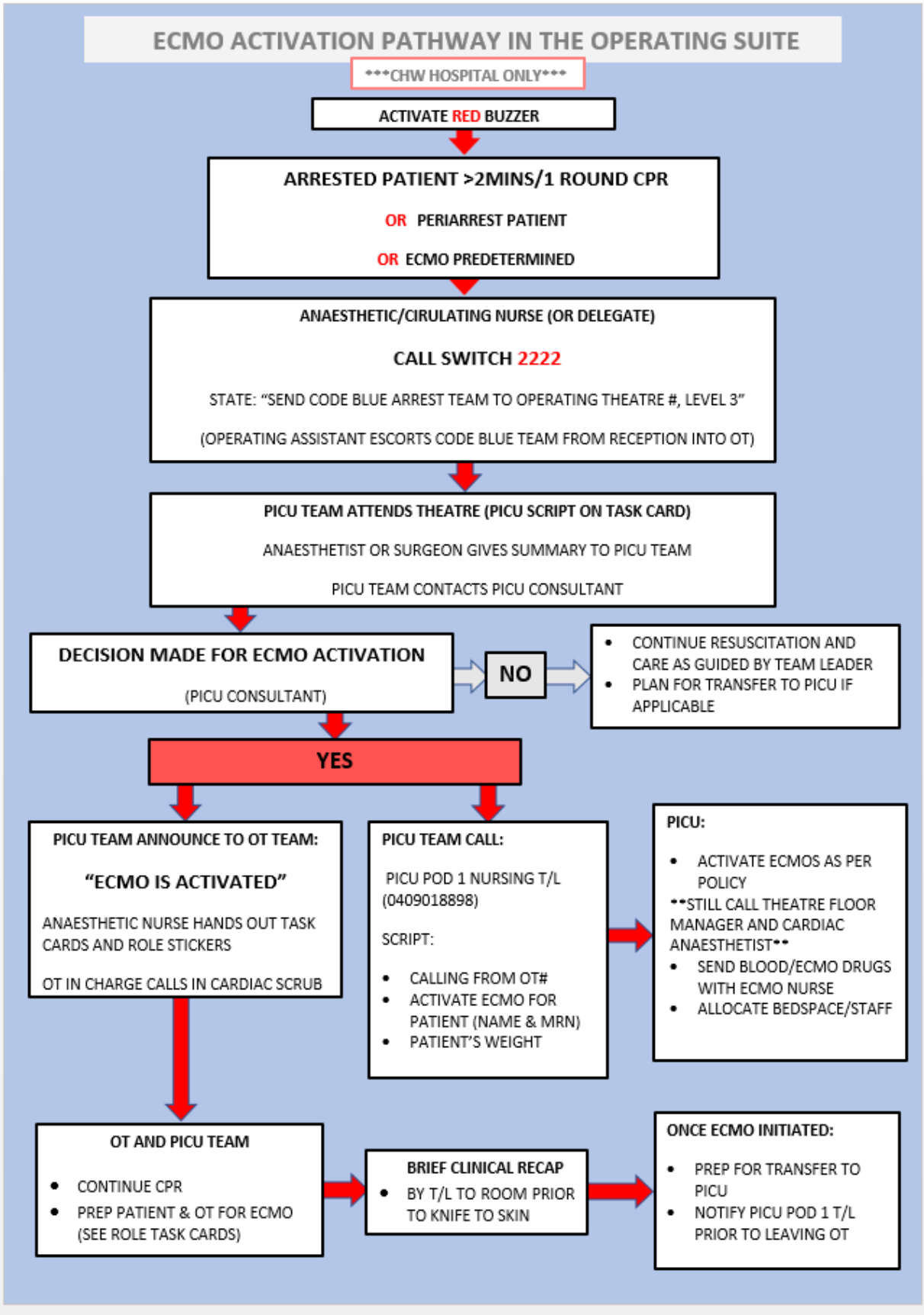
# Appendix 4: Activation of ECMO in OT (CHW Only)





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# Appendix 5: CHW PICU Outreach Service

## *Paediatric Intensive Care Outreach Service (CHW ONLY)*

- The Paediatric Intensive Care Unit (PICU) Outreach Service provides assessment, treatment, management and support for patients outside of the PICU. Any clinician may refer a child who is felt to be clinically deteriorating on the ward to the PICU Outreach Service by paging 6664, regardless of whether their observations fall within a coloured zone on the Standard Observation Chart.
  - **If you are a nurse:** call the relevant Medical/Surgical team (or the appropriate After Hours Registrar) after calling PICU Outreach Team, if not already done.
  - **If you are a doctor and are not part of the patient's admitting team:** call the relevant Medical/Surgical team after calling PICU Outreach Team, if not already done. It is preferable that the patient's Medical/Surgical team (or the appropriate After Hours Registrar) is already aware of or have seen the patient.
- The PICU Outreach Team will triage the call and prioritise the response in relation to other clinical responsibilities in the PICU and other referrals, and advise the referring clinician if there will be a delay. Initial phone advice will be provided if necessary.
- The patient will be seen by the PICU Outreach Team and a comprehensive assessment will be made of the patient's medical requirements as well as the resources available in the patient's location.
- Outcomes arising from the review may include:
  - Further investigations
  - Changes to current treatment or instigation of new treatments
  - The PICU Outreach Team may remain with the patient on the ward to assist and support the ward staff
  - Immediate admission to the Intensive Care Unit. In this situation, it is the responsibility of the PICU Outreach Team to ensure that the patient receives an adequate and appropriate level of care between the time of their assessment and admission to the PICU
  - An undertaking that the patient is reviewed again within a set period of time by the PICU Outreach Team.
  - That the patient is reviewed by the Admitting team again, and requests subsequent PICU reviews as deemed appropriate
- The patient's primary Medical/Surgical team will be contacted and informed directly of the assessment and suggested plan.
- Details of the outreach call are to be documented in the patient's electronic medical record (eMR) by a member of the PICU Outreach Team using the 'Rapid Response' form, located within Ad Hoc charting in the eMR.
- Referring staff should feel free to promptly discuss any questions or issues relating to a ward review with the on call PICU Consultants or Fellow.


This Policy/Procedure may be varied, withdrawn or replaced at any time. Compliance with this Policy/Procedure is mandatory.

# Appendix 6: SCH CICU Consultation

## *Children's Intensive Care Unit Consultation (SCH Only)*

Children's Intensive Care Unit (CICU) admissions are a significant event for the patient, the family, and the health care team, as well as having resource implications for the hospital. It is appropriate that such admissions are conducted in an appropriate, efficient and safe manner, which ensures that all members of the health care team are apprised of the situation.

**Note: Not all patients receiving CICU consultations will result in CICU admission.**

Any nurse or doctor can call ***CICU consult line: 0484 609 156*** if they are concerned about a patient. However the patient should firstly be discussed with AMO. The outcome of the phone call to the AMO is to be documented by the nurse or doctor calling.

### CICU Consult process

Discuss what time frame you would like the patient to be reviewed within. Document the time & person in CICU spoken with in the patients medical record.

↓

Team/Ward Registrar must be available at the time of the review to provide a clinical background to the CICU team.

↓

CICU Fellow/Registrar and CICU ACCESS RN to review patient.
ICU medical staff are to document the following in patient's notes:
o Time of review
o Patient's condition
o Recommendation of review CICU team.

↓

Discussion between Team/Ward registrar, ward nursing staff and CICU staff with any recommendations.

↓

Team/Ward registrar to contact AMO and plan of care is made

↓

Report of patient's condition is to be provided to ICU Fellow/ Consultant by ICU Registrar/Fellow at the earliest opportunity


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***If patient does not require ICU admission:***

- Responsibility of the patient remains with the referring team and ongoing consultation with ICU as needed.

***If patient requires ICU admission:***

- Discussion with the medical team and/or After Hours Nurse Manager (AHNM) must occur prior to escalation if time allows.
- Patient should be escorted to CICU with team members based on:

1. Condition of child
2. Risk of deterioration and
3. Any staffing and/or
4. Equipment / resource requirement
    a. Either ward or ICU team may be appropriate or members of both teams if necessary. Patient should be transferred to ICU with pulse oximetry and other monitoring as deemed appropriate by the ICU team with minimum oxygen, suction, self-inflating oxygen bag and mask attached accompanying patient in transit

- Formal patient handover occurs when the patient is admitted to CICU, until that time the responsibility of the patient remains with the referring team.
- A porter should be paged to transport the patient to CICU

  *Only if an unreasonable delay is foreseen, which is clinically significant to the patient, may staff transfer the patient without assistance of porters.*

***Patient requires ICU admission but a delay is foreseen:***

- Further ICU medical and nursing review of the patient must take place within a time frame agreed to by the appropriate team.
- Formal patient handover occurs when the patient is admitted to CICU, until that time the responsibility of the patient remains with the referring team in ongoing consultation with ICU.


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## Appendix 7: REACH Poster



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