

SESLHD PROCEDURE COVER SHEET



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KEY TERMS	Clinical deterioration; Paediatric; CERS
SUMMARY	<p>This document outlines the Clinical Emergency Response System procedure for Paediatric Inpatients in use in all SESLHD facilities:</p> <ul style="list-style-type: none"> Operational components of the rapid response system including Between the Flags criteria for initiating a Clinical Emergency Response System Call District and hospital responsibilities and accountabilities in relation to the CERS.

COMPLIANCE WITH THIS DOCUMENT IS MANDATORY

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1. POLICY STATEMENT

Early recognition of the deteriorating child and providing a prompt and appropriate response are essential components of safe quality patient care.

SESLHD facilities will utilise a standardised rapid response system to facilitate early recognition and response to paediatric patients with signs of clinical deterioration. The vital signs of paediatric patients in general ward areas will be documented on one of the five age specific paediatric observation charts (SPOC).

The procedure also complies with National Safety and Quality Health Service Standards No. 2 'Partnering with Consumers', No. 6 'Clinical Handover' and No. 9 'Recognising and Responding to Clinical Deterioration in Acute Health Care'.

The procedure shall be read in conjunction with Ministry of Health policy directive [Recognition and Management of Patients who are Clinically Deteriorating](#) PD2013_049 [NSQHS Standard 9 – Recognising and Responding to Clinical Deterioration in Acute Health Care](#)

For neonates in special care nurseries or post natal wards refer to [SESLHDPR/340 - Patient with Acute Condition for Escalation \(PACE\): Management of the Deteriorating NEONATAL Inpatient in Maternity Services and nurseries](#)

For Adult patients refer to [SESLHDPR/283-Patient with Acute Condition for Escalation \(PACE\): Management of the Deteriorating ADULT & MATERNITY Inpatient](#)

2. BACKGROUND

The Clinical Emergency Response System (CERS) is activated if a child's clinical observations or condition meet calling criteria as listed on the age specific Standard Paediatric Observation Chart (SPOC). CERS aims to identify and reverse early signs of deterioration, through early management and treatment. The success of the system relies on the following:

- Observations monitored at a frequency sufficient to detect deterioration or procedural complications
- Recognition of early signs of deterioration by a staff member
- Activation of the CERS/PACE system if observations meet calling criteria or other clinical condition of concern
- Timely medical response and management by a senior member of the primary care team
- Built in escalation to specialised emergency care should the child continue to deteriorate or if the child's condition is life threatening.

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3. DEFINITIONS / ABBREVIATIONS

A-G: Airway; Breathing; Circulation; Disability; Exposure; Fluids; Glucose

AVPU: **A**lert; rousable by **V**oice; rousable only by **P**ain; **U**nresponsive

AMO: Attending Medical Officer / consultant

BTF: Between the Flags

CERS: Clinical Emergency Response System

DETECT Junior: Detecting deterioration **E**valuation, **T**reatment, **E**scalation and **C**ommunicating in **T**eams. A mandatory education program based on e-learning and a practical scenario session designed to improve clinical assessment skills, recognition and management of patients who are clinically deteriorating

eMR: Electronic medical record

ISBAR: Introduction / **S**ituation / **B**ackground / **A**ssessment / **R**ecommendations

'NETS': 'Newborn and paediatric Emergency Transport Service' is the statewide emergency service for medical retrieval of critically ill newborns, infants and children in New South Wales. NETS provides advice to hospitals requesting transport of a patient too sick for care to continue in that hospital.

Observation Monitoring Plan: A plan outlining the minimum observations and assessments that are required, including observation frequency.

PACE: Patient with Acute Condition for Escalation (the escalation system used in adult and maternity patients)

PCT: Primary Care Team (also known as the home team)

REACH: stands for Recognise / Engage / Ask / Call / Help is on its way. REACH is the process a parent or family member can use to independently make an escalation call if they have clinical concern about their child/baby. REACH is an initiative being rolled out across NSW

SPOC: Standard Paediatric Observation chart. There are five age specific paediatric observation charts: Under 3 months; 3 – 12 Months; 1- 4 Years; 5 -11 Years and 12 years and older

Yellow Zone Criteria: Discretionary calling criteria that requires the nurse, in consultation with the nurse in charge, to decide whether a CERS/PACE is activated

Note: if three or more simultaneous yellow zone criteria are present CERS activation is mandatory.

Clinical Review: Observations or clinical condition that meets SPOC yellow zone criteria

Red Zone Criteria / Rapid Response: Mandatory calling criteria that requires CERS/PACE activation. Observations or clinical condition that meets SPOC red zone criteria

≥: Greater or equal to

≤: Less than or equal to

4. NSW HEALTH STANDARD OBSERVATION CHARTS AND CALLING CRITERIA

There are five age specific standard paediatric general observation charts. Each chart details the yellow zone and red zone calling criteria. The age specific charts are:

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- Under 3 months
- 3 - 12 months
- 1 - 4 Years
- 5 to 11 Years
- 12 Years and Over

5. CERS/PACE ACTIVATION BASED ON PATIENT/ FAMILY CONCERN - REACH

- If a patient or family member / carer raises clinical concern for the patient, the clinician must review the patient and assess whether the patient is deteriorating
- If the patient is breaching PACE criteria a PACE call must be made
- If the patient is not deteriorating the clinician must provide the patient or family / carer with a rationale
- If the patient or family / carer are not satisfied or insist on a medical review a PACE call must be made
- In facilities that have implemented the REACH program, the family member/carer will receive information regarding REACH and how to make an independent REACH call.

6. RESPONSIBILITIES

Primary Care Team (PCT) will:

- Attend CERS Orientation
- Complete DETECT Junior e-learning within six months of employment and DETECT Junior practical
- Complete the Resus4Kids Paediatric Life Support (or its equivalent APLS/PLS) or Paediatric Basic Life Support annual assessment (e-learning module and practical assessment) as outlined in the training matrix at Appendix 1
- Document a comprehensive medical management plan at the time of admission
- **Altering Calling Criteria:** For patients known to have chronically abnormal vital signs (considered usual for the patient) consider whether clinical review or rapid response criteria require alteration. If required, complete the alterations to calling criteria section on the front of the standard paediatric observation chart. Any alteration to yellow zone or red zone criteria must have a clinical rationale documented in the medical record. NB The AMO must authorise any criteria modification
- Alterations to calling criteria for acute changes should be reviewed by the Primary Care Team within 24 hours or sooner if clinical condition requires. Alterations for chronic conditions should be reviewed within 48 hours. The next review due date should be documented on the front of the standard paediatric observation chart

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- Escalate to a Tier 2 if unable to reverse clinical deterioration or if the child's observations deteriorate further or if you are seriously concerned and require immediate help
- Respond/Review CERS calls as per the table below

Responding/Reviewing CERS/PACE Calls:

The primary care team and the paediatric team will respond to CERS calls as per the following:

SSEH	During Hours Week days: 0800 – 1700 hrs	After Hours Week days 1700 -2400hrs Weekends and Public Holidays: 0800 – 2400hrs	After hours Nights including weekends: 2400 – 0800hrs
PACE Tier 1	Medical Registrar and Senior SHED CMO	Senior SHED CMO and Ward SRMO	Senior SHED CMO and Ward SRMO
PACE Tier 2 and Cardiac Arrest	Code Blue Team	Code Blue Team	Code Blue Team
Refer to Appendix 1 for detailed overview			

SGH PAEDIATRIC TEAM	For paediatric patients admitted under PAEDIATRIC Team		For paediatric patients admitted under ALL OTHER Teams	
	In Hours	Out of Hours	In Hours	Out of Hours
Tier 1	Yes ✓	Yes ✓	Yes ✓	Yes ✓
Tier 2	Yes ✓	Yes ✓	Yes ✓	Yes ✓
Cardiac arrest	Yes ✓	Yes ✓	Yes ✓	Yes ✓

SGH PRIMARY CARE TEAM	For paediatric patients admitted under Primary Care Team	
	In Hours	Out of Hours
Tier 1	Yes ✓	
Tier 2	Yes ✓	
Cardiac arrest	Yes ✓	

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TSH PAEDIATRIC TEAM	For paediatric patients admitted under PAEDIATRIC Team		For paediatric patients admitted under ALL OTHER Teams	
	In Hours	Out of Hours	In Hours	Out of Hours
Tier 1	Yes ✓	Yes ✓	Yes ✓	Yes✓
Tier 2	Yes ✓	Yes ✓	Yes✓	Yes✓
Cardiac arrest	Yes ✓	Yes✓	Yes✓	Yes✓

Paediatric Registrar will:

- Respond to paediatric Tier 1 calls within 30 minutes and paediatric Tier 2 calls within five minutes
- For patients admitted under the paediatric team, the paediatric registrar is responsible for the child’s management and follow-up. The paediatric registrar / after-hours equivalent maintains ultimate responsibility for the treatment instigated following a Tier 1 or Tier 2 call
- Ensure a priority management and review plan is documented following any CERS call
- Complete the facility Between the Flags Paediatric Notification audit form
- Notify the Attending Medical Officer (AMO) of the child’s condition following every Tier 2 call or cardiac arrest/code blue call and following two or more Tier 1 calls (within a 24 hour period).

Registrar of the Primary Care Team (for patients admitted under non paediatric teams) will:

- For paediatric patients admitted under non paediatric teams attend a review of the patient following notification that a paediatric CERS call has been made (as per the above table)
- The registrar of the primary care team (PCT) is responsible for the child’s management and follow up following a CERS call
- Ensure a priority management and review plan is documented following any CERS call
- Notify the Attending Medical Officer (AMO) of the child’s condition following every Tier 2 call or cardiac arrest/code blue call and following two or more tier 1 calls (within a 24 hour period).

Emergency Department (ED) clinicians will:

- Document observations on the NSW Paediatric Emergency Department Observation chart or electronically via Firstnet
- Escalate any red zone breach or additional red zone criteria to the senior medical officer on duty in the ED

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- For patients being transferred to the ward ensure that the *Authorisation for Departure from ED to Ward* section of the paper version of the NSW Paediatric Emergency Department Observation chart or the *ED to Ward Transfer* form in FirstNet is complete
- Ensure that patients are not transferred to the ward breaching red zone criteria or additional red zone criteria without the approval of the transferring senior medical officer and a documented management plan to address
- Ensure that the primary care team, (medical and nursing), are advised prior to transfer of any observations in the yellow or red zone (OR additional yellow zone or additional red zone criteria) and the management plan to address
- Any **alterations to calling criteria** are to be documented on the paper SPOC, including a documented review due date and to be signed by an ED senior medical officer before the patient is transferred to the ward. Alterations to calling criteria should be made in liaison with the primary care team. The primary care team must be notified of any alterations to calling criteria before the patient is transferred
- Attend CERS Orientation, Awareness /training, Detect Junior e-learning, DETECT Junior practical (face to face training session) and Complete the *Resus4Kids Paediatric Life Support (or APLS/PLS)* annual assessment (e-learning module and practical assessment) as outlined in the Training Matrix at Appendix 1.

Nursing Unit Manager (NUM) will:

- Review with the bedside nurse any child/baby with observations charted in the YELLOW ZONE of the SPOC to determine if PACE activation is required
- Review observation charts on a regular basis to ensure that vital signs are monitored and recorded completely, at a frequency sufficient to detect clinical deterioration and that calling criteria are escalated as per the PACE procedure
- To ensure continuous quality improvement, remedial action and follow up with staff should occur, if deficits are identified
- The NUM or shift team leader of the ward/unit is responsible for the provision of sufficient equipment to ensure nursing workflow is not delayed due to faulty or missing equipment i.e. thermometers, oxygen saturation monitors and probes
- Ensure nursing staff complete Awareness /training, Detect Junior e-learning, DETECT Junior practical (face to face training session) and the Resus4Kids Paediatric Life Support (or APLS/PLS) and annual assessment (e-learning module and practical assessment) as outlined in the Training Matrix at Appendix 1.

Nurses will:

- Attend CERS Orientation; Awareness Training, DETECT Junior e-learning and DETECT Junior practical (face to face training session)
- Complete the *Resus4Kids - Life Support or Paediatric Basic Life Support* annual assessment (e-learning module and practical assessment) as outlined in the Training Matrix at Appendix 1

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- Monitor a paediatric patient's vital signs at a frequency that is appropriate to the clinical condition or treatment being administered. All paediatric inpatients are to have a minimum set of observations attended every four hours
- If observations meet yellow zone criteria consult promptly with the nurse in charge to determine whether a Tier 1 call is required
- If observations meet red zone criteria the nurse must immediately activate the CERS system by dialling the facility's emergency number (2222). The nurse will request either a paediatric Tier 2 or code blue/cardiac arrest depending on the severity of the patient's condition. Advise the switch operator which team is required, the ward and bed number.
- **NB** Check whether the patient has altered calling criteria
- Notify the NUM or team leader that a CERS call has been made
- Initiate treatment within scope of clinical practice including a repeat set of observations. Monitor for signs of worsening deterioration. Prepare to hand over to the responder using ISBAR principles
- Ensure that parents have received information regarding **REACH** including how to make a REACH call
- If a parent or family member raises clinical concern for the patient, the nurse/midwife must review the patient and assess whether the patient is deteriorating. If the patient is deteriorating a PACE call must be made. If the patient is not deteriorating the nurse/midwife must provide the patient or family / carer with a rationale.
- If the patient or family remain concerned or not satisfied with the rationale provided the nurse/midwife must activate a PACE call
NB: If the parent remains concerned they are able to make a REACH call by dialling the facility REACH number
- Contemporaneously document the episode in the medical record
- Complete the activator section of the Paediatric BTF Paediatric Notification Audit form and place in the collection folder.

Allied Health Professions will:

- Attend CERS Orientation
- Complete Awareness Training, DETECT Junior e-learning and DETECT Junior practical (face to face session) and Resus4Kids Basic Life Support for Allied Healthcare Rescuers training (e-learning module and practical assessment) as per the Training Matrix at Appendix 1
- Immediately notify the nurse / midwife if a patient's condition deteriorates or meets clinical review or rapid response criteria. The nurse / midwife will activate the appropriate response.

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7. PROCEDURE

7.1 ACTIVATION OF THE CERS – PAEDIATRIC PATIENT

BLUE ZONE Criteria

If a paediatric patient's observations breach the blue zone of the Standard Paediatric Observation Chart (SPOC) increase the frequency of monitoring as clinically indicated and monitor for adverse trend. Initiate appropriate clinical care within scope of your clinical practice.

Escalate via the CERS if you are worried about the patient's clinical condition.

YELLOW ZONE

If the observations are charted in the yellow zone or meet additional yellow zone criteria (as listed on page 4 of the Standard Paediatric Observation chart):

- Consult promptly with the nurse in charge to assess whether a Paediatric CERS is required
- Initiate appropriate clinical care and repeat the observations as indicated by the patient's clinical condition

To determine if escalation is required the nurse / midwife should consider:

- Whether abnormal observations reflect deterioration in your patient
 - What is usual for your patient or if there are altered calling criteria
 - Whether there is an adverse trend in observations
- If CERS escalation is required, activate a CERS call (refer below) and prepare to handover to the responder using ISBAR principles.

If escalation is not required:

- Increase observation frequency as indicated by the patient's condition.

Note: If the child's condition becomes immediately life threatening, deteriorates further or is not reviewed within 30 minutes or if deterioration is not reversed within one hour the clinician **MUST** activate a paediatric Tier 2 call.

PAEDIATRIC CERS ACTIVATION (RED ZONE)

If the child's observations are charted in the red zone or meet additional red zone criteria or simultaneously meet three or more yellow zone criteria you **MUST** immediately activate a Paediatric CERS:

- Dial the emergency number (2222)
- State paediatric Tier 1 or Tier 2, consultant ward and bed number
- Instigate treatment within scope of clinical practice.

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A Tier 1 call will be responded to within 30 minutes

A Tier 2 within five minutes

Cardiac Arrest / Code Call

If the child's condition is immediately life threatening or you are seriously concerned immediately activate a Paediatric Cardiac Arrest / Code Blue:

- Dial emergency number (2222)
- State Paediatric Cardiac Arrest/ Code Blue, ward and bed number
- Instigate treatment within scope of clinical practice including basic life support (BLS).

The cardiac arrest / code blue team (and Paediatric Team SGH and TSH) will respond immediately.

7.2 RESPONDING TO A PAEDIATRIC CERS CALL

Following a CERS page the registrar (or equivalent at SSEH – see Appendix 2) must respond within 30 minutes for a Tier 1 or within five minutes for a Tier 2.

- The responder must conduct an urgent systematic review of the patient's condition and commence appropriate management. A complete review of the child's history, observation charts and a full physical examination should follow. Documentation of the review and a medical management plan must be completed in the health care record
- **If the child deteriorates further during the review or if the child's condition becomes immediately life threatening escalate to a Code Blue /Cardiac Arrest call by dialling the emergency number (2222)**
 - At SSEH consider early transfer of the patient to a Paediatric Hospital via the Emergency Department if the patient's clinical condition is not responsive to initial treatment
- The Registrar (or SSEH equivalent - see Appendix 2) is responsible for informing the AMO of multiple Tier 1 calls , and any tier 2 or cardiac arrest calls including treatment instigated and outcomes as soon as possible
- The next of kin should be notified if the child has a Tier 1, Tier 2, or code blue/ cardiac arrest call as soon as possible.

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- As there are no paediatricians at SSEH, Tier 1 and 2 response times remain the same however, responders are allocated according to time of day and availability of Medical Registrar or senior ED CMO. Therefore, please refer to Appendix 2 for Tier 1 and Tier 2 / Cardiac Arrest Responders
- Consider early transfer of the patient to a Paediatric Hospital via the Emergency Department if the patient's clinical condition is not responsive to initial treatment.

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7.3 PAEDIATRIC ESCALATION BEYOND THE FACILITY AND TRANSFER PROCESS

- For all paediatric and neonatal patients who are clinically unstable or deteriorating (or for whom there is a high level of clinical concern), medical or nursing staff need to urgently contact the clinical support or on-call paediatrician (SSEH should contact the SCH Randwick on-call paediatric registrar) to discuss the patient's ongoing care (and transfer)
- This escalation of care is necessary to review what stabilisation or resuscitation the patient may require as well as the end point for NETS (Newborn and Paediatric Emergency Transport Service) transfer to tertiary neonatal or paediatric services which can then inform the documented treatment plan.

7.4 ALTERATIONS TO CALLING CRITERIA

- Altering calling criteria should be undertaken with caution as criteria are sensitive signs of deterioration. Calling criteria should only be altered in consultation with the AMO and must be formally reviewed by the AMO. Any alteration to calling criteria should have a clinical rationale documented in the medical record
- Altered calling criteria and their due review date/time are documented on the Alterations to Calling Criteria section of the NSW Health Standard Paediatric Observation chart
- Alteration of calling criteria for acute changes should be reviewed by the AMO within 24 hours. Alteration of BTF criteria for chronic conditions should be reviewed within 48 hours.

7.5. MONITORING AND INCREASING FREQUENCY OF OBSERVATIONS

The RN is accountable for the safety of the patient under his/her care. This includes monitoring the patient's vital signs in accordance with their clinical condition and treatment. In the absence of a pathway, end of life plan or other document specifying frequency of observation measurements, the patient should have a complete set of core vital signs conducted every four hours.

Core vital signs include: respiratory rate, signs and symptoms of respiratory distress, oxygen saturation, heart rate, level of consciousness using rapid assessment method AVPU (Alert, voice, Pain Unresponsive) or a more detailed neurological assessment utilising Glasgow Coma Scale (GCS), temperature and pain assessment. BP should be attended as per the clinical condition but at least once during the admission.

Clinical situations that require more frequent observations

Ongoing assessment and monitoring of the patient for signs of clinical deterioration is a core nursing function. In considering the need to increase the frequency of observations the nurse should take into consideration the patient's clinical condition and treatment.

Observation frequency should be increased if:

- Vital signs change or trend away from normal limits
- Vital signs meet blue, yellow or red zone criteria

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- Recently transferred from Critical Care areas or Emergency Department
- Following a general anaesthetic or conscious sedation.

Other clinical situations when vital signs should be monitored:

- On admission or transfer
- During / following a change in treatment or management
- Prior to administration of medications that will directly affect the vital signs
- Prior to a child’s discharge from a facility
- Patient or family member / carer concern
- As per other policies or procedures

Clinical Situation	Observation Frequency	Action Required
If vital signs change and are charted in the Blue Zone	Repeat vital signs; Increase observation frequency as clinically appropriate	<ul style="list-style-type: none"> • Monitor and reassess
Observations charted in the Yellow Zone or meet Additional Yellow Zone criteria	Repeat and record observations within 30 minutes and continue to monitor	<ul style="list-style-type: none"> • Assess with nursing team leader and determine whether a Paediatric Tier 1 call is required • Initiate clinical management within scope of practice.
Observations charted in the Red Zone or meet additional Red Zone criteria	Immediately repeat vital signs and continue to monitor	<ul style="list-style-type: none"> • Activate a Paediatric Tier 2 call or code blue/cardiac arrest depending on the severity of the patient’s condition. • Inform nursing team leader.

8. ACCURACY OF VITAL SIGN MEASUREMENTS

The reliability of vital signs is dependent on clinician expertise, proper technique and well maintained equipment. The child must be settled and at rest for routine observations. Following any physical activity allow the child to settle to pre activity levels before measuring vital signs.

- **Respiratory rate** should be assessed over 60 seconds
- **Oxygen saturation:** The probe should be placed on a warm and well perfused part of the body. Measurements should correlate with the child’s heart rate. Poor correlations suggest the measurement is not a true reading.
- **Blood pressure** must be measured with the appropriately sized cuff. Correct cuff size should measure fifty per cent of the upper arm. Automated blood pressure machines occasionally provide spurious results and questionable values should be confirmed by manual auscultation.

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Note: If the automated blood pressure reading is outside the patient's usual range or in the blue, yellow or red zone of the standard paediatric observation chart, then a manual reading should be obtained.

- **Heart rate** should not be obtained from a pulse oximeter/cardiac monitor as palpation provides the opportunity to assess regularity and contour.

A manual pulse checked by palpation of peripheral pulses over 60 seconds is to be taken on all patients who breach heart rate calling criteria. If the heart rate is found to be irregular then a manual blood pressure reading should also be obtained.

The heart rate should be counted over sufficient time to ensure an accurate rate is obtained (at least 60 seconds).

If apex beat is used and heart rate breaches criteria, then a palpation of peripheral pulses should also be included.

9. DOCUMENTATION

- NSW Health Standard Paediatric Observation charts and clinical progress notes
- BTF Paediatric Notification form.

10. AUDIT

- District and facility Deteriorating Patient committees will monitor and review key performance indicators, incidents involving the deteriorating patient and system management issues
- Data will be collected on every CERS and code blue / cardiac activation
- The results of data analysis should be reported to clinical units, facilities and district quality committees
- Monthly audits include identification of system failures (i.e. system failures in relation to observations, documentation, escalation of care) for all cardiac arrests and transfers to Critical (Intensive) care *
**Excludes transfers from emergency department, transfers from sources external to the hospital and patients whose planned postoperative care includes transfer to critical care.*
- Observation chart audit.

11. REFERENCES

- Australian Commission on Safety and Quality in Health Care (2011); A guide to support implementation of the National Consensus Statement: Essential elements for recognising and responding to clinical deterioration. Sydney, ACSQHC.

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- Harrison, G., Jacques, T., McLaws, M., and Kilborn, G. (2006). Signs of Critical Conditions and Emergency Responses (SOCCER): A Model for Predicting Adverse Events in the Inpatient Setting. . *Resuscitation* 69, 175-183.
- Harrison, G., Jacques, T., Kilborn, G., and McLaws, M. (2005). The Prevalence of Recordings of Signs of Critical Conditions and Emergency Responses in Hospital Wards - the SOCCER Study. *Resuscitation* 65, 149-157.
- Harrison, G., Jacques, T., McLaws, M., and Kilborn, G. (2006). Combinations of Early Signs of Critical Illness Predict In-Hospital Death - the SOCCER Study (Signs of Critical Conditions and Emergency Responses). *Resuscitation* 71, 327-334.
- Harrison, G., and Jacques, T. (2006). *Summary of GMCT Guidelines for in-Hospital Clinical Emergency Response Systems for Medical Emergencies.*
- RPAH PD 2010_04 Patient Observation (Vital Signs) Policy – Adult
- Ministry of Health policy [Recognition and Management of Patients who are Clinically Deteriorating](#) PD2013_049

12. REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
July 2013	1	Adapted by Suzanne Schacht from old Area Policy PD 208; Paediatric PACE procedure developed as a separate procedure. Updated to include Monitoring of Observations; PACE criteria and procedure mapped to align with the BTF observation charts Revised by Scarlett Acevedo, District Policy Officer.
November 2013	2	Revised by Suzanne Schacht following consultation period. Re-formatted by Scarlett Acevedo, District Policy Officer
September 2014	2	Statement added relevant to non-tertiary paediatric facilities 6.3 - <i>PAEDIATRIC ESCALATION BEYOND THE FACILITY AND TRANSFER PROCESS</i> Endorsed and approved by the relevant divisions, streams and committees (Women’s & Children’s stream, local sector as well as local and LHD deteriorating patient and CERS committees).
October 2015	3	Reviewed by Clinical Streams. Endorsed by Executive Sponsor
November 2015	3	Endorsed by SESLHD Clinical and Quality Council
June / September 2018	4	Minor review to include increasing clarity re role of medical responders and inclusion of a Paediatric Education Matrix as an appendix. Draft for Comment period for feedback. Final draft approved by Executive Sponsor.
September 2018	4	Processed by Executive Services prior to publishing – minor review.
November 2018	5	Minor review to Matrix – Appendix 1. Processed by Executive Services prior to publishing.

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APPENDIX 1: MATRIX FOR BETWEEN THE FLAGS AND PAEDIATRIC RESUSCITATION TRAINING AND REACCREDITATION

DEFINITIONS

Tier One Non-Clinical = All healthcare workers (i.e. non clinical)

Tier One Clinical = Allied Health, Enrolled Nurses and all Registered Nurses and medical staff who do not care for children (POWH ED)

Tier Two Non Specialist = Paediatric nurses, General Ward (SSEH), Recovery, Anaesthetics, Day Only, Child and Family Health, Outpatients including Dental, Medical Imaging and Adolescent Mental Health

Tier Two Specialist = All ED nurses that care for both paediatric and adult patients, ICU nurses that respond to arrest calls/CERS calls

Tier Three = All medical staff that are required to respond to, or act as a resus/rapid response team leader

MODULES	TIER ONE NON-CLINICAL	TIER ONE CLINICAL	TIER TWO NON-SPECIALIST	TIER TWO SPECIALIST – Resus/Rapid Responders	TIER THREE – Rapid Response Team T/L
Between the Flags Awareness and Standard Observation Charts & Escalation - eLearning	Once	Once	Once	Once	Once
Paediatric Basic Life Support for Clinicians on HETI / My Learning Pathway - eLearning		Annual	Annual		
Paediatric Basic Life Support with AED – practical session (dates on HETI / My Learning Pathway)		Annual	Annual		
DETECT Junior eLearning			Once	Once	Once
DETECT Junior Practical			Once	Once	Once
Skills In Paediatrics (SKIP) eLearning			Once	Once	Once
NSW Health Paediatric Clinical Practice Guidelines eLearning – To be repeated if guidelines change /updated			Once	Once	Once
Resus 4 Kids eLearning – Paediatric Life Support for Healthcare Rescuers				Annual	Annual
Resus 4 Kids Practical – Paediatric Life Support for Healthcare Rescuers				Annual	Annual
Resus4Kids – Advanced Paediatric Resuscitation eLearning and practical session IO Access, 4 Hs & 4 Ts and abnormal Cardiac Rhythms				Every Four Years	Every Four Years
Resus4Kids – Advanced Paediatric Airway Management eLearning and practical session				Every Four Years	Every Four Years
Resus4Kids – Paediatric Tracheostomy Emergency Management eLearning and practical session				Every Four Years	Every Four Years

Appendix 2:

Sydney/Sydney Eye Hospitals

Clinical Emergency Response System (CERS) incorporating Patient with Acute Condition for Escalation (PACE) and Code Blue



Sydney Hospital and Sydney Eye Hospital
Clinical Emergency Response System (CERS) Protocol



PACE Tier 1 Responder and Code Blue (PACE Tier 2/Cardiac Arrest) Teams DIAL "777"			
	During Hours Weekdays: 0800 - 1700hrs	After Hours Weekdays: 1700 - 2400hrs Weekends & Public Holidays: 0800 - 2400hrs	After Hours Nights including Weekends: 2400 - 0800hrs
PACE Tier 1	Medical Registrar* & Senior SHED CMO***	Senior SHED CMO** & Ward SRMO	Senior SHED CMO** & Ward SRMO
<p>Escalate to PACE Tier 2 if:</p> <ul style="list-style-type: none"> You are concerned and require immediate help; and/or Patient's condition deteriorates rapidly before or during review; and/or No response to PACE Tier 1 within 30 minutes; and/or Patient is not stabilised within 1 hour of treatment and/or Medical Officer requests escalation. 			
PACE Tier 2 & Cardiac Arrest	<p style="text-align: center; color: blue;">Code Blue Team</p> <ul style="list-style-type: none"> SHED Director or Staff Specialist or CMO Medical Registrar Anaesthetist from OT if free Bed Manager/AHNM SHED CNC or SHED RN Wardsperson/ Porter Security 	<p style="text-align: center; color: blue;">Code Blue Team</p> <ul style="list-style-type: none"> SHED CMO Eye Registrar Ward SRMO Bed Manager/AHNM SHED RN Wardsperson/ Porter Security 	<p style="text-align: center; color: blue;">Code Blue Team</p> <ul style="list-style-type: none"> SHED CMO Ward SRMO Bed Manager/AHNM SHED RN Wardsperson/Porter Security

*If the Medical Registrar is unable to answer the PACE Tier 1 call, response to the PACE Tier 1 call will be delegated to the Senior Sydney Hospital Emergency Department (SHED) CMO.

**The Senior SHED CMO will answer the PACE Tier 1 call. Response to the PACE Tier 1 call may then be delegated to the Ward SRMO at the discretion of the SHED CMO. The delegated alternative responder must then report back to the SHED CMO within 30 minutes of activated call. The Ward SRMO is not rostered on Saturday, Sunday or Public Holiday between 1700 - 2200hrs.

*** Eye or Hand/ENT Residents will be paged for PACE Tier 1 calls for their respective patients.