**NAME OF DOCUMENT**  
Patient with Acute Condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY Inpatient

**TYPE OF DOCUMENT**  
Procedure

**DOCUMENT NUMBER**  
SESLHDPR/283

**DATE OF PUBLICATION**  
August 2016

**RISK RATING**  
High

**LEVEL OF EVIDENCE**  
NSQHS Standard 9

**REVIEW DATE**  
August 2018

**FORMER REFERENCE(S)**  
Former PD 208

**EXECUTIVE SPONSOR or EXECUTIVE CLINICAL SPONSOR**  
Ms Kim Brookes  
A/Director of Clinical Governance

**AUTHOR**  
Suzanne Schacht  
SES Deterioration Patient Committee

**POSITION RESPONSIBLE FOR THE DOCUMENT**  
LHD Clinical Stream Manager Cardiac/Respiratory and Intensive Care  
suzanne.schacht@health.nsw.gov.au

**KEY TERMS**  
Clinical deterioration; escalation; clinical emergency response systems, CERS, PACE, Sepsis

**SUMMARY**  
This document outlines the PACE escalation procedure in use in all SESLHD facilities  
- Operational components of the rapid response PACE system including criteria for activating a PACE call  
- District and hospital responsibilities and accountabilities in relation to the PACE rapid response system
1. **POLICY STATEMENT**

   Early recognition of the deteriorating patient and the provision of 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 respond to patients with signs of clinical deterioration. The agreed rapid response system is called Patient with Acute Condition for Escalation (PACE).

   In SESLHD general observations for adult patients must be recorded on the NSW Health Standard Adult General Observation chart or the NSW Health Standard Maternity Observation chart.


2. **BACKGROUND**

   PACE is the rapid response system activated if a patient’s clinical observations or condition meet PACE criteria. PACE criteria aligns with the rapid response criteria documented on the NSW Standard Observation chart/Standard Maternity Observation chart. The PACE system 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 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 patient continue to deteriorate or if the patient’s condition is life threatening
3. **DEFINITIONS and ABBREVIATIONS**

A-G: Airway; Breathing; Circulation; Disability; Exposure; Fluids; Glucose
AVPU: Alert; rousable by Voice; rousable only by Pain; Unresponsive
AMO: Attending Medical Officer / consultant (or on call equivalent)
BTF: Between the Flags
CERS: Clinical Emergency Response System
DETECT: Detecting deterioration Evaluation, Treatment, Escalation and Communicating in Teams. A mandatory education program based on e-learning and a practical scenario based session designed to improve clinical assessment skills, recognition and management of patients who are clinically deteriorating
DETECT Junior: A similar e-learning and practical scenario based session as DETECT, which is mandatory for all staff who care for paediatric patients
FONT: Fetal welfare assessment, Obstetric emergencies and Neonatal resuscitation Training
ISBAR: Introduction / Situation / Background / Assessment / Recommendations
Observation Monitoring Plan: A plan outlining the minimum observations and assessments that are required, including observation frequency.
PACE: Patient with Acute Condition for Escalation
PCT: Primary Care Team (also known as the home team)
SAGO: Standard Adult General Observation chart
SMOC: Standard Maternity Observation chart
SNOC: Standard Newborn Observation Chart

≥: Greater or equal to
≤: Less than or equal to

**Clinical Review / Yellow Zone Criteria:** An observation range that requires the nurse/midwife, to decide based on clinical judgement whether a PACE call is activated
**Additional Yellow Zone Criteria:** A list of conditions, listed on page four of the SAGO/SMOC that require a mandatory PACE call.

*For a list of adult additional calling criteria refer to page 14*
*For a list of maternity additional calling criteria refer to page 19*

**Rapid Response / Red Zone Criteria:** An observation range that requires either a mandatory PACE tier 1 or PACE tier 2 / code blue / cardiac arrest call to be made.
**Additional Red Zone Criteria:** A list of serious conditions, listed on page four of the SAGO/SMOC that require a mandatory PACE call

*For a list of adult additional calling criteria refer to page 14*
*For a list of maternity additional calling criteria refer to page 19*
4. **NSW HEALTH STANDARD OBSERVATION CHARTS**

- NSW Health Standard General Adult Observation Chart
- Adult Emergency Department Observation Chart
- NSW Health Maternity Observation Chart

*Pregnant women admitted at less than 20 weeks gestation have vital signs recorded on the Standard Adult General Observation chart*

5. **RESPONSIBILITIES**

5.1 **Primary Care Team (PCT) will:**

- Attend PACE Orientation, DETECT e-learning and DETECT practical (or Fetal welfare Obstetric emergency Neonatal resuscitation Training)
- Document a comprehensive medical management plan at the time of admission, including required observations
- Prescribe any required variations to frequency of observations on the NSW Health Standard Adult General Observation chart / NSW Health Standard Maternity Observation chart
- **Altering Calling Criteria:** Calling criteria may only be modified in consultation with the AMO. If alteration required, complete the Alterations to Calling Criteria section on the Standard Adult General Observation / Standard Maternity Observation chart, documenting acceptable vital sign parameters.
  - Any alteration to calling criteria must have a clinical rationale documented in the patient’s health care record
  - All alterations to calling criteria must be formally reviewed by the AMO
  - Calling criteria modification for **acute** changes should be reviewed by the AMO within 24 hours and then on a regular basis to ensure still valid (i.e. on an ongoing 24 hour basis)
  - Calling criteria modification for **chronic** conditions should be reviewed within 72 hours for general patients and within 36 hours for maternity patients by the AMO
  - Review any alterations to calling criteria as soon as feasible for any patient transferred from a high acuity area such as Emergency or Intensive Care
  - The next review due date/time (of the altered calling criteria) must be documented on the Standard Adult General Observation chart or the Standard Maternity Observation chart

5.2 **Registrar of the Primary Care Team will:**

- Respond to any PACE tier 1 call as soon as possible but within 30 minutes
  - If unable to attend a PACE tier 1 call (i.e. in theatre or attending another PACE call), a locally agreed deputy can respond
  - The deputy must discuss the patient with the registrar or AMO (as soon as possible or before the end of the shift if not deemed urgent). The discussion and any outcomes should be documented in the medical record
Patient with Acute condition for Escalation (PACE):
Management of the Deteriorating ADULT and MATERNITY inpatient

- Document the PACE event in the medical record including: clinical findings, treatment and if required a revised management plan. Ensure this revised plan is communicated to relevant staff (i.e. nursing staff)
- Notify the Attending Medical Officer (AMO) of the patient's condition following every PACE Tier 2 call or cardiac arrest/code blue call or following multiple PACE tier 1 calls (within a 24 hour period)
- Notify the patient's next of kin (NOK) as soon as practical following a PACE tier 2 or code blue / cardiac arrest call or following a significant change / deterioration in the patient's condition
- Complete the PACE Notification form

5.3 Emergency Department (ED) Clinicians will:
- Document observations on the NSW Emergency Standard Observation Chart or for maternity patients ≥ 20 weeks gestation on the NSW Standard Maternity Observation chart via FirstNet or paper version during down time
- Escalate any red zone breaches or additional red zone criteria to the senior medical officer on duty in the ED
- For patients being transferred to the ward ensure that on FirstNet the following are completed prior to ward transfer: ED to Ward Form, Medical Admission checklist and ED Safe for Transfer-Nursing and Medical from or ED SAGO Paper version ED to Ward Departure Checklist and Authorisation for Departure from ED to Ward.

5.4 Emergency Department, Critical Care, Intensive Care or High Dependency Unit Clinicians will:
- 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
- Ensure that any alterations to calling criteria are documented on the paper SAGO / SMOC or FirstNet Alterations to Criteria form, including a documented review due date and are signed by an ED / ICU 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.

5.5 Nursing / Midwifery will:
- Attend PACE Orientation, DETECT e-learning and the DETECT practical
  - Midwives are exempt from the DETECT practical as the principles of DETECT have been incorporated into Fetal welfare Obstetric emergency Neonatal resuscitation Training (FONT)
- Monitor patient's vital signs at a frequency that is appropriate to the clinical condition or treatment being administered, (i.e. at a frequency sufficient to detect deterioration). Well maternity patients without risk factors (and well new born babies
in the postnatal ward) only require one set of core vital sign observations following birth

- Check whether there are appropriate alterations to calling criteria (i.e. signed by the AMO and within the review period)
- Know when and how to activate the PACE system
- Notify the NUM / MUM or team leader that a PACE call has been made
- Contemporaneously document the episode in the medical record. Alternatively the PACE label can be used and adhered in the medical record.
- Complete the activator section of the PACE Notification Audit form and place in the PACE collection folder [http://seslhnweb/PACE/notificationform.asp](http://seslhnweb/PACE/notificationform.asp)
- Discuss the management plan with the reviewing medical officer and seek clarity if required to provide treatment as appropriate
- If a patient or family member / carer 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 / carer insist on a review by the doctor a PACE call must be made.

### 5.6 Nursing / Midwife Unit Manager (NUM /MUM)/ Team Leader will:

- Review with the bedside nurse/midwife any patient with observations in the yellow zone, (following appropriate clinical care being initiated and a repeat set of observations performed) to determine if a PACE activation is required
- Review observation charts on a regular basis to ensure that vital signs are monitored and recorded completely and 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 when deficits are identified.
- The NUM / MUM of the ward/unit is responsible for the provision of sufficient equipment to ensure nursing / midwifery workflow is not delayed due to faulty or insufficient equipment i.e. sphygmomanometers (automatic and manual), BP cuffs, thermometers, oxygen saturation monitors
- Ensure staff receive education and training regarding the PACE system, DETECT e-learning and DETECT practical (or for maternity staff [ FONT ] education).

### 5.7 Allied Health Professions will:

- Attend PACE Orientation, DETECT e-learning and DETECT practical
- Graphically record any vital sign observation measurements on the relevant patient observation chart i.e. SAGO, SMOC or Emergency Standard Observation chart
- Notify the nurse / midwife if the patient’s observations or clinical condition meet calling criteria or activate a PACE call by dialing the facility’s emergency number (advise switch operator of PACE tier required, the ward and bed number)
- **NB** Check whether the patient has alterations to calling criteria
- Document the PACE episode in the medical record and complete the activator section of the PACE Notification Audit form and place in the PACE collection folder.
5.8 Facility PACE Coordinators will:
- Provide ongoing multi-disciplinary ward education and hospital orientation related to the operation of the PACE system
- Maintain a register of all PACE activations (i.e. SESLHD PACE Management system http://ranapp12.lan.sesahs.nsw.gov.au/PACE/). Provide agreed monthly key performance indicators
- Audit compliance to the procedure, report on variances and feedback results to clinical areas, facility Deteriorating Patient Committee and the District Deteriorating Patient Committee.

5.9 District Deteriorating Patient Committee:
- The District Deteriorating Patient Committee is the peak District Committee with overarching responsibility for the SESLHD PACE system
- Any local variance to the District PACE policy requires formal approval by this Committee.

6. Corporate Services (Telecommunication Managers) will:
- Develop and maintain a PACE Call Action Card for use by switch operators
- Develop a PACE call log book for operators including:
  - Time of call
  - Type of call being initiated i.e. PACE Tier 1 or PACE Tier 2; Code Blue / Cardiac Arrest; Adult, Obstetric, Neonatal or Paediatrics
  - The primary care team being requested
  - The location and bed number of the deteriorating patient
  - Time page initiated
  - Any difficulties encountered in implementing the PACE system
- Monitor adherence to PACE call operator requirements. Report / escalate issues where necessary to facility Clinical Emergency Response Committee.

Telecommunications Operators will:
- Initiate the PACE call using the usual hospital emergency paging system (or equivalent)
- Record and document all PACE calls using the PACE call log book.

7. PROCEDURE
7.1 ACTIVATION OF THE PACE SYSTEM – ADULT / MATERNITY PATIENT

Clinical Review / Yellow Zone Criteria: An observation range, shaded yellow on the SAGO/SMOC that requires the nurse/midwife in consultation with the nurse/midwife in charge to decide, based on clinical judgement, whether a PACE call is activated

Additional Yellow Zone Criteria: A list of conditions, listed on page four of the SAGO/SMOC that require a mandatory PACE call* ♦

For a list of adult additional calling criteria refer to page 13

* ♦
Patient with Acute condition for Escalation (PACE):
Management of the Deteriorating ADULT and MATERNITY inpatient

For Blood Glucose Level < 4mmol/L or > 20 mmol/L the clinician should treat the patient as per the local hypoglycaemic protocol. A PACE call is required if the patient does not respond to treatment or if the patient has a symptomatic decrease in level of consciousness.

Rapid Response / Red Zone Criteria: An observation range, shaded red on the SAGO/SMOC that requires a mandatory PACE tier 1 or PACE tier 2 / code blue / cardiac arrest call to be made. Additional Red Zone Criteria: A list of serious conditions, listed on page 4 of the SAGO/SMOC that requires a mandatory PACE call.

Adult additional calling criteria refer to page 13
Maternity additional calling criteria refer to page 18

PACE Activation based on Patient or Family / Carer Concern: 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 deteriorating 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 insist on a medical review a PACE call must be made.

7.2 Yellow Zone / Clinical Review Zone

If observations are charted in the yellow zone:

- Initiate appropriate clinical care and repeat the observations as indicated by the patient’s clinical condition

- If observations continue in the yellow zone or trend towards the red zone, (without an Alteration to Calling Criteria), the nurse/midwife must consult the nurse/midwife in charge to determine if a PACE call is required

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

- What is usual for the patient or are there “Alterations to Calling Criteria” documented?
- Does the trend in observations suggest deterioration?
- Are you worried about your patient’s condition?
- Is there more than one Yellow Zone observation charted?

- If PACE escalation is required, activate a PACE call (refer below).
7.2.1 If a patient has an additional yellow zone criteria as listed on page four of the SAGO/SMOC:

- You must activate a PACE call

For a list of adult additional calling criteria refer to page 13

7.2.2 If observations meet Yellow Zone criteria and escalation is not required:

- Consider increasing the frequency of observations as indicated by the patient’s condition
- If observations continue to deteriorate escalate to a PACE call. Prepare to handover to the PACE responder using ISBAR principles

7.2.3 Document the reason for escalation / non escalation, any treatment and outcome in the health care record.

7.3 PACE Tier 1 Activation

If a patient’s observations are recorded in the red zone on the observation chart or meet additional yellow or red zone criteria the clinician MUST activate the PACE system.

- Repeat the observation (to clarify if correct)
- Dial the emergency number (777)
- Request a PACE tier 1 call (Adult; Obstetric; Neonatal or Paediatric)
- Provide the operator with the primary care team required, the ward and bed number of the patient
- Inform the nurse / midwife in charge, instigate treatment within scope of clinical practice. Prepare to handover to the responder using ISBAR principles
- Review the observation frequency and increase frequency as indicated by the patient’s condition
- Document the event as outlined in Nursing /Midwifery Responsibility section of this policy and complete a PACE Notification form

A senior member of the primary care team will respond to a PACE Tier 1 call within 30 minutes

7.4 PACE Tier 2 (Code Blue) Activation

If the patient’s condition becomes immediately life threatening, deteriorates further or the patient is not reviewed within 30 minutes of a PACE tier 1 call, the clinician MUST activate a PACE Tier 2 call (code blue)

- Dial the emergency number (777)
- Request a PACE tier 2/code blue call (Adult; Obstetric; Neonatal or Paediatric)
Patient with Acute condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY inpatient

- Provide the operator with the ward and bed number of the patient
  - At the following sites (RHW, SGH and TSH) also provide the operator with the name of the patient’s consultant
- Instigate treatment within scope of clinical practice. Prepare to handover to the team using ISBAR principles

The cardiac arrest / code blue team will respond immediately

7.4.1 **Cardiac Arrest / Code Blue**

If a patient’s condition is immediately life threatening or you are seriously concerned immediately activate a cardiac arrest / code blue call

- Dial the emergency number (777)
- State Cardiac Arrest/ Code Blue, Adult; Obstetric; Neonatal or Paediatric, ward and bed number (plus AMO’s name at SGH for general adult patients)
- Instigate treatment within scope of clinical practice including basic life support (BLS)

The cardiac arrest / code blue team will respond immediately

7.5 **Responding to a PACE Call**

Following a PACE tier 1 page the Registrar of the primary care team or locally agreed deputy must respond as soon as possible but within 30 minutes

- The Registrar must conduct an urgent systematic review of the patient’s condition and commence appropriate management
- The Registrar should initiate further investigations, referrals (consider whether an ICU review is required) or definitive treatment as appropriate
- **If the patient deteriorates further during the review or if the patient’s condition becomes immediately life threatening escalate to a Code Blue /Cardiac Arrest call by dialing the facility emergency number (777)**
- Notify the AMO if the patient has multiple PACE tier 1 calls within 24 hours or following a PACE Tier 2 or code blue/cardiac arrest call.
- Communicate with the treating nursing staff of the outcome of the assessment and revised management plan
- The next of kin (NOK) should be notified if the patient has a PACE tier 2 or code blue/cardiac arrest call made. Notifying the NOK following a PACE tier 1 should be on the basis of clinical judgement (i.e. substantial change in the patient’s condition or management)
- Complete the responder section of the PACE Notification Audit form and place in the PACE collection folder [http://seslhnweb/PACE/notificationform.asp](http://seslhnweb/PACE/notificationform.asp)

7.5.1 **ALTERATIONS TO CALLING CRITERIA**

- Altering 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 the order must be formally reviewed by the AMO. Any alteration to criteria must have a clinical rationale documented in the medical record.

- Alterations to calling criteria and their due review date/time are documented on the Alterations to Calling Criteria section of the NSW Health Standard Adult General Observation chart / NSW Health Standard Maternity Observation chart

- Alteration of criteria for acute changes should be reviewed by the AMO within 24 hours. Alteration of criteria for chronic conditions should be reviewed within 72 hours for general patients and within 36 hours for maternity patients.

- **Palliative patients and patients who are dying.** Activation of the PACE system for the management of deranged vital signs may remain appropriate for palliative patients. It is essential that the patient has an individualised patient management plan which clearly documents if and when a PACE call is to be activated and a Resuscitation Plan (documenting resuscitation status and ceiling of care).
  
  - At all times clinicians should use clinical judgement when to activate a PACE call. Certain situations will require a PACE activation such as deterioration due to inadvertent misadventure eg; tracheostomy tube dislodgement.

7.6 **MONITORING and INCREASING FREQUENCY OF OBSERVATIONS**

**The RN and EN** 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 clinical 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 at least once per shift (the interval between observations must be **no greater** than eight hours).

**NB** As per Ministry of Health policy ‘Recognition and Management of Patients who are Clinically Deteriorating’ PD2011_077 for sub-acute, long stay rehabilitation and palliative care patients the minimum requirement for observations is twice a day. If patients develop an acute medical problem the frequency reverts to a minimum of three times per day.

As per Ministry of Health policy ‘Recognition and Management of Patients who are Clinically Deteriorating’ PD2011_077 for Mental Health patients the minimum requirement is three times per day for the first 48 hours then daily thereafter. If patients develop an acute medical problem the required frequency of observations reverts to a minimum of three times per day with additional physical observations and monitoring determined and reviewed by the treating team.

*The NSW Guideline 2009_007 Physical Health of Mental Health Consumers is due for revision. Please note the revised guideline with respect to observation frequency will align with the Ministry of Health policy 2011_077*

Core vital signs include: respiratory rate, oxygen saturation, blood pressure, heart rate, level of consciousness and temperature. Pain assessment should also be documented.
The RM 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 and local maternity guidelines.

For well maternity patients following a normal birth only one set of core vital signs are required. Core vital signs include: respiratory rate, blood pressure, heart rate, level of consciousness, temperature and pain assessment.

The NSW Health Standard Maternity Observation chart is used for women with risk factors (e.g. infection or risk of infection; bleeding or risk of bleeding; hypertension, etc.).

- See Appendix 1 for when to use the NSW Health Maternity Observation Chart

7.6.1 Clinical situations that require more frequent observations

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

Observations frequency should be increased if:

- Vital signs change or trend away from normal limits
- Vital signs meet yellow zone or red zone criteria
- A change is evident in the patient’s clinical condition or behaviour
- Recently transferred from Critical Care areas or Emergency Department
- Following a general anaesthetic or conscious sedation.

7.6.2 Other clinical situations when vital signs should be monitored:

- On admission or transfer (excludes well maternity patients)
- During / following a change in treatment or management
- Prior / during and following administration of medications that will directly affect the vital signs
- Patient or family member / carer concern re the medical condition of the patient
- Just prior to a patient’s discharge from a facility
- As per other policies or procedures.

8. ACCURACY OF VITAL SIGNS MEASUREMENTS

The reliability of vital signs measurements is dependent on proper technique and well maintained equipment. The patient should be settled and at rest for routine observations i.e. following physical activity - allow patient to settle to pre activity levels before measuring vital signs.

Respiratory rate should be assessed over a minute as the typical adult respiratory rate is between 12 – 20 breaths per minute.

Oxygen saturation: The probe should be placed on a warm and well perfused part of the body.
Blood pressure must be measured with the appropriately sized cuff. Automated blood pressure machines occasionally provide spurious results and questionable values should be confirmed by manual auscultation. If the automated blood pressure reading is outside the patient’s usual range, in the yellow or red zone of the standard adult general observation chart, then a manual reading should be obtained.

NB: Automated blood pressure devices should not be used on maternity patients ≥ 20 weeks gestation.

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

A manual pulse checked by palpation over one minute 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 15 seconds if regular or over a minute if irregular).

Temperature: Preferably via the oral or axillary method. When taken orally place the thermometer in the posterior sublingual pocket. Do not eat or drink for at least 5 minutes. When taken axillary place the thermometer in a central position with the patient's arm adducted to the chest wall. Temperature taken via the axilla may be significantly affected by ambient temperature, sweat, inappropriate placement of the probe and correct timing.

9. CALLING CRITERIA

9.1 Calling Criteria for MATERNITY patients see Appendix 1 (page 16)
9.2 Calling Criteria for ADULT patients (see below)
9.3 Calling Criteria for ADULT Sepsis (page 15)

<table>
<thead>
<tr>
<th>ADULT Criteria</th>
<th>Yellow Zone Criteria Discretionary Activation</th>
<th>Red Zone Criteria Mandatory Activation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Review the patient and assess whether PACE activation is required</td>
<td>ACTIVATE PACE Tier 1 or Tier 2</td>
</tr>
<tr>
<td>Respiratory Rate</td>
<td>6 -10 or 25 - 30</td>
<td>≤ 5 or &gt;30</td>
</tr>
<tr>
<td>Oxygen Saturation</td>
<td>91 -95%</td>
<td>≤90</td>
</tr>
<tr>
<td>Systolic Blood Pressure</td>
<td>90-100 or 180- 200</td>
<td>&lt; 90 or &gt; 200</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>40-50 or 120 – 140</td>
<td>&lt; 40 or &gt; 140</td>
</tr>
</tbody>
</table>
Patient with Acute condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY inpatient

<table>
<thead>
<tr>
<th>Neurological</th>
<th>Rousable to voice only</th>
<th>Responds to Pain only (P) or is Unresponsive (U) OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Glucose Level*</td>
<td>&lt;4 mmol/L or &gt;20mmol/L with no decrease in LOC</td>
<td>&lt;4 mmol/L or &gt;20 mmol/L with a symptomatic decreased LOC</td>
</tr>
<tr>
<td>Concern*</td>
<td>Concern by patient or family member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concern by any staff member</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Staff member concern</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serious patient or family concern</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any rapid change in observations</td>
<td></td>
</tr>
</tbody>
</table>

*Escalate hypoglycaemia as per local hypoglycaemic protocol

Additional Mandatory ADULT Yellow Zone Criteria that require a PACE activation

- Increasing O2 requirement
- Poor peripheral circulation
- Decrease in LOC OR New confusion
- Excess or increasing blood loss
- Greater than expected fluid loss from a drain
- Low Urine output <100mL over 4 hours or less than 0.5mL/kg(via IDC) for 4 hours
- Polyuria >200 ml / for 2 hours (without diuretics)
- New, increasing or uncontrolled pain (including chest pain)
- Ketonaemia >1.5mmol/L or Ketonuria 2+ or more
- If there are any risk factors and signs or symptoms of sepsis

Additional Mandatory ADULT Red Zone Criteria that require a PACE activation

- All cardiac or respiratory arrests
- Airway obstruction or stridor
- Increasing O2 requirement to maintain O2 saturations greater than 90%
- Sudden Decrease in LOC OR Decrease in GCS of 2 ≥ points
- Seizures
- Low urine output persistent for 8 hours (< 200 mL over 8 hours or < 0.5mL/kg/hr via an IDC
- Arterial Blood Gas: PaO2< 60 or PaCO2 > 60 or pH <7.2 or BE<-5
- Venous Blood Gas: PvCO2 >65 or pH <7.2
- Lactate ≥ 4 mmol/L

If the patient’s condition becomes immediately life threatening, deterioration not reversed within 1 hour of a PACE call or the patient is not reviewed within 30 minutes of a PACE tier 1 call, the clinician MUST activate a PACE tier 2 call.
10. DOCUMENTATION

- NSW Health Standard General Adult Observation Chart
- NSW Health Maternity Observation Chart
- Standard Newborn Observation Chart (for use in special care nurseries, maternity unit or postnatal wards)
- PACE Label
- PACE Notification form
- LHD Resuscitation record (located on the arrest trolley)

11. AUDIT

- District and facility CERS committees will monitor and review key performance indicators, incidents involving the deteriorating patient and system management issues
- Data will be collected on every PACE and code blue / cardiac activation. PACE activations will be logged into the PACE management system
- 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 audits

12. REFERENCES

- Australian Commission on Safety a 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.


Patient with Acute condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY inpatient

- RPAH PD 2010_04 Patient Observation (Vital Signs) Policy – Adult
- NSW Ministry of Health ‘Recognition & Management of Patients who are Clinically Deteriorating’ PD2013_049
- Schriger D.L., Approach to the patients with abnormal vital signs. Goldman’s Medicine, 24th Ed. Elsevier Inc. 2

13. REVISION AND APPROVAL

<table>
<thead>
<tr>
<th>Date</th>
<th>Revision No.</th>
<th>Author and Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 2009</td>
<td>0</td>
<td>Gabby Kilborn CERS CNC POW, Chair Area CERS Sub-committee for SESIAHS Resuscitation Committee (and sub-groups) and Suzanne Schacht for PACE Workshop Committee. Approved by Clinical Council Committee January 2009</td>
</tr>
<tr>
<td>Feb 2009</td>
<td>1</td>
<td>Changed calling criteria from &quot;Airway: Threatened/Obstructed&quot; to remove the word “obstructed” at request of G Kilborn, Manager Corporate Governance.</td>
</tr>
<tr>
<td>Sept 2009</td>
<td>2</td>
<td>Carolyn Smith RTC SCH. Addition of paediatric information</td>
</tr>
<tr>
<td>Jul 2013</td>
<td>3</td>
<td>Converted from old Area Health Service Policy to new District Procedure Document. Aligned with LHD’s transition to the NSW Health Standard Observation Charts. Revised by Scarlette Acevedo, District Policy Officer.</td>
</tr>
<tr>
<td>Jul 2013</td>
<td>3</td>
<td>Updated to include Monitoring of Observations; PACE criteria and procedure mapped to align with the NSW Standard observation charts; Paediatric PACE procedure developed as a separate procedure</td>
</tr>
<tr>
<td>Nov 2013</td>
<td>4</td>
<td>Additional yellow zone criteria updated to mandatory calling criteria as per District Extraordinary CERS Committee; Registrar responsibilities amended as advised by District Clinical Quality Committee. Revised by Suzanne Schacht, District PACE Manager/Intensive Care Program Manager. Re-formatted by Scarlette Acevedo, District Policy Officer.</td>
</tr>
<tr>
<td>Dec 2013</td>
<td>4</td>
<td>Updated hyperlink to NSW Ministry of Health ‘Recognition and Management of Patients who are Clinically Deteriorating’ PD2013_049.</td>
</tr>
<tr>
<td>March 2016</td>
<td>4</td>
<td>Bi-annual Review. Revised to include: 1. If unable to attend a PACE tier 1 call (i.e. in theatre or attending another PACE call), a locally agreed deputy can respond. The deputy must discuss the patient with the registrar or AMO (as soon as possible or before the end of the shift if not deemed urgent). 2. Requirement for allied health staff to record observation measurements on the SAGO/ SPOC/SMOC. 3. Other minor changes</td>
</tr>
<tr>
<td>July 2016</td>
<td>4</td>
<td>Endorsed by Executive Sponsor</td>
</tr>
<tr>
<td>July 2016</td>
<td>4</td>
<td>Approved by Clinical and Quality Council</td>
</tr>
<tr>
<td>November 2017</td>
<td>4</td>
<td>Following advice from author Executive Services corrected error on page 14.</td>
</tr>
</tbody>
</table>
Appendix 1: Information for MATERNITY PATIENTS

The majority of women accessing maternity care are well, healthy young women who have different needs and observation requirements to sick hospital inpatients. Comprehensive protocols and policies guide clinical practice in the Maternity setting for women who do have risk factors such as hypertension. There is no evidence to support the practice of routine 8hrly recording of vital signs in well women and well babies. In view of this the following tables provides information regarding the use of the SMOC and Maternity specific calling criteria.

<table>
<thead>
<tr>
<th>When to use the Standard Maternity Observation Chart (SMOC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Irrespective of age or reason for admission SMOC must be used to document observations for ≥ 20 weeks pregnant women/adolescents</td>
</tr>
<tr>
<td>• This also includes women admitted with a non-Obstetric diagnosis who may be on a General ward</td>
</tr>
<tr>
<td>• All antenatal women admitted to hospital.</td>
</tr>
<tr>
<td>• SMOC does not replace clinical pathways or the partogram</td>
</tr>
<tr>
<td>• Well women (without risk factors) following a normal/assisted vaginal birth require one set of vital signs to be recorded on the partogram before leaving the birthing environment (i.e. no need to use the SMOC)</td>
</tr>
<tr>
<td>• Comprehensive guidelines, local business rules, diagnosis and reason for admission will guide practice and frequency of observations for women admitted to hospital with identified risk factors.</td>
</tr>
<tr>
<td>• Maternal risk factors may include (list is not exhaustive): Infection or risk of infection; bleeding or risk of bleeding; hypertension or threatened premature labour.</td>
</tr>
<tr>
<td>• Women with pre-existing co-morbidities such as cardiac disease will also need regular observations once admitted and post birth</td>
</tr>
<tr>
<td>• Fetal heart rate is not recorded on the SMOC</td>
</tr>
</tbody>
</table>

Core Vital Signs of Maternity Patients

- Core vital signs: RR, BP, HR, Level of consciousness, Temperature
- Oxygen saturations as per local guidelines
**MATERNITY Calling Criteria**

<table>
<thead>
<tr>
<th>Maternity Calling Criteria</th>
<th>Clinical Review Criteria</th>
<th>Rapid Response Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Review the patient and assess whether PACE escalation is required</td>
<td>Escalate via PACE (Mandatory Tier 1 or Tier 2 escalation)</td>
</tr>
<tr>
<td><strong>Respiratory Rate</strong></td>
<td>6 -10 or 25 - 30</td>
<td>≤5 or &gt;30</td>
</tr>
<tr>
<td><strong>Oxygen Saturation</strong></td>
<td>91 - 95%</td>
<td>≤ 90</td>
</tr>
<tr>
<td><strong>Oxygen Requirement</strong></td>
<td>Increasing O2 requirement</td>
<td>Increasing O2 requirement to maintain O2 saturations ≥ 90%</td>
</tr>
<tr>
<td><strong>Systolic Blood Pressure</strong></td>
<td>80 - 90 or 140 -170</td>
<td>&lt; 80 or &gt; 170</td>
</tr>
<tr>
<td><strong>Diastolic Blood Pressure</strong></td>
<td>40 – 50 or 90 - 110</td>
<td>&lt; 40 or &gt; 110</td>
</tr>
<tr>
<td><strong>Heart Rate</strong></td>
<td>40 - 50 or 120 – 140</td>
<td>&lt; 40 or &gt; 140</td>
</tr>
<tr>
<td><strong>Neurological</strong></td>
<td>Altered mental state: agitation, confusion or unexpectedly uncooperative</td>
<td>Seizures Sudden decrease in Level of Consciousness of ≥ 2 points on GCS</td>
</tr>
<tr>
<td></td>
<td>Decreasing or absent deep tendon reflexes</td>
<td>Rousable only by central pain or Unresponsive</td>
</tr>
<tr>
<td></td>
<td>Rousable only by voice</td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td>35.5- 36 or 37.5 – 38.5</td>
<td>≤35.5 or ≥38.5</td>
</tr>
<tr>
<td><strong>Urine Output</strong></td>
<td>Anuria or urine output &lt; 80mL total over 4 consecutive hours</td>
<td></td>
</tr>
<tr>
<td><strong>Blood Glucose Level</strong></td>
<td>2 - 4 mmol/L</td>
<td>&lt; 2 mmol/L</td>
</tr>
<tr>
<td><strong>Concern</strong></td>
<td>Concern by any staff or family member</td>
<td>Staff member concern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Serious patient or family concern</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Any rapid change in observations</td>
</tr>
</tbody>
</table>
### Additional Maternity Clinical Review Criteria
(escalate via PACE tier 1 or tier 2 based on clinical scenario)

- If there are any risk factors and signs or symptoms of sepsis
- Poor peripheral circulation
- Greater than expected fluid loss
- New, increasing or uncontrolled pain (including headache and chest pain)

### Additional Mandatory Maternity Rapid Response Criteria
(escalate via PACE Tier 2 or Code Blue/ Cardiac Arrest)

- ALL respiratory and cardiac arrests
- Airway obstruction or stridor
- Arterial Blood Gas: Pa O2 < 60, or Pa CO2 > 60, or pH < 7.2, or BE < -5
- Venous Blood Gas P v CO2 > 65 or pH < 7.2

If the patient's condition becomes immediately life threatening, deteriorates further or the patient is not reviewed within 30 minutes of a PACE tier 1 call, the clinician MUST activate a PACE tier 2 call
APPENDIX 2: Recognition of Prior Learning

As per the DRAFT *Between the Flags Education Strategy and Implementation Guide*, Clinicians who have completed courses which meet the learning requirement of DETECT adult / junior may apply for recognition of prior learning (RPL). There is no RPL options for e-DETECT.

Applications for RPL for the face to face component of DETECT should be forwarded via the staff member’s line manager to the facility CERS Committee or other facility body for approval and processed according to the local processes.