SYDNEY WEST
Area Health Service

"Between the Flags"
Clinical Emergency Response Policy
Westmead Hospital

January 2010

PURPOSE

Sydney West Area Health Service ("SWAHS") is committed to the provision of appropriate medical and social services to our patients. This policy describes Westmead Hospital's Emergency response system which incorporates Westmead's two-tiered response system for recognising and managing the deteriorating patient at Westmead Hospital.

INTENDED AUDIENCE

This policy applies to all Medical, Nursing and Allied Health staff within Westmead Hospital.

EXPECTED OUTCOMES

Improved outcomes for deteriorating patients within Westmead Hospital
Compliance with the Between the Flags program

REFERENCES AND RELATED POLICIES

NSW Health Department Policy and Procedure (draft) ***"Recognition and Management of Patients who are Clinically Deteriorating"***

Contingency Plan for Multiple ALS Team Call
http://westnet/SERVICES/NURSING/Westmead/PACE/documents/SimultaneousALScontingencyNovember2008.pdf

DEFINITIONS

ALS – Advanced Life Support

ALS Team – Medical Registrar, ICU Registrar, Anaesthetics Registrar, Cardiology resident and the ALS nurse.

PACE – Pre Arrest Criteria for Escalation

EBL – Estimated Blood Loss

Consultant – includes Staff Specialists, Visiting Medical Officers, Locum Visiting Medical Officers (Locum Staff Specialists, Temporary VMP's and Temporary Staff Specialists) and Senior Medical Practitioners and other academic appointments who hold clinical privileges in a specialty granted by the Credentials Sub-committee of MDAAC. This does not include Fellows or Senior Registrars.

Consultant on Call – This does include Fellows or Senior Registrars only when they are first on call on the Consultant On Call roster.

Initiator – any staff member who makes a PACE or ALS call, this may be a nurse, doctor or allied medical staff.

> – greater than
< – less than

Resident – RMO or intern

Yellow Zone – Clinical Review Criteria

Red Zone – Rapid Response Criteria. Will be managed by the 2 tiered PACE/ALS system. Patients with Red Zone criteria that are immediately life-threatening will be managed by the ALS team. Patients with Red Zone criteria not immediately life-threatening will be managed by the team/specialty-after-hours registrar.

BETWEEN THE FLAGS PROGRAM

The Clinical Excellence Commission (CEC) introduced the Between the Flags (BTF) program incorporating a new Standard Adult General Observation (SAGO) chart. The system has Yellow zone and Red zone calling criteria as outlined below. These criteria were derived as early and late signs of patient deterioration based on the SOCCER study.[1]

The BTF program also incorporates a mandatory 3 tiered education program.

- Tier 1 – Awareness,
- Tier 2 – DETECT; and
- Tier 3 – Rapid Response Team Training.

POLICY STATEMENT

The yellow and red zones contain physiologic parameters and clinical conditions that direct staff to escalate appropriate clinical management.

The red zone criteria will be managed by the PACE/ALS system already in place at Westmead Hospital. The yellow zone criteria will be managed separately. This policy outlines the required responses to breaches of both the red and yellow zones.

This policy describes:

1) Yellow Zone Criteria
2) Red Zone Criteria
3) Rapid Response Protocol

[1] Jacques, T., Harrison, G.A., Maclaws, M., Kilborn, G, "Signs of Critical Condition and Emergency Response (SOCCER). A model for predicting adverse events in the inpatient setting", *Resuscitation* (2006) 69, 175-183.

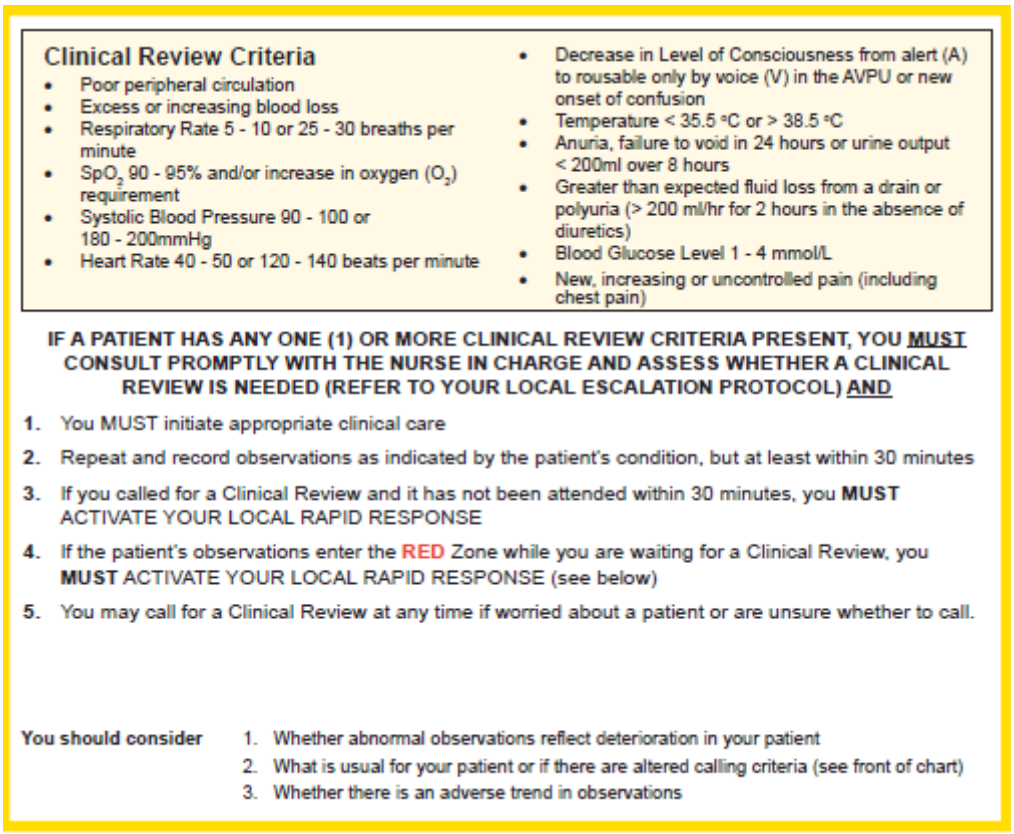
1. How to recognise the deteriorating patient
2. Initiating the PACE or ALS call
3. Action to be taken in the first 30 minutes
4. Action to be taken within one hour
5. ALS calls

4) Mummy PACE (peripartum patients)
5) Febrile Neutropenia
6) Documentation
7) Educational Notes

Appendix 1 – ALS team roles

YELLOW ZONE (Early Signs of Deterioration)

When a patient has observations within the yellow zone, a Clinical Review by the Primary Care Team/After-Hours RMO is required.



Clinical Review Criteria

- Poor peripheral circulation
- Excess or increasing blood loss
- Respiratory Rate 5 - 10 or 25 - 30 breaths per minute
- SpO_2 90 - 95% and/or increase in oxygen (O_2) requirement
- Systolic Blood Pressure 90 - 100 or 180 - 200mmHg
- Heart Rate 40 - 50 or 120 - 140 beats per minute
- Decrease in Level of Consciousness from alert (A) to rousable only by voice (V) in the AVPU or new onset of confusion
- Temperature < 35.5 °C or > 38.5 °C
- Anuria, failure to void in 24 hours or urine output < 200ml over 8 hours
- Greater than expected fluid loss from a drain or polyuria (> 200 ml/hr for 2 hours in the absence of diuretics)
- Blood Glucose Level 1 - 4 mmol/L
- New, increasing or uncontrolled pain (including chest pain)

IF A PATIENT HAS ANY ONE (1) OR MORE CLINICAL REVIEW CRITERIA PRESENT, YOU MUST CONSULT PROMPTLY WITH THE NURSE IN CHARGE AND ASSESS WHETHER A CLINICAL REVIEW IS NEEDED (REFER TO YOUR LOCAL ESCALATION PROTOCOL) AND

1. You MUST initiate appropriate clinical care
2. Repeat and record observations as indicated by the patient's condition, but at least within 30 minutes
3. If you called for a Clinical Review and it has not been attended within 30 minutes, you **MUST** ACTIVATE YOUR LOCAL RAPID RESPONSE
4. If the patient's observations enter the RED Zone while you are waiting for a Clinical Review, you **MUST** ACTIVATE YOUR LOCAL RAPID RESPONSE (see below)
5. You may call for a Clinical Review at any time if worried about a patient or are unsure whether to call.

You should consider

1. Whether abnormal observations reflect deterioration in your patient
2. What is usual for your patient or if there are altered calling criteria (see front of chart)
3. Whether there is an adverse trend in observations

For a breach of the yellow zone criteria the following steps must be followed:

Nursing Responsibilities:

1. The nurse must consult promptly with the nurse in charge regarding need for clinical review.
2. Nursing staff must page the responsible team or after hours resident immediately
3. The nurse calling the resident must be familiar with the clinical situation.
4. Institution of appropriate nurse initiated management and observation

5. The team leader must delegate a staff member to manage the patient and one to contact the resident
6. If the resident doesn't contact the ward within 30 minutes or attend the patient within one hour the call must be escalated to the red zone response system
7. If the patient deteriorates into the red zone criteria this must be immediately escalated
8. If the patient remains in the yellow zone one hour after commencement of a management plan the nursing staff must initiate a Red Zone response

RMO responsibilities:

1. Attend the patient within 30 minutes of the initial call and initiate clinical review and management.
2. Contact the registrar after review if there are any concerns
3. If the patient breaches the Red Zone this must be escalated by making a PACE/ALS call as required. These patients must be reviewed by a registrar or above.
4. If the patient remains in the yellow zone one hour after commencement of a management plan the RMO must initiate a Red Zone response

Registrar responsibilities:

1. If the patient remains in the yellow zone despite commencement of a management plan the registrar must attend the patient when called by the RMO.

RED ZONE (Late Signs of Deterioration)

The Red Zone (Rapid Response) criteria constitute the current PACE/ALS calling criteria. A patient with observations in the Red Zone may be critically unwell and needs a rapid response. The management of a patient within this zone will be guided by the PACE system as outlined below.

The PACE system is a two-tiered response system for managing the deteriorating patient.

Tier one is a *PACE call* for urgent patient review by a senior member of the patient's primary care team (ie, registrar), and

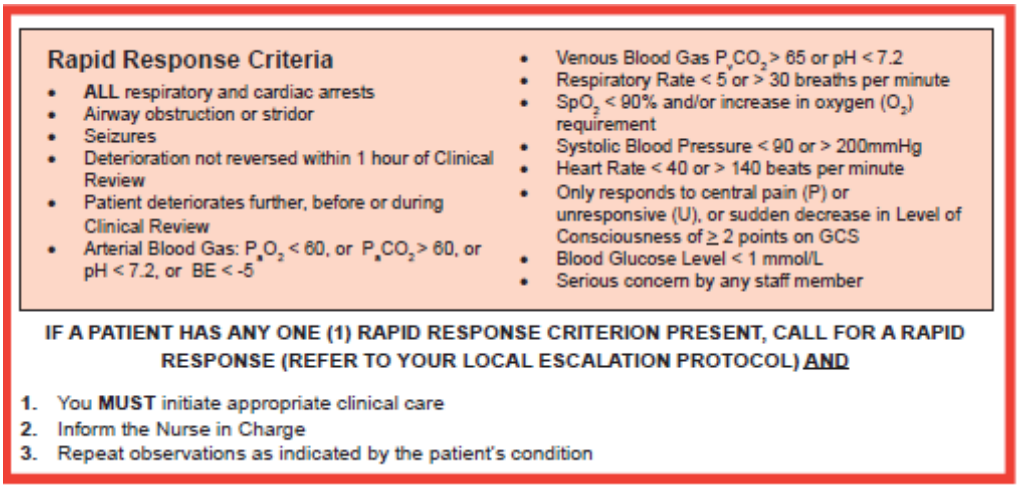
Tier two is an *Advanced Life Support (ALS) team call*.

The criteria for initiating a PACE or ALS team call is listed on the card issued to all medical, nursing and allied health staff working in Westmead Hospital – see Educational notes

RAPID RESPONSE PROTOCOLS

1. Calling Criteria

The first step in the PACE system is the identification of the deteriorating patient as evidenced by deterioration in vital signs. This deterioration is defined as:



2. Initiating a PACE or ALS call

When one or more of the above criteria are identified, the initiating staff member (the initiator) must decide on one of 2 options:

1) If the initiator feels that the patient's deterioration is immediately life-threatening:

Call for the Advanced Life Support (ALS) Team on **'111'.**
State that the ALS team is required and give the patient's ward and bed number.

Do not call the ALS Team if the patient has a current NFR order in their notes.

Or

2) If the patient's condition is **not** immediately life-threatening**,** then a PACE call should be made.

Dial **'111'** to initiate the PACE call.
State that you wish to make a PACE call.
State the consultants name, ward and patient's bed number, nurse's name and ward telephone number.

Do not call the intern or resident.

When the primary team registrar attends or phones the ward, state the reason for the PACE call and any other relevant information and that the patient requires an urgent assessment.

The procedures outlined above are to be followed both in hours and after hours.

Exceptions
In the event of deterioration of a visitor, staff member, or outpatient, only an ALS call is to be made.

If the Consultant Medical Officer has documented a NFR order in the patients medical records specifically stating the patient is not for a PACE or ALS call.

If the Consultant Medical Officer has documented a change to this patient's calling parameters in the medical record and on the front sheet of the patients SAGO chart (see below). In the event the Consultant or Consultant on call gives instructions over the phone to alter the Calling Criteria the registrar must document this in the medical record, indicate the consultant name on the front of the chart and sign on their behalf. ***Any alteration to the calling criteria must have a clinical rationale documented in the medical record.***

ALTERATIONS TO CALLING CRITERIA (MUST BE REVIEWED AT LEAST EVERY 72 HOURS) ANY ALTERATIONS MUST BE CONFIRMED BY CONSULTANT							
DATE:							
Respiratory Rate							
Systolic Blood Pressure							
SpO_2							
Heart Rate							
Other							
Consultant Medical Officer Name							
Signature							

3. Second Response – The next 30 minutes after a PACE call

The initiator of the PACE call must remain with the patient and instigate assessment and management as appropriate, until the registrar arrives to review the patient. Resident Medical Officers will attend PACE calls to assist the registrar only.

After a PACE call is initiated one or more of the following 5 outcomes may occur:

1. The patient's condition is stabilised by the patient's medical team or "on-call" registrar and appropriate referral/transfer if required.
    a. No further action
2. The patient's condition deteriorates.
    a. The ALS Team must then be called.
3. The patient's medical team or "on-call" registrar may decide to call the ALS Team after review
4. The patient's consultant or on-call consultant may decide that "aggressive" management is inappropriate.
5. 30 minutes elapses from the time of the original PACE call and the team or on-call registrar has either not responded or the response is considered inadequate by the initiator or other member of nursing or medical staff.

The **Team or On call Registrar** must attend and review the patient within 30 minutes of a PACE call being initiated. **If after 30 minutes they have not attended, then an ALS call must be made.**

Surgical and Obstetric Registrars are often unable to attend PACE calls when they are scrubbed in theatre or attending a delivery. If a PACE call is made and the registrar is unable to attend within 30 minutes, they may nominate another Registrar (from within the same specialty) to review the patient. If there is no available Registrar, and the patient cannot be reviewed within 30 minutes, the Registrar must instruct the initiator of the PACE call to make an ALS call immediately. In this situation DO NOT wait 30 minutes to make an ALS call.

It is inappropriate to send an intern or resident to review the patient.

N.B. For situations in which multiple ALS team calls occur (two or more calls within a 30 minute period), refer to the *Contingency Plan for Multiple ALS Team Calls*.

4. One Hour after a PACE call

After initiation of treatment the registrar needs to monitor the patient to ensure that further deterioration is avoided and that the physiological parameter that triggered the PACE call is being reversed.

If the physiological parameter that triggered the PACE call has not been stabilised **1 hour** after the call, the Team Registrar should contact the patient's Consultant who will decide on any limitation of management. **If there is no limitation then an ALS call will be made**.

No change of the PACE parameters can be implemented for a patient without the agreement of the patient's Consultant (or the on-call consultant). PACE and ALS calls will continue to be made by nursing and medical staff if this rule is not followed.

5. ALS calls

When an ALS call is made all members of the team must respond immediately unless attending another ALS call.

Please see **Appendix 1** for roles and responsibilities of all team members during an ALS call.

Mummy PACE

For peripartum patients (Mummy PACE), a number of other criteria may identify the deteriorating patient:

Active bleeding with EBL > 1000mL
Urine output < 80mLs in 4 hours in catheterized patients
Diastolic BP > 110mmHg or Systolic > 170mmHg
SpO2 < 94% on room air

Please make a PACE call to the O&G registrar.

Haematology PACE

For Haematology patients, the following parameter must trigger a PACE call:

Febrile neutropenic patients (a patient who is neutropenic and develops a temperature 38 degrees or above [first spike])

Please make a PACE call to the Haematology registrar during business hours or the after hours medical registrar.

DOCUMENTATION

All PACE and ALS calls *must* be documented in the following manner:

1. PACE/ALS Data Collection Form

PACE/ALS calls will be recorded by completing the 'PACE and ALS Team Calls' form (SWHR-2585w). When completed, this should be signed by the team registrar or team leader to confirm its accurate depiction of events.

All team members must sign the the PACE and ALS Team Calls form prior to leaving the patient.

2. In the patient's medical record

Initiation of a PACE and/or ALS call and resulting management will be recorded in the patient's medical record.

N.B. When nursing staff or medical officers inform senior practitioners of changes to the patient's status via the telephone, and/or seek direction from senior medical staff via the telephone, all available relevant test results or observations are to be relayed to the senior medical staff, and this is to be documented in the medical record as to what information passed between them.

3. In Cerner Powerchart

Medical staff enter details of the call on the PACE form in Cerner. This takes approximately 60 seconds.

4. Patients with NFR orders

Patients with NFR orders may still require PACE calls. It should be clearly documented in the patient's notes which interventions are deemed inappropriate for the patient, as well as outlining appropriate management options if necessary.

Non-standard acronyms and abbreviations should be avoided to minimize confusion.

Acceptable abbreviations include:

CPR

ICU
CPAP
BiPAP
ALS

EDUCATIONAL NOTES

Double-sided PACE cards are issued to all medical and nursing staff at Westmead Hospital, clearly outlining correct procedure for initiating PACE and ALS Team calls. *Please note these are in draft format*

PACE Rapid Response Protocol	
If any acute changes in any ONE of the following	
AIRWAY	• Threatened
BREATHING	• Resp Rate < 5 or > 30 • SpO2 <90% and/or increasing O2 requirement
CIRCULATION	• Heart Rate < 40 or > 140 • SBP < 90 or > 200 mmHg
NEUROLOGICAL	• Only responds to central pain (P) or unresponsive (U), • Sudden decrease in LOC of GCS ≥ 2 • Uncontrolled Seizures
OTHER	• ABG PaO2 < 60 or PaCO2 >60 or pH < 7.2 or BE < -5 • VBG PvCO2 > 65 or pH < 7.2 • Blood Glucose level < 1 mmol/L • Deterioration not reversed within 1 hour of clinical review • Any other patient you are concerned about
Is the Patient's deterioration IMMEDIATELY life-threatening?	
YES: CALL 111 FOR ALS TEAM	
NO: URGENT PATIENT REVIEW! CALL PACE 111 With Consultant name, Ward, bed number	

ADVANCED LIFE SUPPORT Rapid Response Protocol
Call ALS team: • **ALL respiratory and cardiac arrests** • **Airway Obstruction, Stridor or Patient unresponsive** • **Patients condition is IMMEDIATELY life-threatening or** • **You are seriously concerned and require immediate help** • **Patient deteriorates before or during a PACE review** • **Patient not reviewed 30 minutes after PACE call** • **After one hour of PACE review the calling criteria are not reversed**
CALL 111 FOR ALS TEAM

For information on DETECT education please find further information on the following website, http://swahs.moodle.com.au/course/view.php?id=143.

Risk Rating - Critical

Risks of non-compliance

- Risk to patient; potential increased morbidity/mortality risk
- Risk to staff ; potential disciplinary action
- Risk to organization ; reputation

IMPLEMENTATION PLAN

Timeframe	Communication strategy	Education strategy	Resources required	Reporting
January 2010 Ongoing	Dissemination of policy electronically to staff via managers, CNCs and educators Published on the SWAHS Intranet (TBA)	In-services at local level Inclusion in hospital orientation Post-implementation forums	Existing local education resources	Signed ledger stating staff member has 'read, understands and will comply' with policy

Appendix 1

Advanced Life Support Team roles

This is a general overview and should be seen as a minimum expectation. A collaborative multidisciplinary approach is anticipated.

Tasks may vary dependant upon presentation* and skill.

*The anaesthetic registrars have obligations in operating theatre and the birthing unit and may be unable to leave to attend ALS calls.

All team members must identify themselves on attending the ALS call. All team members must seek permission from the medical registrar prior to leaving an ALS call. The ALS sheet must be signed by each team member prior to leaving the patient.

One medical member of the team must document the call in the patients medical record and complete the PACE form on Powerchart.

Medical Staff Roles

Medical Registrar:

- ALS team leader
- Coordinate the team members
- Ensure the team registrar is contacted during the day
- Discuss the medical condition of the patient with the relevant Consultant Medical Officer including NFR status if appropriate
- Management Direction
- Release team members as appropriate

Anaesthetic Registrar:

- Will assess and manage the patient's airway
- IV access
- Coordinate any patients required to attend theatre.
- If the patient is intubated and requiring any radiological investigation prior to theatre they must transport the patient.

ICU Registrar:

- Will assist as directed by the medical registrar.
- Arterial and Central Venous Access
- Difficult IV access
- Fluid and Drug management
- They must make a formal assessment on the need for the patient to be admitted to an HDU or ICU as required.
- If the patient requires transfer to ICU, the ICU registrar is responsible for coordination and transfer.

Cardiology Resident:

- Will assist as directed by the medical registrar.
- Bloods, ABG
- CPR as directed

Nursing Staff Roles

ALS nurse

Principal role:
- primary assessment, rhythm identification, defibrillation, transcutaneous pacing.

Secondary roles:
- Care and maintenance of established resuscitation therapies and patient management until definitive patient care transfer is achieved, (if required) including: -
- Endotracheal intubation management; (i.e. insertion assistance, ETT security, cuff pressure management, ETT suctioning, ventilation (if required).
- Titration of intravascular volume augmentation and titration of inotropes/pressors against clinical endpoint's
- Education of ward staff in relation to ALS management.
- Delegation of duties to nursing staff.
- Documentation of ALS procedures in patient's clinical records.
- Departure of the ALS nurse is upon definitive ward/unit placement of the patient (including hand-over), or if the ALS team leader states that the ALS team can "stand down".

Role of the ward nurses.

Participate in ALS management:
- including CPR,
- preparing drugs, IV fluids,
- patient privacy and family support

A designated scribe:
- Documentation on SWHR-2585w
- Contemporaneous entry, any intervention, any drug/fluid administration, any plan, an outcome and patient movement (see it, hear it, did it, write it, sign it).

Role of the NUM/Team Leader

- Ensure fundamentals are executed efficiently, i.e. history, clinical observations, ECG, BGL, IV access, BLS prior to ALS team arrival
- Contact family,
- Contact primary team registrar or consultant.
- Maintain adequate staffing to manage other ward patients, (crowd control).
- Exposure of junior and inexperienced staff to ALS events
- Contact chaplain (if required).
- Debriefing

NB: In the event of a prolonged (>30 minutes) ward ALS call, it is at the after hours senior nurse managers discretion to draw upon ALS accredited nurses from any department to assist.