escalation mapping tool: worked example

Track and trigger systems specify different levels of abnormal physiological parameters, or combinations of the parameters that indicate abnormality, and outline the response or action required when trigger thresholds are reached or deterioration identified. This information is generally expressed in an escalation protocol and can be built into the design of an observation chart.

This tool is designed to assist with the development of an escalation protocol and track and trigger system. The purpose of the tool is to help you to:

- identify the number of levels of abnormality to be included in the track and trigger system and escalation protocol
- decide on the trigger thresholds for each physiological parameter for each level of abnormality
- decide on the appropriate response for each level of abnormality.

This mapping tool can be used for both single parameter and aggregate scoring track and trigger systems. However the process of allocating weighting to physiological parameters for the purpose of calculating a score is complex and is not dealt with here. If you would like to use an aggregated scoring system it is recommended that an existing scoring system be used (for example the Adult Deterioration Detection System used in the Commission's observation and response charts).

Further information about track and trigger systems and escalation protocols is included in *A Guide to Support Implementation of the National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration*, which is available on the web site of the Australian Commission on Safety and Quality in Health Care: www.safetyandquality.gov.au



This worked example of the escalation mapping tool is for a system using three levels of abnormality: low, medium and high. You will see that steps 3-9 have been repeated for each of the three levels.

Further information

Further information about implementing recognition and response systems can be found in the Australian Commission on Safety and Quality in Health Care publication *A Guide to Implementation of the National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration* (2012). This can be downloaded from:

www.safetyandquality.gov.au

Australian Commission on Safety and Quality in Health Care GPO Box 5480 Sydney NSW 2001 Telephone: (02) 91263600 Email: mail@safetyandquality.gov.au

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE





IDENTIFY WHAT DEPARTMENT/S THIS MAPPING EXERCISE RELATES TO AND WHO IS INVOLVED IN UNDERTAKING THIS WORK

DEPARTMENT/S: Ward ADATE: September 2011PEOPLE INVOLVED IN THIS EXERCISE:NUM ward AResidents ward AStaff nurses ward ANUM ICUNurse educator ward AConsultants ICUConsultants ward APatient safety officerRegistrars ward AQuality manager



DECIDE ON HOW MANY LEVELS OF ABNORMALITY WILL TRIGGER A RESPONSE IN YOUR ESCALATION PROTOCOL

NUMBER OF LEVELS OF ABNORMALITY IN YOUR SYSTEM?	3
THESE LEVELS ARE:	High, Medium, Low

|--|



DECIDE WHAT PHYSIOLOGICAL OBSERVATION THRESHOLDS WILL TRIGGER A RESPONSE TO THIS LEVEL OF ABNORMALITY

PHYSIOLOGICAL OBSERVATION THRESHOLDS INDICATING THIS LEVEL OF ABNORMALITY:

RESPIRATORY RATE:	HEART RATE:	TEMPERATURE:	OTHER:
8-10 or 25-29	40-49 or 100-119	35.1-35.9°C or 38.0-38.9°C	Clinician concern Oxygen flow rate
OXYGEN SATURATION: <i>93-94 %</i>	SYSTOLIC BLOOD PRESSURE: 100-109 OV 160-179	LEVEL OF CONSCIOUSNESS: No trigger at this level of abnormality	Hudson mask



- basic life support
- oxygen therapy
- auscultation of chest
- systematic physical assessment
- IV access
- ordering and/or performing and/or interpreting investigations (e.g. CXR, 12-lead ECG)
- collection of pathology (UEC, FBC, blood cultures etc)
- \cdot prescription and administration of drugs and 1V fluids
- ability to refer for senior and/or specialist input
- communicating with patient, family, carers



DECIDE WHO HAS THE NECESSARY SKILLS TO PROVIDE THIS TREATMENT

DECIDE WHO WILL RESPOND TO ENSURE A RESPONSE IS AVAILABLE AT ALL TIMES

WHO HAS THE SKILLS TO RESPOND?		WHEN ARE THEY AVAILABLE?	• • •	WHO WILL RESPOND?
RN caring for patient	> > >	24 hours / 7 days		Pacanud 21/7
RN in charge of ward	• • •	24 hours/ 7 days		Kesporar 2477
Admitting team resident	• • •	Mon – Friday, 0800 – 1700	• • •	In hours responder
Admitting team registrar	• • •	Mon – Friday, 0800 – 1700	• • •	In hours alternative/ back-up responder
On-call resident	> > >	Mon – Friday, 1700 – 0800 24 hours weekends	• • •	Out of hours responder
Medical registrar	• • •	Mon – Friday, 1700 – 0800 24 hours weekends	• • •	Out of hours alternative/ back-up responder

WHAT ARE THE RESPONSIBILITIES OF THE CLINICIANS WHO HAVE PRIMARY RESPONSIBILITY FOR THE PATIENT? (E.G. WARD REGISTERED NURSE)

RN caring for patient:

•

- repeat observations at least every 30 minutes until patient reviewed
 consider appropriateness of current oxygen therapy
 consider 12-lead ECG and blood sugar check

- review medications, analgesia, drains and fluid balance as indicated
- ensure clinical record and other relevant documentation is available and up-to-date
- hand'over pertinent information using ISBAR format

WHAT ARE THE RESPONSIBILITIES OF THE CLINICIANS PROVIDING THE ESCALATION RESPONSE? (E.G. THE NURSE IN CHARGE AND RESPONDING MEDICAL OFFICER)

Nurse in charge

- contact alternative response provider if required
- support RN caring for the patient to undertake further assessments and treatments as required
- ensure other patients' are attended to

Resident

- undertake systematic assessment of patient (all systems)
- provide treátment in consultation with admitting team registrar and/or senior medical officer
- refer for senior medical review or specialist input as required
- d'ocument plan of care including monitoring plan and plan for any follow-up required • hand over pertinent information to admitting registrar using ISBAR format



DECIDE ON HOW THE RESPONSE SYSTEM WILL OPERATE

WHAT IS THE REQUIRED TIMEFRAME FOR RESPONSE GIVEN THESE LEVELS OF ABNORMALITY

• Within 30 minutes

HOW WILL THE RESPONDING HEALTH PROFESSIONAL/S BE CONTACTED?

- Resident via paging system
- RN caring for patient if unable to locate use assist call button
- Nurse in charge call on mobile phone or use assist call button

WHO ELSE SHOULD BE NOTIFIED?

Resident to advise admitting team registrar once patient has been assessed

WHAT ARE THE ALTERNATIVE OR BACK UP OPTIONS FOR OBTAINING A RESPONSE?

- Contact admitting registrar, or on-call medical registrar after hours
- Contact admitting senior medical officer
- Medical emergency call via switchboard if staff worried/patient rapidly deteriorating



IS EQUIPMENT AVAILABLE IN THE CLINICAL AREA TO UNDERTAKE THE NECESSARY TREATMENTS?
V Yes
No – consider purchasing equipment or develop processes for equipment to be brought to area
ARE THERE SPECIALISED TRAINING REQUIREMENTS FOR RESPONDERS TO THIS LEVEL OF ABNORMALITY (EG. BASIC OR ADVANCED LIFE SUPPORT, COMMUNICATION, CLINICAL TEACHING)?
ARE THERE SPECIALISED TRAINING REQUIREMENTS FOR RESPONDERS TO THIS LEVEL OF ABNORMALITY (EG. BASIC OR ADVANCED LIFE SUPPORT, COMMUNICATION, CLINICAL TEACHING)?



DECIDE ON THE FINAL AGREED RESPONSE TO BE INCLUDED IN THE ESCALATION PROTOCOL AND POLICY AND DISPLAYED ON THE OBSERVATION CHART

- Notify RN caring for patient if not already aware
- Page admitting team resident, or on call resident after hours
- Notify RN in charge
- Repeat observations at least every 30 mins until review
- Consider oxygen therapy, 12-lead ECG, blood sugar level
- Contact admitting registrar (on call registrar after hours) if no response within 30 minutes
- \cdot Call medical emergency team on $\mathcal{X}\mathcal{X}\mathcal{X}$ if worried or patient deteriorates further

The escalation system being mapped in this worked example includes three levels of abnormality. Steps 3-9 are repeated below for a medium level of abnormality.



LEVEL OF ABNORMALITY:

Medium

DECIDE WHAT PHYSIOLOGICAL OBSERVATION THRESHOLDS WILL TRIGGER A RESPONSE TO THIS LEVEL OF ABNORMALITY

PHYSIOLOGICAL OBSERVATION THRESHOLDS INDICATING THIS LEVEL OF ABNORMALITY:

RESPIRATORY RATE:	HEART RATE:	TEMPERATURE:	OTHER:
5-7 or 30-35	50-60 or 120-139	≥ 39.0°C	Oxygen flow rate ≥ 10 L/min via Hudson mask
OXYGEN SATURATION:	SYSTOLIC BLOOD PRESSURE:	LEVEL OF CONSCIOUSNESS:	Clinician concern Sedation score 2
90-92%	$90-99 \text{ or } \ge 180$	Responds to voice	



DECIDE WHAT TREATMENTS MAY / WILL BE REQUIRED WHEN A RESPONSE IS TRIGGERED

- basic life support
- oxygen therapy
- auscultation of chest
- ABG and interpretation
- CXR and interpretation
- non-invasive ventilatory support
- systematic physical assessment
- IV access
- prescription and administration of drugs and IV fluids
- ECG and interpretation, treatment of dysrythmia
- collection of pathology (UEC, FBC, blood cultures etc)
- · ordering of CT/USS/other tests
- referral to other speciality and/or for senior input
- communication with patient/family/carer



DECIDE WHO HAS THE NECESSARY SKILLS TO PROVIDE THIS TREATMENT DECIDE WHO WILL RESPOND TO ENSURE A RESPONSE IS AVAILABLE AT ALL TIMES

WHO HAS THE SKILLS TO RESPOND?	• • •	WHEN ARE THEY AVAILABLE?	• • •	WHO WILL RESPOND?
Admitting team registrar	• • •	Mon – Friday, 0800–1700hrs		In hours responder
On call medical registrar		Mon – Friday, 1700–0800 24 hours weekends		After hours responder
Admitting senior medical officer	• • •	Variable hours	• • •	Alternative / back up response (when available)
RN caring for patient	> > >	24 hours/7 days	• • •	Record 24/7
RN in charge of ward	•••	24 hours/7 days		Responden 2477
ICU registrar	•••	24 hours/7days	• • •	Alternative / back up
ICU nurse in charge or nominated senior ICU nurse	• • •	24 hours/7 days		response



DECIDE ON THE RESPONSIBILITIES OF THE RESPONDING CLINICIANS

WHAT ARE THE RESPONSIBILITIES OF THE CLINICIANS WHO HAVE PRIMARY RESPONSIBILITY FOR THE PATIENT? (E.G. WARD REGISTERED NURSE)

RN caring for patient:

- begin basic life support if necessary
 repeat observations at least every 15 minutes until patient reviewed
 consider appropriateness of current oxygen therapy
 consider 12-lead ECG and blood sugar check

- review medications, analgesia, drains and fluid balance as indicated
 ensure clinical record and other relevant documentation is available and up-to-date
- handover pertinent information using ISBAR format

WHAT ARE THE RESPONSIBILITIES OF THE CLINICIANS PROVIDING THE ESCALATION RESPONSE? (E.G. THE NURSE IN CHARGE AND RESPONDING MEDICAL OFFICER)

Responding medical officer:

- úndertake physical assessment of patient (all systems)
- provide tréatment in consultation with admitting medical officer
- refer for further specialty input if required (e.g. cardiology/intensive care/radiology etc)
- handover pertinent information to admitting senior medical officer using ISBAR format
- document plan of care including monitoring plan and plan for any follow-up required

Nurse in charge:

- contact alternative response options (if required)
- support RN caring for patient to undertake further assessments and treatments as required
- · ensure other patients are attended to



DECIDE ON HOW THE RESPONSE SYSTEM WILL OPERATE

WHAT IS THE REQUIRED TIMEFRAME FOR RESPONSE GIVEN THESE LEVELS OF ABNORMALITY

As soon as possible but within 30 minutes

HOW WILL THE RESPONDING HEALTH PROFESSIONAL/S BE CONTACTED?

Registrar via switchboard – advise patient name, location and admitting team RN caring for patient – if unable to locate use assist call button Nurse in charge – call on mobile phone or use assist call button

WHO ELSE SHOULD BE NOTIFIED?

Registrar to contact admitting senior medical officer once patient has been assessed

WHAT ARE THE ALTERNATIVE OR BACK UP OPTIONS FOR OBTAINING A RESPONSE?

Contact admitting senior medical officer via switchboard and request review If admitting senior medical officer not contactable or unable to attend within 30 mins, call ICU registrar on XXXXX & notify patient flow / after hours manager Medical emergency call via switchboard if staff worried/patient rapidly deteriorating



IS EQUIPMENT AVAILABLE IN THE CLINICAL AREA TO UNDERTAKE THE NECESSARY TREATMENTS?
Y yes
No – consider purchasing equipment or develop processes for equipment to be brought to area
ARE THERE SPECIALISED TRAINING REQUIREMENTS FOR RESPONDERS TO THIS LEVEL OF ABNORMALITY (EG. BASIC OR ADVANCED LIFE SUPPORT, COMMUNICATION, CLINICAL TEACHING)?
No
Jes - consider how you will ensure access to this training
• Ongoing ward based, inter-professional, simulated BLS and deteriorating patient training scenarios
• All staff to attend hospital deteriorating patient training course



DECIDE ON THE FINAL AGREED RESPONSE TO BE INCLUDED IN THE ESCALATION PROTOCOL AND POLICY AND DISPLAYED ON THE OBSERVATION CHART

- Notify RN caring for patient if not already aware
- Call home team registrar (medical registrar afterhours) via switch on XXX advise patient name, ward, bed number & admitting medical team
- Notify RN in charge
- Consider O2 therapy (aim for oxygen saturation >95%) and additional assessments (ECG etc) as required
- Repeat observations in 15 minutes
- If registrar unable to attend within 30 minutes, contact admitting senior medical officer
- Call ICU registrar on XXXX and patient flow manager on XXXX if admitting senior medical officer not contactable or unable to attend within 30 minutes
- \cdot Call medical emergency team on XXX if worried or if patient deteriorates further

The escalation system being mapped in this worked example includes three levels of abnormality. Steps 3-9 are repeated below for a high level of abnormality.



LEVEL OF ABNORMALITY:

High

3

DECIDE WHAT PHYSIOLOGICAL OBSERVATION THRESHOLDS WILL TRIGGER A RESPONSE TO THIS LEVEL OF ABNORMALITY

PHYSIOLOGICAL OBSERVATION THRESHOLDS INDICATING THIS LEVEL OF ABNORMALITY:

RESPIRATORY RATE:	HEART RATE:	TEMPERATURE:	OTHER:
≤ 4 or ≥ 36	$\leq 49 \ or \geq 140$	No trigger at this level of abnormality	Requiring ≥ 60% oxygen (i.e. oxygen via non-rebreather
OXYGEN SATURATION:	SYSTOLIC BLOOD PRESSURE:	LEVEL OF CONSCIOUSNESS:	mask or bag-valve- mask resuscitator)
<i>≤ 89%</i>	<i>≤ 89</i>	Responds to pain or unresponsive	Clinician concern Sedation score 3



DECIDE WHAT TREATMENTS MAY / WILL BE REQUIRED WHEN A RESPONSE IS TRIGGERED

- advanced life support
- advanced, continuous monitoring
- auscultation of chest
- ABG and interpretation
- CXR and interpretation
- invasive or non-invasive ventilatory support
- systematic physical assessment
- central IV access
- prescription and administration of drugs and IV fluids
- ECG and interpretation, treatment of dysrythmia
- collection of pathology (UEC, FBC, blood cultures etc)
- ordering of CT/USS/other tests
- referral to other speciality and/or for senior input
- communication with patient/family/carer



WHO HAS THE SKILLS TO RESPOND?	• • •	WHEN ARE THEY AVAILABLE?	• • •	WHO WILL RESPOND?
ICU registrar				
ICU nurse in charge or nominated senior ICU nurse		24 hours/7 days		Ке <i>зрони</i> 2477
ICU senior medical officer	•••	On site or on call 24 hours/7 days	> > >	Back up response 24/7



DECIDE ON THE RESPONSIBILITIES OF THE RESPONDING CLINICIANS

WHAT ARE THE RESPONSIBILITIES OF THE CLINICIANS WHO HAVE PRIMARY RESPONSIBILITY FOR THE PATIENT? (E.G. WARD REGISTERED NURSE)

RN caring for patient:

- stay with the patient
- inform nurse in charge
- begin basic life support if necessary
- repeat observations at least every 5 minutes until patient reviewed
- consider appropriateness of current oxygen therapy
 consider 12-lead ECG and blood sugar check
- review medications, analgesia, drains and fluid balance as indicated
- ensure clinical record and other relevant documentation is available and up-to-date
- handover pertinent information using ISBAR format

Nurse in charge:

- contact alternative response options (if required)
- support RN caring for patient to undertake further assessments and treatments as required
- ensure other patients are attended to

WHAT ARE THE RESPONSIBILITIES OF THE CLINICIANS PROVIDING THE ESCALATION RESPONSE? (E.G. THE NURSE IN CHARGE AND RESPONDING MEDICAL OFFICER)

ICU staff providing rapid response:

- begin advanced life support if necessary
- provide advanced monitoring as required
- undertake physical assessment of patient (all systems)
- · provide tréatment in consultation with admitting medical officer
- refer for further specialty input if required (e.g. cardiology/intensive care/radiology etc)
- coordinate transfer of patient to ICU/CCU or other critical care area if required
- handover pertinent information to ICU senior medical officer using ISBAR format
- liaise with admitting medical team regarding treatment provided and plans for ongoing follow up
- · document plan of care including monitoring plan and plan for any follow-up required
- ensure patient/family/carer aware of ongoing plan of care



DECIDE ON HOW THE RESPONSE SYSTEM WILL OPERATE

WHAT IS THE REQUIRED TIMEFRAME FOR RESPONSE GIVEN THESE LEVELS OF ABNORMALITY

As soon as possible but within 5 minutes

HOW WILL THE RESPONDING HEALTH PROFESSIONAL/S BE CONTACTED?

- Via emergency telephone call to switchboard state 'medical emergency' and advise patient name, location and admitting team
- RN cáring for patient if unable to locate use emergency assist call button
- Nurse in charge call on mobile phone or use emergency assist call button

WHO ELSE SHOULD BE NOTIFIED?

- Ward nurse in charge to advise admitting registrar/senior medical officer as soon as practicable after emergency call has been placed
- ICU registrar to contact on call ICU senior medical officer once patient has been assessed
- ICU registrar to contact admitting senior medical officer once patient has been assessed

WHAT ARE THE ALTERNATIVE OR BACK UP OPTIONS FOR OBTAINING A RESPONSE?

Repeat medical emergency call via switchboard



IS EQUIPMENT AVAILABLE IN THE CLINICAL AREA TO UNDERTAKE THE NECESSARY TREATMENTS?
 Yes No - consider purchasing equipment or develop processes for equipment to be brought to area attending ICU staff to bring medical emergency trolley to the bedside contact porters for urgent assistance if patient requires emergency transfer
ARE THERE SPECIALISED TRAINING REQUIREMENTS FOR RESPONDERS TO THIS LEVEL OF ABNORMALITY (EG. BASIC OR ADVANCED LIFE SUPPORT, COMMUNICATION, CLINICAL TEACHING)?
 No Yes - consider how you will ensure access to this training Ongoing ward based, inter-professional, simulated BLS and deteriorating patient training scenarios All staff to attend hospital deteriorating patient training course



DECIDE ON THE FINAL AGREED RESPONSE TO BE INCLUDED IN THE ESCALATION PROTOCOL AND POLICY AND DISPLAYED ON THE OBSERVATION CHART

- Press bedside emergency assistance bell to notify ward nurse in charge and RN caring for patient if not already in attendance
 Call XXX, state 'medical emergency' and advise patient name, ward and bed number
 Stay with the patient, begin basic life support if required
 Repeat observations at least every 5 minutes until patient reviewed

Summary of the agreed escalation protocol for inclusion in the escalation policy and on the observation and response charts

LEVEL OF ABNORMALITY:	RESPONSE:
Low	 Ensure RN in charge and RN caring for patient are aware of patient deterioration Page admitting team resident, or on call resident after hours Repeat observations at least every 30 mins until review Consider oxygen therapy, 12-lead ECG, blood sugar level Contact admitting registrar (on call registrar after hours) if no response within 30 minutes Call medical emergency team on XXX if worried or patient deteriorates further
Medium	 Ensure RN in charge and RN caring for patient are aware of patient deterioration Call home team registrar (medical registrar afterhours) via switch on XXX – advise patient name, ward, bed number & admitting medical team Consider O2 therapy (aim for oxygen saturation >95%) and additional assessments (ECG etc) as required Repeat observations in 15 minutes If registrar unable to attend within 30 minutes, contact admitting senior medical officer Call 1CU registrar on XXXX and patient flow manager on XXXX if admitting senior medical officer not contactable or unable to attend within 30 minutes Call nedical emergency team on XXX if worried or if patient deteriorates further
High	 Press bedside emergency assistance bell Call XXX and state 'medical emergency' Stay with the patient and begin basic life support if required Repeat observations 5 minutely