STANDARD 8: Recognising and Responding to Acute Deterioration

CRITERION: Clinical governance and quality improvement to support recognition and response systems (Action 8.1 – 8.3)

Organisation-wide systems are used to support and promote detection and recognition of acute deterioration, and the response to patients whose condition acutely deteriorates.

Provide a summary of the processes that are in place to meet this criterion

The Deteriorating Patient Committee (DPC) aligns with Safe Care in the Western Health (WH) Best Care Committee structure and co-ordinates systems that support recognition and response to acute patient deterioration. The Committee provides oversight and endorses policies and procedures that guide WH staff in recognising and responding to acute deterioration. Policies and procedures relating to the deteriorating patient cover:

- Screening, assessment and comprehensive care planning to identify patients at risk of acute deterioration, and develop appropriate monitoring and escalation plans
- Escalation and emergency assistance processes (eg Urgent Clinical Review, Medical Emergency Team (MET) response, and Code Blue response. These include roles, responsibilities and accountabilities of multidisciplinary team members in recognising and responding to acute deterioration
- Patient and family escalation systems through 'Call for Help'. FAQ and messaging available in multiple languages. Instructional videos available on intranet and internet
- Policies and procedures are aligned with the current legislative requirements and standards and outline the expectations to support recognition and response to the deteriorating patient. They are available to staff through the PROMPT PPG platform and are routinely reviewed and updated by subject matter experts.

WH has standardised forms and processes for staff eg. Acute Resuscitation form.
EMR functionality supports risk assessment and care planning for acute mental deterioration, identification of physiological markers within escalation criteria, and messaging for MET/Urgent Clinical Review.
Involvement in Deteriorating Patient Systems (DPS) projects have resulted in enhanced support for acute deterioration detection, clinical decision making and escalation.
New buildings and services within WH have provided an opportunity to enhance the rapid response systems and further develop supporting education.
The Code Blue Sub-committee provide clinical expertise and specific guidance to first responders and Advanced Life Support code responders to support systems and equipment requirements, in addition to providing advice on best practice, education and training, including COVID responses and PPE requirements in Code Blues e.g guidelines from the safe provision of CPR.
WH's recognition, escalation and response processes are conveyed at orientation programs for all new clinical staff (medical, nursing and allied health). The content of orientation sessions is updated annually in response to the most up-to-date best practice guidelines. In addition, all clinical staff are required to complete training and assessment of Basic or Advanced Life Support (Adult / Paediatric / Neonatal) relevant to their clinical role. Paediatric Code Nurse (PCN) response team are also supported by WH to attend the 3-day APLS course in Melbourne to upskill them and educate them on the most up-to-date best practice guidelines. The Course is fully funded.

The WH Centre for Education supports multidisciplinary programs that train staff in recognition and response to clinical deterioration, inclusive of all patient cohorts and ages. Many programs are co-facilitated by senior clinicians from Education, Anaesthetics, Emergency Medicine, General Paediatric Medicine, Intensive Care, Newborn Services, Obstetric Medicine and Midwifery services. The programs cover clinical and non-clinical skills. These programs include Introduction of regular mock Code Blue simulation training for code response teams and first responder mock Code Blue simulations being run on wards

Additional training opportunities are provided through simulation training, and WeLearn, including WeLearn training packages on the WH Rapid Response System and Call for Help procedures. All education and training is evaluated and regularly updated to align with best practice. WeLearn modules are available online to compliment individual as well as face-to-face learning.

To ensure organisational awareness of governance processes, WH utilises monitoring data to inform quality improvement initiatives with the aim of optimising outcomes of recognition and response systems. Data Initiatives at WH (excluding BMM) include:

- Consolidation and ongoing focus on delirium and sepsis management
- Adult, Paediatric, Maternal and Neonatal Code Blue data collection
- Adult, Paediatric, Maternal and Neonatal MET Call dashboards
- Met calls – home units, patients having 3 or more calls (within 4 days)
- Maternity Code Pink and Code Green calls
- Call For Help data
- KPI report

Sepsis Management Guidelines have been completed to enhance recognition and management of sepsis in adults. Currently the obstetric guidelines are being drafted.

How does the health service monitor the requirements of this criterion are being met and where is the information reported?

WH adult Rapid Response and Call for Help System activation is entered into a MET Register component of the Riskman Incident Reporting system, with data reviewed monthly by the Deteriorating Patient Committee (DPC), including a review of any missed opportunities to escalate or intervene prior to a Code Blue being called, where CPR was required. Review is supported by electronic dashboards and in-depth analysis of cardiac arrest calls. The paediatric codes are entered into Sharepoint for neonatal, paediatric, Code Green, Code pink, MET and Code Blue – with planning movement to Riskman for future data collection. Data is tabled and reviewed monthly at DPC.

Compliance with mandatory training and assessment of Basic or Advanced Life Support (Adult / Paediatric / Neonatal) is monitored by managers on the WH Monitoring and Performance (MaP) system at the Deteriorating Patient Committee from Code Blue Committee meetings. Training reports can be run through We Learn. Managers can review their staff competencies through MaP

Auditing of clinical documentation on observation, escalation and response to acute deterioration is also undertaken, such as the ABC audit. Audit results are shared with all teams and action plans developed as required.

Incidents and near misses associated with recognition and response to acute deterioration are entered into Riskman, with data provided to the Victorian Health Incident Management System (VHIMS). Monthly recognition and response to acute deterioration incident reports, including specific high-risk situations, are developed for reporting at ward level, divisional level, and through the Best Care Committee structure.

The above activity provides opportunity to identify system gaps and trending issues that are used to inform improvement strategies.

Have improvements been implemented?

In late 2019, WH had a review of its deteriorating patient systems. This review was undertaken by Professor Daryl Jones (Intensivist and chair of the International Rapid Response System). Following a pause for COVID, work commenced in July 2020 on implementing his recommendations.

This included

- Optimal medical composition of the MET team
- Optimisation of Code Blue nursing response and code blue team composition
- Code Responder trolley standarisation
- First responder trolley standardisation
- Live Deteriorating Patient Alert Dashboard for the ICU Liaison team
- Critical Care Outreach Team (CCOT) model working group established. One of the recommendations from this was inclusion of an ICU Liaison Nurse on the Deteriorating Patient Committee
- Clinical Code call alignment
- Procedural alignment for governance of Code Blue/MET
- Centralised checklists for resuscitation trolleys

The main initiative of the DPS team focussed on systems, equipment, data collection, clinical emergency response composition, education and completing recommendations from DPS report.

Through the pandemic, 45% of all COVID-19 cases in Victoria resided in Western Health's catchment. Severe illness related to COVID-19 virus had a significant impact on Western Health (WH) 'business as usual' operations. To care for the increased numbers of patients with COVID requiring Intensive Care at Western Health, the Perioperative Division Critical Care nursing cohort undertook upskilling to provide WH with greater capacity to take additional ICU patients. Training involved upskilling, initiation of a buddy-model with CCU nurses, support of ICU Liaison each shift and self-directed learning packages. The units expanded by 83% into four subunits, and a new Model of Care was introduced to maintain safe care for all ICU/HDU patients, as well as those having MET calls on the ward or requiring regular review.

BSOTS (a maternity specific triage system) was implemented in Feb 2021 in the MAC unit. Education and training provided, BSOTS champions identified, resourced accordingly, escalation processes developed and outcomes measurable and sustainable.

In 2021, Djerriwarrah Health Services amalgamated with Western Health. In July 2023, Bacchus Marsh and Melton implemented call for help. Following infrastructure improvements, Bacchus Marsh also implemented a 3 tiered deteriorating patient response system. All forms containing escalation processes were amended to reflect these changes. PPGs were updated accordingly. Intensive education and training was provided to teams.

Other improvements include:

- Change to code response team - ICU liaison nurses to attend MET and Code Blue calls as clinical nursing lead supported by ICU access nurse and CCU nurse
- PPE guidelines for First responders and code response teams was updated regularly throughout the pandemic
- Rapid response establishment and consultation on COVID immunisation clinic emergency equipment requirements and escalation processes
- Implementation of compass training
- Introduction of Code team tours for code responders
- Junior medical support training project

- 444 to 2222 was implemented in July 2021 In July, 2023, 2222 was implemented at Bacchus Marsh and Melton alongside implementation of a 3 tiered rapid response system
- Project manager – new universal defibrillator roll out endorsed full replacement across all WH sites – Phillips. Planned replacement occurred in March 2023
- Overhead paging upgrades
- Simulation lab upgrade

WH has played a significant role in providing services to the people of the West throughout the pandemic. This care has occurred in the community, in our acute hospitals and through providing support to other organisations, in particular private residential aged care settings. The DPC has consulted and supported all staff and teams around processes to support timely recognition of deteriorating patients, irrespective of where their role has taken place.

WH Integrated COVID-19 Care at Home program, which was a finalist for the 'Improving integration of care for patients with chronic and complex healthcare needs' category in the Victorian Public Healthcare Awards. This amazing program administered 2000 early COVID therapies and monitored more than 9000 patients since its inception in September 2021,

Throughout the pandemic the ICU liaison role was increased to 24/7 service at Footscray (in line with Sunshine campus). This model was so successful that it has now been supported (through a business case) to remain in place.

Surveillance of data on Western Health adult Rapid Response activations (Adult MET and Adult Code Blue) by the Deteriorating Patient committee (DPC) demonstrates there continues to be a clear upward trajectory in both Adult MET and Code Blue. The number of MET calls across both Footscray and Sunshine Hospitals from 2016 to 2021 increased from 2581 to 5562, equating to a 115% increase in Adult MET calls over 6 years. In July 2022 we had our largest number of calls with FH 255 MET/ SH 385 Total 640 MET for a month. An increase in activations led to an increase in the number of "simultaneous" (within 15 min) activations.

The primary reason identified for adult MET calls was hypotension. The primary reason for calling an adult Code Blue was altered conscious state. Actual CPR events is quite low with 48 of 720 Code Blue calls requiring CPR.

CRITERION: Detecting and recognising acute deterioration, and escalating care (Actions 8.4 – 8.9)

Acute deterioration is detected and recognised, and action is taken to escalate care.

Provide a summary of the processes that are in place across the health service to meet this criterion

WH has processes for clinicians to detect, document and escalate acute physiological deterioration for adult, maternity, paediatric and newborn patients.

WH's 3-tiered Rapid Response System for staff works by identifying patients with signs of early medical deterioration and initiating escalation and emergency assistance processes (eg Urgent Clinical Review, Medical Emergency Team response, and Code Blue response).

The Rapid Response System is supported by graphical track and trigger observation charts which assist staff with recognition and response to clinical deterioration. Staff are notified of the correct pathway for management in the means of alerts and notifications if something is tracked as abnormal in the observation charts and care plan.

WH's Comprehensive Care risk assessment tool and inter-disciplinary plan of care (IPOC) supports clinicians to support recognition and response to acute deterioration in mental state, including patients who are at risk of developing delirium.

Policy and procedures provide guidance for staff on the use of the Rapid Response Systems, as well as WeLearn training modules.

WH has an active ICU Liaison Nurse Service that provides expert support to patients with complex care needs and those who have recently been discharged from the Intensive Care Unit.
The team also provide a referral service for clinicians who identify patients who will benefit from specialised clinical nursing care. The ICU Liaison Service round regularly and aim to proactively identify patients of concern, to commence and escalate management in the early phases of clinical deterioration. WH has supported an Increase in funding to increase staffing levels of ICU liaison nurses as well as implementing the Medical Clinical Lead role. This role is to provide senior medical after hours support at METs. This initiative has shown to be a success to the care of the potential deteriorating patient hence more funding has been improved to enhance this service. Shown by the reduction in Code Blues and response time of seeing patient before they become a MET call based on their rounding

At WH, clinicians, patients, carers and families are encouraged to escalate concerns about acute deterioration without the need to meet specific physiological parameters. The Call for Help response works alongside the WH's Rapid Response system and has been developed as a three-step process:

1. Talk to your nurse or doctor about your concerns
2. Talk to the nurse in charge of the ward about your concerns
3. If these nurses and doctors cannot help please call 03 8345 HELP (4357). This number makes it easier to remember and associates with its intended use

The ICU Liaison Service provide the clinical response to the Call for Help activations and assistance with addressing the clinical areas of concern.

The organisation-wide implementation of the EMR provided the opportunity to enhance support for acute deterioration detection, clinical decision making and escalation. The EMR provides prompts when physiological markers are within escalation criteria and alert messaging for MET/Urgent Clinical Review on the EMR is customised to align with WH escalation procedures.

Externally supported opportunities to enhance the detection and recognition of acute deterioration have also supported improvement activity.

In collaboration with Safer Care Victoria, WH has improved the prevention, recognition and management of delirium through a Breakthrough Series. As part of this collaborative, the 4AT screening tool was implemented at WH. Screening of all patients over the age of 18 years using the 4AT on admission and at bedside nursing handover is included as part of a redesigned Comprehensive Risk Assessment and IPOC process implemented across WH and also supported by the EMR. BOC has been implemented in the daily care plan. Work continues in the Bacchus Marsh and Melton sites to update the risk assessments and develop the comprehensive care plan utilizing those tools in practice at all other WH sites

In July 2023, Western Health commenced delivery of primary healthcare at the Dame Phyllis Frost Centre (correctional facility). Staff at this centre will provide Basic life support principles and initiate a 000 response in the care of a deteriorating patient. The principles and processes implemented at Dame Phyllis align to those practiced across other outlying Western Health sites.

The Adult Sepsis Pathway has been integrated with our EMR and has been rolled out across a variety of clinical areas including wards and emergency departments.
Recently, in July 2023, Western Health also became one of the largest mental health service providers in Melbourne. Discussions are occurring around resources required to support deteriorating patients in the mental health space. Call for help is has been implemented. Whilst we prepare for the new building to be opened in Sept/Oct, planning continues for a MET and a 3 tiered MET Code Blue System.

How does the health service monitor the requirements of this criterion are being met and where is the information reported?

WH Rapid Response and Call for Help System activation is entered into a MET Register component of the Riskman Incident Reporting system, with data reviewed monthly by the Deteriorating Patient Committee. Review is supported by electronic dashboards and in-depth analysis of cardiac arrest calls, including those requiring CPR and if there was any opportunity for earlier escalation.

Auditing of clinical documentation, such as the ABC audit, on observation and escalation and response to acute deterioration is also used as a monitoring mechanism.

Incidents and near misses associated with recognition and response to acute deterioration are entered into Riskman, with data provided to the Victorian Health Incident Management System (VHIMS). Monthly recognition and response to acute deterioration incident reports, including specific high-risk situations, are developed for reporting at ward level, divisional level, and through the Best Care Committee structure.

The above activity provides opportunity to identify system gaps and trending issues that are used to inform improvement strategies.

Have improvements been implemented? … *update the following information to reflect current state, with any improvement/outcome examples to cover the time period since March 2020.*

Significant work has been undertaken in the delirium space – Delirium CNC recruited. Tools and resources developed and implemented to screen, diagnose/ prevent and manage delirium. The delirium escalation flow chart is included in the medical hand book. EMR Delirium order set and IPOC assessment is in place. Work continues at the Bacchus Marsh/Melton sites to mirror those improvements using a paper based tool (until EMR is rolled out in 2024)
During the pandemic, an anaesthetist joined the ICU liaison team to assess, support and manage unwell patients on the ward through the critical care outreach team (CCOT). Staff were regularly updated with changes to code response eg. compression only CPR only.

Education and training was provided through updated PPE adult CPR posters, intranet and videos

Significant work has taken place on standardizing the Acute Resuscitation Plan (ARP) – currently a paper based form kept at the bedside of the patient.

Consumer participation in DPC steering committee

Primary Postpartum Haemorrhage (PPH) SCV project in progress

Working toward implementation of EMR at Bacchus Marsh/Melton (BMM) scheduled for the first half of 2024. In interim, BMM utilizing trigger charts for recognizing and responding to deteriorating patients

Cognitive assessment - WH have Standardised screening for delirium, introduced measurement of essential environment components such as orientation aids, personalised space and access to items, Implemented a Medical audit set for doctors in EMR and introduced Nursing and Medical pathways. WH have sustained and embedded education in diagnosis, prevention and management with tools and knowledge to identify and manage cognitive impairment. WH also have a SNAP (Subacute and non-acute access and pathways) model of care that provides timely expert assessment.

The objective of the WH Rapid Response System is to decrease the number of Code Blue calls required through staff identifying and escalating early signs of a patient's deterioration and facilitating appropriate management such as Urgent Clinical Review or MET Call. Code Blues are called in response to a patient having cardiac and respiratory arrest or becoming unconscious.

WH has seen a slight increase in Code Blue calls in Sunshine over the last 2 years (Median 28 to 32). Along with an increase in adult Code Blues there has also been a significant increase in adult MET calls

The management of Sepsis continues to be impressive, with significant reductions in sepsis-related mortality (13.7% to 6%), sepsis-related admissions to our Intensive Care Units (21.6% to 11.5%) and patient length of stay (6.39 days to 4.73 days). In addition, the median time for administering antibiotics to septic patients has fallen below 60 minutes, representing an increase in those treated within best practice timeframes.

The strategies implemented around delirium have been highly successful and one WH is very proud of. The 4AT tool incorporates a baseline cognitive assessment on all patients over the age of 18 on admission or if there is any cognitive changes. Prior to the pandemic the completion rate of the 4AT across Western Health was consistently above 90%. Since then, the completion rate has decreased slightly - this has been largely contributed to a large number of new staff entering the workforce. To improve completion rates we have completed a Nursing Grand Round, updated the Delirium WeLearn Module for all disciplines, identified nurse champions, developed a resource folder and implemented an educational programme.

The SIM sessions to incorporate the requirements of the pandemic was very successful with no recent incidents logged around breach of PPE associated with code responses

The PPH collaborative with SCV has led to a progressive reduction in PPH > 1.5 L at BMM and JK. JK PPH rates went from 4-5% in 2020-2021 to 2.9% in 2022. BM rates went from 6.67 to 4.35% with none in the last 2 months. Some improvements implemented in this space include Scales in every Birthing room (improving weighed loss), Carbetocin change for 3rd Stage, Ergometrine, TXA and then Carboprost for PPH management, purchase of PPH Trolley, suturing equipment in the room, PPH Drug Box, Gravimetric Drapes to assist with visualizing loss during suturing and a Code Pink revamp.

The planning phase of implementing the rapid response system at BMM was supported and tested through simulation scenario testing. This was extremely successful and provided a great deal of confidence in the systems prior to implementation.

EMR planning for BMM is progressing with infrastructure improvements being made. A senior nursing informatics advisor has been recruited to assist the project team in this space.

CRITERION: Responding to acute deterioration (Actions 8.10 – 8.13)

Appropriate and timely care is provided to patients whose condition is acutely deteriorating

Provide a summary of the processes that are in place to meet this criterion

WH has processes for timely response by clinicians with skills are required to manage episodes of acute deterioration. Staff trained to respond to patients whose condition is acutely deteriorating include:

- Specialist treating teams (e.g. Urgent Clinical Review)
- Medical Emergency response teams, including the CCOT, patient's treating team and specialised critical care response nurses with escalation to medical responders (e.g. ICU Registrars, ED Paediatric Registrars, Neonatal Registrars)
- Code Blue responders, including CCOT, ICU Registrars, ICU nurses, Coronary Care Unit Nurse responders, Emergency Department Paediatric Registrars/nurses, Neonatal Registrars/nurses, General Medical and Anaesthetic Registrar.
- Code Pink and Code Green responders, including CCOT, Obstetric Registrars, Neonatal Registrars, Anaesthetic Registrars and senior Clinical Resource Support Midwives. Additional operating theatre staff also support these responses.

Responders who form part of the MET and Code Blue response teams are specialised medical and nursing staff with critical care and Advanced Life Support skills (i.e. Adult, paediatric and neonatal resuscitation skills).

WH has processes to ensure appropriate and timely referral of patients whose mental state is acutely deteriorating, including patients at risk of or who have developed delirium. Referral options (as suitably assessed) include medical review, the Consultation Liaison (CL) Psychiatry Service, Psychology Services, and the Sub-Acute Non-Acute Pathway (SNAP).

In addition to internal WH referral and transfer procedures to areas of higher acuity/complex care, WH has strong relationships and escalation processes with other Melbourne Metropolitan health and retrieval services (eg Paediatric infant Perinatal Emergency Retrieval (PIPER) for patients who require definitive intervention for acute and complex physical deterioration.

The DPC will be reviewing current RRT staffing to ensure it meets the minimum staffing levels and staff qualifications recommended by Australian and New Zealand national standards.

How does the health service monitor the requirements of this criterion are being met and where is the information reported?

WH Rapid Response and Call for Help System activation is entered into a MET Register component of the Riskman Incident Reporting system, with data reviewed monthly by the Deteriorating Patient Committee. Review is supported by electronic dashboards and in-depth analysis of cardiac arrest calls.

Compliance with mandatory training and assessment of Basic or Advanced Life Support (Adult / Paediatric / Neonatal) is monitored by managers on the WH Monitoring and Performance (MaP) system and tabled bi-monthly at the Deteriorating Patient Committee and Best Care Steering Committee meetings.

Auditing of clinical documentation on observation and escalation and response to acute deterioration is also used as a monitoring mechanism, such as the ABC audit.

Incidents and near misses associated with recognition and response to acute deterioration are entered into RiskMan, with data provided to the Victorian Health Incident Management System (VHIMS).

Monthly recognition and response to acute deterioration incident reports, including specific high-risk situations, are developed for reporting at ward level, divisional level, and through the Best Care Committee structure.

The above activity provides opportunity to identify system gaps and trending issues that are used to inform improvement strategies. NUMS or ANUMS can generate EMR reports with compliance of their staff completing all daily tasks including BOC or OBS to note if deterioration was escalated appropriately. NUMS can see this report daily/ weekly/ monthly for the admitted patients. Allowing them to follow up with staff if need be. Also having an overarching view of their department in real time.

Have improvements been implemented?

Monitoring incidents and near misses in addition to consumer feedback associated with WH care provision for patients whose condition is acutely deteriorating has led to the development and implementation of further staff education and training. The WH Centre for Education has supported several multidisciplinary programs focusing on training staff in recognition and response to clinical deterioration. The programs are supported by WH's Simulation facilities and are co-facilitated by senior clinicians from a range of areas including Education, Anaesthetics, Emergency Medicine, General Paediatric Medicine, Intensive Care, Newborn Services, Obstetrics and Midwifery Services.

DPC learnings from the opening of Joan Kirner Women's and Children's (JKWC) at WH in May 2019, will assist in expansion and growth of future services, including establishing robust data collection and entry systems.

The Comprehensive Risk Assessment and IPOC process implemented across WH and supported by the EMR has improved WH's capability to respond to acute mental deterioration, including the onset of acute delirium. The EMR also supports alert messaging for MET/Urgent Clinical Review.

The emergency bedside equipment standardization was effective across WH sites. Standardization of such an initiative is extremely useful and provides some uniformity when responding to deteriorating patients for all staff, but especially those staff working across different wards or working across WH sites

With the amalgamation of Bacchus Marsh and Melton (formerly Djerriwarrah Health Services) into WH, much work has been undertaken in the DPS space. With the recent introduction of the call for help, 2222 and implementation of a tiered rapid response system – a planned review will take place after 3 months

The Critical care outreach team (CCOT) to support wards was implemented during COVID and has continued following the success of this initiative.

My beeper application – paging system implemented for improved communication

Code Responder Role stickers have been developed

Medical clinical lead positions commenced early 2022

Standardisation of Emergency Bedside equipment was revised by the Code Blue Subcommittee

Standardization of paediatric and maternity code trolleys eg. PPH trolley

Upskilling of medical registrars to support response to various code calls. This was undertaken by Home units medical leads & BPT 3s commenced upskilling medical registrars

Coordinated SIM training incorporating PPE/ separation of defib from the resus trolley in code response. A video of the training was used for training a wider audience and from a multi-disciplinary perspective.

A commitment to investing financial and staffing resources has ensured the latest educational equipment is available and staff have access to internal and external courses and training. In addition to enhancing clinical skills, the training aims to improve staff skills in the areas of crisis resource management, clinical leadership and communication skills during clinical emergencies.

EMR implementation has enhanced Rapid Response System and communication. Tracking UCR's through EMR dashboard - alerts generated through graphical interpretation and see what's happening remotely