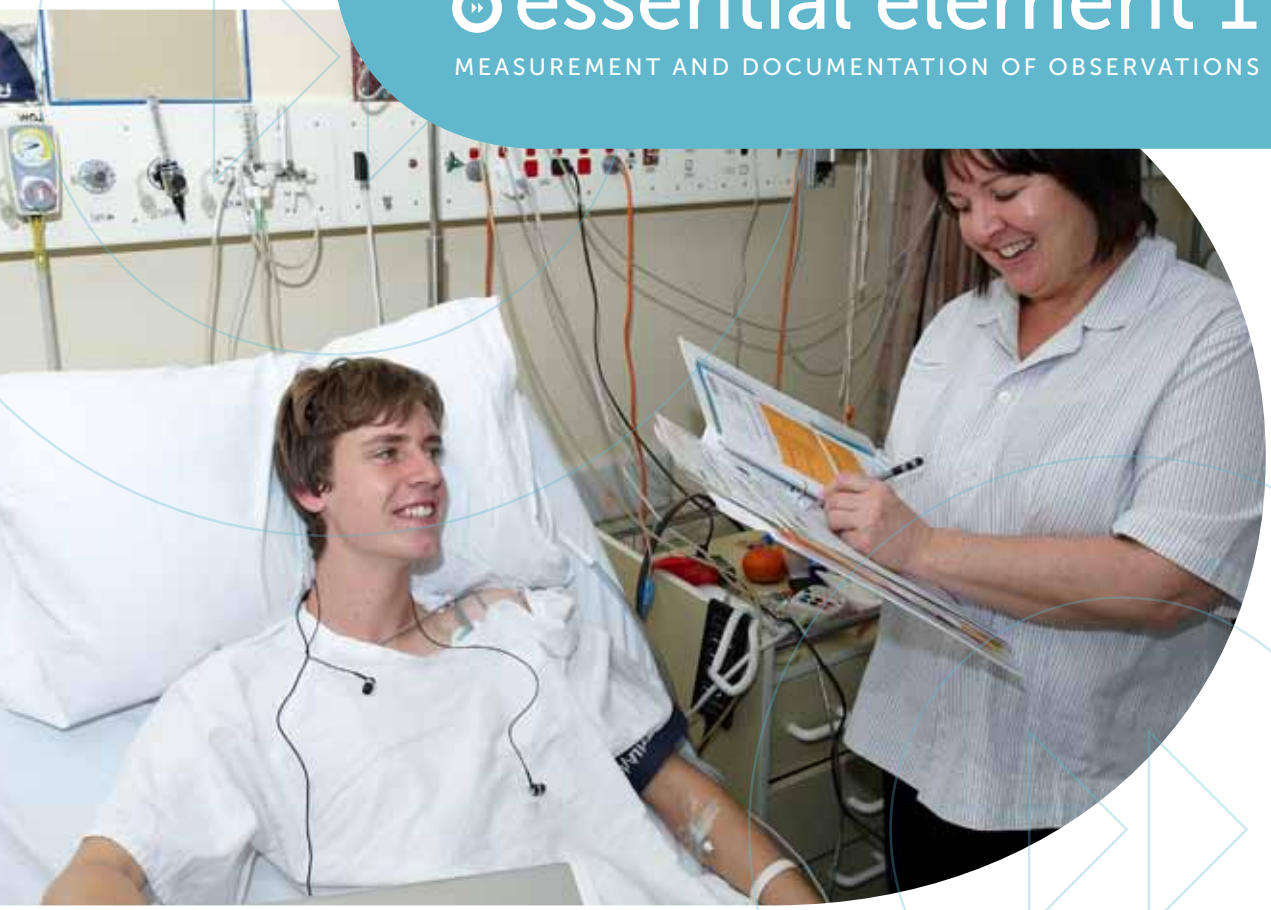
quick-start guide
to the implementation of

essential element 1

MEASUREMENT AND DOCUMENTATION OF OBSERVATIONS



national consensus statement:

essential elements for recognising & responding to clinical deterioration

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

recognising + responding TO CLINICAL DETERIORATION

NSQHS STANDARDS

Quick-start Guide to the Implementation of
Essential Element 1: Measurement and Documentation of Observations

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introduction

Early recognition of clinical deterioration, followed by prompt and effective action, can minimise adverse outcomes such as cardiac arrest, and decrease the number of interventions required to stabilise patients whose condition deteriorates in hospital.[1]

each essential element describes a number of specific systems and processes of care that need to be in place to successfully recognise and respond to clinical deterioration

The *National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration* (the consensus statement) describes eight elements that are essential for a prompt and reliable response to clinical deterioration. Each essential element describes a number of specific systems and processes of care that need to be in place to successfully recognise and respond to clinical deterioration. In April 2010, all Australian health ministers endorsed the consensus statement as the national approach for recognising and responding to clinical deterioration in acute care facilities in Australia.

using the consensus statement

The consensus statement guides facilities in developing and implementing recognition and response systems according to their local circumstances. The focus of these systems is to ensure that all patients who deteriorate receive appropriate and timely treatment. Facilities may need additional resources such as equipment, personnel, education and training to ensure patients receive appropriate and timely care.

quick-start guides to implementation

This series of quick-start guides has been developed to help people to rapidly understand and implement the essential elements. Implementing the tasks in these guides will help to ensure that the essential elements are in operation and working effectively.

A comprehensive implementation guide (available on the Commission's web site: www.safetyandquality.gov.au) provides more detailed information, resources and examples.

using the quick-start guides

The quick-start guides are structured around an action framework, which is designed to help you answer the five key questions to complete each task for each element.

- Do health professionals agree on the basis for the task, the best way to perform the task and who is responsible?
- Are the necessary processes and policies in place to complete the task?
- Does the facility have the necessary resources to complete the task?
- Is the clinical and non-clinical workforce educated about the importance of the task?
- Does the facility conduct audits, reviews or evaluations to ensure the task is performed properly?

introduction

The types of actions included within this framework and the barriers these actions address are summarised below.

action framework used in the implementation guide

DECIDE › DEVELOP › RESOURCE › EDUCATE › EVALUATE

Action framework		The barriers they address
DECIDE	actions address ▶ ▶ ▶	Lack of agreement
DEVELOP	actions address ▶ ▶ ▶	Lack of process/policy
RESOURCE	actions address ▶ ▶ ▶	Lack of resources and tools
EDUCATE	actions address ▶ ▶ ▶	Lack of knowledge
EVALUATE	actions address ▶ ▶ ▶	Lack of monitoring and evaluation

Use the action framework to help you complete a self-assessment of your clinical area or facility and to develop an action plan for implementation. Self-assessment and action planning tools can be downloaded from:

www.safetyandquality.gov.au

essential element 1

MEASUREMENT AND DOCUMENTATION OF OBSERVATIONS

the problem

Clinicians do not always measure the appropriate observations to identify clinical deterioration.

Patients in acute care settings often go for extended periods without observations being monitored.

Clinicians sometimes fail to recognise and respond appropriately to abnormal observations.

goals of this essential element

Patients have appropriate physiological observations and assessments monitored to recognise and respond to clinical deterioration.

Patients' physiological observation and assessment monitoring needs are clearly communicated among members of the healthcare team.

Abnormal physiological observations are easily identified from observation charts.

Patients' physiological observations can be tracked over time, with clear triggers for when care should be escalated.

tasks

There are three key tasks to complete for this essential element.

1. Measure and document core physiological observations with appropriate frequency and duration.
2. Document a monitoring plan for each patient.
3. Use observation charts designed using human factors principles that incorporate a track and trigger system.

for each task you will need to:

- identify who has a role in measuring and documenting observations, and what that role is
- use the self-assessment and planning tool (on the Commission's web site) to identify gaps in your systems for measuring and documenting observations and prioritise your changes
- use the results of your self-assessment to complete an action plan for your ward or facility
- use the five step action framework – **Decide, Develop, Resource, Educate, Evaluate** – to guide you through implementation.

essential element 1

MEASUREMENT AND DOCUMENTATION OF OBSERVATIONS

common terms used in this essential element

Human factors: 'The environmental, organisational and job factors of humans interacting with systems, as well as the physiological and psychological characteristics which influence behaviour at work.'[2]

Monitoring plan: a plan outlining the minimum observation and assessment requirements for a patient in an acute care setting. May be an individualised plan documented in the patient record or a standardised policy or pathway applying to a group of patients. This includes the required frequency (times per day) and duration (number of days) of physiological observation monitoring.

Observations: the core physiological observations required to identify clinical deterioration (blood pressure, heart rate, level of consciousness, oxygen saturation, respiratory rate and temperature).

Track and trigger systems: systems designed to provide clinicians with an objective decision making process for recognising and responding to altered physiological observations.[3]

learning from coronial inquests

The importance of regular observations

Vanessa Anderson was a 16-year-old girl admitted to hospital suffering a closed head injury. She had been in considerable pain and received multiple doses of opioid medications, which the coroner determined led to her death from a respiratory arrest.

'Observations were due again at 4:00 am; however, the nurse decided not to do these observations because Vanessa had been neurologically unchanged when she conducted the observations at around 2:00 am. At around 5:30 am the nurse entered Vanessa's room and found her unresponsive. An emergency was called and CPR administered. The treatment was unsuccessful and Vanessa was certified as being Life Extinct at 6:35 am.'[4]

task 1

MEASURE AND DOCUMENT CORE PHYSIOLOGICAL OBSERVATIONS WITH APPROPRIATE FREQUENCY AND DURATION

why this task is important

Measurement of physiological observations is important in detecting clinical deterioration. Hospitalisation places patients at risk of complications other than those related to their presenting diagnosis (e.g. pulmonary embolism, hospital-acquired infections). Ongoing observation and assessment is therefore necessary to detect clinical deterioration and other possible complications.

Abnormal observations may occur at any time during a patient's admission to an acute care facility. Multiple studies and adverse events have shown that patients in acute care settings often go for prolonged periods without having appropriate physiological observations measured.[5] When this occurs it can mean that clinical deterioration may not be recognised, and treatment may be delayed.

Frequency of observation measurements often varies, due to differences in an individual clinician's judgement, poor communication among teams, varying views on the importance of observations and a lack of guidelines to inform practice.[5-8] It is therefore necessary to develop systems to ensure that physiological observations are being measured and documented at the appropriate frequency and duration for all patients in acute care facilities.

how to complete task 1

DECIDE

REACH AGREEMENT ON THE CORE PHYSIOLOGICAL OBSERVATIONS TO BE MEASURED

Clinicians often have varying views on the physiological observations required to recognise clinical deterioration. Agreeing on this issue is an important step towards identifying clinical deterioration.

It is recommended in the consensus statement that, as a minimum, every acute care area should measure the core physiological observations for recognising clinical deterioration:

- respiratory rate
- oxygen saturation
- heart rate
- blood pressure
- temperature
- level of consciousness.

DEVELOP

DEVELOP POLICIES OUTLINING THE MINIMUM FREQUENCY AND DURATION FOR MEASUREMENT OF CORE PHYSIOLOGICAL OBSERVATIONS

Acute care areas need to develop policies that outline the minimum frequency (times per day) and duration (number of days) of observations.

The consensus statement recommends that the frequency of observations should be consistent with the clinical situation of the patient. For the majority of patients in an acute health facility, observations should be taken at least once per eight hour shift.

Different clinical areas may need policies with different frequencies for observations. Patients in a specialist unit such as coronary care may have different requirements from patients in general wards.

RESOURCE

PROVIDE EQUIPMENT FOR MONITORING PHYSIOLOGICAL OBSERVATIONS

Equipment for measuring physiological observations should be readily available and in good working order. Lack of equipment may delay measurement of physiological observations and management of clinical deterioration.

ENSURE THAT STAFFING LEVELS ARE ADEQUATE AND APPROPRIATE CLINICAL SUPERVISION IS PROVIDED

Reduced staffing levels can prevent health professionals from measuring physiological observations with adequate frequency.[5] Clinical areas need to consider if staffing levels affect their ability to measure physiological observations, and develop strategies to address this problem.

Adequate clinical supervision and effective communication within the healthcare team are important to ensure that the correct observations are measured, recognised and responded to.[5]

how to complete task 1

EDUCATE

EDUCATE CLINICIANS ON MEASUREMENT AND INTERPRETATION OF CORE PHYSIOLOGICAL OBSERVATIONS

Recognising the significance of altered physiological observations is complex, and develops from integrating knowledge with clinical experience. Education should include information on:

- core physiological observations and their role in identifying clinical deterioration
- the need for policies on monitoring practices
- the minimum frequency of physiological observation monitoring
- the minimum duration of physiological observation monitoring
- the clinician to whom abnormal physiological observations should be reported or escalated
- the person responsible for orientation of new, relief or agency staff on observation monitoring policies in each clinical area.

EVALUATE

AUDIT CURRENT PRACTICES REGARDING THE MEASUREMENT AND DOCUMENTATION OF PHYSIOLOGICAL OBSERVATIONS

Audits may occur as part of a facility-wide audit program or through quality improvement activities in individual clinical areas. Two types of audit may be useful. Observational audit can provide information about clinicians' practices regarding the techniques of physiological observation measurement. Documentation audit measures compliance with policy regarding minimum frequency and duration of core physiological observation monitoring. Audits should be based on the area's observation policy or policies, and should evaluate whether:

- core physiological observations are being measured accurately
- observations are measured and documented according to the minimum frequency and duration specified in the monitoring plan.

task 2 DOCUMENT A MONITORING PLAN FOR EACH PATIENT

why this task is important

Understanding the significance of altered assessments and observations can be complex given the vast array of abnormalities that can occur. Not all clinicians may have enough knowledge and experience to identify the assessments and observations which may signal clinical deterioration. Clinicians can also only recognise and respond to clinical deterioration if appropriate observations and assessments are measured with adequate frequency.

Identifying additional observations and assessments for measurement (other than core physiological observations) requires a team approach that draws on each clinician's knowledge, experience and critical thinking skills. A clear monitoring plan for each patient is needed to ensure that:

- appropriate observations and assessments are monitored, considering the patient's diagnosis and proposed treatments
- the frequency of observations and assessments is suitable, considering the patient's clinical condition and proposed treatment plan
- the monitoring requirements for each patient are clearly communicated to all members of the healthcare team.

how to complete task 2

DECIDE

AGREE ON ADDITIONAL OBSERVATIONS AND ASSESSMENTS FOR SPECIFIC PATIENT GROUPS

Different clinical conditions and treatments need different observations and assessments to detect clinical deterioration and to monitor treatment. Clinicians need to agree on the observations and assessments—and the frequency of these—that specific patient groups need.

Standardising care improves the likelihood of patients having appropriate observations and assessments measured for their clinical condition.[9-10] National clinical guidelines often provide minimum requirements for observations and assessments for specific clinical conditions. Using these guidelines will help clinicians agree on minimum standards for observations and assessments for specific patient groups and treatments.

DEVELOP

DEVELOP POLICIES OR GUIDELINES OUTLINING ADDITIONAL OBSERVATIONS AND ASSESSMENTS FOR SPECIFIC PATIENT GROUPS AND TREATMENTS

Policies or guidelines should be developed once agreement has been reached on the observations and assessments for specific patient groups and treatments. The policies or guidelines should specify which observations and assessments are to be undertaken, how often, and by whom. These policies may apply to patient care in one or several clinical areas within a facility.

DEVELOP AND IMPLEMENT PROCESSES FOR DOCUMENTING A CLEAR MONITORING PLAN FOR EACH PATIENT

Clinical areas will need to individualise care by developing processes for documenting a clear monitoring plan for each patient throughout the duration of their admission to an acute care facility. For many clinical areas, this will be a new process that will require changes to existing work practices. When designing these processes, clinical areas need to consider the following questions.

- Which member(s) of the healthcare team will prepare and document the monitoring plan?
- Where during the patient's journey will monitoring plans be prepared and documented?
- How will minimum observation and assessment requirements (from policy or guidelines) be incorporated into the monitoring plan?
- What format will be used to document monitoring plans?
- How frequently will monitoring plans be reviewed and updated, and who will document any changes?

RESOURCE

PROVIDE EQUIPMENT TO MEASURE ADDITIONAL OBSERVATIONS AND ASSESSMENTS

Equipment for measuring additional observations and assessments should be readily available and in good working order. Lack of equipment may delay measurement of observations and management of clinical deterioration. Clinical areas should establish systems for regular checking and maintenance of equipment.

how to complete task 2

EDUCATE

EDUCATE CLINICIANS ON OBSERVATIONS AND ASSESSMENTS RELEVANT TO SPECIFIC PATIENT GROUPS AND TREATMENTS

Clinicians need education and training to understand observations and assessments that are relevant to specific patient groups and clinical treatments. This includes the new and continuing clinical workforce.

EDUCATE CLINICIANS ON PROCESSES FOR DOCUMENTING A CLEAR MONITORING PLAN FOR EACH PATIENT

Clinicians also need to understand the importance of each patient having a clear monitoring plan, and the agreed processes for developing such a plan. Information about these processes should be incorporated into orientation programs or other educational forums.

EVALUATE

AUDIT DOCUMENTATION OF MONITORING PLANS

All clinical areas should conduct audits of patient monitoring plans. These may be undertaken with audits of the frequency and duration of observation monitoring. Audits should be based on the content of policies or guidelines, and should evaluate whether:

- a monitoring plan exists for each patient
- core physiological observations are included in the monitoring plan
- observations and assessments for specific patient groups and individual patient needs are included in the monitoring plan
- observations and assessments are planned according to minimum frequencies and duration, and measured according to the monitoring plan
- monitoring plans are reviewed and updated according to policy.

Healthcare teams should have access to audit data, and strategies should be developed to address barriers or deficiencies in observation and assessment measurement practices.

task 3

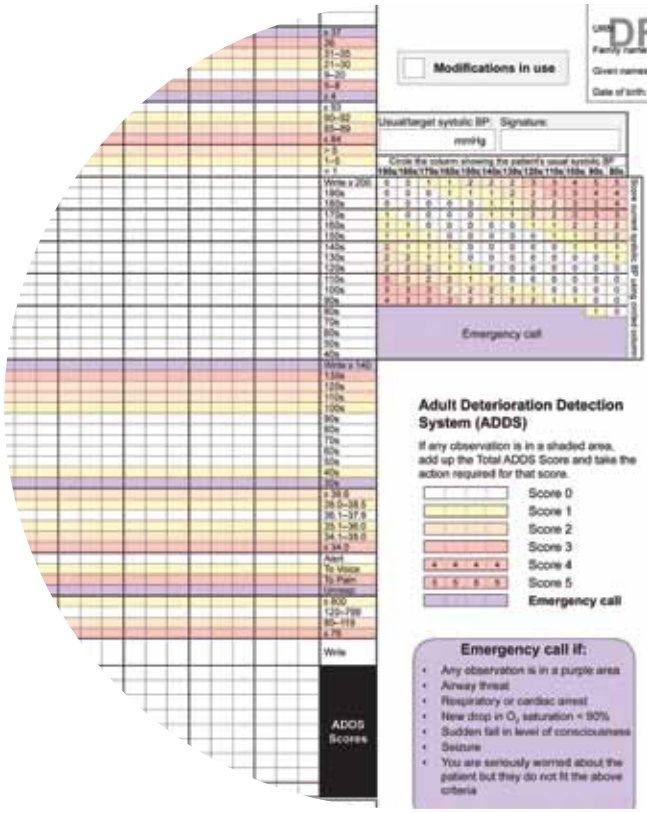
USE OBSERVATION CHARTS DESIGNED USING HUMAN FACTORS PRINCIPLES THAT INCORPORATE A TRACK AND TRIGGER SYSTEM

why this task is important

Observation charts are tools for documenting, monitoring and communicating changes in physiological observations. Charts play a key role in recognising and responding to clinical deterioration.

Poorly designed observation charts reduce clinicians' ability to recognise abnormal physiological observations and understand the significance of altered physiological observations. Initiating appropriate care is a complex process and an objective decision-making process helps to ensure altered physiological observations and assessments are recognised and responded to.

Human factors research demonstrates that observation chart design affects clinicians' ability to accurately document and identify abnormal physiological measurements. Charts identified as having a better design tend to yield fewer errors and shorter decision times in simulation experiments.[11-12]



how to complete task 3

DECIDE

DECIDE ON THE TYPE OF TRACK AND TRIGGER SYSTEM TO BE USED

Decisions on the type of track and trigger system to use are usually made as part of local clinical governance processes for recognition and response systems. Some statewide services and private hospital groups have decided what type of track and trigger system their facilities will use, and health professionals in these groups will need to use the prescribed system.

The National Institute for Health and Clinical Excellence in the United Kingdom has identified three types of track and trigger systems:[8]

1. **Single-parameter systems:** Periodic observations of selected physiological parameters are compared with a simple set of criteria with predefined thresholds. A response algorithm is activated when any threshold is reached. A common type of single-parameter system in Australia is the calling criteria for a medical emergency team.
2. **Aggregate scoring systems:** Weighted scores are assigned to values of physiological parameters and compared with predefined trigger thresholds. The modified early warning score (MEWS) tool is one of the most common aggregated scoring systems. These systems are more complex than single-parameter systems, and usually require measurement of a number of parameters and calculation of a score.[8,13] These systems can be prone to human calculation errors, but this can be addressed by automated electronic systems such as handheld computers.[8]
3. **Combination systems:** Single and aggregate scoring systems used in combination.

Reviews of track and trigger systems have found that the performance of most systems is imperfect, with questions raised about their validity and reliability in accurately identifying patients whose condition will deteriorate.[13] Despite the results of such reviews and a lack of consensus on which system to use, national and international patient safety organisations and national experts recommend using track and trigger systems to improve the recording of observations and avoid delays in recognising and responding to clinical deterioration.[8,14]

DEVELOP

DEVELOP TRIGGER THRESHOLDS AND RESPONSES, CONSIDERING AVAILABLE RESOURCES AND DIFFERENT PATIENT GROUPS

Thresholds in a track and trigger system are a single physiological parameter, observation or assessment, or a group of parameters, that trigger an escalation of care and a clinical response. The thresholds need to consider the treatment and monitoring needs of the patient, the level of physiological abnormality each threshold represents, locally available resources and the potential need to transfer the patient to another facility.

Some statewide services and private hospital groups in Australia have set trigger thresholds. Facilities need to ensure that local trigger thresholds and responses are consistent with any decisions made by these jurisdictions. In some cases, local facilities can make changes to trigger thresholds after a consultation process and agreement.

As a minimum, track and trigger systems should include the core physiological parameters required to detect clinical deterioration: heart rate, respiratory rate, systolic blood pressure, level of consciousness, oxygen saturation and temperature.

Developing trigger thresholds and associated responses for these parameters is a complex process. Facilities developing their own thresholds will need to identify the range or threshold for each parameter, and develop responses considering the:

- treatments and timeframe required to respond to trigger thresholds
- appropriate skill level of the responder to safely manage the clinical deterioration
- resources available to safely manage the clinical deterioration and possible treatment.

An escalation mapping tool is available from the Commision's web site to assist with this process.

RESOURCE

INCORPORATE TRACK AND TRIGGER SYSTEMS INTO AN OBSERVATION CHART DESIGNED USING HUMAN FACTORS PRINCIPLES

The Commission, in partnership with Queensland Health and the University of Queensland, has designed observation and response charts based on human factors principles.

Four general adult observation and response charts have now been developed:

- adult deterioration detection system (ADDS): an aggregate weighted scoring system with a single parameter emergency response category
- ADDS with blood pressure table: an aggregate weighted scoring system with a single parameter emergency response category, including a look-up table regarding the patient's normal blood pressure
- single-parameter system with four response categories (increased surveillance, senior nurse review, clinical review, emergency call)
- single-parameter system with two response categories (clinical review or emergency call)

Where there is no statewide or similar chart, and facilities need to develop their own chart, the Commission strongly recommends using one of these charts. The charts (particularly the template and design principles) may be useful for a variety of clinical areas, including general wards, mental health units, emergency departments, paediatric units and maternity units. Other specialty clinical areas may also choose to use these charts in combination with other charts such as neurological observations.

It should be noted that these charts are currently the subject of research regarding their use in a clinical environment, and they should be regarded as drafts at this stage. They are likely to change following research conducted by the Commission in 2011–12.

how to complete task 3

EDUCATE	**EDUCATE CLINICIANS ON THE USE OF OBSERVATION CHARTS** Clinicians need education on how to use observation and response charts. This should include a skills-based component that allows clinicians to practise using the chart and the trigger response system.
EVALUATE	**AUDIT CLINICAL AREAS WHERE OBSERVATION AND RESPONSE CHARTS ARE USED** Facilities should audit relevant clinical areas to ensure they are using observation charts that meet the requirements of the consensus statement and the National Safety and Quality Health Service Standard for recognising and responding to clinical deterioration in acute health care facilities. **MONITOR INCIDENTS AND CRITICAL EVENTS TO IDENTIFY PROBLEMS WITH OBSERVATION CHARTS** Incidents and critical events may also identify problems with observation chart design or use. Facilities should monitor these events as part of their evaluation processes.

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what other resources are available to support implementation of this essential element?

Further information, tools and resources can be found in the full implementation guide and on the Commission's web site:

www.safetyandquality.gov.au

Appendix A of the implementation guide matches the actions discussed in this guide to the National Safety and Quality Health Service Standards, and Appendix B provides examples of quality measures that may assist in guiding evaluation of this essential element in your facility.

Links to other resources specific to this essential element include:

TRACK AND TRIGGER OBSERVATION CHARTS

Adult Deterioration Detection System observation charts, Australian Commission on Safety and Quality in Health Care
www.safetyandquality.gov.au

Between the Flags, New South Wales Health
http://nswhealth.moodle.com.au/DOH/DETECT/content/00_worry/when_to_worry_07.htm

Compass, Australian Capital Territory Health Register (free) at:
http://health.act.gov.au/professionals/general-information/compass/registration
then log in so that you can access observation charts for general adult, maternity and paediatric settings.

Children's Early Warning Tool (CEWT), Patient Safety and Quality Improvement Service
www.health.qld.gov.au/chi/psq/

HUMAN FACTORS

ACSQHC-commissioned report on human factors regarding observation charts
www.safetyandquality.gov.au

World Health Organization, Human Factors in Patient Safety
www.who.int/patientsafety/research/methods_measures/human_factors/human_factors_review.pdf

TOOLS

Escalation mapping tool
www.safetyandquality.gov.au

Observation equipment stocktake
www.safetyandquality.gov.au

Observations, monitoring and escalation of care audit tool
www.safetyandquality.gov.au

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