Deteriorating Patient Measurement Strategy Guide

Purpose

This document provides guidance to Public Health Organisations on developing a measurement strategy that monitors the performance and effectiveness of the local Deteriorating Patient Safety Net System.

Introduction

The New South Wales (NSW) Deteriorating Patient Safety Net System is based on five core components including governance and leadership; standard clinical tools; clinical emergency response systems; education; and evaluation. The aim of the NSW Deteriorating Patient Safety Net System is to reduce preventable serious patient harm through the early recognition and appropriate management of patients who exhibit signs of physiological and mental state deterioration. The *Between the Flags* program provides the foundation for the NSW Deteriorating Patient Safety Net System, which is strengthened by the integration of other programs and frameworks, such as:

- SEPSIS KILLS
- End of Life
- Patient, carer and family escalation, known as R.E.A.C.H and
- Take 2, Think, Do framework for diagnostic error.

Since the implementation of the *Between the Flags* program in 2010, there have been two state level key performance indicators: the rate of Rapid Response (Red Zone) calls per 1,000 acute separations; and the rate of unexpected cardiopulmonary arrest pre 1,000 acute separations. These measures, now referred to as quality improvement measures within the service agreements (NSW Health, 2018), provide a crude measure of the entire system, measuring the implementation (through the rapid response call rate) and effectiveness (through the unexpected cardiopulmonary arrest rate).

In 2016, Pain et.al, described the challenges in designing and implementing *Between the Flags* in NSW and reported a statistically significant correlation between an increase in the rapid response rate and an inverse decrease in the unexpected cardiopulmonary arrest rate (Pain et al., 2016) from August 2010 to December 2015. This trend has continued with a reported 53% reduction in unexpected cardiopulmonary rate in NSW in December 2018 (Clinical Excellence Commission, 2019).

The NSW Health policy PD2020_018 *Recognition and management of patients who are deteriorating* outlines standards and principles of the Deteriorating Patient Safety Net system for all NSW Public Health Organisations (PHO) aligned to the Australian Commission on Safety and Quality in Health Care (ACSQHC) National Safety and Quality Health Service (NSQHS) Standards (second edition). Due to different resources, service capability, location and patient population of health services across the state, implementation of these standards and principles will vary. As a result of this variation, comparing health services and the prescription of universal measures that are applicable across the entire system for all patients is challenging (Subbe et al., 2019, Provost and Murray, 2011).

The application of these state level quality improvement measures is limited when applied to specific clinical services and patient cohorts because the definition of ‘measurable preventable patient harm’ is different, and the measures monitoring the reliability of process are aligned with their specific system. For example, ‘unexpected cardiopulmonary arrest’ rarely occurs in community, paediatrics and maternity services and is expected in palliative care services, therefore for these groups it provides very little assurance that the local Deteriorating Patient Safety Net System is reducing preventable patient harm.

In order to monitor the performance and effectiveness of the system at the facility/clinical service/unit level a more detailed measurement strategy is required that considers the complexity of the health care system and the variation in processes and in how the system functions.

Measurement strategy

As outlined within the *Recognition and management of patients who are deteriorating* policy, PHOs are to develop and implement a local measurement strategy that monitors the performance and effectiveness of the local Deteriorating Patient Safety Net System. Identifying a family of measures including outcome, process and balancing measures provides a robust framework for understanding and analysing the impact of change over time (Provost and Murray, 2011). The measures selected should demonstrate achievement of the organisation's aims and objectives of the system and take account of the context of the organisation, including:

- The patient's needs,
- Service capability
- Care provided by facility/clinical service/clinical unit
- The specific processes within the Deteriorating Patient Safety Net system; and
- Any specific changes/improvement made by the organisation

A Deteriorating patient measurement strategy template for LHD/SHN is provided in Appendix A

A separate strategy may be required for different facilities/clinical services/clinical units within a single LHD/SHN. Table 1 outlines a list of suggested measures to support PHOs to identify and select appropriate measures as part of their own local measurement strategy. This list of suggested measures is based on recommendations from the International Society for Rapid Response Systems on core metrics for measuring, and improving, functionality of hospital rapid response systems (Subbe et al., 2019).

For each measure the table outlines:

- Measure type (*outcome/process/balancing*)
- Level of recommendation (*essential, recommended, optional, experiment*)
- Name/description of measure
- Data elements description and operational definitions
- Data source options
- Inclusion and exclusion criteria recommendations
- Timing/frequency of data collection
- Recommended chart to display data such as a statistical process control (SPC) chart.

Each item needs to be reviewed and adjusted based on local processes and access to available data/reports. Where data isn't immediately available through an electronic database or electronic health record, random sampling of a smaller proportion of patients should be considered. Facility/clinical units/clinical services may also identify and include other measures not listed in Table 1 as part of their local measurement strategy.

Table 2 provides options and examples for data stratification and other inclusion/exclusion criteria to be considered when selecting a measure for a facility/clinical service/clinical unit. Stratification options for each measure will provide a greater level of detail about the system and assist in identifying areas of focus and of high performance. Decision on timing/frequency of data collection would depend on the availability of the data, frequency of the event and if changes have been made to the system. During changes to the system, more frequent data collection is recommended to support rapid cycle tests of change and to identify if the change has led to an improvement.

Communicating outcomes to stakeholders is an important part of a measurement strategy. A communication plan that outlines the information to be communicated; who the information is being communicated to; and key messages regarding analysis of the data should for part of a measurement strategy. Performance reports and information should be communicated to the LHD/SHN leadership and governance group; clinicians and managers, patients, carers and families and other key stakeholders and include an analysis of the data identifying improvement opportunities and the impact of any improvements implemented by the facility/clinical service/clinical unit.

Key terms

Measure type	
Family of measures	A collection of outcome, process and balancing measures that monitor many facets of the system providing a framework to understand the impact of changes
Outcome measure/s	A unit of data that measures whether changes to the system have an impact on the intended recipient and the size of the effect
Process measure/s	A unit of data that measures whether the system is performing as it is intended to and that activities are occurring as planned, and the extent to which that is happening
Balancing measure/s	A unit of data that measures whether changes to one part of a system have an impact on another part of the system and the size of the effect

Level of recommendations[(Subbe et al., 2019)]	
Essential measure	Measure is fundamental to understanding the functionality of deteriorating patient safety net systems and should be used by all facilities/clinical units/clinical services as part of local measurement strategy.
Recommended measure	Measure adds significant value to understanding the function of the system when included as part of the local measurement strategy.
Optional measure	Measure has strong face validity; facilities/clinical units/clinical services may benefit from using this measure as part of the local measurement strategy.
Exploratory measure	Measure describes an area that lacks high-quality evidence. Collection may aid future understanding and research when used as part of the local measurement strategy.

Table 1: List of outcome, process and balancing measures

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Outcome	Essential	Patient Story	Narrative description of a patient story – from the patients and/or carers and/or family's perspective	Patient, carer, family interview and Clinical notes			NA
Outcome	Essential	Number / Rate of unexpected cardiopulmonary arrests (Subbe et al., 2019, Chen et al., 2016, Bingham et al., 2018, NSW Health, 2018)	**Numerator** = Number of unexpected cardiopulmonary arrests **Denominator** = Total separations (counted as stays not episodes) *NB: subset of Rapid Response/Red Zone Calls* **Available in QIDS** https://qids.cec.health.nsw.gov.au/Account/Login **Report 116, 117, 118**	**Numerator** = MoH (provided by LHD) **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient **Exclusion** All arrest occurring in an emergency department, operating theatre or intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients with a DO NOT resuscitate / No CPR orders as per their resuscitation plan	**M**	c-chart u-chart
Outcome	Essential	Percentage of patients that die in hospital following an unexpected cardiopulmonary arrest (Chen et al., 2016, Bingham et al., 2018)	**Numerator** = Number of patients who die following an unexpected cardiopulmonary arrest **Denominator** = Total number of unexpected cardiopulmonary arrests	**Numerator** = HIE/death review database **Denominator** = locally identified MoH (provided by LHD)	**As above**	**M**	p chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Outcome	Essential	Number and rate of patients that die in hospital following transfer to a higher care facility	**Numerator** = Number of patients who die following transfer to a higher care facility **Denominator** = Total number of transfers to a higher care facility	**Numerator** = locally identified. **Denominator** = locally identified.	**Inclusion** All admitted patients/inpatient transferred from another facility to receive a higher level / specialist care including those in intensive care unit, emergency, operating theatre, cath lab and other procedural areas **Exclusion** Patients not transferred	**M**	c-chart u-chart
Outcome	Essential	Overall hospital mortality rate (Chen et al., 2016, Fernando et al., 2018)	**Numerator** = Number of patients who die in hospital **Denominator** = Total separations (counted as stays not episodes)	**Numerator** = HIE/death review database **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient **Exclusion** Outpatient, Visitors and employees	**M**	p chart u-chart
Process	Essential (Subbe et al., 2019)	Percentage of patients who have a RED ZONE trigger within 24 hours of an unexpected cardiopulmonary arrest (excluding the 30 minutes prior to the cardiopulmonary arrest) (Subbe et al., 2019, Bingham et al., 2018)	**Numerator** = Number of patients with a RED ZONE trigger within 24 hrs of the unexpected cardiopulmonary arrest (excluding the 30 minutes prior to the arrest) **Denominator** = Total number of unexpected cardiopulmonary arrests	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = MoH (provided by LHD)	**Inclusion** All admitted patients/inpatient **Exclusion** All arrest occurring in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients with a DO NOT resuscitate / No CPR orders as per their resuscitation plan	**M**	p chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage of patients that have two (2) or more RED ZONE calls within twenty four (24) hours of an unexpected cardiopulmonary arrest (Bingham et al., 2018)	**Numerator** = Number of patients that have two (2) or more Red Zone calls within twenty-four (24) hours of the unexpected cardiopulmonary arrest **Denominator** = Total number of unexpected cardiopulmonary arrests	**Numerator** = locally identified. **Denominator** = locally identified	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients with a DO NOT resuscitate / No CPR orders as per their resuscitation plan	**M / Q**	p-chart
Process	Recommended	Average number of RED ZONE calls within twenty four (24) hours of an unexpected cardiopulmonary arrest (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls within twenty-four (24) hours of the unexpected cardiopulmonary arrest **Denominator** = Total number of unexpected cardiopulmonary arrest	**Numerator** = locally identified. **Denominator** = locally identified	**As above**	**M /Q**	u-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Essential (NSW Health, 2018)	Number and rate of RED ZONE (Rapid Response) (Bingham et al., 2018, NSW Health, 2018)	**Numerator** = Number of RED Zone Clinical Emergency Response System calls **Denominator** = Total separations (counted as stays not episodes) *NB: Numerator includes the number of unexpected cardiopulmonary arrest calls* **Available in QIDS** https://qids.cec.health.nsw.gov.au/Account/Login **Report 116, 117, 118** *The numerator should include all Clinical Emergency Response System calls to any RED ZONE criteria on a NSW Health Standard Observation Chart. For facilities that have a graded response within the RED ZONE, this would include a combination of these types of CERS calls.*	**Numerator** = MoH (provided by LHD) **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** All patients in an emergency department, operating theatre or intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for Rapid Response call as per their resuscitation plan	**M**	c-chart u-chart
Process	Essential (Subbe et al., 2019)	Average and median response time for a RED ZONE call (Subbe et al., 2019)	**Average** **Numerator** = Summation of the total time from initiating a RED ZONE Clinical Emergency Response System (CERS) Call to the responder(s) arrival to the patient **Denominator** = Number of RED ZONE Clinical Emergency Response System (CERS) calls **Median** = Mid time of all RED ZONE response times (Time from initiating a RED ZONE CERS calls to the responder(s) arrival to the patient) ***Operational definitions*** *Start time: time that the RED ZONE call is initiated* *End time: Documented time that the RED ZONE responder arrives*	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = MoH (provided by LHD)	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Patients in the community, outpatient areas, Visitors and employees Patients not for Rapid Response call as per their resuscitation plan	**M**	X and S - Chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended (Subbe et al., 2019)	Percentage of patients receiving critical care intervention within six (6) hours following the first RED ZONE trigger (Subbe et al., 2019)	**Numerator** = Number of patients receiving intervention(s) provided by critical care within six (6) hours of a RED ZONE trigger **Denominator** = All RED ZONE Clinical Emergency Response System calls ***Operational definitions*** *Patient is said to receive critical care when the patient has been attended to by staff with critical care knowledge and skills and there is commencement of vasoactive medication, artificial ventilation (either invasive or non-invasive), continuous arterial pressure monitoring, other advanced monitoring, or infusion or large volumes of fluids or blood products regardless of hospital location. (Subbe et al., 2019)*	**Numerator** = locally identified. **Denominator** = MoH (provided by LHD)	**As above**	**M**	P chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended (Subbe et al., 2019)	Average and median time to critical are intervention following a RED ZONE trigger (Subbe et al., 2019)	**Average** **Numerator** = Summation of the total time from the RED ZONE trigger to receiving critical care intervention **Denominator** = Number of patients that have a RED ZONE Clinical Emergency Response System call (CERS) and receive critical care intervention **Median** = Mid time of all patient who have a RED ZONE trigger and require critical care intervention (Time from RED ZONE trigger to critical care intervention) ***Operational definitions*** *Patient is said to receive critical care when the patient has been attended to by staff with critical care knowledge and skills and there is commencement of vasoactive medication, artificial ventilation (either invasive or non-invasive), continuous arterial pressure monitoring, other advanced monitoring, or infusion or large volumes of fluids or blood products regardless of hospital location.* *(Subbe et al., 2019)*	**Numerator** = locally identified. **Denominator** = MoH (provided by LHD)	**As above**	**M**	X and S - Chart
Process	Recommended	Percentage of patients requiring pressor usage within 1 hour after ICU admission (Bonafide et al., 2014)	**Numerator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call who require pressor usage within 1 hour of admission **Denominator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**As above**	**M / Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage of patients requiring pressor usage within 12 hours after ICU admission (Bonafide et al., 2014)	**Numerator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call who require pressor usage within 12 hours of admission **Denominator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**As above**	**M / Q**	p-chart
Process	Recommended	Percentage of patients requiring mechanical ventilation within 1 hour after ICU admission (Bonafide et al., 2014)	**Numerator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call who require mechanical ventilation within 1 hour after ICU admission **Denominator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**As above**	**M / Q**	p-chart
Process	Recommended	Percentage of patients requiring mechanical ventilation within 12 hours after ICU admission (Bonafide et al., 2014)	**Numerator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS call who require mechanical ventilation within 12 hours after ICU admission **Denominator** = Number of patients requiring an unexpected admission to ICU or ICU admission following a CERS	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**As above**	**M / Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Number and rate of YELLOW ZONE call rate (Clinical Review Calls)	**Numerator** = Number of YELLOW Zone Clinical Emergency Response System calls **Denominator** = Total separations (counted as stays not episodes)	**Numerator** = locally identified. eMR report **PC026** - *potential source if using electronic Clinical Review forms* **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Clinical Review or Rapid Response call as per their resuscitation plan	**M**	c-chart u-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage RED ZONE calls (Rapid Response Calls) within four (4) hours of Emergency Department (ED) Departure to an inpatient unit (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls that occur within four (4) hours of Emergency Department (ED) departure to an inpatient unit **Denominator** = Total number of RED ZONE calls	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = MoH (provided by LHD)	**Inclusion** All patients admitted to an inpatient unit from the Emergency Department **Exclusion** All patients in an operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees All patients admitted directly to an inpatient area Patients not for a Rapid Response call as per their resuscitation plan	**M**	p-chart
Process	Recommended	Percentage of admitted inpatients who require a RED ZONE calls (Rapid Response Calls) within four (4) hours of ED departure (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls that occur within four (4) hours of ED departure to an inpatient unit **Denominator** = Number of patients admitted to an inpatient unit from ED	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = FirstNet	**As above**	**M**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage RED ZONE calls (Rapid Response Calls) within four (4) hours of recovery room departure to an inpatient unit (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls that occur within four (4) hours of recovery room departure to an inpatient unit **Denominator** = Total number of RED ZONE calls	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = MoH (provided by LHD)	**Inclusion** All patients transfer to an inpatient unit from the recovery unit/procedural area **Exclusion** All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees All patients admitted directly to an inpatient area Patients not for a Rapid Response call as per their resuscitation plan	**M**	p-chart
Process	Recommended	Percentage of admitted inpatients who require a RED ZONE calls (Rapid Response Calls) within four (4) hours of Recovery Room departure (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls that occur within four (4) hours of Recovery Room departure to an inpatient unit **Denominator** = Total number of patients transferred from the Recovery Room to an inpatient unit	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = SurgiNet	**As above**	**M**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage RED ZONE calls (Rapid Response Calls) within seventy-two (72) hours of Intensive Care Unit (ICU) departure to an inpatient unit (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls that occur within seventy-two (72) hours of Intensive Care Unit (ICU) departure to an inpatient unit **Denominator** = Total number of RED ZONE calls	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = MoH (provided by LHD)	**Inclusion** All patients transferred to an inpatient unit from the Intensive Care Unit **Exclusion** All patients not admitted to an Intensive Care Unit Visitors and employees Patients not for a Rapid Response call as per their resuscitation plan	**M**	p-chart
Process	Recommended	Percentage of patients transferred to an inpatient who require a RED ZONE calls (Rapid Response Calls) within seventy-two (72) hours of ICU Departure (Bingham et al., 2018)	**Numerator** = Number of RED ZONE calls that occur within seventy-two (72) hours of ICU departure to an inpatient unit **Denominator** = Total number of patients transferred from ICU to an inpatient unit	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = ICU database/PowerChart	**As above**	**M**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage/rate of RED ZONE calls resulting in an Intensive Care Admission	**Numerator** = Number of admissions to ICU following a RED ZONE call **Denominator** = Total number of RED ZONE calls	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = locally identified/ICU data base	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Rapid Response call as per their resuscitation plan	**M**	u-chart p-chart
Process **(EOL)**	Recommended	Percentage of RED ZONE calls resulting in an Do Not Resuscitate order and/or Resuscitation Plan (Subbe et al., 2019)	**Numerator** = Number of RED ZONE calls resulting in a Do Not Resuscitate order and/or Resuscitation Plan **Denominator** = Total number of RED ZONE calls	**Numerator** = locally identified. **Denominator** = locally identified	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Rapid Response call as per their resuscitation plan prior to the RED ZONE call	**M / Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(EOL)**	Recommended	Percentage of YELLOW ZONE calls resulting in an Do Not Resuscitate order and/or Resuscitation Plan (Subbe et al., 2019)	**Numerator** = Number of YELLOW ZONE calls resulting in an Do Not Resuscitate order and/or Resuscitation Plan **Denominator** = Total number of YELLOW ZONE calls	**Numerator** = locally identified. **Denominator** = locally identified	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Clinical Review call as per their resuscitation plan prior to the YELLOW ZONE call	**M / Q**	p-chart
Process **(EOL)**	Essential	Percentage of patients that die in hospital with a Do Not resuscitate order / No CPR / Resuscitation plan (Bingham et al., 2018)	**Numerator** = Number of patients that die in hospital with a Do Not Resuscitate order / No CPR / Resuscitation Plan **Denominator** = Total number of patients in hospital deaths	**Numerator** = locally identified. **Denominator** = Death review database/HIE	**Inclusion** All admitted patients/inpatient with a Do Not resuscitate/No CPR order as per their resuscitation plan **Exclusion** All patients without a Do Not resuscitate/No CPR order as per their resuscitation plan	**M/ Q**	p-chart
Process **(EOL)**	Recommended	Average time from documenting a Do Not resuscitate order / No CPR / Resuscitation plan to patient death (Subbe et al., 2019, Bingham et al., 2018)	**Numerator** = Total time from documentation to death **Denominator** = All patient in hospital deaths with a Do Not Resuscitate order / No CPR / Resuscitation Plan ***Operational definitions*** *Start: Date and time stamp on documentations* *End: Date and time death is confirmed*	**Numerator** = locally identified. **Denominator** = Death review database/HIE	**As above**	**M/ Q**	X and S - Chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(EOL)**	Recommended	YELLOW ZONE (Clinical Review) call rate for patients on a *Last Days of Life Plan*	**Numerator** = Number of YELLOW ZONE calls for patients on a *Last Days of Life Plan* **Denominator** = Number of patients on a *Last Days of Life Plan*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient on a *Last Days of Life Plan* **Exclusion** All patients not on a *Last Days of Life Plan*	**M/Q**	u-chart
Process **(Diagnostic Error)**	Exploratory	Percentage of RED ZONE calls resulting in a change in diagnosis	**Numerator** = Number of RED ZONE calls resulting in a change in diagnosis **Denominator** = Total number of RED ZONE calls	**Numerator** = locally identified. **Denominator** = locally identified	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Rapid Response call as per their resuscitation plan prior to the RED ZONE call	**M / Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Diagnostic Error)**	Exploratory	Percentage of YELLOW ZONE calls resulting in a change in diagnosis	**Numerator** = Number of YELLOW ZONE calls resulting in a change in diagnosis **Denominator** = Total number of YELLOW ZONE calls	**Numerator** = locally identified. **Denominator** = locally identified	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Clinical Review call as per their resuscitation plan prior to the YELLOW ZONE call	**M / Q**	p-chart
Process	Recommended	Reason for RED ZONE calls (Fernando et al., 2018)	**Numerator** = Number of RED ZONE calls with (trigger) as the primary reason to call **Denominator** = Total number of RED ZONE calls **Trigger as identified on a NSW Health Observation Chart** *Airway obstruction, Unresponsive, High RR, Low RR, Low SpO2, Increasing O2 requirements, Altered ABG VBG pathology, High SBP, Low SBP, High DBP (Maternity only), Low DBP (Maternity only), High HR, Low HR, Responds to Pain on AVPU, Sudden decrease in level of consciousness / 2 point drop in GCS, Seizures, Low Urine output for 8 hrs, Low or High BGL with decreased, level of consciousness, Lactate greater than or equal to 4 mmol/L, Serious concern by patient, family, Serious concern by staff*	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = locally identified	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Rapid Response call as per their resuscitation plan prior to the RED ZONE call	**W /M/ Q**	Pareto chart (for all) p-chart – individual triggers

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Percentage of RED ZONE triggers with a RED ZONE response	**Numerator** = Number of RED ZONE calls/Number of Rapid Response forms completed **Denominator** = Number of vital signs sets that have a RED ZONE trigger ***Operational definitions*** *RED ZONE response call made within five (5) minutes of the RED ZONE trigger, and exclude RED ZONE triggers that occur within the next hour of the RED ZONE call or where it is documented that the response is in progress (Rapid Response team with the patient)*	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms*	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Rapid Response call as per their resuscitation plan prior to the RED ZONE call	**W/M/Q**	p-chart
Process	Recommended	Percentage of YELLOW ZONE triggers with a YELLOW ZONE response	**Numerator** = Number of YELLOW ZONE call forms completed (eMR) **Denominator** = Number of vital sign sets that have a YELLOW Zone trigger and no Red Zone triggers ***Operational definitions*** *YELLOW ZONE call forms completed excluding YELLOW ZONE triggers that occur within the 30 minutes of a YELLOW ZONE form or where there is a documented reason for not completing the form (Clinical Review call made, monitoring patient as per plan)*	**Numerator** = locally identified. eMR report **PC026** - *potential source if using electronic Clinical Review forms* **Denominator** = locally identified. eMR report **PC026** - *potential source if using electronic Clinical Review forms*	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Clinical Review call as per their resuscitation plan prior to the YELLOW ZONE call	**W/M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Recommended	Reason for YELLOW ZONE calls (Fernando et al., 2018)	**Numerator** = Number of YELLOW ZONE calls with (trigger) as the primary reason to call **Denominator** = Total number of YELLOW ZONE calls **Trigger as identified on a NSW Health Observation Chart** *High RR, Low RR, High SpO2, Low SpO2, Increasing O2 requirements, High SBP, Low SBP, High DBP (**Maternity only**), Low DBP (**Maternity only**), High HR, Low HR, Poor peripheral circulation, Responds to Verbal on AVPU, Decrease in Level Consciousness or new onset of confusion, Altered mental state: Agitation, combative or inconsolable (**Paediatrics**), Altered mental state: Agitation, confusion or unexpectedly uncooperative (**Maternal**) Decreasing or absent deep tendon reflexes (**Maternal**), High Temperature, New onset of fever (**Paediatrics**), Low Temperature, Low Urine output for 4 hrs (**Adults**), Low Urine output or anuria (<1mL/kg/hr) (**Paediatrics**), Polyuria, in the absence of diuretics, Greater than expected fluid loss, Greater than expected fluid and/or blood loss, Any risk factors, signs or symptoms of SEPSIS (**Maternal**), Severe pain (pain score 7 to 10), New, increasing or uncontrolled pain (including chest pain), Low or High BGL without decreased level of consciousness (Adults), BGL 2-3 mmol/L (**Paediatrics**), BGL 2-4 mmol/L (**Maternal**), Ketonaemia or Ketonuria (**Adult**), New Proteinuria (**Maternal**), Concern by patient, family, Concern by staff*	**Numerator** = locally identified. eMR report **PC026** - *potential source if using electronic Clinical Review forms* **Denominator** = Death review database/HIE	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees Patients not for a Clinical Review call as per their resuscitation plan prior to the YELLOW ZONE call	**W/M/Q**	Pareto chart (for all) p-chart – individual triggers

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Essential	Average number of complete sets of vital signs per patient	**Numerator** = Number of complete sets of vital signs completed in last 24 hours within *[specific location – facility/unit]* **Denominator** = Number of patients within *[specific location – facility/unit]* at midnight	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** Patients not requiring vital sign observations as per their individualised monitory plan, clinical guideline/procedures and/or model of care	**W/M/Q**	X and S – Chart
Process	Essential	Number / percentage of patient with vital signs observations completed as per their individual monitoring plan or based on the minimum requirement	**Numerator** = Number of patients that have their vital sign observations measured and recorded as per their individualised monitoring plan or as per the minimum requirement in last 24 hours within *[specific location – facility/unit]* **Denominator** = Number of patients within *[specific location – facility/unit]* at midnight	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** Patients not requiring vital sign observations as per their individualised monitory plan, clinical guideline/procedures and/or model of care	**W/M/Q**	p-chart
Process **(Alterations to Calling Criteria)**	Recommended	Rate/Percentage /Number of patients that have an alteration to calling criteria (acute or chronic) during their hospital encounter	**Numerator** = Number of patients that have an alteration to calling criteria (acute or chronic) during their hospital encounter **Denominator** = Total separations (counted as stays not episodes)	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient	**M/Q**	u-chart, p-chart, c-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Alterations to Calling Criteria)**	Recommended	Rate/ Percentage/ Number of patients that have an ***acute*** alteration to calling criteria during their hospital encounter	**Numerator** = Number of patients that have an ***acute*** alteration to calling criteria during their hospital encounter **Denominator** = Total separations (counted as stays not episodes)	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient **Exclusion** Patients in the community, outpatient areas, Visitors and employees	**M/Q**	u-chart, p-chart, c-chart
Process **(Alterations to Calling Criteria)**	Recommended	Rate/ Percentage/ Number of patients that have a ***chronic*** alteration to calling criteria during their hospital encounter	**Numerator** = Number of patients that have a ***chronic*** alteration to calling criteria during their hospital encounter **Denominator** = Total separations (counted as stays not episodes)	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = MoH (HIE/APDC)	**Inclusion** All admitted patients/inpatient	**M/Q**	u-chart, p-chart, c-chart
Process **(Alterations to Calling Criteria)**	Recommended	Percentage of patient that have a documented rationale for their alteration to calling criteria	**Numerator** = Number of patients that have an alteration to calling criteria (acute or chronic) with a documented rationale **Denominator** = Number of patients that have an alteration to calling criteria (acute or chronic)	**Numerator** = locally identified. eMR report*[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately*	**M/Q**	p-chart
Process **(Alterations to Calling Criteria)**	Recommended	Percentage/ number of patients within *[ward/unit/facility]* that have an active/current ***acute*** alteration to calling criteria at *[specific time e.g. handover]*	**Numerator** = Number of patients within *[ward/unit/facility]* that have an active/current ***acute*** alteration to calling criteria at *[specific time e.g. handover/12 midnight]* **Denominator** = Number of patients within *[ward/unit/facility]* at *[specific time e.g. handover/12 midnight]*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **Exclusion** Patients in the community, outpatient areas, Visitors and employees	**daily**	p-chart, c-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Alterations to Calling Criteria)**	Recommended	Percentage/ number of patients within *[ward/unit/facility]* that have an active/current ***chronic*** alteration to calling criteria at *[specific time e.g. handover]*	**Numerator** = Number of patients within *[ward/unit/facility]* that have an active/current ***chronic*** alteration to calling criteria at *[specific time e.g. handover/12 midnight]* **Denominator** = Number of patients within *[ward/unit/facility]* at *[specific time e.g. handover/12 midnight]*	**Numerator** = locally identified. eMR report*[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion**	**daily**	p-chart, c-chart
Process **(SEPSIS)**	Essential	Average time to IV **antibiotic administration** (Burrell et al., 2016, Thursky et al., 2018, Levy et al., 2018)	**Numerator** = Time from sepsis recognition to commencement of first dose of IV antibiotics **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward* *Commencement of antibiotic = antibiotic IV administration started*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient with suspected sepsis **Exclusion** All patients with no suspicion of sepsis Visitors and employees	**W/M/Q**	X and S - Chart
Process **(SEPSIS)**	Essential	Median time to IV **antibiotics administration** (Burrell et al., 2016, Thursky et al., 2018, Levy et al., 2018)	**Median** = Time from sepsis recognition to commencement of first dose of IV antibiotics ***Operational definitions*** *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward* *Commencement of antibiotic = antibiotic IV administration started*	**Median** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	X and S - Chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(SEPSIS)**	Essential	Percentage of patients that have **IV antibiotics commenced** within one (**1**) hour of sepsis recognition (Downing et al., 2019, Burrell et al., 2016, Levy et al., 2018)	**Numerator** = Number of patients that have IV antibiotics commenced within one (**1**) hour of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward* *Commencement of antibiotic = antibiotic IV administration started*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process **(SEPSIS)**	Essential	Percentage of patients that have **IV antibiotics commenced** within two (**2**) hours of sepsis recognition (Downing et al., 2019)	**Numerator** = Number of patients that have IV antibiotics commenced within two (**2**) hours of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward* *Commencement of antibiotic = antibiotic IV administration started*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process **(SEPSIS)**	Recommended	Percentage of patients prescribed the **appropriate IV antibiotics** based on the original assessment/ documentation (Thursky et al., 2018)	**Numerator** = Number of patients commenced on the appropriate IV antibiotics as per approved sepsis guideline (based on original assessment/documentation) **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Appropriate antibiotics = as per the local sepsis antibiotic guideline or TG:antibiotic*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(SEPSIS)**	Recommended	Percentage of patients with a documented **review of antibiotic** therapy within forty-eight (48) hours of sepsis recognition	**Numerator** = Number of patients with documented antibiotic review within forty-eight (48) hours of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process **(SEPSIS)**	Recommended	Percentage of patients with documented evidence of a change in **antibiotic management** within forty-eight (48) hours of sepsis recognition	**Numerator** = Number of patients with documented antibiotic management change (antibiotic/s ceased or changed) within forty-eight (48) hours of sepsis recognition **Denominator** = Number of patients suspected sepsis	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process **(SEPSIS)**	Essential	Percentage of patients with an IV fluid bolus **(Fluid resuscitation)** within one (1) hour of sepsis recognition (Downing et al., 2019, Burrell et al., 2016, Thursky et al., 2018, Levy et al., 2018)	**Numerator** = Number of patients who receive an IV fluid bolus within one (1) hour of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *IV fluid bolus* • *ADULTS 20mL/kg in emergency department, 250-500mL in ward* • *PAEDIATRICS 20mL/kg* • *NEONATES 10mL/kg* *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(SEPSIS)**	Essential	Percentage of patients with a **blood cultures** completed within one (1) hour of sepsis recognition (Burrell et al., 2016, Downing et al., 2019, Thursky et al., 2018, Levy et al., 2018)	**Numerator** = Number of patients with blood cultures taken within one (1) hour of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *ADULTS = 2 blood culture sets*[(Clinical Excellence Commission, 2016a)] *PAEDS/NEONATES = 1 blood culture set*[(Clinical Excellence Commission, 2016c, Clinical Excellence Commission, 2016b)] *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process/ Balancing **(SEPSIS)**	Essential	Percentage of patients with a **blood cultures** completed prior to administration of the first dose of IV antibiotics (Downing et al., 2019, Burrell et al., 2016, Thursky et al., 2018, Levy et al., 2018)	**Numerator** = Number of patients with blood cultures taken prior to administration of the first dose of IV antibiotics **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *ADULTS = 2 blood culture sets*[(Clinical Excellence Commission, 2016a)] *PAEDS/NEONATES = 1 blood culture set*[(Clinical Excellence Commission, 2016c, Clinical Excellence Commission, 2016b)]	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report*[insert report details]*	**As above**	**W/M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(SEPSIS)**	Essential	Percentage of patients with a serum **lactate** test completed within one (1) hour of sepsis recognition (Downing et al., 2019, Burrell et al., 2016, Thursky et al., 2018, Shetty et al., 2017, Shetty et al., 2018, Levy et al., 2018)	**Numerator** = Number of patients with lactate tested within one (1) hour of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Lactate testing = VBG, Point of Care Testing or formal lactate* *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process **(SEPSIS)**	Essential	Percentage of patients with a serum **lactate** test **repeated** within four (4) and eight (8) hours following sepsis recognition	**Numerator** = Number of patients with lactate testing repeated within (4) and eight (8) hours following sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Lactate testing = VBG, Point of Care Testing or formal lactate* *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart
Process **(SEPSIS)**	Recommended	Percentage of patients with suspected sepsis that have a documented **sepsis management plan** within two (**2**) hours of sepsis recognition	**Numerator** = Number of patients with a documented management plan within two (2) hours of sepsis recognition **Denominator** = Number of patients with suspected sepsis ***Operational definitions*** *Sepsis recognition = Triage time stamp in emergency or time CERS call initiated on the ward*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator** = locally identified. eMR report *[insert report details]*	**As above**	**W/M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Patient, carer & family escalation)**	Essential(Subbe et al., 2019)	Number/Percentage / rate of CERS calls due to concern or serious concern by the patient or family/carer (Subbe et al., 2019)	**Numerator** = Number of YELLOW and RED ZONE calls with the primary or a secondary reason for the call being concern or serious concern by the patient or a family member/carer **Denominator** = Total number of YELLOW and RED ZONE calls (percentage) **Denominator** = Total separations (counted as stays not episodes) (rate)	**Numerator** = locally identified. eMR report **PC026 & PC017** - *potential source if using electronic Clinical Review and Rapid Response forms* **Denominator** = MoH (provided by LHD)	**Inclusion** All admitted patients/inpatient **community and outpatient areas should be viewed separately* **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees	**W/M/Q**	c-chart, u-chart, p-chart
Process **(Patient, carer & family escalation)**	Essential(Subbe et al., 2019)	Number/Percentage / rate of CERS calls that are made by the patient, carer or family (Subbe et al., 2019, Dwyer et al., 2019) (REACH calls)	**Numerator** = Number of patient, carer and family escalation calls (REACH calls) **Denominator** = Total number of CERS calls ***Operational definitions*** <u>*Patient, carer and family escalation call*</u> = *call made by the patient, carer or family that initiates a CERS call*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**Inclusion** All patients ** including community and outpatient areas* **Exclusion** Nil	**M/Q**	c-chart, u-chart, p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Patient, carer & family escalation)**	Essential	Outcome of patient, carers and family escalation calls (REACH) (Subbe et al., 2019, Dwyer et al., 2019)	**Numerator** = Number of 'Outcome/learning classification' **Denominator** = Number of patient and family escalation calls (REACH calls) ***List of outcome/learning classification*** *Communication of plan only, no change, Escalation to Clinical Review, Escalation to Rapid Response, Change in Management plan, Transfer to higher level of care, Complaint resolved, Complaint resolved and escalated* ***Operational definitions*** *Patient, carer and family escalation call = call made by the patient, carer or family that initiates a CERS call*	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**As above**	**M/Q**	Pareto chart (for all) p-chart – individual triggers

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Patient, carer & family escalation)**	Recommended	Percentage of patients, carers and family surveyed that report a positive or negative experience during a Clinical Review and/or Rapid Response call	**Numerator** = Number of patient, carer and family members surveyed that report a positive or negative experience following a Clinical Review and/or Rapid Response call **Denominator** = Number of patient, carer and family members surveyed following a Clinical Review and/or Rapid Response call ***Operational definitions*** *Patient, carer and family escalation call = call made by the patient, carer or family that initiates a CERS call* *Positive Experience = dependant on the survey questions, could include evidence of patient outcome aligned with their goal of care, improved communication, reassurance, comfortable speaking up and making a call or calling again, patient, carer and family needs have been met* *Negative Experience = dependant on the survey questions, could include evidence of increased concern, feeling that their concerns have not been heard, reluctance to raise their concerns, make a call or call again, patient needs have been not been met*	**Numerator** = locally identified. Consumer/patient surveys **Denominator:** = locally identified. Consumer/patient surveys	**Inclusion** Patients, carers and family ** including community and outpatient areas* **Exclusion** Nil	**M/Q**	p-chart
Process **(Patient, carer & family escalation)**	Recommended	Percentage of patients, carers and family surveyed that know how to make a CERS/ patient, carers and family escalation (REACH) call	**Numerator** = Number of patient, carer and family members surveyed that know how to make a CERS/patient, carers and family escalation (REACH) call **Denominator** = Number of patient, carer and family members surveyed ***Operational definitions*** *Patient, carer and family escalation call = call made by the patient, carer or family that initiates a CERS call*	**Numerator** = locally identified. Consumer/patient surveys **Denominator:** = locally identified. Consumer/patient surveys	**Inclusion** Patients, carers and family ** including community and outpatient areas* **Exclusion** Nil	**M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Patient, carer & family escalation)**	Recommended	Percentage of patient, carers and family members that activate a patient, carers and family escalation call/REACH call who when surveyed report a positive experience (Dwyer et al., 2019)	**Numerator** = Number of activators of a patient, carer and family escalation call (REACH) who when surveyed report a positive experience **Denominator** = Number of activators of a patient and family escalation call (REACH) who are surveyed ***Operational definitions*** *Patient, carer and family escalation call = call made by the patient, carer or family that initiates a CERS call* *Positive Experience = dependant on the survey questions, could include evidence of patient outcome aligned with their goal of care, improved communication, reassurance, comfortable speaking up and making a call or calling again, patient, carer and family needs have been met*	**Numerator** = locally identified. Consumer/patient surveys **Denominator:** = locally identified. Consumer/patient surveys	**As above**	**M/Q**	p-chart
Process **(Patient, carer & family escalation)**	Recommended	Percentage of patient, carers and family members that activate a patient, carers and family escalation call/REACH call who when surveyed report a negative experience (Dwyer et al., 2019)	**Numerator** = Number of activators of a patient, carer and family escalation call (REACH) who when surveyed report a negative experience **Denominator** = Number of activated of a patient and family escalation call (REACH) who are surveyed ***Operational definitions*** *Patient, carer and family escalation call = call made by the patient, carer or family that initiates a CERS call* *Negative Experience = dependant on the survey questions, could include evidence of increased concern, feeling that their concerns have not been heard, reluctance to raise their concerns, make a call or call again, patient needs have been not been met*	**Numerator** = locally identified. Consumer/patient surveys **Denominator:** = locally identified. Consumer/patient surveys	**As above**	**M/Q**	p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process **(Patient, carer & family escalation)**	Optional	Percentage of bed spaces where the information on patient, carers and family escalation (REACH) call is visible	**Numerator** = Number of beds where the information on patient, carers and family escalation (REACH) call is visible **Denominator** = Number of bed spaces/ treatment areas ***Operational definitions*** *Bed spaces/treatment areas: defined locally*	**Numerator** = locally identified - audit **Denominator:** = locally identified – bed spaces/ treatment areas	**Inclusion** All bed spaces/ treatment areas **Exclusion** Nil	**Q**	p-chart
Outcome/ Process/ Balancing	Recommended	Number / percentage of inpatients requiring transfer to a higher care facility due to deterioration / following a CERS call (Fernando et al., 2018)	**Numerator** = Number of inpatients transfers to a higher care facility due to deterioration / following a CERS call **Denominator** = Total number of CERS calls	**Numerator** = locally identified. eMR report **PC026 & PC017** - *potential source if using electronic Clinical Review and Rapid Response forms* **Denominator:** = locally identified. eMR report **PC026 & PC017** - *potential source if using electronic Clinical Review and Rapid Response forms*	**Inclusion** All admitted patients/inpatient including patients in a level 4 intensive care unit requiring transfer to a level 6 **Exclusion** Patients in an emergency department and level 6 intensive care unit	**M/Q**	c-chart p-chart
Outcome/ Process/ Balancing	Recommended	Number/percentage of patients requiring transfer to a higher care facility due to deterioration from an Emergency Department	**Numerator** = Number of patients transferred to a higher care facility due to deterioration from an Emergency Department **Denominator** = Total number of Emergency Department admission and transfers	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]*	**Inclusion** All patients in an emergency department **Exclusion** All patients admitting to an inpatient or transferred from an inpatient unit to an Emergency Department while awaiting transfer	**M/Q**	c-chart p-chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Outcome/ Process/ Balancing	Recommended	Number of unexpected ICU admission from an inpatient unit	**Count:** Number of patients with unplanned/unexpected admitted to ICU from an inpatient unit	**Count** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **Exclusion** Planned admission to Intensive care	**M/Q**	c-chart
Outcome/ Process/ Balancing	Recommended	Percentage of CERS calls resulting in an ICU admission (Fernando et al., 2018)	**Numerator** = Number of patients admitted to ICU following a CERS call **Denominator** = Total number of CERS calls	**Numerator** = locally identified. eMR report **PC026 & PC017** - *potential source if using electronic Clinical Review and Rapid Response forms* **Denominator:** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient **Exclusion** All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status All intensive care unit patients regardless of location (diagnostic areas) Visitors and employees	**M/Q**	p-chart
Outcome/ Process/ Balancing	Exploratory	Average and Median ICU LOS for unexpected admission / admission following a CERS call (Fernando et al., 2018)	**Average** **Numerator** = Summation of patient's total time spent in ICU post a CERS call **Denominator** = Number of patients admitted to ICU following a CERS call and discharged **Median** = Median time patient spent in ICU post CERS call	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]* **Median** = locally identified. eMR report *[insert report details]*	**As above**	**M/Q**	X and S - Chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Outcome/ Process/ Balancing	Exploratory	Average and median total hospital LOS for patients that have an unexpected admission / admission following a CERS call to an ICU (Subbe et al., 2019, Fernando et al., 2018)	**Average** **Numerator** = Summation of total time in hospital for patients that have an unexpected ICU admission / admission to ICU post a CERS call **Denominator** = Number of patients admitted to ICU following a CERS call and discharged **Median** = Median time spent in hospital for patients that have an unexpected ICU admission / admission to ICU post a CERS call	**Numerator** = locally identified. eMR report *[insert report details]* **Denominator:** = locally identified. eMR report *[insert report details]* **Median** = locally identified. eMR report *[insert report details]*	**As above**	**M/Q**	X and S - Chart
Outcome/ Process/ Balancing	Exploratory	Average and median total hospital LOS for patients that require a RED ZONE response (Subbe et al., 2019)	**Average** **Numerator** = Summation of total time in hospital for patients that require a RED ZONE response **Denominator** = Number of patients that require a RED ZONE response **Median** = Median time spent in hospital for patients that require a Red Zone response	**Numerator** = locally identified. eMR report **PC017** - *potential source if using electronic Rapid Response forms* **Denominator:** = locally identified. eMR report *[insert report details]* **Median** = locally identified. eMR report *[insert report details]*	**Inclusion** All admitted patients/inpatient that have had a RED ZONE response call **Exclusion** Patients that have not had a RED ZONE response call	**M/Q**	X and S - Chart

Measure Type *(Outcome/ Process/ Balancing)*	**Recommendation for inclusion**	**Description / Title**	**Data element description / operational definitions**	**Source**	**Inclusion/ exclusion**	**Timing** *W= Weekly M = Monthly Q = Quarterly*	**SPC chart**
Process	Essential	Percentage of staff that have completed their targeted Deteriorating Patient learning pathway(s)	**Numerator** = Number of clinical staff providing direct patient care who have completed their targeted Deteriorating Patient Learning Pathway(s) **Denominator** = Number of clinical staff providing direct patient care	**Numerator** = locally identified. My Health Learning report **Denominator:** = locally identified. My Health Learning report	**Inclusion** All clinical staff (medical, nursing, midwifery and allied health professionals) that provide direct patient care **Exclusion** Staff that do not provide direct patient care	**M/Q**	p-chart
Process/ Balancing	Recommended	Percentage of staff surveyed that report a positive safety culture in relation to the Deteriorating patient Safety net system (Subbe et al., 2019)	**Numerator** = Number of staff surveyed that report a positive safety culture in relation to the Deteriorating patient Safety net system **Denominator** = Number of staff surveyed	**Numerator** = locally identified. My Health Learning report **Denominator:** = locally identified. My Health Learning report	**Inclusion** All staff **Exclusion** Patients, carers and family	**M/Q**	p-chart
Information obtained through local and state level patient experience surveys/questions, patient correspondence such as thank you and complaint letters should also be considered							

Table 2: Examples of Stratification options, inclusion and exclusion criteria

Stratification Patient groups (Adult / Paediatrics / Neonates / Maternal)	**NUMERATOR** **Total** **Adult:** All patients 16yrs and older admitted through the ED, excluding Maternity patients whose observations are documented on a Standard Adult General Observation Chart (SAGO). **Paediatrics:** Patients less than 16 years. All children treated in a Specialist Children's Hospital **-** excluding Maternity patients whose observations are documented on a Standard Maternity Observation Chart (SMOC) **Neonates/Newborns:** All newborns whose observations are documented on a Standard Newborn Observation Chart (SNOC). **Maternity:** patients whose observations are documented on a Standard Maternity Observation Chart (SMOC). **DENOMINATOR** **Total** **Adult:** Patients 16 years and over **Paediatrics:** Patients less than 16 years (excluding newborn) **Neonates/Newborns:** Patients less than 3 months. **Maternity:** Patients allocated to any DRG in MDC 14 Pregnancy, Childbirth and the Puerperium.
Stratification Ages group	Examples less than 7 days; less than 28 days; less than 3 months; 3 to 12 months; 1 to 4 years; 5 to 11 years; 12 to 16 years; 16 to 18 years; >18 years; >65 years; >70 years; >80 years
Stratification Clinical Service	Examples Cardiology, general medicine, surgery, oncology, geriatrics, orthopaedics, paediatrics, obstetrics, palliative care, community, psychiatry, neurology
Stratification Diagnosis	• Emergency Department discharge diagnosis - SNOWMED codes • ICD10 codes (Principle or within the top *[select number – 50]* other codes) *Examples – Sepsis ICD10 AM codes (Sundararajan et al., 2005)* *A40.0 Sepsis due to streptococcus, group A; A40.1 Sepsis due to streptococcus, group B; A40.2 Sepsis due to streptococcus, group D; A40.3 Sepsis due to Streptococcus pneumoniae; A40.8 Other streptococcal sepsis; A40.9 Streptoccal sepsis, unspecified; A41.0 Sepsis due to Staphylococcus aureus; A41.1 Sepsis due to Coagulate-negative staphylococcus; A41.2 Sepsis due to unspecified staphylococcus; A41.3 Sepsis due to Haemophilus influenzae; A41.4 Sepsis due to anaerobes; A41.50 Gram-negative septicemia NOS; A41.51 Sepsis due to Escherichia coli; A41.52 Sepsis due to Pseudomonas; A41.58 Sepsis due to other Gram-negative organisms; A41.8 Other specified sepsis; A41.9 Sepsis unspecified, septicemia; A39.4 Meningococemia, unspecified; A48.3 Toxic shock syndrome; B37.7 Candidal sepsis; B38.7 Disseminated coccidioidomycosis; B39.3 Disseminated histoplasmosis capsulati; B40.7 Disseminated blastomycosis; B41.7 Disseminated paracoccidioidomycosis; B42.7 Disseminated sporotrichosis; B44.7 Disseminated aspergillosis; B45.7 Disseminated cryptococcosis; B46.4 Disseminated mucormycosis; A42.7 Actinomycotic sepsis; A43.0 Pulmonary nocardiosis; A48.1 Legionnaires disease; A19 Miliary tuberculosis; A24.1 Acute and fulminating melioidosis; A78 Q fever; A01.0 Typhoid fever; A02.1 Salmonella sepsis; A54.8 Other gonococcal infections; A32.7 Listerial sepsis; P36 Bacterial sepsis of newborn*
Location Inclusion / exclusion criteria for stratification	• All admitted patients / individual wards/clinical areas/clinical services within a facility • Non-admitted patients • Patients in subacute, non-acute, residential age care facilities or inpatients treated in a community settings (HITH) • Patients in an ED, operating theatre, intensive care unit (ICU), procedural areas such as cath lab

Other Inclusion / exclusion criteria for stratification	• Patients not for cardiopulmonary resuscitation as documented on their resuscitation order • Patients on a *Last Days of Life Plan* • Patients that do not have a cardiopulmonary arrest • Admission pathway (from ED, direct admission, transferred from another facility) • Patients transferred from another clinical service (Recovery, ED, ICU) • Patients that die in hospital • Patients that return to their place of residence • Patients admitted under a specific clinical service (cardiology, neurology, paediatrics, mental health, oncology, palliative care etc)

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[LHD/SHN] Measurement Strategy
Deteriorating Patients

Facility
[Name of facility/hospital]

Clinical Service / Clinical unit
[Name of clinical service/clinical unit]

Description of service
[Brief summary of clinical services provided including details on the patient groups and aims of the service]

Communication plan
[Information to be communicated; who the information is being communicated to; and key messages regarding analysis of the data should form part of a measurement strategy]

Example **Measure name:**	*Average and median time to critical are intervention following a RED ZONE trigger*	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☒ Process ☐ Balancing

Operational definition(s):	Receive critical care	Patient is said to receive critical care when the patient has been attended to by staff with critical care knowledge and skills and there is commencement of vasoactive medication, artificial ventilation (either invasive or non-invasive), continuous arterial pressure monitoring, other advanced monitoring, or infusion or large volumes of fluids or blood products regardless of hospital location

Every event or sample ☒ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	Average: Summation of the total time from the RED ZONE trigger to receiving critical care intervention Median: Mid time of all patient who have a RED ZONE trigger and require critical care intervention (Time from RED ZONE trigger to critical care intervention)	Locally identified. eMR report [insert report details]
Denominator:	Number of patients that have a RED ZONE Clinical Emergency Response System call (CERS) and receive critical care intervention	MoH (provided by LHD)
Other:		

Stratification: Weekdays; weekends and public holidays

Inclusion criteria: All admitted patients/inpatient

Exclusion criteria: All patients in an emergency department, operating theatre, cath lab or other procedural area, regardless of admission status
All intensive care unit patients regardless of location (diagnostic areas)
Patients in the community, outpatient areas, Visitors and employees
Patients not for Rapid Response call as per their resuscitation plan

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☒ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart
☐ i-chart (x-chart, XMR chart) ☒ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

1.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

2.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

3.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

4.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

5.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

6.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

7.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ **Outcome** ☐ **Process** ☐ **Balancing**

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ **Every event** ☐ **Sample**

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

8.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ **Outcome** ☐ **Process** ☐ **Balancing**

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ **Every event** ☐ **Sample**

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
Other:	[Description of other items, such as a scoring system, likert scale]	[Identify source of data/survey]

Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

Exclusion criteria: [Describe items that are excluded from the data]

Refer to table 2 in the Deteriorating patient measurement strategy guide for examples of inclusion and exclusion criteria, and options for stratification

Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

☐ i-chart (x-chart, XMR chart) ☐ X & S chart ☐ T-chart ☐ other *Specify:*_____

Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

9.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ **Outcome** ☐ **Process** ☐ **Balancing**

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ **Every event** ☐ **Sample**

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
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Inclusion criteria: [Describe items that are included within the data]

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Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

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Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

10.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
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Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

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Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

11. **Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
Denominator:	[Description of denominator – if applicable]	[Identify source of data]
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Stratification: [Describe options for how the total data can be further analysis – such specific patient groups, ICD10 codes, time/day of the week]

Inclusion criteria: [Describe items that are included within the data]

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Frequency/timing of data: ☐ Daily ☐ Weekly ☐ Monthly ☐ Quarterly ☐ Half yearly ☐ Yearly

Data display: ☐ Pareto chart ☐ Histogram ☐ Run chart ☐ c-chart ☐ u-chart

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Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

12.	**Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ **Outcome** ☐ **Process** ☐ **Balancing**

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ **Every event** ☐ **Sample**

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
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Communication / presentation of data report *[Describe who will receive the data report, how the analysed data will be presented and the frequency at which the data report will be completed. These details may differ depending on the audience],*

13. **Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
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14. **Measure name:**	[Name of measure/ title that provide a simple description]	**Date:** dd/mm/yyyy

Type of measure: ☐ Outcome ☐ Process ☐ Balancing

Operational definition(s):	[Item 1 title]	[Definition]
	[Item 2 title]	[Definition]
	[Item 3 title]	[Definition]

Every event or sample ☐ Every event ☐ Sample

If sample size describe sampling method [Describe sampling method – if applicable]

	Description	**Source**
Numerator:	[Description of numerator – or value used for an average or median]	[Identify source of data]
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Copy and paste table for additional measures