SPSP Acute Adult Programme
Deteriorating Patient
Change Package

Improvement Hub
Enabling health and
social care improvement
Welcome to the deteriorating patient change package

The aim of the deteriorating patient change package is to provide evidence-based guidance to support the early recognition and response to patient deterioration in acute hospital settings. A change package consists of a number of high-level outcomes supported by activities that when tested and implemented, bring about improvement. It brings together what is known about best practices and processes based on evidence from literature, research, and the experiences of others.

Why have we developed this change package?

This change package is for acute hospital teams participating in deteriorating patient improvement work. It will support teams to use quality improvement methods to improve the cardiac arrest rate within their service.

How it was developed?

This change package was co-designed with clinical and quality improvement experts from NHS boards. The clinical experts were from disciplines such as nursing and medicine. Expert Reference Groups (ERG) were convened in October 2020 with representation from across NHS Scotland. A benefit with working in a virtual space was the inclusion and contribution from colleagues in remote, rural and island NHS boards.
What is included in this change package?

- driver diagram
- change ideas
- guides, tools and signposts to the supporting evidence and examples of good practice, and
- guidance to support measurement

Guidance on using this change package

This change package is a resource to support NHS boards with improvement in the early recognition and response to patient deterioration. It is not expected for teams to work simultaneously on all aspects of the driver diagram. It is designed to assist teams in the identification of areas for improvement relevant to their local context. The change ideas and measures are not exhaustive and it is expected that teams will develop their own to support their identified areas for improvement. We would encourage teams to seek support from their local quality improvement teams in the development of additional measures if required.

Using this package

We have made this an interactive document, if you click on the primary/secondary driver it will take you to additional information including tools and resources relating to that driver. At the top of each page of the secondary drivers, there is an arrow and home button. The arrow button will take you back to the primary driver page and the home button will take you to the main driver diagram page.
Project aim

Setting a project aim

All quality improvement projects should have an aim that is Specific, Time bound, Aligned to the NHS board’s objectives and Numeric (STAN).

The national aim for SPSP Acute Adult Deteriorating Patient:

A reduction in Cardiopulmonary Resuscitation rate, in acute care, by September 2023
What is a driver diagram?

A driver diagram visually presents an organisation or teams’ theory of how an improvement goal will be achieved. It articulates which parts of the system need to change, in which way and includes ideas of how to make this happen. It is used to help plan improvement projects and ensure team engagement.

The primary drivers are the key components of the system that need to change to deliver the aim. The secondary drivers are the processes that influence the primary drivers. Changing the processes outlined in the secondary drivers should change the primary drivers and deliver the aim.

Change ideas

Change ideas are specific practical changes the project team can make to alter the processes in the secondary drivers. The following pages provide a list of change ideas for the early recognition and response to patient deteriorating. They are grouped by the primary driver that they influence. Project teams should select change ideas to implement. A range of change ideas will be needed to ensure there are changes to all primary drivers.

This change package does not contain an exhaustive list of change ideas. Project teams can also generate their own change ideas that will help drive change in the secondary drivers. One way of generating ideas is to use the question “How might we?” For example, “How might we engage with patients and their families to improve the experience of care when in hospital?”
### Deteriorating Patient Driver Diagram 2021

<table>
<thead>
<tr>
<th>What are we trying to achieve...</th>
<th>We need to ensure...</th>
<th>Which requires...</th>
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<tr>
<td>A reduction in Cardiopulmonary Resuscitation rate, in acute care, by September 2023</td>
<td>Recognition of acute deterioration</td>
<td>Observations using NEWS2</td>
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<td>Standardised structured response to acute deterioration</td>
<td>Clinical concern</td>
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<td>Safe communication across care pathways*</td>
<td>Timely review by appropriate decision maker</td>
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<td>Leadership to support a culture of safety at all levels*</td>
<td>Screening for causes of acute deterioration</td>
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<td>Treatment escalation planning</td>
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<td>Regular review and triage</td>
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<td>Anticipatory care planning</td>
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<td>Patient and family inclusion in decision making*</td>
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<td>Communication between primary and acute care</td>
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<td>Use of standardised communication tools*</td>
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<td>Management of communication in different situations*</td>
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<td>*Essentials of Safe Care</td>
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<td>Psychological safety*</td>
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<td>Safe Staffing*</td>
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<td>System for learning*</td>
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Primary Driver
Recognition of acute deterioration

<table>
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<tr>
<th>Secondary</th>
<th>Change ideas</th>
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<tbody>
<tr>
<td>Observations using NEWS2</td>
<td>NEWS2 implementation</td>
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<tr>
<td>Clinical concern</td>
<td>Standardised process for frequency of observations</td>
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<td>Staff training in NEWS2 scoring</td>
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<td></td>
<td>Consider implementation of electronic track and trigger system</td>
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<td></td>
<td>Standardised process to escalate all staff clinical concern</td>
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<td>Standardised process to escalate patient and family concern</td>
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</tbody>
</table>
Recognition of acute deterioration

Observations using NEWS2
NEWS2 implementation
Standardised process for frequency of observations
Staff training in NEWS2 scoring
Consider implementation of electronic track and trigger system

Evidence and Guidelines:
- National Early Warning Score (NEWS) 2 Royal College of Physicians, 2017
- Carr E, et al.
- National Early Warning Score Systems that Alert to Deteriorating Adult Patients in Hospital National Institute for Health and Care Excellence (NICE), 2020
- Electronic Track and Trigger Literature Search Healthcare Improvement Scotland, 2020

Tools and Resources:
- SPSP Acute Adult Early Warning Scoring: A Digital Solution in this Digital Age NHS Fife, Healthcare Improvement Scotland, 2020
- National Early Warning Score - NEWS2 e-learning Module TURAS, NHS Education for Scotland
Evidence and Guidelines:


Nurses’ Worry or Concern and Early Recognition of Deteriorating Patients on General wards in Acute Care Hospitals: a systematic review Crit Care, 2015, Douw G, et al.


Tools and Resources:

<table>
<thead>
<tr>
<th>Secondary drivers</th>
<th>Change ideas</th>
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<tbody>
<tr>
<td>Timely review by appropriate decision maker</td>
<td>Timely clinical review from identification of deterioration</td>
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<tr>
<td>Screening for causes of acute deterioration</td>
<td>Staff training focused on trigger, escalation and response process</td>
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<td>Treatment escalation planning</td>
<td>Use of generic response process for acute deterioration</td>
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<td>Regular review and triage</td>
<td>Think Sepsis and Sepsis Six implementation</td>
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<td>Delirium screening and response</td>
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<td>Acute kidney injury response and review</td>
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<td>Standardised treatment and escalation planning</td>
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<td>Standardised DNACPR completion and communication</td>
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<td>Frailty screening across care pathways</td>
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<td>SPICT to identify limited reversibility (Supportive &amp; Palliative Care Indicators Tool)</td>
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</table>
Evidence and Guidelines:

SIGN Guideline 139: Care of Deteriorating Patients Healthcare Improvement Scotland, 2014

Acutely Ill Adults in Hospital: Recognising and Responding to Deterioration National Institute for Health and Care Excellence (NICE), 2007

Recognising and Responding to Clinical Deterioration: Background Paper Australian Commission on Safety and Quality in Healthcare, 2008

The Response to Patient Deterioration in the UK National Health Service — A Survey of Acute Hospital Policies Resuscitation, 2019

Do Either Early Warning Systems or Emergency Response Teams Improve Hospital Patient Survival? A Systematic Review Resuscitation, 2013, McNeill G and Bryden D

Interventions to Reduce Mortality From In-Hospital Cardiac Arrest: A Mixed-Methods Study National Institute for Health Research, 2019, Hogan H et al

Tools and Resources:

SPSP Acute Adult Deteriorating Patient Improvement Programme Healthcare Improvement Scotland
Standardised structured response

Screening for causes of acute deterioration
Use of generic response process for acute deterioration
Think Sepsis and Sepsis Six implementation
Acute kidney Injury response and review
Delirium screening and response

Evidence and Guidelines:
A Multifaceted Quality Improvement Programme to Improve Acute Kidney Injury Care and Outcomes in a Large Teaching Hospital BMJ Quality Improvement Reports, 2017, Ebah L et al.
Sepsis Literature and Resources List Healthcare Improvement Scotland, 2020
SIGN Guideline 157: Risk Reduction and Management of Delirium Healthcare Improvement Scotland, 2019
Clinical Practice Guideline Acute Kidney Injury (AKI) The Renal Association, 2019
Rapid Clinical Test for Delirium The 4AT

Tools and Resource
Acute Kidney Injury Toolkit Royal College of General Practitioners
Think Kidneys Campaign NHS England, UK Renal Registry
THINK Delirium Toolkit, 4AT and TIME bundle Healthcare Improvement Scotland
SPSP Acute Adult: Falls Improvement Programme Healthcare Improvement Scotland
Generic Response to Deteriorating Patients: 90 Day Learning Cycle Healthcare Improvement Scotland, 2019
Evidence and Guidelines:

- *Impact of a Treatment Escalation/Limitation Plan on Non-Beneficial Interventions and Harms in Patients During their Last Admission Before In-Hospital Death, Using the Structured Judgment Review Method* BMJ Open Quality, 2018, Lightbody CJ et al
- *Comprehensive Geriatric Assessment for Older Adults Admitted to Hospital* Cochrane Review, 2017

Tools and Resources:

- *Practising Realistic Medicine: Chief Medical Officer for Scotland: Annual Report* Scottish Government, 2018
- *Frailty at the Front Door: Improvement Collaborative* Healthcare Improvement Scotland
- *Silver Book II: Quality Care for Older People with Urgent Care Needs* British Geriatrics Society, 2021
- *Supportive and Palliative Care Indicators Tool (SPICT™)* University of Edinburgh, 2019
Standardised structured response

Regular review and triage

Standardised structured ward rounds

Evidence and Guidelines:
- Development and Implementation of a Structured Ward Round in Acute Adult Psychiatry BMJ Open Quality, 2018, Mattison AR and Cheeseman SJ
- Impact of delayed admission to intensive care units on mortality of critically ill patients: a cohort study Critical Care, 2011, Cardoso LTQ et al

Tools and Resources:
- Modern Ward Rounds Royal College of Physicians, 2021
- CEC- Structured Ward Rounds – Patricia’s Story YouTube, 2015
### Secondary drivers
- Anticipatory care planning
- Patient and family inclusion in decision making
- Communication between primary and acute care
- Use of standardised communication tools
- Management of communication in different situations

### Change ideas
- Including ACP/TEP communication between teams
- Structured ward rounds
- Key information summary
- SBAR tool
- Hospital huddles
- Immediate discharge letter
- Ward safety huddles
- Person centered visiting
- Standardisation of TEP documentation
- Integrated IT systems
- Ensuring patient & family at heart of ACP/TEP Planning
- Ward safety briefs

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**Primary Driver**
**Safe communication across care pathways**
Evidence and Guidelines:
Training for Medical Oncologists on Shared Decision-Making About Palliative Chemotherapy: a Randomized Controlled Trial Cochrane Library, 2019

Tools and Resources:
Anticipatory Care Planning Healthcare Improvement Scotland
My Anticipatory Care Plan Healthcare Improvement Scotland, 2018
Essential Anticipatory Care Planning Guidance and Template Scottish Government, 2020
Realistic Medicine - Working Together to Provide the Care that's Right for You NHS Education for Scotland

Scottish Partnership for Palliative Care
Always Events® NHS England
Mental Capacity Act: Care Planning Involvement and Person-centred Care Social Care Institute for Excellence, 2017
Personal Outcomes Collaboration
ReSPECT Resuscitation Council UK
Evidence and Guidelines:

Obesity Prevention Person-centred Care: Principles for Health Professionals NICE Guideline 2016
Shared Decision Making in Realistic Medicine: What Works Scottish Government, 2019

Tools and Resources:

Good Communication Techniques The Health Literacy Place
What Matters to You WMTY
Caring Conversations My Home Life Scotland
CEC - Structured Ward Rounds – Patricia’s Story YouTube, 2015

Enhancing Person-centred Care Effective Practitioner, NES
Ten Essential Shared Capabilities TURAS, NES, log in required
Improving Compassionate Care Picker Institute, 2017
CollaboRATE Glyn Elwyn
Safe communication

Communication between primary and acute care

- Key Information Summary
- Immediate discharge letter
- Integrated IT systems

Evidence and Guidelines:
SIGN Guideline 128: The SIGN Discharge Document

Tools and Resources:
Best Practice Statement for Key Information Summary (KIS) Scottish Government, 2013
Evidence and Guidelines:

Tools and Resource:
SBAR Tool: Situation-Background-Assessment-Recommendation Institute for Healthcare Improvement
SBAR Examples NHS Education for Scotland
SBAR-Situation-Background-Assessment-Recommendation East London NHS Foundation Trust
Improving Clinical Communication Using SBAR NHS Wales, 2012
### Evidence and Guidelines:

### Tools and Resources:
- **Acute Care Toolkit 1: Handover** Royal College of Physicians, 2015
- **Safety Briefings** Institute for Healthcare Improvement
- **Huddles** Institute for Healthcare Improvement
- **Structured Handover Education Project** NHS Education for Scotland.
- **Making Delegation Safe and Effective : A learning resource for nurses, midwives, allied health professionals and health care support workers** NHS Education for Scotland
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<td>Psychological safety</td>
<td>Compassionate leadership at all levels</td>
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<td>Staff wellbeing</td>
<td>Listening to the workforce and identifying improvements</td>
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<td>Safe Staffing</td>
<td>Staff education &amp; awareness</td>
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<td>System for learning</td>
<td>Quality improvement and measurement support</td>
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<td>Collective leadership approach</td>
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<td>Celebrate success</td>
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<td>Effective rostering</td>
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<td>Involvement of resuscitation teams in improvement work</td>
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<td>Structured 1:1 time</td>
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<td>Visible supportive leadership</td>
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<td>Mitigation</td>
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<td>Escalation</td>
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<td>Review of unplanned ICU admissions</td>
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<td>Mortality and morbidity reviews</td>
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<td>Multi-disciplinary review of cardiac arrests/2222 calls</td>
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<td>Real-time staff risk assessment</td>
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<td>Quality improvement and measurement support</td>
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Culture of safety

Evidence and Guidelines:
- Psychological Safety and Learning Behaviour in Work Teams Edmondson AC, 1999, Athens/institution log in required
- The 4 Stages of Psychological Safety: Defining the Path to Inclusion and Innovation Clark TR, 2020

Tools and Resources:
- Leadership Walk-rounds and Safety Conversations Healthcare Improvement Scotland
- Safety Culture Discussion Tool NHS Education for Scotland
- The Importance of Psychological safety – Amy Edmondson YouTube, 2020
Culture of safety

- Staff wellbeing
- Listening to the workforce and identifying improvements
- Celebrate success
- Implement national health and wellbeing outcomes 1.8.9

Evidence and Guidelines:
- Framework for Improving Joy in Work Institute for Healthcare Improvement, 2017. Please note this link will require a free registration to IHI.
- COVID-19 Guides for Social Service Workers Scottish Social Services Council, 2020
- National Trauma Training Programme

Tools and Resources:
- National Wellbeing Hub for Health and Social Care Staff
- The Scottish Social Service Council Coaching for Wellbeing Resources
Culture of safety

Evidence and Guidelines:

Tools and Resources:
Coronavirus (COVID-19): Care Home Staffing and Escalation Resources Scottish Government, 2020
A Call to Learn from What Works Well Learning from Excellence
Achieving Sustainable Change NHS Education for Scotland
Staffing Workload Tools Healthcare Improvement Scotland
Safe Staffing Healthcare Improvement Scotland
Culture of safety

Evidence and Guidelines:
- Measuring Safety Culture The Health Foundation, 2011
- The Measuring and Monitoring of Safety The Health Foundation, 2013
- An Organisation Without a Memory: A Qualitative Study of Hospital Staff Perceptions on Reporting and Organisational Learning for Patient Safety Reliability Engineering & System Safety, 2015, Sujan M

Tools and Resources:
- Coronavirus (COVID-19): Care Home Staffing and Escalation Resources Scottish Government, 2020
- Quality Improvement Made Simple, What Everyone Should Know about Healthcare Quality Improvement The Health Foundation, 2021
- Learning from Excellence
- Achieving Sustainable Change NHS Education for Scotland
Measurement is an essential part of improvement as it helps the project team understand if the changes they are making are leading to improved care. Below you will see an outline of three types of measures used in improvement and a link to the measurement framework.

**Outcome measures**
Outcome measures are used to understand if the changes are resulting in improvements towards the aim.

**Process measures**
Process measures demonstrate that change ideas are improving the underlying processes that contribute towards falls prevention.

**Balancing measures**
Balancing measures are used to determine if the changes are affecting things elsewhere in the system (unintended consequences).

More detailed information can be found in the measurement framework on the ihub website.
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