SPSP
Acute Adult
End of phase report
August 2016
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Introduction

The Scottish Patient Safety Programme (SPSP) is now part of Healthcare Improvement Scotland’s Improvement Hub supporting improvement across health and social care. This is a unique national programme that aims to improve the safety of healthcare and reduce the level of harm experienced by people using healthcare services. SPSP aims to support National Health and Wellbeing Outcome 7: People using health and social care services are safe from harm.

Acute Adult aim
Since the programme launched in 2008, the aim has been to reduce harm and mortality in hospitals.

The Acute Adult programme has contributed to a significant reduction in harm and mortality to acute adult inpatients through:

- introduction and development of quality improvement methodology through testing of focused safety interventions
- testing and implementation of leadership activities providing organisational support for safety
- building of capacity and capability within clinical and non-clinical roles
- tangible patient impact on patient outcomes through reduction of infection rates such as ventilator associated pneumonia and central line bloodstream infections
- widespread implementation of safety briefs, daily goal setting in ICU and surgical brief and pause
- improvement in the recognition and treatment of deteriorating patients and sepsis, and
- transition of now well-established interventions from improvement to day to day care through the 10 Essentials of Safety.
The Acute Adult programme concluded its current phase of work in March 2016. In the last year, the Programme has contributed to:

- a reduction in Hospital Standardised Mortality Ratio (HSMR) of 16.5% from the 2007 baseline
- a 21% reduction in 30-day mortality sepsis, using ICD-10 A40/41 sepsis codes
- a reduction of 19% in cardiac arrest rate for 11 hospitals that have reported consistently from February 2012 to December 2015, and
- eight out of 15 reporting NHS boards from March 2014 to February 2015 show the percentage of patients discharged from hospital without any of the Scottish Patient Safety Indicator (SPSI) harms exceeding the original aim of 95%.
Deteriorating Patient and Sepsis

Deteriorating Patient

The aim of the Deteriorating Patient workstream is to reduce mortality and harm for people in acute hospitals by reliable recognition and response to acutely unwell patients. The SPSP team supports this by focusing on:

- early recognition of deteriorating patients through the National Early Warning Score (NEWS)
- the implementation of a process for structured response and treatment for sepsis, and
- person-centred care planning and early referral where required.

The Deteriorating Patient workstream builds on existing SPSP work when early warning scoring was widely implemented in NHSScotland’s hospitals to support the recognition of acute physiological deterioration.

The Deteriorating Patient workstream contributes to the aim of reducing cardiac arrests in ward setting by 50% by March 2017.
National Early Warning Score

The Royal College of Physicians has published and supported NEWS a standardised approach for the recognition and response of deterioration – the National Early Warning Score. SPSP has supported this standardisation through presentations, assessment feedback and inclusion in the News and Sepsis App. Over the last year the number of NHS boards who have implemented this system has risen from five to eight, with two further NHS boards planning implementation this year.

Structured response and review of the deteriorating patient

Building on existing work to recognise acutely unwell patients, SPSP has supported clinical and improvement teams in NHS boards to test improvements for the response to a person who is triggering NEWS. The Scottish Structured Response & Review aims to reduce cardiac arrests in general ward areas through a person-centred and multidisciplinary approach to rescue and care planning. Interventions in this are wide ranging and include:

- multidisciplinary communication
- screening and treatment for sepsis
- treatment escalation planning
- early review by a senior decision maker, and
- communication with people and their families to identify goals of care.
Sepsis

The SPSP Sepsis Collaborative ran from January 2012 to December 2014 with the aim of reducing mortality from sepsis through the implementation of an evidence-based bundle, the Sepsis 6. A 3-year programme was delivered and the award-winning Acute Adult NEWS and Sepsis app was developed for use in conjunction with NHS Education for Scotland (NES).

What progress have we made?

As a result of the Sepsis Collaborative, acute hospitals now have an improved approach to identify and treat patients with sepsis quickly and effectively. Delivery of this intervention has improved to around 75% of sampled patients and has helped to reduce mortality from sepsis by 21% in NHSScotland.

ICD-10 codes A40 & A41 are the most commonly used codes to identify a person with sepsis.
Sepsis 6 has been widely adopted in NHSScotland’s emergency departments and receiving areas and remains a core part of our Deteriorating Patient work, spreading to Maternity, Paediatrics and, most recently, Primary Care.

The adoption of NEWS and testing of structured response in acute hospitals has supported improved processes to identify and respond to deteriorating patients. This work has contributed to a reduction in cardiac arrests of 19% in NHSScotland.

By September 2015, HSMR had fallen by 16.5% against the 2007 baseline.
Case study

NHS Ayrshire & Arran carried out an in situ simulation training programme focusing on communicating the sense of urgency of patients presenting to Crosshouse Emergency Department with sepsis. The aim was to create a mutual understanding of the importance of prioritising these patients within a busy Emergency Department. The data showed a shift from 40% to 85% compliance with the target of antibiotics delivered within one hour.
# Falls

## What are we aiming for?

Falls remain a common cause of harm to patients in acute hospitals with as many as 250,000 falls recorded in the UK each year.

Evidence from clinical staff, subject experts and an extensive literature review identified interventions which may reduce falls. Working in partnership with NHS boards, processes were developed with the aim of reducing falls by 25% and falls with harm by 20% by December 2015.

Many factors contribute to the risk of falls in acute wards. A combination of processes which include risk assessment falls bundles, review of local environment and the use of safety crosses help to understand and communicate data which contributes to a measurable reduction in harm.

## What progress have we made?

A number of key measures such as reliability of completion of falls bundles and risk assessment is measured and reviewed within NHS boards. All NHS boards are measuring and reviewing the number and rate of falls and falls with harm. This data is collected using local reporting systems and displayed within wards using tools such as safety crosses.

Considerable progress has been made in reducing falls and national aggregated data now exists. Whilst this gives a baseline and a route to comparison, it is the individual hospital and ward data that is showing real improvement.
Case study

Ward 71 at the Western General Hospital, Edinburgh, has successfully implemented a number of key improvements to reduce falls within the ward. At its heart is visible ward leadership which has encouraged and enabled staff to test and successfully deliver a number of interventions which have resulted in a 21% reduction in falls within the ward.

This work is supported by a Multidisciplinary Team (MDT) approach to falls reduction and ongoing work now includes testing of a post falls bundle.
‘It is difficult to pinpoint one specific change that made a difference. There is no doubt highlighting falls as a priority, sharing learning and targeting interventions have all made a difference to patients.’

Irene Corcoran
Falls Co-ordinator: NHS Lothian
Pressure ulcers

What are we aiming for?

Pressure ulcers are an unwanted complication of illness, severe physical disability or increasing frailty. Approximately 412,000 people are likely to develop a new pressure ulcer annually in the UK and this presents a significant burden on the provision of healthcare within the NHS. In June 2015, the Scottish Government announced an expansion of the existing aim, to reduce acquired grade 2–4 pressure ulcers in hospitals and care homes in Scotland by 50% by 2017.

What progress have we made?

NHS boards have been moving from Clinical Quality Indicator CQI measurement of pressure ulcer care prevention to SPSP process and outcome measures. NHS boards are now reporting reliability with measures relating to pressure ulcer risk assessment and completion of the SSKIN bundle and pressure ulcer rate.

Descriptions of improvement work within NHS boards suggest development and implementation of more robust systems and processes for pressure ulcer recording which have led to an increased confidence in the data of pressure ulcers reported.
Case study

NHS Forth Valley has achieved a sustained reduction in pressure ulcers. This has been achieved over time with a continued focus and energy for improvement with senior charge nurse (SCN) leadership at its core.

As part of Leading Better Care, an aim for no incidents of avoidable harm for patients from pressure ulcers has become a top priority. A key clinical indicator within the SCN’s balance score and supported by standardising pressure area care across all sites in NHS Forth Valley has been key to driving whole system improvement. This work has ongoing support from the area wide Tissue Viability Service and has used tools such as safety crosses, protocols, incident reporting, including learning and reflective processes to strengthen accountability at all levels.

The clinical areas have tested and implemented a large range of interventions and activities, which together, have led to a sustained success in the reduction of pressure ulcers.
Factors that influenced pressure ulcer reduction in NHS Forth Valley

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<th>Nurse Education and resource folders</th>
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<td><strong>ABC Campaign</strong></td>
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<td>• Incident reporting</td>
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<td>• Posters</td>
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<td>• Safety crosses</td>
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<td>• Pupra in ED</td>
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<td>• Intranet</td>
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<td><strong>SCN QI review of managed bed service</strong></td>
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<td><strong>Braden risk assessment and SSKIN chart and in all areas within 6 hours</strong></td>
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<th>Forth Valley Royal Hospital - Pressure Ulcer count</th>
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<td>Count</td>
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Baseline Median = 7
Sustained Improvement
Current Median = 2
Catheter Associated Urinary Tract Infection

What are we aiming for?

Catheter Associated Urinary Tract Infection (CAUTI) is the most prevalent healthcare associated infection (HAI) worldwide. With good evidence that harm from CAUTI can be reduced, SPSP and acute hospitals embarked on a programme of work with an aim of reducing CAUTI by 30% by December 2015.

In recognition of the priority of this work the Scottish Government provided funding for HAI quality improvement facilitators to work within NHS boards and an HAI Improvement advisor within SPSP. The addition of these posts has had a significant impact on the development of this work.

What progress have we made?

Following a revised national definition, NHS boards tested methods of measuring incidents of CAUTI and the processes that will reduce them. The interventions have focused on the use of evidence-based bundles for catheter insertion and maintenance to help avoid catheter insertion, reduction of length of catheterisation and avoid cross-contamination. Another outcome measure of catheter use has been developed and NHS boards are now reporting a significant reduction in the number of people with a catheter in pilot wards.

Currently 13 NHS boards are reporting data on the insertion and maintenance bundle reliability and 10 NHS boards are reporting CAUTI count rate.
Case study

As part of NHS Lanarkshire’s Reducing Harm Collaborative teams from across both acute and community have been working to achieve a 30% reduction in CAUTI. Teams focused on achieving reliable implementation of both catheter insertion and maintenance bundles. Below is an example of work undertaken by one of the collaborative pilot teams.

Ward 14 at Wishaw General Hospital took an MDT approach to reducing CAUTI by asking three key questions:

1. Is there really a clinical need for a catheter?
2. What are the alternatives?
3. Have we tried everything to avoid a catheter?

Only when the three questions were reliably examined and confirmed did the team proceed with the use of catheter insertion and maintenance bundles.
What did they do?

- initial weekly measurement using safety cross
- tests of change to ensure reliable implementation of CAUTI bundles
- development of criteria for catheter insertion
- reviewed data, and
- staff and patient education.

‘All staff are more likely to question the need for catheters when a patient is transferred in to the ward.’

**Staff Nurse**

**Ward 14, Wishaw**
Reducing Medicines Harm across Transitions

What are we aiming for?

Medicines are the most common intervention in healthcare. Avoidable harm, or potential harm, due to discrepancies or a lack of understanding of patients’ medicines at points of transition in healthcare is well described. This is particularly important when patients are taking multiple medicines, high risk medicines and are at the extremes of life (paediatrics and the elderly).

Medicines reconciliation is an evidence-based clinical activity to ensure patients are prescribed the correct medicines, in the correct doses appropriate to their current clinical presentation, to reduce avoidable harm from medicines.
What progress have we made?

A letter from the Chief Medical Officer in the Scottish Government to NHS boards in 2013 provided the basis for the current measurement of medicines reconciliation on both admission to and discharge from the acute care setting. Using a bundle approach, reliability of medication on admission and discharge is measured against five and four elements, respectively.

NHS boards commenced targeted tests of change and reporting data in 2008, focusing on medicines reconciliation at the point of admission. A number of NHS boards have started testing and reporting data related on medicines reconciliation at discharge. NHS boards have reported that medication reconciliation is complex and difficult, but continue to test ways to ensure accurate inpatient medication charts and immediate discharge letters.

Last year saw additional resources added to the programme to support medicines-related activity. This has resulted in a refresh of activity related to medicines in NHS boards and a focus on a whole system approach to improvements (for example linking teams across acute and community care settings). medicines reconciliation and high risk medicines have been identified as core medicines themes across SPSP.
Case study

Dumfries and Galloway Royal Infirmary received a grant from The Health Foundation to support improvement activity related to medicines in an orthopaedic trauma ward (Ward 16).

Creating the urgency

The team knew that variation in the quality of medicines reconciliation on admission to Ward 16 resulted in poor communication about medicines to other members of the healthcare team. This also impacted on confirming medicines plans at the point of discharge, increasing the risk of patient harm and creating additional work for staff in both acute and primary care.

Using rapid cycle small tests of change, the two medicines reconciliation bundles (admission and discharge) were applied in Ward 16, with the support of dedicated pharmacy resource.

The team used process mapping to learn more about the role of staff when dealing with patients’ medicines at the point of admission to, and discharge from, Ward 16. The team learned that:

• junior doctors were the key human factor in the medicines reconciliation process, and
• no automated systems were in place to support medicines reconciliation.
Did any of the tests of change make a difference?

One key test of change has resulted in sustained improvement: the development of an electronic system, known as e-med rec, which automatically draws medicines information from the Electronic Care Summary in primary care.

The local e-med rec system has reduced the time and complexity for staff confirming an accurate medication list at the point of admission to hospital.

What was so different?

The e-med rec system was developed in a close collaboration between IT staff, junior doctors and the project team. This project demonstrated that through effective collaboration, such changes can be developed, tested and measured effectively. This is particularly inspiring, given the regular changeover of junior doctors in the ward.
What does the data tell us?

The run charts show the improvement story in Ward 16.

**Medicines Reconciliation on Admission**

Baseline median = 29.2

Current median = 40.0

- Dedicated project manager and pharmacist in place to lead improvement activity
- New junior doctors start on ward – education programme provided
- Collaborative development of e-med rec tool

**Medicines Reconciliation on Discharge**

Baseline median = 55.0
Surgical Site Infection, Heart Failure and Venous Thromboembolism

In response to a variation in engagement across the Acute Adult programme, a decision was reached in 2014 to separate the workstreams into core and supplementary to support NHS boards to prioritise activity according to local context.

A revised measurement plan was published with Surgical Site Infection (SSI), Heart Failure and Venous Thromboembolism (VTE) identified as supplementary areas.

**Surgical Site Infection and Heart Failure**

The work in relation to SSI is now supported by the HAI improvement team within SPSP.

Differing elements of the Heart Failure bundle have now been separated to enable NHS boards to test specific elements along a person’s care journey. The programme continues to participate in the Heart Failure Hub to inform development of this work.
Venous Thromboembolism

The focus on VTE formed part of the Sepsis VTE collaborative which ran from 2012–2014.

The collaborative, part of the Acute Adult programme, focused on developing reliable delivery of evidence-based interventions to patients at risk of harm from VTE and to contribute to the overall aim of reducing mortality.

This work built on a previous focus on VTE prevention for surgical patients which was well established within the peri-operative workstream of the first phase of the programme. The SPSP team supported this by focusing on:

• improving the reliable delivery of risk assessment and appropriate thromboprophylaxis for patients admitted to acute hospitals and throughout their hospital stay, and
• involving patients and families in risk assessment by providing information on risks and benefits of thromboprophylaxis.

The original aim of the Sepsis VTE collaborative was for 95% of patients admitted to an acute hospital for more than 48 hours to have a risk assessment carried out and have appropriate thromboprophylaxis administered by December 2014.

However, the aim was revised to reflect the learning and progress being gained during the course of the collaborative.

The revised aim focused on sustained improvement in delivery of VTE risk assessment (at 95% +/- 5%) in 50% of applicable wards by December 2015.
What progress have we made?

The Sepsis VTE collaborative was the subject of a concurrent evaluation undertaken by the Sapphire Group, University of Leicester, and the School of Nursing and Midwifery, University of the West of Scotland.

A number of themes emerged through the evaluation which aligned to the challenges identified by local teams in delivering the programme of work, which included the following.

- The Breakthrough Series (BTS) collaborative approach not supporting the pathway nature of this particular harm.
- The lack of a credible outcome measure. Hospital associated VTE events often occur post discharge and are not currently measured or connected with an inpatient stay. This posed an ongoing challenge in connecting improvements in risk assessment with reduction in VTE events.
- An ongoing dialogue around the evidence base, particularly in relation to medical patients.
- The impact of the above on levels of clinical engagement.

NHS board assessments also provided a view of progress and highlighted the following.

- Clear evidence of improved awareness and expectation that all inpatients are at risk of VTE and therefore require risk assessment.
- Across the sites included in ethnographic studies, there is evidence of efforts to improve VTE prophylaxis.
- Where strong clinical leadership was present, evidence of improvement was greatest. These NHS boards also took an organization-wide approach to the assessment and management of VTE.
- Data submissions demonstrated that risk assessment for VTE is around 70% reliable in reporting NHS boards, while delivery of appropriate thromboprophylaxis is 90–95% reliable in sampled patients.
Next steps

A review process was undertaken to identify future areas of focus and delivery methods for the acute adult and primary care programmes. A key finding of the review was the importance of a transitional year to enable existing work to continue, allow alignment of the broader safety programmes and support prototyping of new areas of work.

Aims of the Acute Adult programme during this transitional year will focus on the following.

• By March 2017:
  ◊ reduce cardiac arrest by 50%
  ◊ reduce falls by 20%
  ◊ reduce falls with harm by 25%
  ◊ reduce CAUTI by 30%
  ◊ reduce HSMR by 20%

• By December 2017:
  ◊ reduce pressure ulcers in hospitals by 50%

A number of areas of work will, therefore, continue as national priorities. NHS boards are expected to continue to work on these as part of the national focus of SPSP. The table below describes the areas of work that will continue to be supported over 2016–2017 in collaboration with the SPSP Primary Care Programme.
The focus for the next phase of the Acute Adult Programme is based on feedback provided by key informants of the review process. Three overarching themes of Medicines, Deterioration and Systems Enablers were identified and will inform the future content and structure of SPSP. Specific topics were identified under these three themes; some describe existing work while others, for example Acute Kidney Injury, are potential new areas of focus for SPSP and the table below illustrates the overarching themes and the identified related topics.

### System Enablers for Safety

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<th>Transitions of care</th>
<th>MDT Working</th>
<th>Capacity and capability</th>
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<tr>
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<td>Medicines Reconciliation</td>
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SPSP will work with a small number of services to design and test approaches to reducing harm in these areas with aims being agreed as part of this work.
Deteriorating Patient and Sepsis

A recent review of SPSP Acute Adult and Primary Care found that recognition and response to deterioration is one of the three key themes for the next phase of these programmes. Work on sepsis will continue, with work on Acute Kidney Injury being developed over the coming year. These workstreams will be tested across acute and primary care settings.

Reducing Medicines Harm across Transitions

Improvement activity aimed to reduce medicines harm across transitions will continue. Work related to high risk medicines exploring harm as an outcome will be developed over the coming year.

Venous Thromboembolism

The findings of an evaluation found that while progress had been made with VTE, a revised approach would be required to support achievement of aims. As a result, the SPSP Acute Adult team will be working with NHS Borders to:

- explore existing VTE processes to diagnose the factors impeding reliable delivery of risk assessment and thromboprophylaxis
- test novel approaches to overcome the barriers, and
- develop a revised approach as a resource for NHSScotland.
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www.scottishpatientsafetyprogramme.scot.nhs.uk