

Using Rapid Spread methodology to reduce the incidence of hospital-acquired pressure ulcers

KEY WORDS

- ▶ Change management
- ▶ Hospital-acquired pressure ulcers
- ▶ Incidence
- ▶ Rapid Spread

This article reports on the process of engaging an entire hospital in a pressure ulcer prevention programme using a 'Rapid Spread' approach. The Rapid Spread methodology comprises an initial preparatory phase, an immersion phase, an action phase and sustainability. It allowed the gold standard practices to be embedded in a 12-week period and resulted in large reductions in both pressure ulcer incidence and pressure ulcer point prevalence and also reduced the estimated cost of caring for people with hospital-acquired pressure ulcers.

The tissue viability team at an acute hospital had been reducing hospital-acquired pressure ulcers by employing trust-wide prevention strategies and the incidence of hospital-acquired pressure ulcers had been decreasing year on year, with a 79% reduction reported annually between April 2010 and March 2014. However, pressure ulcer incidence had become static, which prompted them to try a new approach.

The trust is part of the NHS Safety Thermometer programme (a point-of-care programme to measure harm-free care in an organisation by looking at four avoidable harms: pressure ulcers, falls, venous thromboembolism and catheter-associated urinary tract infections), with a pressure ulcer point prevalence below both the national and regional average. However, a zero tolerance approach deemed that one unavoidable hospital-acquired pressure ulcer was one too many and a new approach was required to stop any patient experiencing avoidable harm. The desire to improve patient experience was the trigger for wanting to stop any hospital-acquired pressure ulcers from developing. A pressure ulcer is deemed avoidable if it occurs "when risk assessments, preventative actions and re-evaluations have not been implemented" (Department of Health, 2011).

A new pressure ulcer pathway was devised to ensure that every patient received the right care at the right time, every time. The Rapid Spread approach was favoured as a way to introduce this

pathway and to examine every step of the patient journey in a multidisciplinary way. Rapid Spread has already been used by other trusts as a way to quickly implement evidence-based practice and gold standard care for every patient on every ward, every time (Stevens, 2010). It was devised by Stevens and Edwards (2012) as a novel change management technique whereby a number of actions are completed before a change begins, to increase the likelihood of the changes being sustained. The methodology has been successfully used to reduce avoidable harms such as falls and pressure ulcers in a number of NHS organisations (McIntosh, 2010; Rose, 2010).

AIMS AND OBJECTIVES

There were four main objectives of this initiative:

- ▶ Improve patient experience
- ▶ Reduce costs
- ▶ Embed a new pathway
- ▶ Collect data to measure the impact on pressure ulcer incidence and point prevalence, along with a number of other outcome measures.

Improve patient experience

The aim was to further improve the quality of patient care at the hospital by reducing harm by preventing avoidable pressure ulcers. It is well established that pressure ulcers are painful and have a negative impact on people's emotional, mental, physical and social health (Spilsbury et al, 2007; Moore and

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Cowman, 2009); therefore, preventing any new pressure ulcers from occurring would have a positive impact on patient health-related quality of life and also improve patient experience.

Reduce health service costs

As avoidable pressure ulcers are a key indicator of the quality of care in an organisation, reducing the number of avoidable pressure ulcers would ensure that the trust was leading the way in pressure ulcer prevention. Reducing hospital-acquired pressure ulcers is an important way to reduce the overall costs to the entire health service, including both inpatient and community services. Indeed, estimates suggest that the cost of pressure ulcers to the UK is £2.1–2.4bn per annum (Bennett et al, 2004) and the cost of healing a category 4 pressure ulcer is an estimated £14,108 (Dealey et al, 2012).

Embed a new pathway

The evidence base for pressure ulcer prevention is well established and there is recent NICE guidance (NICE, 2014) alongside existing European guidance (European Pressure Ulcer Advisory Panel and National Pressure Ulcer Advisory Panel, 2009). Therefore, the tissue viability team had

evidence-based guidelines upon which to base a new pressure ulcer prevention pathway. There was also a well-established network of link nurses to help to cascade information and training.

Measurements

The primary aim was to reduce all avoidable hospital-acquired pressure ulcers. Electronic data collection systems were already in place to collect hospital-acquired pressure ulcer incidence data. Point prevalence data was collected monthly via the Safety Thermometer. In order to measure compliance with the new pressure ulcer prevention pathway, several other outcome measures were set and are outlined in *Box 1*.

METHODS

The Rapid Spread process used a step-by-step approach with four main phases:

- ▶▶ Preparation
- ▶▶ Immersion
- ▶▶ Implementation
- ▶▶ Sustainability.

Leadership was critical to the success of the project and was provided by the director of nursing, deputy director of nursing and an appointed project manager to lead the entire process. Stevens and Edwards (2012) suggest that Rapid Spread can be used when: there is a proven evidence base, the issues are the same across the organisation, and success can be measured through good data collection. The project met these requirements and the audit team designed a robust data collection process with agreed outcome measures (*Box 1*).

Sustaining real organisational change depended on engaging key people in the organisation to influence a trust-wide culture change. The goal was to identify the barriers to following best practice and find solutions. Small teams such as tissue viability services can struggle to engage and mobilise key players in large organisations. The director of nursing engaged the trust board in the Rapid Spread pressure ulcer prevention programme and this further strengthened the trust's commitment to this project. Staff in the trust were mobilised to engage with the project and find solutions to designing, implementing and embedding an ideal pressure ulcer prevention pathway.

The organisation had traditionally used the Plan, Do, Study, Act (PDSA) methodology used by many

Box 1: Main objectives and outcome measures .

- Initial short pressure ulcer risk assessment (Andersen et al, 1982) is completed for all patients admitted through A&E within 2 hours of admission
- Full pressure ulcer risk assessment (modified Braden) is completed within 6 hours of admission
- Full pressure ulcer risk assessment (modified Braden) reassessed every 48 hours
- Pressure ulcer care plan is commenced for all patients with a high pressure ulcer risk assessment score
- Comfort/intentional rounding completed for all adult inpatients
- Staff will receive training and complete a pressure ulcer competency
- Dynamic mattresses to be in situ within 6 hours of risk assessment

Table 1: Comparison of PDSA and Rapid Spread methodologies (Adapted from Stevens and Edwards, 2012).

PDSA	Rapid Spread
Tests ideas in small numbers	Uses established 'gold standards' across whole organisations
Uses a four-stage change cycle	
Cyclical process	Linear process
Creates change gradually/incrementally	Creates change quickly in a 'big bang' approach
Can be difficult to sustain	Involves all key members of the organisation to promote ownership and sustainability

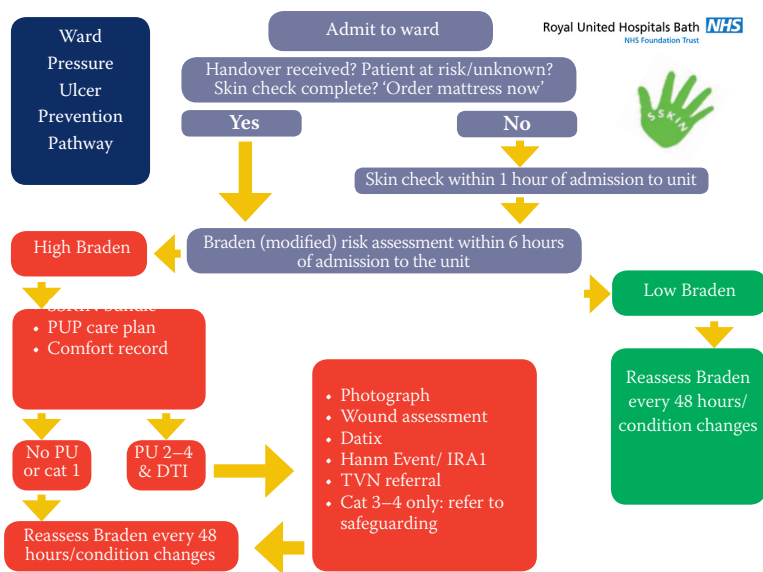


Figure 1: Pressure Ulcer Pathway.



Figure 2: Hospital SSKIN Bundle.

NHS organisations as an evidence-based way to implement changes. In contrast, the Rapid Spread methodology enabled change to be embedded across the whole organisation at a fast pace (Table 1). In 2010 Janice Stevens summed up the Rapid Spread approach: “We know what we need to do so let’s just get on and do it”

THE PREPARATORY PHASE

One of the essential elements of the preparatory phase was getting the trust board to support the project, along with a promise to unblock any issues

that got in the way of delivering the objectives. It was also essential to get all of the right people in the right place at the right time. A group to ensure the delivery of the Rapid Spread work was established comprising key stakeholders including: tissue viability nurses, consultants, training leads, the medical equipment team, matrons, theatre managers, documentation leads, senior quality improvement nurses, occupational therapists, physiotherapists, data analysts, communications team, dieticians, portering leads and audit managers.

Early engagement of the communications team was essential to spreading the changes throughout the organisation. They communicated to staff about each phase of the project to ensure that staff in all areas understood what they should be currently doing and where the project was going next.

During this preparatory phase, the tissue viability team and entire delivery group focussed on producing the resources that were needed for the immersion period. Some of these resources were new and some were modified versions of forms that were already in use. There were four main elements that the tissue viability team and delivery group focused on during the preparatory phase.

First an evidence-based pressure ulcer prevention pathway was developed to launch across all departments (Figure 1). This pathway was broken down into a ward pathway, a theatre pathway and an emergency department pathway. This would give all members of staff a clear picture of their roles and responsibilities with regard to pressure ulcer prevention. Alongside the pathway and training bundle, a new tool (Figure 2) was launched based on the SSKIN bundle of five simple steps to prevent and treat pressure ulcers (NHS Midlands and East, 2012). SSKIN training based on the Midlands and East SSKIN bundle had already been carried out in the organisation; therefore, this new tool was developed to further assist staff to use it in everyday practice.

Then the tissue viability team worked with the documentation team to adapt three essential elements of pressure ulcer avoidance and care: the intentional rounding comfort and pressure care record, the wound care plan and the pressure ulcer prevention and management care plan.

Third, a new trust-wide pressure ulcer risk assessment tool was launched (modified from the Braden Tool) (Bergstrom et al, 1987). Before this

time, a local tool had been used that gave three risk levels: low, medium or high. The new modified Braden tool (Bergstrom et al, 1987) only had two risk levels — low and high — making the care pathway simpler to follow. The new risk assessment tool was electronic, which allowed data to be collected instantly to monitor compliance. A new process to screen patients for their risk of pressure ulcers in the emergency department using a short risk assessment tool (Andersen et al, 1982) was also developed.

Finally, the tissue viability team and the training team developed a pressure ulcer prevention competency focused around the elements of the pressure ulcer prevention pathway. It was considered essential to ensure that all members of staff in the organisation had a clear knowledge of how to prevent and manage pressure ulcers. This competency focused on assessing competence against a package of pressure ulcer training resources (Box 3).

THE IMMERSION PHASE

During this five-week stage, ward sisters, therapists and tissue viability link nurses were fundamental to mobilising and engaging their staff to make real changes to improve patient care. They were given the freedom to do this in a way which suited the culture and needs of their team.

An immersion event day was held in order to engage, energise and enthuse staff into committing to real change. Ward sisters, tissue viability link nurses, staff nurses, therapists and healthcare assistants from each ward attended a one-day event. A patient's story was used as the catalyst for change and this was a powerful way to reconnect healthcare staff with the importance of pressure ulcer prevention (Haigh and Hardy, 2010).

The patient story focused on the impact a pressure ulcer had on a patient called Betty. It was a powerful mechanism to carry the message that as an organisation we could not stand still and now was the time for change.

Staff all attended a number of workshops at the immersion event focusing on the pressure ulcer prevention pathway, pressure ulcer risk assessment training, nutritional support to prevent pressure ulcers, the importance of documentation, data collection and using equipment for prevention. At this time, the pressure ulcer training package and pressure ulcer competency were launched. Staff

Box 2: Pressure ulcer training bundle resources.

- Betty's story: audio and written patient story
- Gillian's story: video of a patient story
- Pressure ulcer prevention pathway (wards, theatres, emergency department)
- SSKIN bundle
- Equipment selection pathway (pressure redistribution)
- Nutritional education
- Comfort and pressure care record and guidance
- Incontinence-associated dermatitis protocol
- Pressure ulcer policy
- Device-related pressure ulcer guidance

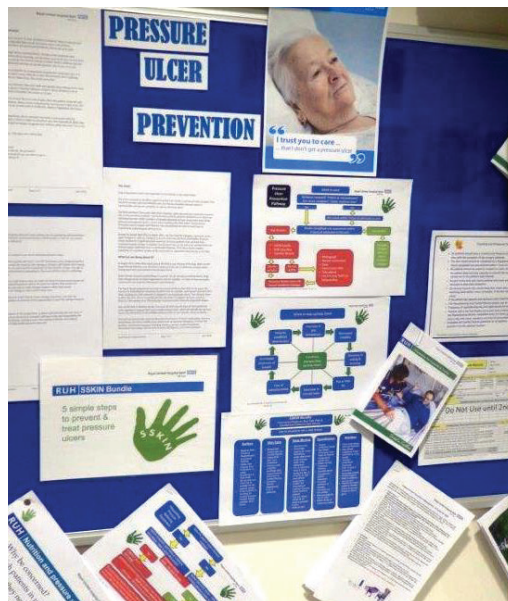


Figure 3: Example of ward teaching board.

then went back to their areas of work to spread the word. This was often done by presenting a board of resources and explaining the patient story along with the new resources to all members of staff in that area (Figure 3).

After the immersion event, all wards and departments had a five-week training period to identify the changes that needed to take place in their area. The pressure ulcer training package and competency were launched in wards by the ward sisters and link nurses. Tailoring training to the needs of individual areas ensured that the training was relevant and every member of staff understood its importance. The tissue viability link nurses and ward sisters were in the best position to deliver training in their areas, understanding both the needs of their patients, family members and carers, and the individual needs and learning styles

of their staff. Alongside the training of nurses and healthcare assistants, the Rapid Spread delivery team trained other essential staff groups including doctors, occupational therapists, physiotherapists, radiotherapists, radiographers, portering staff and medical equipment staff.

RESULTS

The implementation phase

The project ‘went live’ on 2nd June 2014. At this time, staff had received the training bundle and completed the competency and all areas had the necessary pathways and documentation.

The pressure ulcer pathway (*Figure 1*) was to be followed for every patient every time from this launch date, to ensure that consistent gold standard care was given. Staff used the SSKIN bundle to inform everyday practice (*Figure 2*).

The three new documents went into use, comprising the intentional rounding comfort and

pressure care record, the wound care plan, and the pressure ulcer prevention and management care plan. Advice was sought from other organisations that had successfully undergone the Rapid Spread process and documentation was made to be user-friendly in order to ease the implementation and sustain the changes (McIntosh, 2010).

The risk assessment screening process (Andersen et al, 1982) in A&E allowed elements of the pressure ulcer prevention pathway to be implemented earlier into a patient’s stay; for example, allowing earlier allocation of a dynamic mattress. This also ensured that the correct patients received the care outlined in the pressure ulcer prevention and management care plan as early into their admission as possible.

Results against outcome measures

A weekly audit took place across all inpatient areas in the hospital to measure compliance with the outcome measures (*Table 2*). The seven key areas monitored demonstrated improvements across the trust so that, by the end of the 12-week programme, an average of 93% of adherence to all seven core measures was achieved.

Pressure ulcer incidence, prevalence and costs
Incidence

A large reduction in pressure ulcer incidence was reported during the Rapid Spread programme, which started in April 2014. A clear decrease in pressure ulcer incidence from April 2014 is outlined in *Figure 4*. From April 2014 to July 2014, there was a 90% reduction in category 2 pressure ulcers. Furthermore, zero Category 3 and 4 pressure ulcers were recorded from April 2014 until July 2014. From July 2013 until July 2014, there was a total 97% reduction in hospital-acquired pressure ulcer incidence.

Prevalence

Alongside pressure ulcer incidence, pressure ulcer point prevalence measured through the Safety Thermometer data also fell during the project period, with an average of 0.75 pressure ulcers reported per month during the Rapid Spread project, compared with an average of 3.2 pressure ulcers for the period of July 2013 until March 2014 (*Figure 5*).

Objective	Week 1	Week 5	Week 10	Week 12
1. Initial risk assessment (Andersen) completion in A&E	62%	80%	80%	91%
2. Initial full risk assessment (modified Braden) completion	95%	94%	97%	97%
3. Full risk assessment (modified Braden) reassessment	92%	95%	96%	96%
4. Pressure ulcer care plan	96%	89%	84%	89%
5. Comfort (intentional) rounding	85%	85%	88%	91%
6. Competency	89%	96%	96%	97%
7. Dynamic mattress issued to a high-risk patient	88%	96%	96%	90%
Average	87%	91%	91%	93%

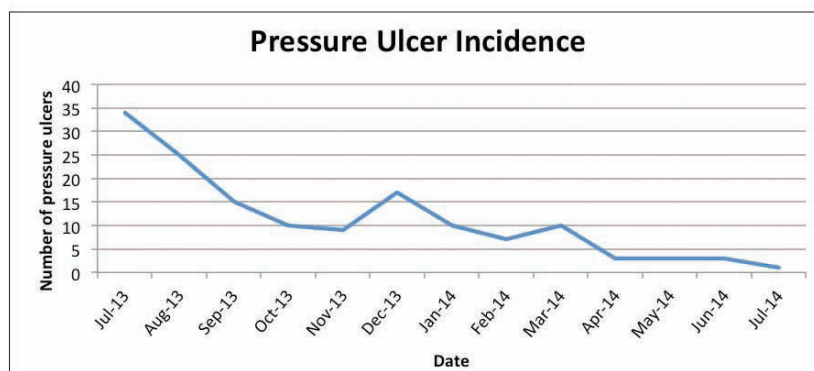


Figure 4: Fall in pressure ulcer incidence.

Costs

The costs of pressure ulcers were estimated using the Department of Health (2011) pressure ulcer productivity calculator. In July 2013 the estimated cost of pressure ulcers was £246,000. This reduced to £7,000 in July 2014. Although the tool does not use 2014 prices, this data clearly demonstrates the potential amounts saved through reducing pressure ulcer prevalence.

Sustaining practice

Sustaining change was an imperative component of the Rapid Spread process. To support sustainability, the project manager was commissioned for 6 months opposed to the 12 weeks of the initial project length. This ensured that teams across the organisation continued to engage with the project and prioritise pressure ulcer prevention. The tissue viability team used the Millennium computer system to track pressure ulcer incidence in real time, which enabled them to rapidly share any concerns about potential hospital-acquired pressure ulcers. Alongside this process, the project manager monitored the outcome measures across the entire trust and supported areas that were not meeting the standard.

DISCUSSION

From the tissue viability team’s perspective, the Rapid Spread process engaged the entire organisation in a way that a small team cannot do alone. The Rapid Spread four-stage process ensured that a systematic and proven approach was taken to further reduce pressure ulcers. The project manager was integral to the success of the project, and investment in this post was important. The support of the trust board and the director of nursing and deputy director of nursing was integral to support such large-scale change across the organisation. The engagement of the delivery team led to the success of the project, with all the key stakeholders with all the relevant knowledge in one place at one time, focusing on improving practice. Overall the Rapid Spread process worked well to make large-scale changes over a short period of time.

Using a pressure ulcer pathway as the starting point for planning improvements enabled the

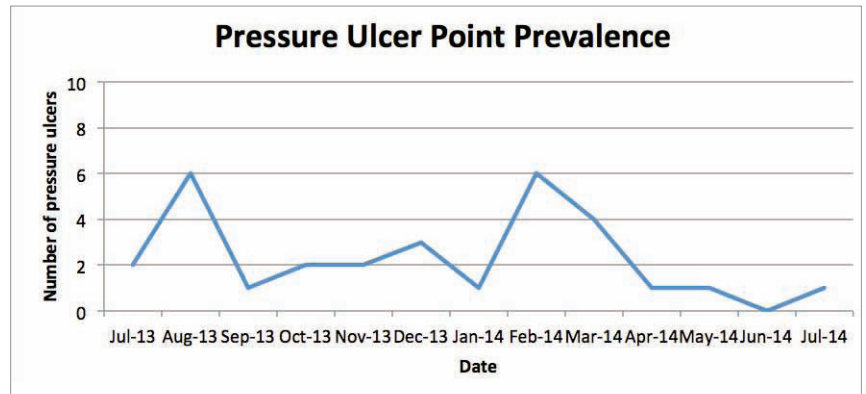


Figure 5: Fall in pressure ulcer point prevalence.

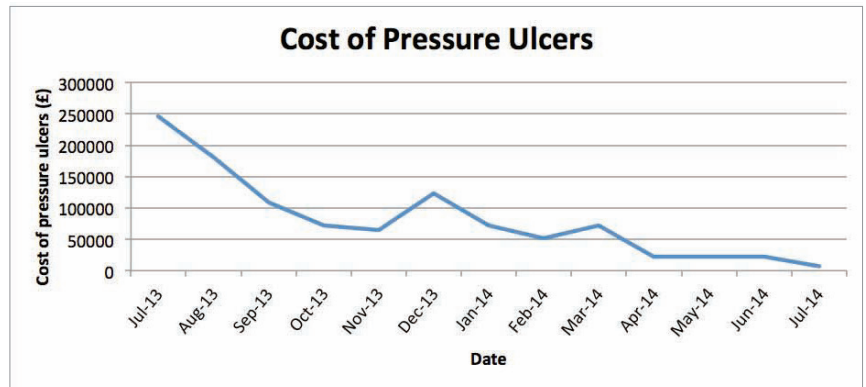


Figure 6: Reduction in costs based on Department of Health (2011) Pressure Ulcer Productivity Calculator.

delivery team to focus on areas of the ideal pathway that were not consistently completed. Amending the pressure ulcer risk assessment tool has avoided confusion around the pathway for those patients formerly deemed at medium risk. Alongside this, screening for pressure ulcer risk in A&E has enabled early modification of risk factors; for example, getting the right equipment to the patient quicker. The new documents that were introduced have avoided duplication and ensured that patients consistently follow evidence-based guidance about pressure ulcer prevention. Staff training around these aspects have ensured that practice is well-informed, evidence-based and documentation completion is timely and accurate.

For an organisation already performing well both regionally and nationally to have made such reductions in both incidence and prevalence demonstrates the level of success that can be achieved with investment in the Rapid Spread

Box 3: What worked well with Rapid Spread.

- Large-scale changes were made quickly
- The whole organisation was focused on pressure ulcer prevention
- Staff re-engaged with their passion for protecting patients by preventing pressure ulcers.
- A project lead was able to monitor improvements to practice and support areas that were not meeting the required targets

programme. Although the cost analysis in *Figure 6* outlines large financial savings, these savings must be balanced by the costs of the programme. The main costs involved were accrued in appointing a project manager and increased provision of dynamic mattresses. However, the potential cost savings achieved by this initiative have far outweighed the investment in the programme and provide an opportunity for the trust to further reinvest in improving quality and safety. Now that this methodology has proven a success, it can be used in the organisation to improve quality and patient experiences in other areas such as falls and nutrition.

CONCLUSION

The Rapid Spread methodology enabled large-scale cultural change over just 12 weeks (*Box 3*). Trust-wide training and the use of a pressure ulcer competency document increased the knowledge base of staff. This training was successful as it was adapted to suit individual ward and staff needs. All healthcare staff became competent in pressure ulcer prevention methods according to the trust standard. This very quickly resulted in decreasing numbers of patients with hospital-acquired pressure ulcers. This has increased the quality of care in the organisation and will potentially increase health-related quality of life for a number of patients who will not have developed pressure ulcers.

The Rapid Spread programme decreased both pressure ulcer prevalence and incidence, and enabled large estimated cost savings to be achieved. Such changes could not have been achieved without several elements coming together. These elements comprised:

- ▶▶ A committed delivery team, each member of which

was talented in their own field and determined to make a difference to improve patient care

- ▶▶ Leadership and support from the director of nursing and team
- ▶▶ The trust board
- ▶▶ A strong project manager
- ▶▶ Commitment from all members of staff.

In the future the trust will continue to undertake initiatives to further reduce pressure ulcer incidence and prevalence. Sustainability will continue to be monitored through regular analysis of relevant data. The Rapid Spread process is transferable to other areas such as falls and nutrition and there may be opportunities to apply the same principles to make improvements in other areas.

The authors recommend Rapid Spread as a methodology that is particularly suited to making large-scale organisational changes and have found it to be effective in changing organisational culture regarding pressure ulcers. WUK

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