

# PRESSURE REDISTRIBUTING SURFACES IN ACUTE CARE: A REVIEW OF THE SERVICE DELIVERY MODEL.

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## Introduction

Facing the challenge of eliminating all category 2-4 pressure ulcers in NHS care (new wounds occurring under clinical supervision) against the backdrop of budget restrictions and demographic changes leading to increased patient acuity is proving to be a challenge. A pressure ulcer is an area of damage to the skin and underlying tissue that is caused by unrelieved pressure, friction and or shear forces and a severe ulcer may become infected and can be life threatening. The NHS Safety Thermometer (April-June 2012) identified 6.6% of patients suffered a pressure ulcer, the biggest single cause of harm to patients in NHS care. Posnett and Franks (2008) state that 2-3% of the healthcare budget in the UK is spent treating wounds and indeed pressure ulcers are the largest single component of this cost. The NHS spend in 2012 on rental and purchase of pressure redistributing mattresses and beds alone was in excess of an estimated £100m (Clancy 2013), with surprisingly little clinical evidence to support efficacy.

The NHS faces many challenges. Economic pressures are unprecedented with a ceaseless drive for improved quality and productivity in the system. This project outlines a review of the current provision of pressure redistributing surfaces for pressure ulcer prevention and management in an acute NHS organisation and is driven by the QIPP agenda.

## Method

The Midlands and East Strategic Health authority (SHA) 'ambition programme' in 2012/13 set an unprecedented target to eliminate all avoidable health care acquired category 2-4 pressure ulcers. The University Hospital of North Staffordshire participated in a collaborative programme facilitated by the SHA to test and share strategic outcomes and disseminate best practice. A pilot area was identified to develop and test a standard SSKIN bundle document, targeted education package and an alternative approach to the provision of pressure redistributing surfaces.

The pilot area was a 31 bed vascular surgical unit, identified as an area where patients were at escalated risk of developing hospital acquired pressure ulcers. A particular concern in this group of patients was the proportion of those declining alternating pressure mattress systems particularly amongst amputees. Patients described discomfort and loss of independent mobility on a moving surface possibly associated with altered core strength and range of movement. Where patients agreed to the use of alternating pressure mattress systems a previously unidentified delay was highlighted. When mattress replacement systems were delivered to the ward, another bed frame may be required on which to inflate the new mattress. It is often very difficult to locate extra bed frames, and audits identified that this can indeed take between 1 and 12 hours. Subsequent transfer of patients with compromised skin from one bed frame to another can also increase risk of shear and friction. In light of these identified risks all of the standard foam mattresses were replaced with a hybrid foam/alternating pressure mattress system (Dyna-FormMercury Advance, Direct Healthcare). This allowed immediate access to an alternating pressure system with no requirement to transfer bed frames. Incidents of hospital acquired pressure ulcers were monitored prior to and during the project and patient feedback was collected with reference to comfort.

## Results

The pilot project concluded that overall the incidence of hospital acquired pressure injuries in this patient population was slightly lower during the pilot. Patient comfort and therefore engagement with use of pressure redistributing devices increased significantly and delay in patients receiving access to this therapy improved by 100%. All departments conduct a monthly infection control audit of foam mattresses and the cost pressure for replacement has escalated over the past 5 years in line with increased use of alternating pressure systems requiring foam mattresses to be removed from beds frequently, so increasing damage to covers and resulting contamination of the foam core. None of the mattresses failed the monthly infection control audit, and therefore no cost was incurred as a result of contamination and replacement during the 6 months project.

## Conclusion

Considering the successful outcome of the pilot project the trust will review the model for supply of pressure redistributing surfaces across the 1200 in-patient bed base, taking account of projected improvement to both quality and cost in terms of patient satisfaction, pressure ulcer incidents, infection control, and the on-going cost pressure of the foam mattress replacement programme and purchase/maintenance of alternating pressure mattress replacement systems. The pilot project clearly demonstrated an effective alternative model to the current system, and is currently being replicated in critical care and also utilizing the trolley mattress in emergency care.

## References

Clancy J M (2013) Pressure redistribution devices: What works, at what cost and what's next? Journal of Tissue Viability 22, 57-62. Posnett, J and Franks P, 2008, The burden of chronic wounds in the UK. Nursing Times 104: 3, 44-45.



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