

## Adopting a new mattress replacement system as part of a comprehensive care-bundle aimed at reducing pressure ulcer incidence across the Trust

Hull and East Yorkshire Hospitals   
NHS Trust

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### Introduction and Aims

An effective support surface (mattress and / or cushion) is required to help reduce the risk of pressure associated tissue damage in at risk individuals. Providing the right support surface, at the right time and for the right patient is an essential aspect of patient care and when done correctly this can have a significant impact in terms of positive patient outcomes.

In 2009, to supplement the diminishing number of Trust owned dynamic mattress replacement systems, the Trust was renting a range of dynamic (one-in-two cell cycle) mattress replacement systems, dynamic (one-in-two cell cycle) mattress overlays and low air loss systems. The imminent replacement of Trust owned pressure area care equipment in association with the cost of renting the numerous support surfaces were key issues that required addressing by Trust management and the tissue viability team.

The aim of this Trust wide clinical project was to identify, evaluate and adopt a new mattress replacement system for patients at an elevated risk of pressure ulceration and to implement this change as part of a comprehensive care-bundle which aimed to improve patient safety, the patient experience, clinical outcomes and the staff experience. The ultimate goal was to reduce PU incidence across the Trust.

### Methods

To reduce hospital acquired pressure ulcers to their lowest possible level the tissue viability team implemented a specialist care-bundle across both hospital sites (totalling 1550 beds and 3,300 clinical staff). The SSKIN care-bundle consisted of;

- Surface selection
- Skin inspection
- Keep moving
- Incontinence
- Nutrition

With regard to 'surface selection', the Trust initiated a formal evaluation process which involved a multidisciplinary Trust team led by tissue viability with support from the Chief Nurse.

Support surface evaluation took place across both surgical and medical clinical areas. Tissue viability link nurses led the evaluation at ward level which included clinical staff, moving and handling and infection prevention and control.

Submissions were scored and ranked by procurement. Clinical product evaluations were assessed by tissue viability, medical equipment library and the Chief Nurse.



FIGURE 1.  
QUATTRO® PLUS  
active mattress  
replacement  
system

## Results

As a result of the formal evaluation process the Trust now uses the QUATTRO® PLUS 1-in-4 cell cycle, active support surface from Talley (see Figure 1) for all patients meeting the following criteria;

**TREATMENT:** Any patient presenting with skin damage and / or a pressure ulcer

**PREVENTION:** Any patient at high risk of pressure ulcers presenting with multiple co-morbidities and / or additional pressure ulcer risk factors.

Staff feedback from the formal clinical evaluation on the new mattress replacement system identified the following benefits over the existing (1-in-2 cell cycle) support surfaces;

- Significant improvement in patient comfort
- Ease of use (requires less user input for correct system set-up and operation)
- Improved staff concordance with allocation and use of dynamic mattresses as a result of the system being very user friendly

- The medical equipment library technicians report that the new mattress replacement is easy to decontaminate, service and maintain

The Trust IPC team stated “The mattresses can be machine cleaned; this ensures a consistent and high standard of decontamination, thus reducing the risk of hospital acquired infections for our patients. In addition, the quality of the mattress covers ensures that the interior of the mattresses remain clean which gives reassurance to both patients and staff that the mattress will not be a source of infection.”

The new mattress replacement made an important contribution to the SSKIN care-bundle. Since implementing the care-bundle across the Trust, hospital acquired pressure ulcer incidence [defined as Category/Stage 2, 3, 4, suspected deep tissue injury (SDTI) or un-stageable] has reduced by over 80%, from 100 to 20 per month (see Figure 2).

The switch from renting a range of mattresses to purchasing a single mattress system has resulted in significant cost savings for the Trust.

**FIGURE 2.** Reduction in monthly, hospital acquired pressure ulcer incidence post care-bundle adoption



## Discussion / Conclusion

The correct use of an appropriate support surface can play an important role in helping to reduce pressure ulcer incidence.

The 1-in-4 cell cycle support surface adopted into clinical practice by the Trust offers excellent levels of clinical and cost effectiveness. It is straightforward to set up and use and it is very well liked by both staff and patients. When included as part of a comprehensive pressure ulcer care-bundle this support surface can help to play a major role in significantly reducing Trust wide pressure ulcer incidence.



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