Poster Presentation: FUSION™ System

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Understanding the use of hybrid mattress systems in an acute care setting: eliminating delays in support surface provision, improving ease of use and maintaining skin integrity

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Introduction and Treatment Aim

During a hospital stay, a patient can be at increased risk of developing a pressure ulcer due to a reduction in mobility as a result of acute illness or surgical intervention. A reduction in mobility, alongside other risk factors such as poor nutrition, alteration in skin status, skin moisture and impaired sensory perception are all acknowledged risks of pressure ulcer development [1].

Pressure ulcers are largely preventable. Having access to an appropriate support surface as part of the patient's care package, can help reduce the risk of pressure ulcer development [2].

A patient's pressure ulcer risk status can change rapidly due to their clinical presentation, and having the ability to respond quickly and appropriately to their changing clinical need is paramount in order to provide high standards of care to patients.

Hybrid mattress systems can act as either a static, high specification foam mattress or an alternating air mattress. They therefore have the potential to decrease the waiting time for patients requiring an alternating surface whilst reducing labour intensive tasks and being time efficient for nursing and hospital staff.

The aims of this project were to evaluate the clinical effectiveness of a new hybrid pressure relieving mattress system (the Talley FUSION, see Figure 1) whilst considering patient and user experiences and its use in 'stepping up' and 'stepping down' patients dependent on their clinical need.

Methods

In addition to the high specification foam or alternating air mattresses currently in use, five new hybrid mattress replacement systems were installed into an acute surgical care unit.

The Braden risk assessment tool is currently used to determine patients pressure ulcer risk status. This, in addition to clinical judgment determines if a patient requires an alternating support surface.

The new hybrid mattress system is primarily used in static mode (i.e. as a high specification foam mattress). However, the system can be easily switched into an active mode to provide an alternating air support surface where patients meet any of the following criteria;

- Patients at high risk of pressure ulceration (as determined by Braden score and clinical judgment)

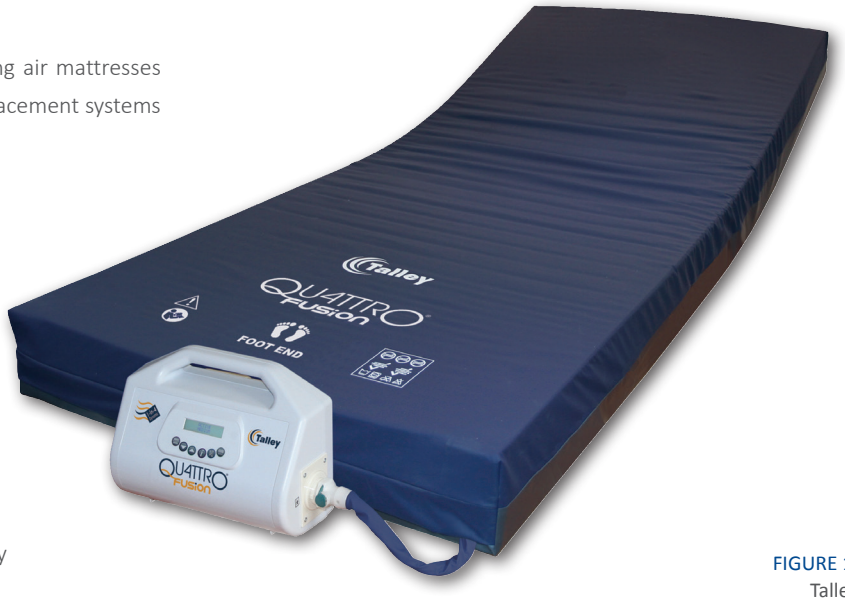

FIGURE 1. Talley FUSION™ mattress system

- Post-operative patients where immobility is a determined risk factor
- Patients with existing pressure ulceration

The Tissue Viability Specialist Nurse led the evaluation at ward level alongside the clinical team including ward managers, tissue viability link nurses, staff nurses and healthcare assistants.

Results

Eleven patients (nine male; two female) with a mean age of 73 years (range 49 years to 88 years) were classified as 'at risk' of pressure ulceration and have been nursed on the Talley FUSION mattress. Patients were nursed on the hybrid system for an average of 11 days (range 1 day to 32 days) and the system has been used in both its static and active (dynamic) mode.

All patients maintained their skin integrity whilst on the new hybrid mattress system.

Patients with capacity who had been nursed on the hybrid mattress were given satisfaction questionnaires to complete. Patients found the mattress both quiet and comfortable. In addition patients also felt safe, reported good quality sleep and would be happy to use the mattress again. The following is a summary of the patient views reported in this evaluation;

- 10 out of 11 patients found the mattress 'comfortable' or 'very comfortable'
- All patients reported their stability on the mattress as either 'good' or 'very good'
- 10 out of 11 patients had either 'good' or 'very good' sleep quality on the FUSION mattress
- None of the patients in the evaluation reported any disturbance as a result of noise from the mattress system

Nine clinical staff documented their experiences of nursing patients on the new hybrid system. Staff reported the FUSION as being clinically effective at maintaining patients' skin integrity, easy to set up and use, quiet in operation and comfortable for the patient.

Staff also found the ability to switch from a static to an active (dynamic) support surface very helpful as it eliminated the usual delays associated with requesting and installing an active mattress replacement system.

Discussion

Based on the results of the eleven patients nursed on this system, the FUSION mattress is clinically effective in preventing pressure ulceration in at risk individuals. The system has also been well received by both patients and staff.

Findings demonstrate positive clinical outcomes whilst helping to reduce the physical workload on nursing staff by eliminating the need to change mattresses in line with patients' changing clinical needs. This results in increasing time to dedicate to patient care.

Conclusion

The Talley FUSION mattress can provide patients with immediate access to an alternating support surface from a static foam mattress. This allows the practitioner to select the most appropriate support surface for the patient and to step patients up or down in-line with their clinical needs. In addition this can be achieved without any patient disruption and without any time delay or involving other departments in this process.

References

1. Guy, H. Recognising pressure ulcer risk factors. Wound Essentials. 2012;7(1): 49-52.

2. Dealey C Brindle CT, Black J, Alves P, Santamaria N, Call E, Clark M. Challenges in pressure ulcer prevention. Int Wound J. 2015 Jun;12(3):309-12.

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