

A formal evaluation using an active therapy mattress system for pressure ulcer prevention in an acute care setting



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Introduction

When pressure ulcers occur in healthcare settings they are typically seen as avoidable patient 'harm' events. Many healthcare providers invest heavily in products, procedures and processes in order to reduce these avoidable harms down to zero within their institutions.

A key step in pressure ulcer prevention is managing the patient's pressure areas effectively. In modern clinical practice this involves selecting an appropriate support surface and combining this with a patient-specific repositioning schedule. The aim is to redistribute pressure away from vulnerable tissues frequently enough to permit tissue reperfusion and thereby eliminate these largely avoidable wounds from occurring.

Whilst there are many different types of support surfaces available on the market the EPUAP recommend active therapy surfaces for patients who are at risk of pressure ulcers and cannot be regularly repositioned.¹

In addition to the mattresses ability to offload pressure it is important to select products that are well liked by staff and patients as this can have a significant impact on how staff use the product and how concordant patients are with their treatment.

Aims

The primary aim for this prospective case series was to document the use of an active therapy support surface with regard to pressure ulcer prevention in patients at an elevated risk of pressure ulcers.

Secondary objectives were to report both staff and patient feedback on the dynamic mattress replacement system.

Method

This work took place across medical and surgical wards at Tallaght Hospital, Dublin, Ireland and the mattress replacement system used in this evaluation was the QUATTRO® Plus from Talley which operates on a 16 minute, 1-in-4 cell cycle (Figure 1).

Patients were invited to take part in the evaluation providing that they met the inclusion/exclusion criteria set out in the case series protocol and in the opinion of the clinician responsible for their care they required use of the support surface as part of their routine treatment.

Patient age, sex, pressure ulcer risk level, nutritional status, mobility and existing pressure damage was documented and monitored. Any incidence of new pressure ulcers was also reported during the evaluation.

After initial assessment, patient progress was monitored weekly for a maximum of 6 weeks or until they were discharged from hospital. The final assessment included patients' views/feedback on the product and a separate form recording nursing views on the product was also completed by the nurses caring for the patient.

Results

A total of fifteen patients (8 males; 7 females) were included in the evaluation with an average age of 81 years (range 61 – 96 years).

On admission to the study Waterlow risk assessment scores ranged from 11 to 28 (mean = 22; mode = 20) and nursing opinion identified 12 patients at 'high' risk and 3 at 'very high' risk of pressure ulceration. Patient mobility levels are reported in Figure 2.



FIGURE 1.
QUATTRO® Plus
mattress system

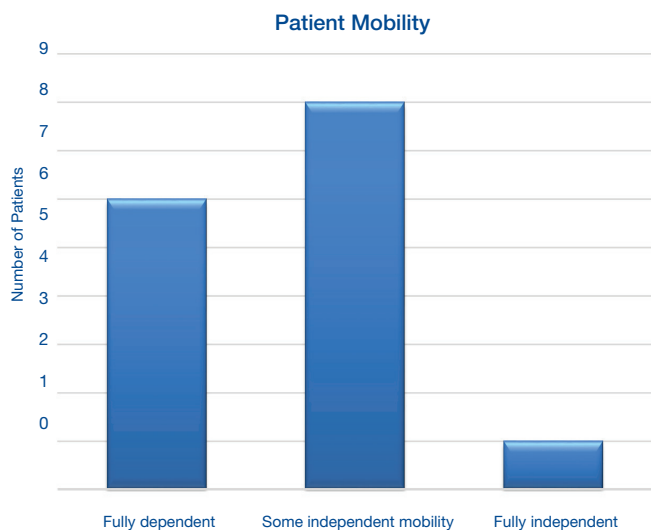


FIGURE 2. Mobility of patients when in bed. NB. All 14 dependent and semi-dependent patients were repositioned in line with their clinical needs and intervals between repositioning ranged from 2 to 4 hours.

On admission to the study five patients presented with superficial pressure ulcers. One patient had two pressure ulcers so a total of six ulcers were included in the case series Category I (n=3), Category II (n=3).

14/15 patients completed the 6 week evaluation with the average length of stay on the mattress being 41 days (range 21 – 44 days).

All fifteen patients in the case series remained free from any new pressure ulcers during the evaluation and five of the six superficial wounds healed during the study.

17 staff feedback forms were completed with;

- 88% stating the mattress was ‘effective / very-effective’ at preventing pressure ulcers.
- 94% stating that reliability was ‘good / very-good’ and the mattress was ‘easy / very-easy’ to use.
- All staff rated the mattress as ‘good / excellent’ and would happily use it again.

12 patient feedback forms were completed with;

- 83% reporting the QUATTRO Plus as ‘comfortable / very comfortable’ and happy to use the mattress again.
- 92% of patients felt stable and secure when transferring on / off the mattress.
- 75% of patients rated the amount and quality of sleep as ‘good / very good’.

Discussion

It is evident from the data reported in the results that, for this specific patient cohort, the QUATTRO Plus, when used as part of a comprehensive care-bundle, can help patients at an elevated risk of pressure ulcers remain free from pressure related tissue injury. Furthermore five of the six superficial ulcers present on admission resolved during the evaluation period.

The QUATTRO Plus performed well clinically and is well liked by both patients and staff who find it easy to use (once in position), reliable and comfortable for their patients. Similarly the patients themselves report excellent levels of comfort and sleep when using the QUATTRO system.

Conclusion

With the majority of pressure ulcers being seen as ‘avoidable harm’ events and the cost of pressure ulcer healing a significant drain on already over-stretched healthcare budgets, it is imperative that providers seek out the most effective interventions to help reduce the risk of these wounds occurring and to expedite the healing of these wounds where they are present.

It is important to understand that any medical device is only as good as the people who use it, however the fifteen patients who have completed this prospective case series have demonstrated that when the QUATTRO Plus is used correctly as part of a pressure ulcer care-bundle, it can play an integral role in the prevention and management of pressure ulcers in a high / very high risk patient population.

References

1. National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel. Prevention and treatment of pressure ulcers: a clinical practice guideline. 2009. NPUAP Washington DC. www.epuap.org



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