

Clinical experiences of using the QUATTRO® PLUS mattress replacement system in a busy NHS Foundation Trust over a six year period

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Background / Improvement issue and context

The tissue viability team at Colchester Hospital University NHS Foundation Trust are responsible for the pressure area care needs of 630 patients over two sites.

Effective prevention and treatment of pressure ulcers is multifactorial and includes, but is not limited to; effective risk assessment, nutrition, continence management, skin inspection etc. Underpinning all of these elements is the identification and provision of an appropriate patient support surface (mattress and / or cushion) which can effectively manage the pressure (\pm shear) over the patient's bony prominences.

In patients identified as being at an elevated risk of pressure damage the effective reduction and / or redistribution of pressure over the patient's bony prominences reduces the risk of pressure related soft tissue injury and thereby reduces the risk of pressure ulceration.

In 2006 / 2007 Colchester Hospital University NHS Foundation Trust used a range of mattresses (both dynamic mattress replacement systems and dynamic overlays) for patients at an elevated risk of pressure ulceration. The systems in use came from several different manufacturers and this variation in the available support surfaces led to two key complications for staff;

- 1) When to provide patients with an overlay vs. a replacement mattress and vice-versa
- 2) Optimal product set up for patients - product set up varied between systems from different manufacturers and there was an element of inconsistency in how staff set up the various different dynamic support surfaces. This sometimes led to patients not receiving optimal pressure relief due to user error during set up.

Aim and objectives

There was a clear need for the Trust to simplify the allocation of dynamic support surfaces for patients at risk of pressure ulceration. In addition the Trust wanted to adopt systems that were simple and intuitive to set up and operate.

The Trust aim was to identify clinically effective dynamic support surfaces from a single manufacturer and adopt them into clinical use. This would simplify the decision making process for staff when providing patients with an appropriate support surface to meet their clinical needs. In addition a mattress which was simple and intuitive to set up and operate has less opportunity for user error and would provide patients with the optimal combination of comfort and pressure relief.

Process

In 2007 / 2008 the QUATTRO® PLUS and QUATTRO® ACUTE systems from Talley were chosen by the Trust after a tender process which was designed to rationalise the existing mixture of overlays and replacements from numerous different manufacturers and to consolidate these into a choice of two different support surfaces from a sole supplier.

Colchester Hospital University NHS Foundation Trust opted for a fully managed service from Talley with a total number of dynamic mattresses in excess of 200. The majority (60%) of the dynamic support surfaces provided by Talley are the QUATTRO® PLUS system (Figure 1). The remaining 40% are QUATTRO® ACUTE systems.

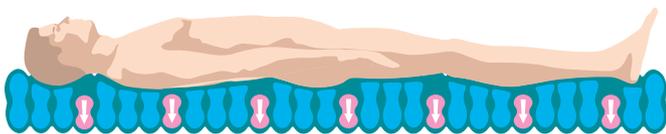


Figure 1
QUATTRO® PLUS
dynamic mattress
replacement
system

The QUATTRO® PLUS system offers a 15 minute, one-in-four cell cycle where during the active part of the cycle every 4th cell will deflate to relieve pressure at the support surface / patient interface (see Figure 2). Cells in the deflation phase remain deflated for approximately 3 minutes prior to re-inflation. At this point the adjacent cell (in the direction of the head end of the mattress) will deflate for 3 minutes etc., etc. Adopting a one-in-four cell cycle strikes a good balance between patient support and comfort and clinically effective pressure relief.

Figure 2

One-in-four cell cycle of the QUATTRO® PLUS dynamic mattress replacement system



Results / Evidence of improvement

The Talley QUATTRO® PLUS has now been in use at Colchester Hospital University NHS Foundation Trust for over 6 years where it continues to do what the tissue viability team set out to do back in 2007 – i.e. maintain or improve clinical outcomes whilst simplifying product selection, provision and use for all clinical and non-clinical staff involved in the appropriate allocation of pressure relieving support surfaces for patients at risk of tissue damage.

The QUATTRO® PLUS system is employed primarily for pressure ulcer prevention within the Trust where it is provided to patients which are deemed to be at medium to high risk of developing a pressure ulcer (according to the Braden risk assessment score AND the clinical judgement of the nursing staff).

The Trust records all stages of pressure ulcer from Category / Stage I to Category / Stage IV and within the past three years (2011 – 2014) there has been a 61.54% reduction in the incidence of hospital acquired pressure ulcers. In addition, there have been no Category / Stage IV hospital acquired pressure ulcers reported within the Trust since July 2012. For the past 2 years (April 2012 to March 2014) all fractured neck of femur patients in Trauma and Orthopaedics have been placed immediately onto the QUATTRO® PLUS system. During this time tissue viability have seen a significant (21.9%) reduction in the incidence of pressure ulcers within this specific high risk patient cohort (this is especially true of Category / Stage III pressure ulcers).

Feedback on the QUATTRO® PLUS is very positive with staff finding the system very easy to set up and use correctly. This simplicity of operation and ease of use has resulted in less user error during product set up and operation which has a follow-on benefit of improved patient comfort.

One significant additional benefit that has been noted by the tissue viability team is the excellent level of product reliability for the QUATTRO® PLUS. The QUATTRO® PLUS system gets heavy use within the Trust yet it continues to provide consistent clinical performance and reliability which in turn leads to staff having very high levels of confidence in the product.

Discussion / Conclusion

Effective pressure ulcer prevention and management is multifactorial and requires a holistic approach to patient care. No single factor is responsible for a reduction in pressure ulcer incidence, however providing patients at risk of pressure damage with a clinically effective support surface is a significant consideration when looking to affect a reduction in incidence of these often preventable wounds.

Adopting the QUATTRO® PLUS mattress into the Trust has helped simplify the choice of support surface for nursing staff. In addition the system is easy to set up and use and this has minimised the opportunity for user error.

Colchester Hospital University NHS Foundation Trust now have over six years of experience of using the QUATTRO® PLUS system for pressure ulcer prevention. This system effortlessly combines clinical performance with patient comfort, product reliability, ease of use and staff acceptance.

When used as an integral part of a holistic care package for patients at risk of pressure ulceration the QUATTRO® PLUS can help reduce the incidence of pressure ulcers in at risk individuals.



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