

Evaluation and adoption of the QUATTRO® PLUS into an acute care setting for the prevention and treatment of pressure ulcers

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Background / Improvement issue and context

At the start of 2013 the tissue viability team at West Suffolk Hospital NHS Foundation Trust were using a combination of full mattress replacements and mattress overlays from a range of manufacturers to provide patients with appropriate pressure area care. The dynamic support surfaces in use were either alternating (one-in-two cell cycle) products or they operated on a one-in-three cell cycle.

All of the dynamic systems within the Trust had been in use for several years and were showing clear signs of wear and tear. Associated with this were the ongoing issues of system reliability, breakdowns, repairs and replacement with spare parts etc. which were becoming increasingly hard to source. Therefore maintaining a full complement of support surfaces in working order was increasingly difficult for the Trust EBME department.

As a result of the ongoing breakdowns and repairs it was not uncommon for at least some of the Trust owned dynamic mattress fleet to be unavailable for patients. This depletion in available dynamic support surface stock put additional pressure on nursing staff who were regularly caring for an elderly, high risk patient population who often required a suitable dynamic support surface to help manage their pressure area care needs during part, or all, of their stay.

To standardise the pressure area care support surfaces available to nursing staff and to overcome the reliability issues and systems being unavailable for use the tissue viability team initiated a replacement programme for dynamic support surfaces.

Aim and objectives

The aim of the Trust was two-fold;

- 1) To simplify the allocation of support surfaces to patients at risk of pressure damage by reducing the variety of products available to staff
- 2) To replace the aged, worn and unreliable existing support surfaces with new, clinically effective, easy to use, reliable support surfaces

Process

After an extensive evaluation process October 2013 saw West Suffolk Hospital NHS Foundation Trust purchase 20 QUATTRO® PLUS dynamic mattress replacement systems (see Figure 1) for use across the 400 bedded hospital. In addition a smaller number (n=9) of QUATTRO® ACUTE systems from Talley were also purchased with the majority of these being used in ITU.

The QUATTRO® PLUS system has a 15 minute cycle time and works on a 'one-in-four cell cycle' where every 4th cell deflates to relieve pressure between the patient and the mattress surface. Over the course of the 15 minute cycle the entire patient / support surface contact area will receive approximately 3 minutes of pressure relief and from a clinical perspective this can help reduce

the frequency of manual turns and patient repositioning which can have benefits to both patients (fewer interruptions, less disturbance, improved comfort etc.) and staff (reduced need for moving and handling input).



Figure 1
QUATTRO® PLUS
dynamic mattress
replacement
system

Important additional features of the QUATTRO® PLUS include the maximum inflation mode and the ability to attach a dynamic cushion to the mattress.

The maximum inflation mode aids transfers from the bed to a chair or other equipment by providing a firm (more supportive) surface for patients to mobilise against. This feature is often used and well-liked

by physiotherapists and occupational therapists who help mobilise and rehabilitate patients during their stay.

The ability to run a dynamic cushion from the head end of the mattress is well liked as it eliminates the need to move the electrical power unit in order to operate the cushion. This is often a drawback with some systems from alternative manufacturers.

Since October 2013 the QUATTRO® PLUS system has been used extensively throughout the Trust for both pressure ulcer prevention and treatment of patients presenting with Category / Stage II – IV pressure ulcers (EPUAP pressure ulcer categorisation).

For a patient to receive a QUATTRO® PLUS they must meet one or more of the following criteria;

- Assessed to be at high to very high risk of pressure ulceration (based on assessment by a qualified nurse using an adapted Waterlow risk assessment score)
- Immobile when in bed and unable to turn or reposition themselves
- Be in a very agitated state of mind
- Present with existing pressure damage (Category / Stage II – IV).

Results / Evidence of improvement

The Talley QUATTRO® PLUS has now been in use at West Suffolk Hospital NHS Foundation Trust for approximately 8 months where it has been very well received by clinical staff, EBME staff and patients.

Clinical staff love the QUATTRO® PLUS as it provides excellent levels of pressure relief for patients and it is a simple matter of ‘plugging it in and pushing a button’ in order to get the system going for the patients. This simplicity of product operation makes the product extremely easy to use and minimises any opportunity for user error, therefore if the system is operating correctly it has the greatest chance of delivering optimal pressure relief to the patients.

EBME staff have reported very positive feedback on the QUATTRO® PLUS in terms of product reliability and maintenance. The systems are very low maintenance and the effort that EBME used to invest in maintaining an ageing fleet of various dynamic support surfaces can now be spent looking after and maintaining other medical devices within the Trust.

Some patients historically found the previous fleet of alternating pressure air mattresses uncomfortable and in some cases were unable to tolerate the systems. Since the QUATTRO® PLUS systems have been in use within the Trust patients report good levels of comfort.

Since coming into service in October 2013 there have been no instances of hospital acquired pressure ulcers occurring in any patients while they have been nursed on the QUATTRO® PLUS system.

The combination of clinical performance, ease of use, product reliability and positive feedback from patients, clinical and EBME staff have resulted in a further 40 QUATTRO® PLUS systems being ordered in May 2014.

Discussion / Conclusion

The integration of the Talley QUATTRO® PLUS system into clinical use within West Suffolk Hospital NHS Foundation Trust has replaced the majority of the aged, worn and unreliable existing support surfaces with new, clinically effective, easy to use, reliable support surfaces and the Trust plans to continue this replacement programme over the next 2-5 years. In addition it has helped to simplify the allocation of support surfaces to patients at risk of pressure damage by reducing the variety of products available to staff.

It is testament to product quality, reliability and performance that both clinical and non-clinical (EBME) staff report positive views when asked about the QUATTRO® PLUS and its importance to the Trust in terms of pressure ulcer prevention and treatment is underlined by the recent order to triple the number of QUATTRO® PLUS systems in use from 20 to 60 with immediate effect.

Successful pressure ulcer prevention and treatment relies upon many factors with one essential element being the provision of a clinically effective support surface. To optimise the performance of any support surface it should be reliable, intuitive, easy to use and well liked and understood by the staff responsible for using it. The QUATTRO® PLUS system does everything it is required to do from a clinical perspective and it continues to play an essential role in the pressure area care needs of all high and very high risk patients who are cared for within the Trust.



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