

DYNA-FORM® STATIC AIR HZ MATTRESS vs DYNAMIC ALTERNATING CELL MATTRESS, REVIEWING CLINICAL AND COST EFFECTIVENESS ALONGSIDE PATIENT EXPERIENCE

Joanne Guthrie, Tissue Viability Nurse, Greater Glasgow and Clyde. e-mail: Joanne.guthrie2@ggc.scot.nhs.uk

Introduction

Hybrid pressure relieving mattresses are now being used more frequently to manage patients assessed to be at high risk of pressure ulcer development. A review was carried out on a patient in the community setting, who over a four year period had tried five different mattresses (three of which were dynamic alternating cell mattresses) and had not been satisfied with any. **Could a hybrid mattress provide appropriate pressure relief alongside a more positive patient experience?**

Method

An audit of the previous and current equipment supplied was reviewed, along with a discussion with the patient at which time a questionnaire was completed to determine if the equipment supplied was appropriate for the level of risk and the required level of patient experience/satisfaction.

Discussion

A review was undertaken of a 67 year old female patient living with a diagnosis of multiple sclerosis with a view to providing advice regarding suitable mattress support. For the past 5 years she had been wheelchair bound and unable to weight bear or body lift to relieve pressure. Whilst in bed she was able to change her position slightly with the aid of an over bed pole hoist though full clearance was not being achieved and there was a high risk of shearing injury occurring. She had a Waterlow score of 18 (Waterlow, J. 1996), indicating a high risk of pressure ulcer development. There was no previous history of pressure ulcers and skin at present was healthy and intact. Initially the patient had been nursed on a medium risk pressure reducing foam mattress which she found uncomfortable and stated she could feel the hard bed beneath her. She was then supplied with dynamic alternating cell mattress A* which she was on for 10 months but stated it was both uncomfortable and noisy and felt it was difficult to transfer with carers. This was changed to dynamic alternating cell mattress B* which attracted the same complaints and subsequently to dynamic alternating cell mattress C*, though she had a short period of time back on a medium risk pressure reducing foam mattress in between whilst waiting for a recycled dynamic mattress to come back into stock. The changes in mattress were driven by patient preference not clinical need. Each of the dynamic mattresses were more than appropriate to manage high to very high risk patients and at no time was skin compromised whilst they were in use.

Patient expectation appeared to be very high and frustration was expressed with the patient stating that she felt her needs were not being met. The patient consistently advised that in her experience the dynamic mattresses were hard, uncomfortable and the noise from the pumps often kept her awake at night. Price et al (2003) recognised that a pressure relieving mattress could improve patients sleep and quality of life and specifically with patients who have multiple sclerosis (Chokroverty, 1996). However, though the high cost dynamic mattresses were providing appropriate pressure relief, poor patient experience resulted in them being inappropriate in this instance.

The Dyna Form Static Air HZ mattress is a non-powered hybrid mattress which works on the principle of air displacement. Air moves within the mattress to surrounding cells when a person moves and repositions their weight, resulting in optimum pressure redistribution.

NICE (2014) advise that heels should be floated if at risk of pressure ulcer development and the Dyna-Form Static Air HZ mattress has an integral heel flotation zone in order to address this. The mattress is appropriate for very high risk patients or those with existing grade 3 pressure damage (Direct Healthcare Services, 2014) and is extremely cost effective.



Results

Following use of the mattress supplied for the patient a review determined there was no evidence of reduced skin integrity and that the patient experience was extremely positive. The patient advised that noise reduction and comfort were allowing undisturbed sleep and she felt repositioning was easier to achieve.

The Dyna-Form Static Air HZ mattress from Direct Healthcare Services provided appropriate pressure relief, equal to the dynamic alternating cell mattresses but in addition provided a positive patient experience and equally good patient satisfaction at a fraction of the cost.



- ✓ IMPROVED PATIENT EXPERIENCE
- ✓ SIGNIFICANT COST SAVINGS
- ✓ NO RISK OF EQUIPMENT FAILURE

Conclusion

Although non-powered hybrid mattresses predominantly compete with high specification foam mattresses, the Dyna-Form Static Air HZ mattress in this instance when compared to the dynamic mattresses, performed as well clinically but exceeded the dynamic mattress with regard to patient experience. Risk assessment should always be undertaken alongside clinical judgement but clinicians should be aware of equipment available and meet not just the clinical need but the patient's needs also.

In addition the cost savings are remarkable with the additional benefit of there being no risk of equipment failure.

References:

Chokroverty, S. (1996) Sleep and Degenerative neurological disorders. *Neurol Clin* 14(4): 807-26
Direct Healthcare Services (2014) Dyna-Form Static Air HZ. (Online) Available from: <http://directhealthcareservices.co.uk/products/dyna-form-static-air-hz-2-2> (Accessed 10th August 2015).
NICE, 2014. Pressure ulcers prevention: the prevention and management of pressure ulcers in secondary and primary care. Available at: <http://www.nice.org.uk/guidance/cg179/evidence/cg179-pressure-ulcers-full-guideline-prevention2> (Accessed 10th August 2015)
Price, P. Rees-Mathews, S. Tebble, N. Camilleri, J. (2003) the use of a new overlay mattress in patients with chronic pain: impact on sleep and self reported pain. *Clini Rehabil* 17(5): 488-92
Waterlow, J. (1996) Pressure Sore Prevention Manual. Available at: www.judywaterlow.fsnet.co.uk/ (Accessed online 10th August 2015)
*Mattress A: Nimbus (ArjoHuntleigh). Mattress B: AlphaXcell overlay system (arjohuntleigh). Mattress C: Royal (Harvest)