Poster Presentation: FUSION™ Hybrid System

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Clinical evaluation of a powered hybrid mattress within a busy clinical assessment ward and medical ward setting: a practical advantage

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Introduction and Aims

Hybrid mattresses combine both foam and air into a single support surface and their use in clinical practice is increasingly popular. Powered hybrids provide either a reactive (static) surface without the pump or an active (alternating) surface when using the pump.

Medical wards and dedicated assessment units/wards are clinically demanding areas, often with a high patient turnover and using powered hybrids in these settings can provide a potential practical advantage for both staff and patients.

The ability to switch from a reactive to an active support surface (or vice-versa) offers a practical time saving solution for staff by allowing them to immediately step patients up or down in accordance with their changing clinical needs. This can increase efficiency and release time for more patient related care activities. Similarly, for suitable patients, a powered hybrid mattress can give them instant access to an appropriate support surface whilst minimising any disruption as they do not have to change beds or mattresses.

The joint aims of this evaluation were;

1. For patients to remain free from any new pressure related tissue damage
2. To capture user-acceptance of the new mattress
3. To identify any efficiency gains offered by a powered hybrid mattress

FIGURE 1.
FUSION™ Hybrid mattress system

Method

The new powered hybrid system used in this evaluation was the FUSION™ Hybrid from Talley (Figure 1). It has a static foam head section and foam filled air cells in the torso and heel zones which, when active, provide an 8 minute, 1-in-2 cell cycle.

Following a request from the tissue viability nurse specialist, six FUSION Hybrid mattress systems were placed on a 28 bedded clinical assessment ward with a further two being placed on a 28 bedded medical ward. Both clinical areas were at the Royal Albert Edward Infirmary (part of Wrightington, Wigan and Leigh NHS Foundation Trust).

Patient demographics were recorded including age, sex, pressure ulcer risk level, nutritional status and patient mobility. Existing pressure damage was documented and monitored. Incidence of any new pressure ulcers was also reported during the evaluation.

Additional information captured included, time saved when using the hybrid system compared to the time required to request, set up and transfer a patient onto or off of a dynamic mattress. Patient views/feedback were also documented.

Results

A total of eleven patients were nursed on the new hybrid mattress. A summary of patient demographics is given below:

- Six males and five females, with a mean age of 71 years old (range 23 to 94 years).
- One patient had a Waterlow score <10.
- Two were 'at-risk' Waterlow score 12-14.
- Four were 'high-risk' Waterlow score 16-19.
- Four were 'very high-risk' Waterlow score 20 to 24.
- Five out of the eleven patients were independently mobile and could reposition themselves in bed.
- Six out of the eleven patients were semi dependent with unrestricted repositioning, three of which were re-positioned every 2-3 hours and three every 2–4 hours.
- Length of stay for patients nursed on the FUSION Hybrid system ranged from 1 day to 24 days (mean length of stay was 8 days).

Two patients had existing category 2 sacral pressure ulcers on admission to the assessment ward and one patient on the medical ward reported existing pressure damage.

Three patients used the mattress as a reactive support surface (i.e. no pump attached). Eight patients had a pump attached to the mattress and used it as an active support surface.

No new pressure related skin damage developed during the evaluation and there was no deterioration of existing pressure ulcers.

Fifteen staff provided feedback and found the hybrid mattress easy to use, clinically effective and reliable. In addition patients were comfortable and concordant with treatment and staff stated that using the hybrid mattress saved on average 40 minutes compared to ordering and setting-up a specialist air mattress.

Patient feedback reported the mattress as comfortable, with 'minimal/no-noise' which enabled sound sleep. In addition all patients felt safe and stable when transferring on/off the mattress.

Discussion

The new powered FUSION Hybrid mattress used in this evaluation has been effective in preventing pressure ulcers across a range of patients with varying risk categories.

For appropriate patients and/or clinical settings, the use of a powered hybrid mattress can help reduce the reliance on specialist alternating pressure air mattresses, thereby eliminating delays often associated with the provision of these air mattresses. In this specific evaluation it helped ensure the timely patient transfer from A&E to the ward.

Using a product that can immediately step up or down in line with patients' risk levels has multiple benefits to healthcare providers which include:

- Improved efficiency- staff no longer have to wait for a product to arrive on the ward and spend time setting it up on the bed.
- Reduced manual handling load on nursing/care staff – no need to physically switch mattresses over between beds.
- Eliminates patient disruption - no need to transfer patients between mattresses.

The potential, when using the FUSION Hybrid, for improving efficiency and reducing manual handling ultimately results in saving nursing time and this aligns well with current DH/NHS publications [1-2] which highlight; 1) the importance of clinical staff not losing time by performing unnecessary tasks and; 2) promoting the efficient delivery of high quality clinical care.

Conclusion

Previous literature [3] concluded that early intervention (i.e. placing an appropriate support surface under patients in a timely manner) can have a major impact on patients' clinical outcomes. Similarly, a significant risk factor in harm occurring to patients (i.e. pressure ulcer development) are delays in receiving appropriate equipment. [3,4]

Use of the powered FUSION Hybrid mattress within these clinical areas has proven to be beneficial for both patients and staff alike. It has performed well clinically and saved valuable time for nursing staff as in some cases it eliminates the need to change mattresses as patients' risk of pressure ulceration changes during their stay.

Some patients may only have a short stay on the assessment ward, prior to discharge home or admission for further treatment. Similarly, patients admitted to medical wards can often show rapid improvement or deterioration in their condition which may necessitate a change of support surface to reflect their changing clinical needs. Therefore in these instances the hybrid mattress is a logical choice for these clinical areas as it eliminates delays in support surface provision and provides a practical advantage as the system can switch easily between either a reactive or active support surface.

References

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