

Evaluating the P.R.O. Matt Plus mattress in a high risk group of patients in a Stroke Unit

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Background

Despite extensive education, staff at Leicester Royal Infirmary appeared to over rely on dynamic mattresses, putting strain on the availability of equipment, resulting in a regular daily waiting list putting the Trust at risk. This is in part due to the current emphasis on the prevention of pressure ulcers (PU) and staff are understandably nervous that the combination of standard foam mattresses, profiling bed frames, individualised repositioning regimens and patient/carer education may not be sufficient.

In an attempt to reduce the reliance on dynamic mattresses the use of a semi-dynamic hybrid mattress (P.R.O. Matt Plus from Medstrom) was proposed. The mattress features a sophisticated system that moves air in and out of the cells enabling it to automatically adjust to each patient's weight and body profile and with the addition of a power unit it can be converted to a continuous low pressure or alternating mattress for higher risk patients (Medstrom 2016).

Method

The two stroke wards (wards 25 and 26) were selected to evaluate the new mattress as patients tend to be in the higher risk categories and as they are all following a Stroke pathway (NICE 2016) there are limited transfers to other wards making it easier to track equipment.

Prior to implementation of the new mattresses a clinical review was undertaken to ensure standards of care were in line with best practice as defined by local and national guidance (NICE 2014). There were issues identified relating to seating and therefore an audit was undertaken. Following the audit chairs were repaired and new cushions provided.

The role of therapists is paramount on this unit and meetings were held with them and other senior clinicians such as Medical Consultants, Manual Handling and Infection Prevention and Control teams to gain their support for the evaluation.

Baseline information was obtained on the occurrence of PU for 3 months prior to installation of the new mattresses, and baseline information was collected to look at use of traditional Dynamic mattresses in the same 3 months 12 month prior. See Table 1 for days usage of dynamic therapy prior to implementation.

An evaluation tool was designed and printed on brightly coloured paper to prompt staff to complete the information. All of the existing mattresses were replaced with P.R.O. Matt Plus mattresses.

Results

129 evaluations were completed. Over the 3-month evaluation no patients developed avoidable hospital acquired skin damage despite some patients being on the mattress for as long as 22 days.

The patient's ages ranged from 16 – 100. The average Waterlow score (based on 91 responses) was 18, the highest was 37.

Generally staff did not feel the need to use the power unit; only 6 being installed at onset.

Throughout the admissions a further 4 boxes were added by day 3, 3 by day 5 and 2 by day 7; only 15 patients in total required the higher risk therapy.

Use of dynamic mattresses was significantly lower than in the corresponding 3 months the previous year – see table 1

Staff time was improved both in relation to mattress management and reduced wound care interventions. Portering staff and the mattress contractor also reported beneficial effects on their activity related to providing the additional support surfaces during the evaluation period.

Therapy Days

1st Feb to 30th April 2015

Pre implementation of P.R.O Matt

Ward	DUO	Primo	Grand Total
25	11	1276	1287
26	0	351	351
Grand Total	11	1627	1638

1st Feb to 30th April 2016

Post full implementation of P.R.O Matt Plus

Ward	Primo	Grand Total
25	21	21
26	43	43
Grand Total	64	64

Table 1 days of dynamic mattress usage before and after implementation of the P.R.O. Matt Plus

Discussion

The use of the P.R.O. Matt Plus mattress improved both clinical and process outcomes in the stroke unit. No patients developed pressure ulcers and staff identified many benefits of using the semi-dynamic hybrid that had not been included in the evaluation form, these included the ability to safely transfer patients to other departments (such as x ray or scanning) without concerns around maintaining an electrical supply as even when unplugged from the power box the mattress is a safe and effective surface unlike the dynamic surfaces which would deflate.

It was also felt that the use of this surface was much more supportive of the rehabilitation and discharge processes, the firm edge of the mattress making it easier to transfer and mobilise the patient and the power box easier to disconnect preparing the patient for probable return to their standard mattress at home. Reduction in use of the dynamic systems reduced clutter in corridors and store rooms where cancelled dynamic mattresses would usually have been kept prior to being decontaminated by the mattress contractor. Ward staff felt that bed occupancy was optimised supporting the patient pathway.

Conclusion

Use of the P.R.O. MATT Plus semi-dynamic hybrid mattress simplified processes and improved patient outcomes whilst reducing costs and the need for Dynamic mattresses. The semi-dynamic hybrid surface performed well in this high risk patient group without the need for a control box in the majority of cases.

Staff feedback on the new mattress was overwhelmingly positive.

References

Medstrom (2016) <http://www.medstrom.com/products/p-r-o-matt-plus-semidynamic-surface/>

NICE (2016) Clinical Guideline QS2 Stroke in adults NICE. London

NICE (2014) Clinical Guideline 179. Pressure Ulcers: prevention and management of pressure ulcers NICE London