

# 12 MONTH FOLLOW UP STUDY OF HYBRID MATTRESS TECHNOLOGY

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## Introduction

**North Middlesex University Hospital NHS Trust (NMUH) is committed to achieving better and safer care and continues to meet NHS London Quality Standards.**

The Trust is committed to reducing the number of avoidable pressure ulcers and delivering harm free care by adopting a model best practice approach that also improves workflow, whilst enhancing quality and productivity.

Since 2009 the hospital has seen vast changes including an increase in the number of inpatient beds to 450+ and A&E becoming one of the busiest in London with 500 patients on average being seen daily.

In response to a significant shift in patient demographics and numbers of inpatient beds, NMUH Trust began an exercise to review its bed and mattress management in Q2 2013 with the objective of securing the most cost and clinically effective method of managing pressure redistributing equipment with patient safety being the primary driver.

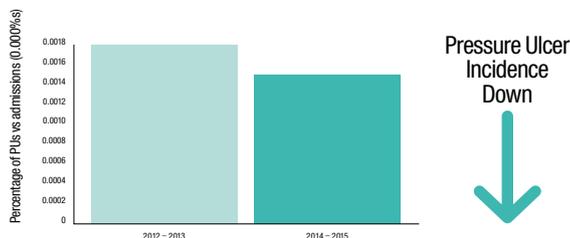
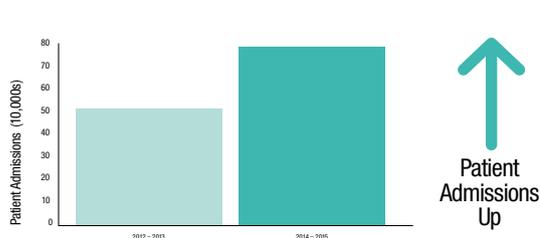
The project was supported by the TV CNS, Head of Medical Equipment Unit, a finance manager and procurement.

## Methods

Following an initial review of alternating pressure mattresses (APAMs) an alternative solution was proposed – the use of powered hybrid mattresses.

Procurement arranged an exhibition of different equipment with two companies then shortlisted and invited to supply equipment for evaluation within the elderly care wards. Following a thorough evaluation including an in-depth costing exercise and liaison with other Trusts who had experience using the product, a decision was made to implement a powered hybrid mattress, the powered hybrid mattress on all inpatient beds, reserving a small amount of alternating systems for the Critical/Progressive Care Unit. Following on from this a Business Case was presented to demonstrate the financial benefits of using powered hybrids over a 5 year period.

From a clinical perspective the Trust has seen a rise in patient admissions from **52,269 in 2012–13 to 79,620 in 2014–15 (a 52% increase)**. This vast shift also coincided with further challenging changes including managing many new staff and changes in protocols, changes which were viewed as potentially negative contributing factors to effective management of pressure ulcer incidence. However by reviewing the number of pressure ulcers proportionally against the number of admissions the number of patients developing hospital acquired pressure ulcers (HAPUs) has reduced. This reduction in pressure ulcers helped the Trust achieve the pressure ulcer element of their CQUIN Target.



## Results

The results were very positive with total cost savings (inclusive of all service and maintenance and provision of alternative systems for CCU/PCU) of £430k over 5 years. The purchase of powered hybrid mattresses/cushions has allowed the Trust to easily add additional pump units to our equipment pool to cater for the increase in patients with the opening of new wards in 2013/14. Had the Trust not chosen to invest in the hybrid solution the forecasted financial cost to cater for the additional bed spaces requiring hire of APAMs would have equated to approximately £66k annually, an additional £330k over a 5 year period.

Therefore the total cost efficiency the powered hybrid solution will deliver over a 5 year period could be in excess of £760k. The release of nursing time to care the solution offers has also been invaluable with an estimated 11.5 hours of nursing time released daily /4,197 hours annually.

From a patient care perspective, we now also deliver earlier intervention to the majority of 'at risk' patients, when previously it could have taken up to 24 hours to receive the required mattress.

As a cohort hospital in the Lord Carter Report our implementation of hybrid surfaces had been submitted as a best practice case study in terms of simultaneously delivering improved clinical outcomes and cost efficiencies.

## Discussion & Conclusion

The Trust's experience of embracing innovative support surface technology has been very positive. The powered hybrid solution has shown clinical improvements can be achieved through cost saving exercises. The decision to split the bed and mattress contract (previously a Total Bed Management contract) and procure beds and mattresses from separate companies opened up the market and allowed us to evaluate additional products that may not have been the case otherwise.

With many NHS Trusts experiencing increasing numbers of patients or going through periods of significant change with inpatient bed spaces increasing, utilising a powered hybrid system may help manage pressure ulcer incidence whilst releasing nursing time back to care and delivering cost savings.

This study shows that the innovation in support surfaces demonstrated with the powered hybrid mattresses can contribute to improving clinical outcomes, whilst demonstrating a clear cost efficiency against traditional approaches to Pressure Care Equipment.

- ✓ Reduction in PU incidence throughout period of massive and complex change
- ✓ 4000+ hours of nursing time released to care
- ✓ £430K cost savings over 5 years
- ✓ CQUIN target achieved

