

# Innovation in patient assessment - A four month trial and clinical evaluation of the effectiveness of the Monitor, Alert, Protect (M.A.P™) system



Berkshire Healthcare

NHS Foundation Trust

Authors: Anita Rush (Clinical Lead and Nurse Specialist Equipment Berkshire) & Sarah Deal (Ward Manager)

## Introduction

Reducing the prevalence of pressure ulcers plays a vital role in improving patient outcomes and reducing the costs associated with treatment – estimated at between £1.4 and £2.1 billion per year for the NHS. Whilst the development of dynamic therapy mattress systems has already made an important contribution, nursing staff do not currently have a tool capable of distinguishing accurately between high and low pressures, or assessing the effectiveness of their interventions.

West Berkshire Community Hospital (WBCH), Berkshire Healthcare NHS Foundation Trust embraces its values: Compassionate | Aspirational | Resourceful | Excellent. Current NICE and EUPAP guidelines recommend repositioning patients in bed in order to relieve or redistribute pressure. WBCH wished to evaluate how visual feedback of continuous interface pressure between the body and support surface could inform clinicians on repositioning strategies and play a key role in interventions for the prevention and management of pressure ulcers.

The chosen settings were Highclere Ward and Donnington Ward at WBCH. These wards having a broad range of patients with complex care needs were identified as an ideal setting to assess the effectiveness of pressure redistribution protocols guided by M.A.P™ which improve clinician's knowledge that repositioning interventions are actually relieving or redistributing pressure.

## Method

The trial was conducted over a three month period and captured data from patients nursed on both static and dynamic mattresses. Nursing staff were asked to continue their standard pressure ulcer preventative practice and patients' Skin Bundle records were reviewed at the end of the evaluation period against the M.A.P™ Pressure areas chart.

### Inclusion criteria:

- Waterlow Score over 20
- Pre-existing tissue damage
- Bed bound patient reduced mobility/ unable to independently reposition

### Exclusion criteria:

- Patients with a high risk transferable virus
- Patients on end of life care plan
- Patients with dementia
- Moisture lesion

Conducted over a three month period.

Clinicians stated that as the system identifies high peak pressure points, this prompts repositioning and agreed that utilising the M.A.P™ had a positive contributing factor to the patient's well-being.



Berkshire Healthcare  
NHS Foundation Trust  
embraces its values:

Compassionate  
Aspirational  
Resourceful  
Excellent

Visual feedback of continuous interface pressure between the body and support surface.

## Results - Quantitative Data

### Patient Feedback:

- 72% of patients were nursed on an alternating mattress surface
- 91% of patients could not reposition independently
- 0% of patients developed Pressure Ulcers during the trial period
- 45% of patients had skin damage. Three patients had existing PU, two patients had existing moisture lesions
- 100% of the existing PU were identified as improved
- 50% of moisture damage was identified as improved

### Clinical Feedback:

- 81% agreed that the system enabled them to redistribute pressure effectively
- 72% agreed that the system increased their knowledge of pressure distribution
- 72% agreed that the information provided by the system improved patient comfort
- 72% agreed using M.A.P has assisted current practises in maintaining patients skin integrity and managing skin breakdown

## Results - Qualitative Data

Clinicians stated that as the system identifies high peak pressure points, this prompts repositioning and agreed that utilising the M.A.P™ had a positive contributing factor to the patient's well-being.

- Promoted and improved patient concordance.
- Encouraged the proper use of the profiling beds.
- Questioned the need to nurse patients on a dynamic mattress.
- Helped the night staff identify whether a patient required moving. If no red areas of concern they were able to leave the patient to rest and sleep.

## Discussion

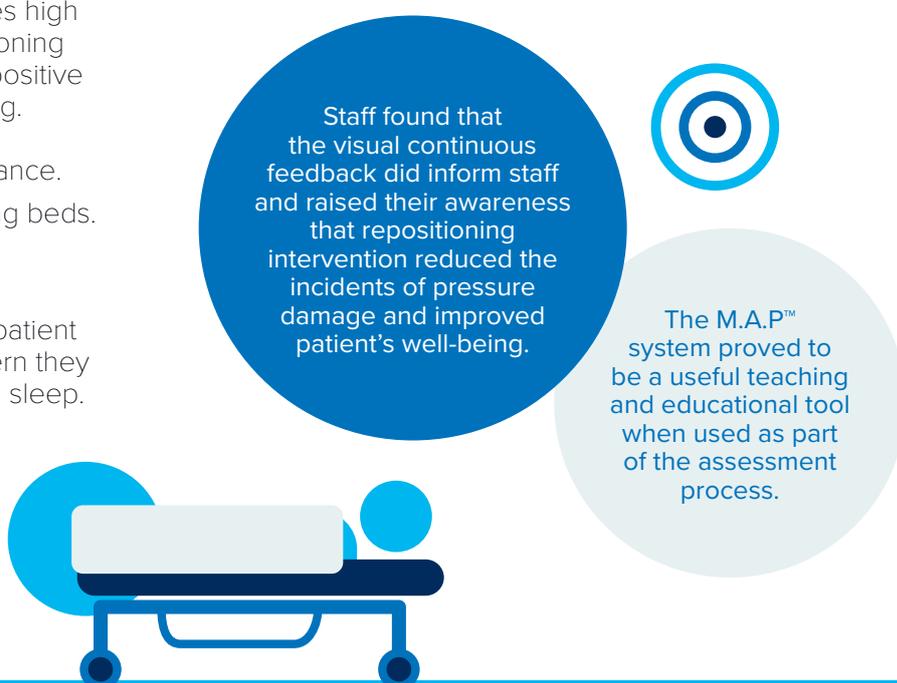
The Trust identified that if there was also an ability to form a printed baseline assessment providing pictorial evidence for patient notes the additional benefits would be to promote best practice and enhance the products value as an assessment tool.

## Conclusion

Feedback was positive, staff found that the visual continuous feedback did inform staff and raised their awareness that repositioning intervention reduced the incidents of pressure damage and improved patient's well-being. The visual information prompted staff to undertake the offloading tasks required to reduce the pressure points and key to the prevention strategies.

The use of the M.A.P™ system also benefitted patients by placing the visual screen to face them it prompted them to reposition and move in bed. They realised the importance of repositioning and independent moving in bed contributed to reducing pressure ulcer and also improved their comfort and well-being.

The M.A.P™ system proved to be a useful teaching and educational tool when used as part of the assessment process. It enabled good clinical reasoning, identified the correct equipment provision and reduced the patients risk of developing tissue damage.



### References:

Reduced pressure for fewer pressure ulcers: can real-time feedback of interface pressure optimise repositioning in bed? Gunningberg L, Carli C. *Int Wound J* 2014; doi: 10.1111/iwj.12374

Repositioning for pressure ulcer prevention in adults. Gillespie BM1, Chaboyer WP, McInnes E, Kent B, Whitty JA, Thalib L. *J Wound Ostomy Continence Nurs.* 2017 Feb 1. doi: 10.1097

Continuous bedside pressure mapping and rates of hospital-associated pressure ulcers in a medical intensive care unit. Behrendt R, Ghaznavi AM, Mahan M, Craft S, Siddiqui A. *Am J Crit Care.* 2014 Mar;23(2):127-33. doi: 10.4037/ajcc2014192.

A Continuous Bedside Pressure Mapping System for Prevention of Pressure Ulcer Development in the Medical ICU: A Retrospective Analysis. Siddiqui A, Behrendt R, Lafluer M, Craft S. *Wounds.* 2013 Dec;25(12):333-9.

NICE Pressure ulcers: prevention and management Clinical guideline [CG179] Published date: April 2014

NICE Pressure ulcers Quality standard [QS89] Published date: June 2015

The European and US National Pressure Ulcer Advisory panels (EPUAP and NPUAP), along with the Pan Pacific Pressure Injury Alliance (PPPIA) International Pressure Ulcer Published September, 2014.