

Implementing Continuous Bedside Pressure Mapping* Cost-Effectively into a Pressure Ulcer Prevention Program

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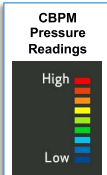


Purpose/Problem

Pressure ulcers (PU) cost the healthcare system \$11.5 billion annually and individual PU can be \$151,700 per ulcer to treat.¹ Individualizing specialty mattress selection and repositioning techniques to maximize pressure redistribution is challenging in the bedside setting.² Risk assessment tools³ do not provide clear guidance on how to select the optimal support surfaces. Utilizing specialty mattresses to prevent all PUs is not our only option.

Methods

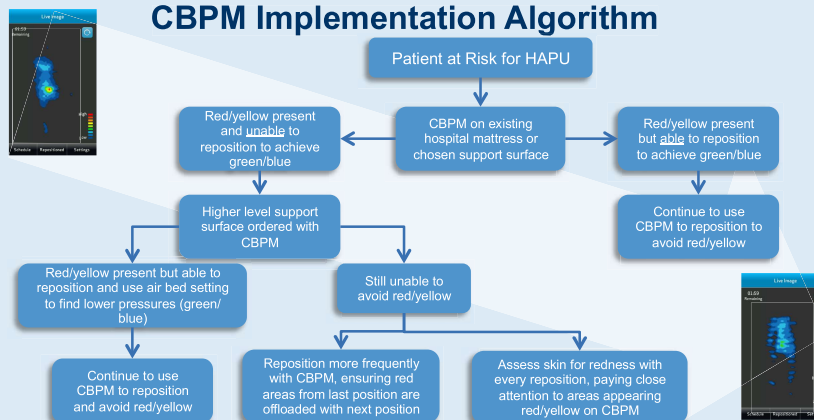
An algorithm was implemented to help us identify the patient population that was at risk for hospital-acquired pressure ulcers (HAPU), but did not need the cost of a specialty rental to accomplish pressure redistribution. The CBPM was used to guide effective repositioning techniques for each individual patient and to assess for areas of higher pressure (red and orange) that could not be managed to achieve lower pressures (blue and green) with the hospital-owned mattress and needed a specialty surface rental.



Equipment Protocol

Patient Characteristics	Management
Braden < 18, or less with: <ul style="list-style-type: none"> • Restraints • Immobile > 4 hours • History of pressure ulcers • Paraplegia 	<ul style="list-style-type: none"> • Foam/Air support surface • CBPM system
Braden < 18, or less with: <ul style="list-style-type: none"> • Hemodynamically unstable • Wounds on more than one turning surface • Quadriplegia • Muscular dystrophy • ALS • MS 	<ul style="list-style-type: none"> • Active Air Support Surface • CBPM system
Moisture issues without current skin breakdown	<ul style="list-style-type: none"> • Foam/Air support surface • CBPM system • Microclimate management system*

CBPM Implementation Algorithm



Conclusions

- ▶ With the use of CBPM, cost-effective support choices are now available to help prevent pressure ulcers.
- ▶ Caregivers learned the importance of "micro-shifts" to effectively reposition each individual patient and the assumption of pressure relief being obtained by simply turning the patient was shown to be false.
- ▶ By using real-time mapping, optimal pressure redistribution while decreasing cost was accomplished.

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*M.A.P™ by WellSense USA, Inc, Nashville, Tennessee

*Skin IQ™ by ArjoHuntleigh, San Antonio, Texas

Disclosures: The authors received no financial support for this study. Funding for poster production was provided by WellSense.

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Presented at: Symposium on Advanced Wound Care Fall 2014, Las Vegas, Nevada, October 16-18, 2014.

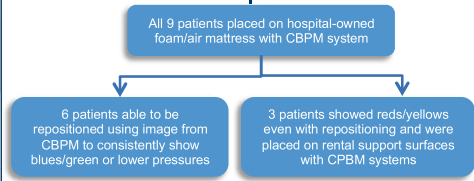
Outcomes

During a month-long period, 6 patients were managed with a CBPM system and hospital-owned mattress, totaling 27 days. In using the CBPM system with hospital-owned mattress, a savings of \$19/day/patient was realized compared with a rented specialty support surface (which are currently used without knowing if the hospital-owned mattress was appropriate). Including the cost of the CBPM, a savings of 13.5 days of specialty surface rentals was achieved. No patients developed a PU during the study, whether on the CBPM system and hospital-owned mattress or a rental surface with a CBPM system. A cost savings was achieved without compromising clinical outcomes.

Background

30 Day Study Period	Intensive Care Unit	9 patients identified at risk for HAPU. All 9 would have immediately received a rental support surface for their length of stay.
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Initial CBPM Protocol Steps



Cost-Effectiveness

Cost Savings \$\$\$

- ▶ 6 of 9 patients (2/3) managed without a rental support surface (just CBPM system and hospital-owned mattress).
- ▶ Including the cost of the CBPM, a savings of **\$19 per day per patient** was achieved without compromising clinical outcomes.

Pressure Management

- ▶ All 9 patients were:
 - able to be repositioned/"micro-shifted" on their respective support surfaces to display lower pressures
 - pressure ulcer free during their length of stay
- ▶ Higher-cost specialty support surfaces were only rented when pressure management could not be accomplished with the hospital-owned mattress and a CBPM system

With Use of CBPM Systems

- ▶ Appropriate and cost-effective support surfaces were able to be chosen for individual patient needs.
- ▶ Effective repositioning techniques, such as "micro-shifting" were utilized to ensure high pressures were eliminated beneath individual patients.
- ▶ Pressure ulcer prevention was achieved in a cost effective manner.