

Real-Time Pressure Assessment and Monitoring Improves Patient Care

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Purpose/Problem

Studies have shown that Health Care Providers (HCPs) are unaware of the actual pressure redistribution effects of their repositioning interventions which allow patients continued exposure to high pressures.¹ Yet international guidelines continue to challenge HCPs to reposition patients in such a way that pressure is relieved or redistributed.²

Methods

Real-time pressure monitoring (RTPM) systems* were utilized between April and June 2014 in various patient populations including cardiac, burn, and flap. The RTPM systems give HCPs a visual, color-coded image of interface pressures and allow for real-time, continuous pressure monitoring. HCPs used the pressure images on the monitors to effectively reposition patients, manage appropriate air settings on air beds, and utilize the alerts to turn patients by their individually determined turn schedules. Patients selected for RTPM had a Braden score of 18 or less.

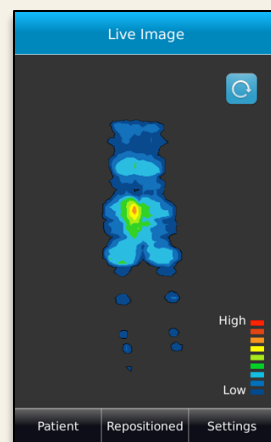
*M.A.P™ by Wellsense USA, Inc, Nashville, Tennessee

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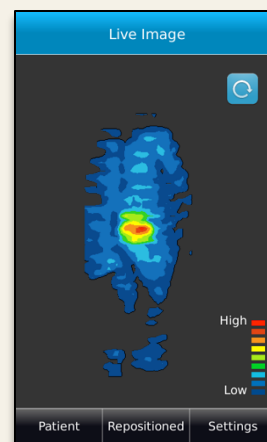
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Routine Repositioning Still Yields High Pressure Exposure



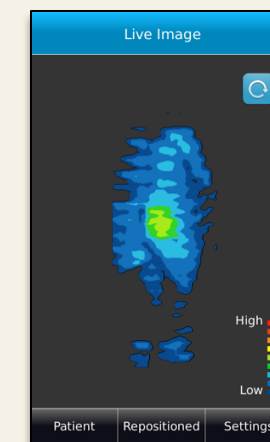
HCPs reposition patients blinded to the effects of their interventions often allowing patients to be exposed to continuous high pressure



Real-Time Pressure Monitoring Enhanced Repositioning



Using the monitor, HCPs were able to address high pressure areas effectively, and monitor if those interventions were effective ongoing



Outcomes

No new pressure ulcers occurred in 46 patients over 509 total patient days of use of the RTPM systems. Six patients had existing pressure ulcers that remained stable or showed signs of healing, despite comorbidities and high pressure ulcer risk. Only one of the 10 flap patients had a small area of dehiscence. HCPs found the RTPM systems easy to use, reduced time needed for repositioning, offered a unique value not obtainable by any other product, and improved patient care.

Conclusions

Pressure monitoring assists HCPs to employ effective pressure redistributing interventions and monitor support surface performance to improve patient outcomes in pressure ulcer prevention and flap success.

Clinical Outcomes

Number of Patients	46
Total Patient Days	509
Range of Length of Stay	1 to 35 days
Average Length of Stay	11 days
Braden Score Range	3 - 18
Primary Diagnoses	Cardiac Status post Flap Burns Existing PU or High PU Risk
Number of HAPUs	0

Clinician Feedback

Question	Strongly Agree	Neutral	Strongly Disagree
This product is "user friendly"	29	1	0
This product reduces procedure time (repositioning time) and helps position patients more comfortably	25	5	0
This product can potentially improve patient outcomes	30	0	0
Question	Yes	Undecided	No
Does this product offer a UNIQUE clinical value not obtainable by another product currently being utilized?	26	3	0
Did you have confidence in the pressure mapping device based on the monitor reading?	29	0	0
Would you recommend this product?	28	0	0

References

- Petersen MJ, Gravenstein N, Schwab WK, van Oostrom JH, Caruso LJ. Patient repositioning and pressure ulcer risk – Monitoring interface pressures of at-risk patients. *J Rehabil Res Dev.* 2013;50(4):477-88.
- National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. Emily Haesler (Ed.). Cambridge Media: Osborne Park, Western Australia; 2014.
- Behrendt R, et al. Continuous Bedside Pressure Mapping and Rates of Hospital-Associated Pressure Ulcers in a Medical Intensive Care Unit. *Am J Crit Care* 2014;23:127-133.
- Gunningberg L, Carli C. Reduced pressure for fewer pressure ulcers: can real-time feedback of interface pressure optimise repositioning in bed? *Int Wound J* 2014; doi: 10.1111/iwj.12374
- Scott RG and Thurman KM. Visual Feedback of Continuous Bedside Pressure Mapping to Optimize Effective Patient Repositioning. *ADVANCES IN WOUND CARE.* 2014; 3(5): 376-382.