

Real-Time Pressure Visualization Guides Repositioning to Reduce Hospital-Acquired Pressure Injuries

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Purpose

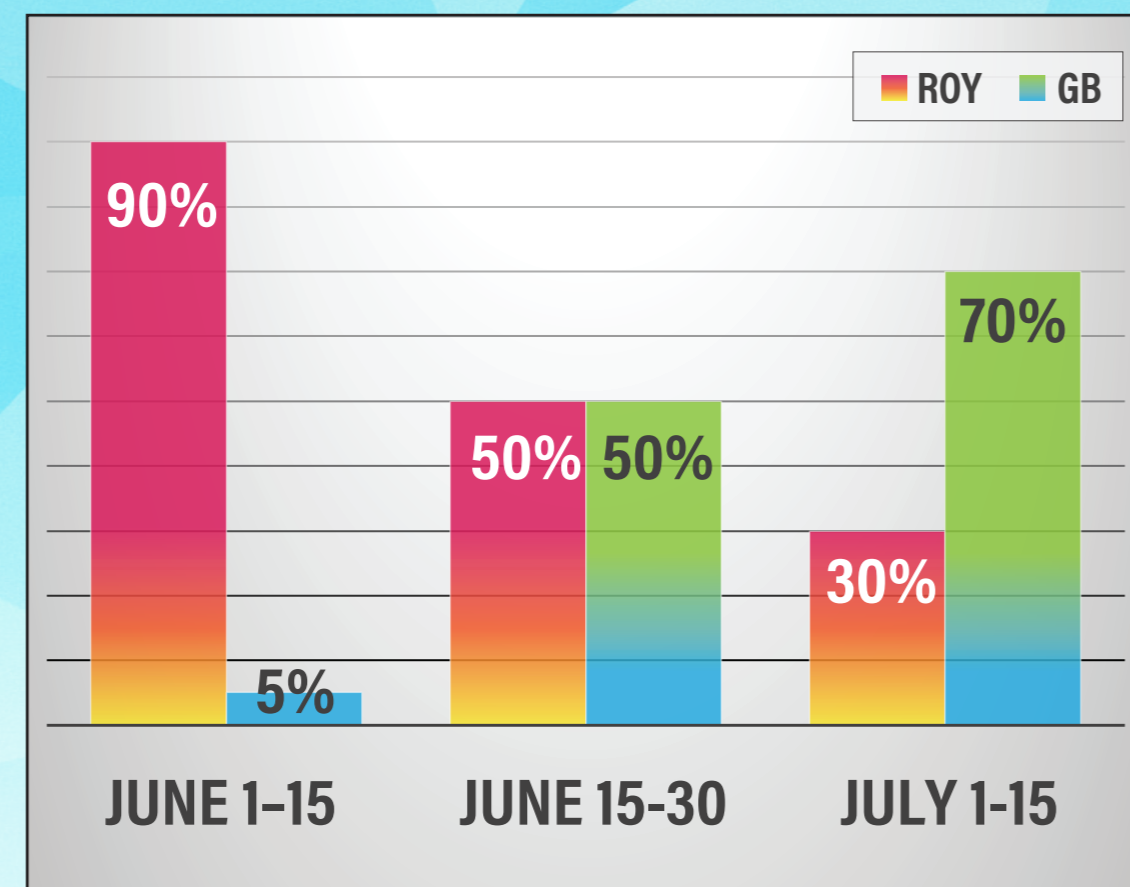
Despite many interventions and support surfaces, pressure injuries continue to occur. One study shows that Health Care Providers (HCPs) are unaware of the actual pressure redistribution effects of repositioning interventions which allow patients continued high pressure exposure,¹ leading to pressure injury (PI) development.

Methods

To better understand patients' pressure exposure, real-time pressure monitors* (RTPMs) were placed on Critical Care Unit (CCU) mattresses for 5 months. HCPs utilized this visualization when repositioning patients. Peak pressures were recorded when HCPs repositioned both before and after interventions. Number of hospital-acquired pressure injuries (HAPIs) were also gathered for the 5 months prior to using the system as well as the 5 months the systems were used.

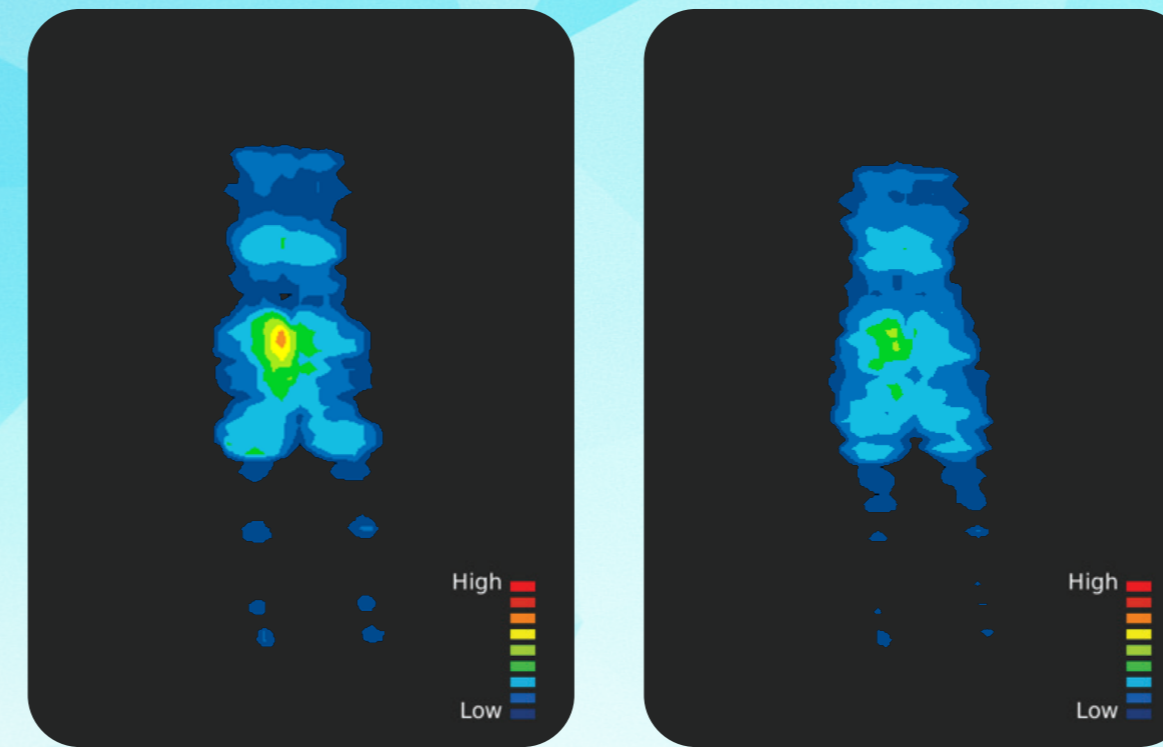
*M.A.P™ by Wellsense USA, Inc, Birmingham, Michigan
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Peak Pressure Reductions Over Time



Peak pressures were observed as the RTPMs were implemented. 90% of patients were positioned with a peak pressure of Red, Orange, or Yellow; and only 5% were positioned with peak pressure of Green or Blue. As staff were educated and began using the RTPM the peak pressure percentages reversed where 70% of patients were seen with peak pressures in the greens and blues, and only 30% had peak pressures in the higher pressures.

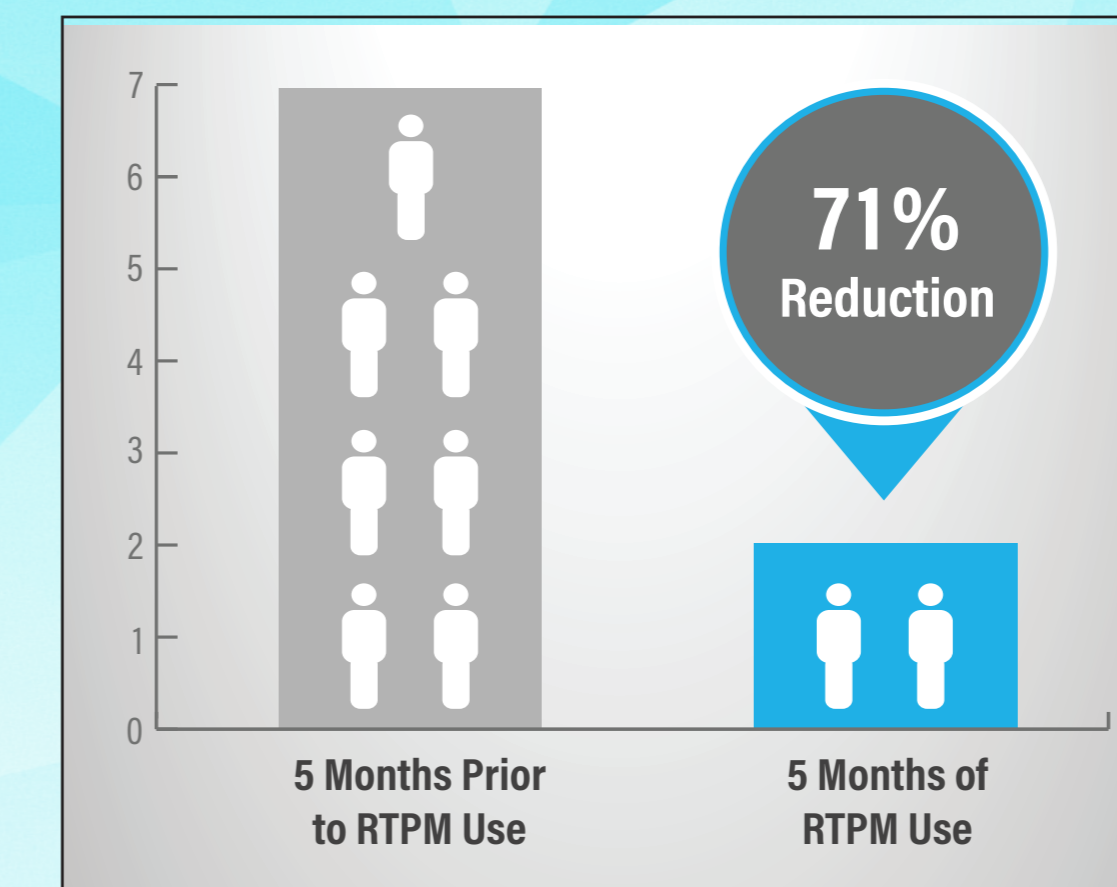
Pressure Managed through Visualization and Monitoring



- Continuous pressure monitoring allows clinicians/physicians to see actual pressures patients are exposed to on their support surface
- If any higher pressure areas would be seen, clinicians can immediately intervene to lower these pressures through micro-shifting, repositioning, air adjustments on the support surface
- If support surface would malfunction and cause higher pressures, this would also be seen on the pressure monitor in real-time so that the support surface could be exchanged

Results

Hospital Acquired Pressure Injuries



A total of 518 repositions were observed. Prior to assessing peak pressures with the RTPMs, the peak pressures averaged 53 mmHg. When RTPMs were utilized for repositioning the average peak pressures dropped to 45mmHg. HAPIs also reduced when the RTPMs were utilized. Five months prior to use, 7 HAPIs were reported. With the RTPMs in use, only 2 HAPI were acquired in the CCU.

Conclusions

Visualizing pressure exposure in the CCU has lead to more effective repositioning evidenced by lower peak pressures consistently under patients. With lower peak pressure exposure a reduction in HAPIs was gained in this patient population. With the visualization of pressure through the use of RTPM, HCPs can now monitor their actual pressure redistribution interventions.

References

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