Enhancing Support Surface Therapeutics and Decreasing User Error Using Continuous Bedside Pressure Mapping

Jennifer A. Edwards, MSPT; Shari L. Scheider, PT, DPT; Kristen M. Thurman, PT, CWS, FACCWS
Swedish Medical Center, Englewood, Colorado

Purpose/Problem
National guidelines recommend examination of support surfaces for appropriateness and functionality upon every encounter with a patient, as an important element of pressure ulcer prevention.1 Bedside practice involves the “hand check” for bottoming out to ensure adequate pressure relief by a support surface.2 Due to time, bed coverings, and patient comfort, this is often not practiced as often as recommended. A continuous bedside pressure mapping (CBPM) system offers a visual image of pressures that exist between a patient and a support surface, allowing caregivers to quickly assess those pressures in real-time, continuously.3

Methods
A 32-year-old woman, 5’11” tall, weighing 145 pounds was placed on the same air mattress for the following test scenarios. The scale for the pressure mapping device was not changed during the study.

Air mattresses were adjusted in 4 clinical scenarios:
1. Under-inflated, as if the mattress was not adjusted appropriately for the patient or was not functioning appropriately and therefore allowing bottoming out
2. Over-inflated, as if the mattress was maximally inflated manually (not using the max inflate button that would re-set after a short time to pre-set inflation) for a transfer and not re-set back down to therapeutic range
3. Inflated according to patient weight
4. Inflated according to the CBPM image

Air mattresses were adjusted to find lower peak pressures and improved images on the pressure monitor for individuals, maximizing the therapeutic value of the support surface. Inappropriate uses of support surfaces were also readily identified, as peak pressures were very high when mattresses were overinflated or under-inflated. These pressure changes were not always obvious without the CBPM image.

Conclusions
The real-time, continuous feedback of the CBPM system allows caregivers to easily monitor the appropriateness of support surfaces for individual patients, the proper functioning of each support surface, and the appropriate use of each support surface to gain the maximum therapeutic value.

References

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