

Successful Quality Improvement Initiative and Standardization of Support Surfaces Results in Sustained Reduction of Hospital-Acquired Pressure Injury in 2 Adult Step-Down Units

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BACKGROUND

Hospital-acquired pressure injury (HAPI) prevention requires multifaceted, interdisciplinary interventions.¹ Support surfaces are an essential aspect of HAPI prevention, and evidence-based recommendations suggest patients, who are at increased risk for pressure injury, be placed on support surfaces instead of standard hospital mattresses.² Support surfaces that ensure pressure redistribution have been shown to reduce HAPI injury up to 60%.²⁻⁴ Additional research has

revealed management of the skin microclimate by keeping the skin cool and dry is also an important aspect of HAPI prevention.⁵

The following outcomes story describes the successful quality improvement (QI) efforts of two units who recognized the need to update support surfaces in order to improve HAPI prevention efforts.

METHODS

Clinical setting: This QI initiative took place on two 32-bed adult step-down units.

Root cause analysis: A root cause analysis was conducted due to higher than national benchmark rates of HAPI. An opportunity to update support surfaces was identified.

Interventions: The QI initiative included the following interventions:

- **July 30th-Aug 5th, 2019:** All unit mattresses were standardized with support surfaces* and placed on refurbished frames.**
- **August 1, 2019:** Use of disposable overlay 'waffle' surface discontinued on both 6N & 8N units.
- **July 30- August 13, 2019:** In-service education was provided during AM/PM huddles on each unit.

- **September 4th and 5th, 2019:** Follow up nurse education was provided and questions from staff were answered. A compliance audit was performed to observe how protocols were being followed and obtain staff feedback.
- **September 24, 2019:** A business review was conducted with leadership to review compliance audit findings.
- **October 1, 2019:** Education was provided based on the findings from the compliance audit. An emphasis was placed on best practices, and any changes that were needed were discussed.
- **October 17, 2019:** A prevalence audit was conducted.
- **December 12, 2019:** Pumps were delivered (4 pumps for 64 mattresses).
- **January 27th-30th, 2020:** Education on pumps was provided to the healthcare team.

*IsoTour™ Support Surface (Stryker Corporation, Kalamazoo, MI)

** S3® Bed (Stryker Corporation, Kalamazoo, MI)

Support surface technology:

The support surfaces standardized throughout both units are designed to ensure pressure redistribution and prevent excess skin moisture and shearing. The surface is comprised of gel structures placed in 3 distinct zones to assist in reallocating pressure on the body's most prominent bony structures. The support surface can operate with or without a

pump, but converts to a low air loss surface when the pump is turned on.

Metrics: In order to review the effectiveness of the QI efforts, a before and after comparison was made on the proportion of stage 2 and greater HAPI from 2nd quarter 2018 through 1st quarter 2020.

RESULTS

The results of this QI initiative were deemed successful, as demonstrated by Figure 1 below showing the quarterly proportions of HAPI of stage 2 or greater in both units.

A comparison before and after the QI initiative revealed a 58% reduction in costs related to waffle mattresses hospital-wide (Figure 2).

Figure 1a. Proportion of HAPI Stage 2 or Greater on 6N

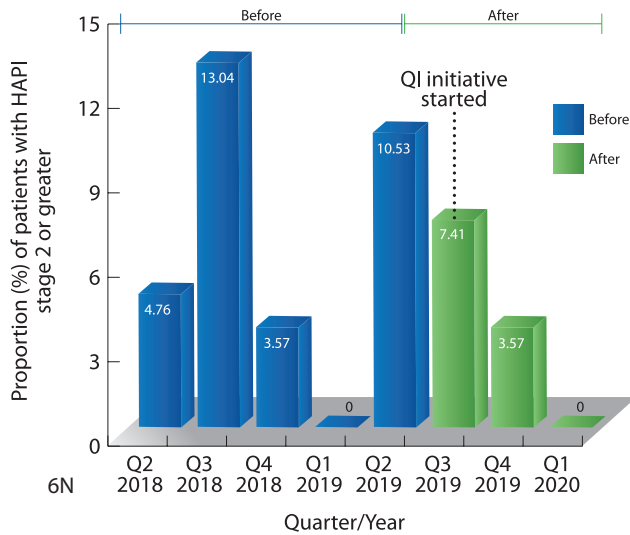


Figure 1b. Proportion of HAPI Stage 2 or Greater on 8N

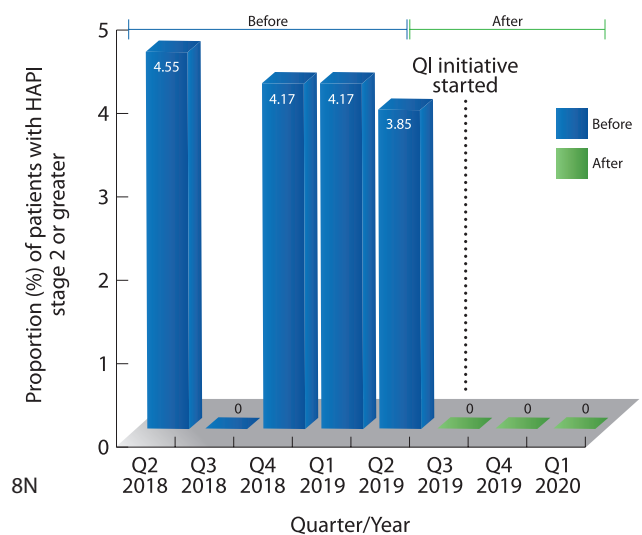
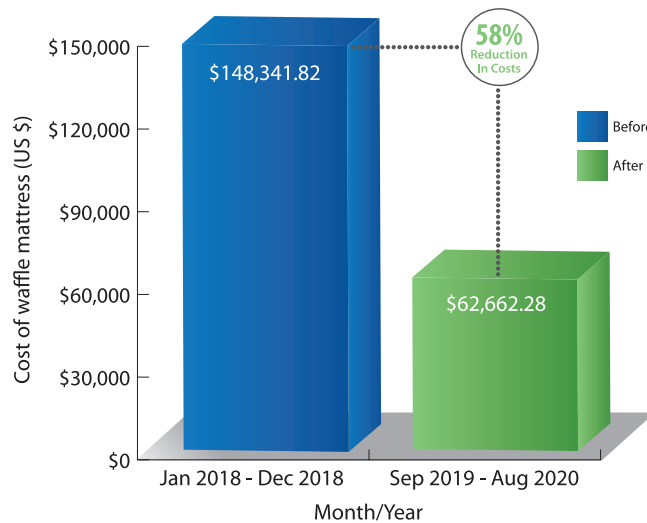


Figure 2. Before and after comparison of waffle mattress expenditures reveals 58% reduction



CLINICAL IMPLICATIONS

The results of ongoing continuous QI efforts have been successful on both units, with a reduction in the proportion of HAPI of stage 2 and greater injury and an elimination in usage of disposable overlay surfaces. There was a 58% reduction in total hospital expenditures on waffle overlays as a result of discontinuation of waffle overlays on these 2 units.

The success of this QI initiative is attributed to:

- A dedicated team clinical culture of patient safety
- Ongoing education in conjunction with compliance audits of equipment use and best practices
- Standardization of all support surfaces on refurbished bed frames to ensure updated technology managing pressure redistribution and microclimate
- Adherence to interdisciplinary, multifaceted best practices for prevention of HAPI
- Enhanced microclimate skin management with only a minimal amount of low air loss pump purchase and usage.

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