

Quality Improvement Efforts in an Academic Medical Center to Reduce the Need for Rental Beds and to Prevent Hospital-Acquired Pressure Injury

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BACKGROUND

The development of hospital-acquired pressure injury (HAPI) continues to be a worldwide public health problem that can contribute to lower quality of life and increasing frailty and dependence of patients.^{1,2} Furthermore, HAPI development leads to increased health care costs, which contributes to a nationwide economic burden of \$26.8 billion.³

In many clinical settings, HAPIs are predictable and preventable with the use of evidence-based guidelines

and implementation of interventions. Studies have demonstrated that mattress surfaces contribute to reductions in HAPI incidence and the incidence of stage 2 or higher HAPI in patients in the intensive care unit (ICU).^{4,5}

The following outcomes story describes a quality improvement (QI) initiative in an academic medical center designed to eliminate bed rentals for pressure injury treatment by replacing them with surfaces that prevent and treat HAPI.

METHODS

Clinical Setting: This QI initiative took place at an 1137-bed academic medical center.

Interventions: The QI initiative included the following interventions:

- Purchase of 825 mattresses* for acute care; purchase of 245 mattresses** for ICU patients
 - Guarantee of a 50% reduction in non-supplier beds rented for skin purposes
- A Clinical Nurse Consultant was embedded in the organization to assist with reducing falls, decreasing rental bed usage, and educating new staff. The Clinical Nurse Consultant participates with the Interprofessional Skin Team and the Mobility Team

Education: Evidence-based education was provided via inservicing house-wide on the features and indications of the beds and surfaces, including the following:

- Upgraded surfaces
- Decreased need to rent beds for skin purposes/pressure injury prevention and/or care

- Mattresses purchased appropriate for treatment of all stages of pressure injury

Collaboration: The intervention involved the collaboration of an interdisciplinary team consisting of nurse managers, Wound, Ostomy, Continence (WOC) nurses, supply chain staff, biomedical and clinical engineering staff.

Communications: Interprofessional Skin Team meetings were held monthly to support/discuss/implement pressure injury initiatives house-wide that include the Isoflex and Isolibrum surfaces in the bundle components.

Data collection: All stages of HAPI were evaluated and validated by the WOC Nurses to provide baseline internal data in March 2018. Patient Safety Indicator (PSI)-03 (reportable Stage 3, 4, and Unstageable HAPI) were reviewed beginning July 2017. A cost savings analysis was also conducted using 2017 (pre-intervention) as the benchmark for comparison.

*Isoflex® Support Surface, Stryker Corporation Inc. (Kalamazoo, MI)

**Isolibrum® Support Surface, Stryker Corporation Inc. (Kalamazoo, MI)

RESULTS

PSI-03 rates decreased by 66% since Spring 2018 (Figure 1). Benchmarked against 2017, there was an 83% reduction in beds rented for skin and a 39% reduction in miscellaneous (eg, bariatric, low, enclosed, PACU/OR) bed rentals (Figure 2). A cost savings analysis was conducted and, including both anticipated (beds rented for skin) and unanticipated (bariatric, low, enclosed, PACU/OR) savings, the total savings for this QI initiative reached \$654,955 in 2019 (Figure 3).

Figure 1: PSI-03

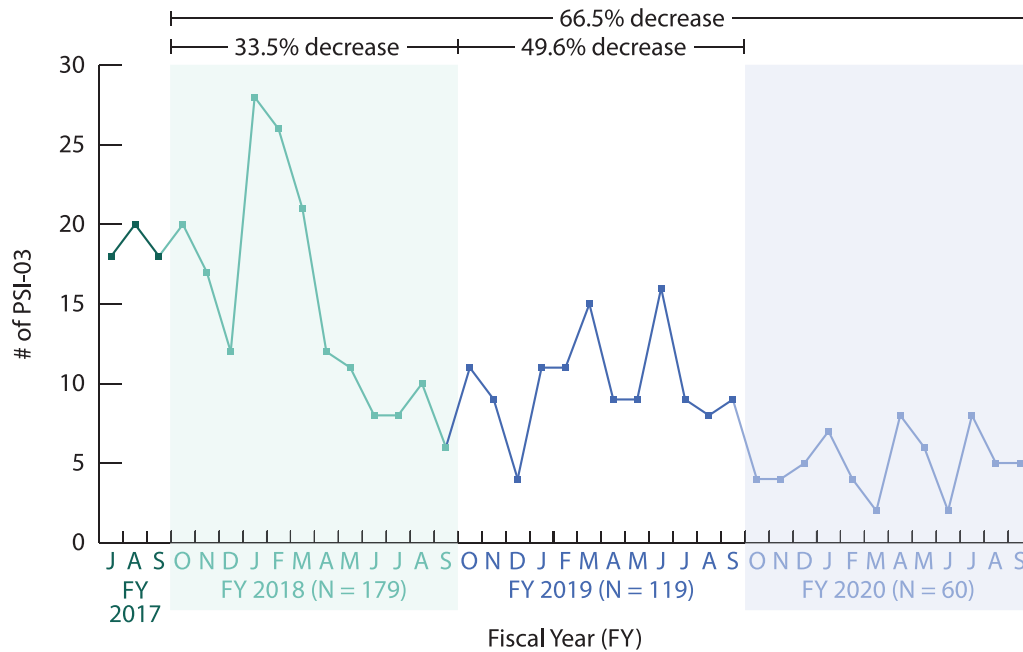


Figure 2a. Beds rented for skin.

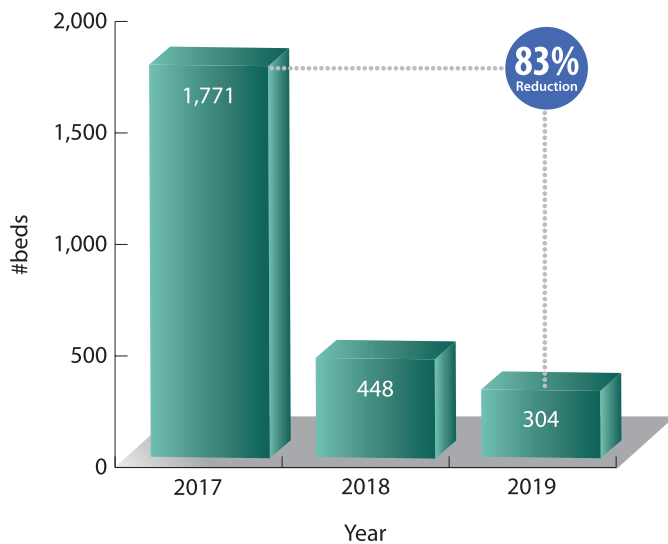
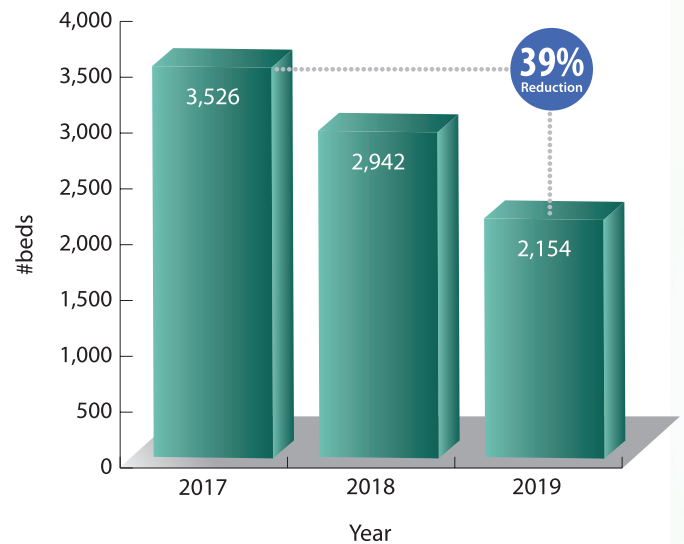
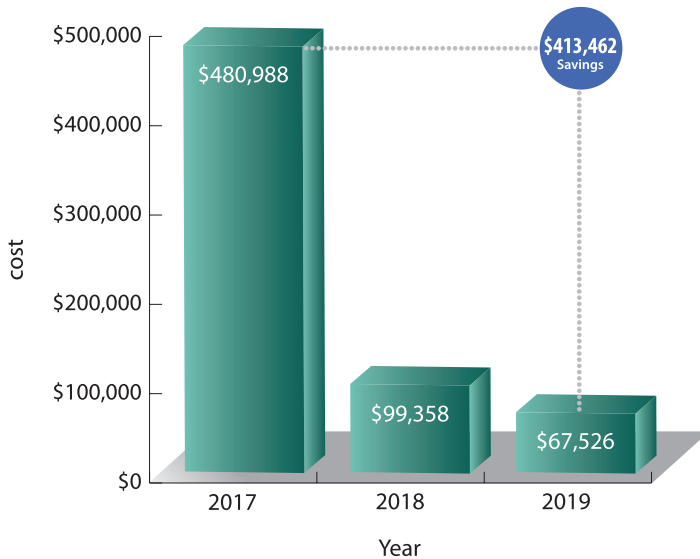


Figure 2b. Misc bed rentals.

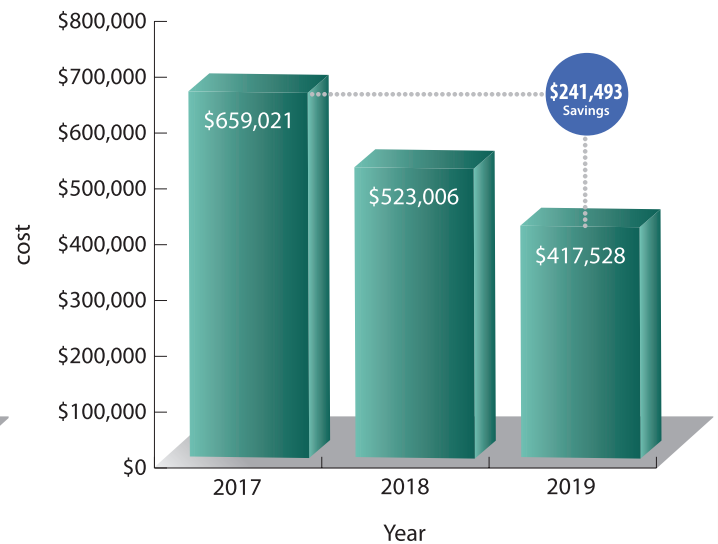


RESULTS *continued*

3a. Cost of beds rented for skin bed rentals



3b. Cost of beds rented for misc bed rentals



CLINICAL IMPLICATIONS

This QI initiative resulted in improved patient outcomes and cost savings. Clinical implications included:

- Decreased use of skin-related bed rentals and associated decrease in costs
- A decrease in PSI-03 and all stage HAPI development
- The unanticipated decrease in costs of other rental beds (eg, bariatric, low beds, enclosure beds)

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