

Quality Improvement Initiative With Implementation of Perioperative Warming Results in Reduction in Linen Use and Associated Costs

Ruthie Rivera, MBA, BSN, CMSRN, RN; Keisha Franks, BSN, CPAN, RN

INTRODUCTION

It is estimated that approximately 2% to 3% of a hospital's budget is allocated to linen and laundry services.¹ Lean methodology has transformed the efficiencies of daily operations in the perioperative setting.² As hospitals are becoming savvier with respect to methods for reducing

waste, novel interventions are being used to minimize the costs of linen and laundry services. The following outcomes story describes a quality improvement (QI) initiative to reduce waste in linen used in the surgical setting.

METHODS

Clinical Setting: This QI initiative took place in the preoperative, intraoperative, and postoperative clinical settings.

Interventions:

- In an effort to eliminate linen waste and reduce associated costs in the perioperative setting, an intervention was implemented that incorporated a warming system*.
- A device for patient warming was selected after a short trial of various warming devices incorporating diffusion technology.
- The hospital implemented the use of the Mistral-Air® Forced Air Warming System in 2015 for perioperative warming.
- An emphasis was placed on maintaining the patient continuum of care across all preoperative, intraoperative, and postoperative settings.
- Staff and patient education focused on appropriate use of the warming system and alignment with the linen waste reduction initiative.

Change Management: After standardizing patient warming with the warming system, a review of change-management processes and staff buy-in found that the number of blanket warmers needed to be reduced, and management removed 3 of 4 warmers to help reduce linen waste.

Staff Education: The staff received in-servicing on the appropriate use of the warming system. All employees were guided on the linen reduction initiative and how they could support waste-reduction efforts in their roles.

Patient Education: Education to ensure that patients understood the importance of maintaining their continuum of care with the warming system and the functionality of the warming blankets was a significant component of the QI initiative.

Metrics: Daily linen par level data were analyzed. The historical baseline used for comparison was for the year 2014, before standardization with the current warming system. The number of bath blankets used and associated costs for 2015 to the end of the second quarter of 2019 were compared with those for the historical baseline.

RESULTS

The linen volume was 109,500 bath blankets in 2014, with an estimated cost of \$53,655. The QI initiative reduced linen volume to 21,900 bath blankets per year from 2015 to 2018, with an estimated annual cost of \$10,731. During the first

6 months 2019, linen volumes and costs remained within quality goals. The QI initiative resulted in an 80% reduction in linen use and associated costs over a sustained period of time (Figures 1 and 2).

Figure 1: Total annual linen use

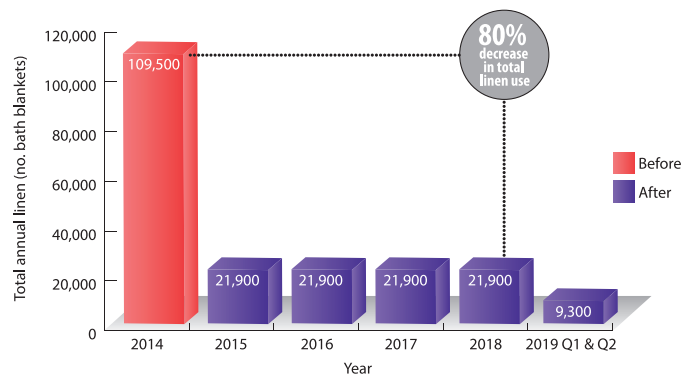
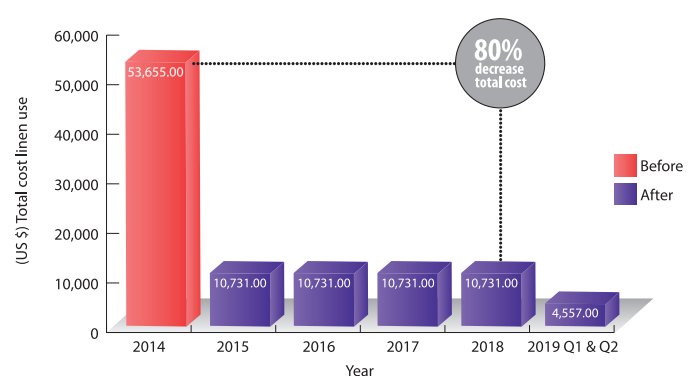


Figure 2: Total annual linen cost



CLINICAL IMPLICATIONS

This QI initiative resulted in an 80% decrease in linen use and associated costs in the preoperative, intraoperative, and postoperative settings. Ongoing education and interprofessional communication ensured that the patient continuum of care was maintained with a standardized patient warming system while also allowing for reduction of linen waste. The following clinical implications resulted from this QI initiative:

- Patient satisfaction drove this QI initiative. Patients voiced satisfaction with the warming system and liked

the ability to cool themselves off if they felt too hot.

- Nursing buy-in was a vital aspect of this successful waste reduction QI initiative, and change-management efforts to help staff adopt the standardized warming system were useful for ensuring compliance.
 - Maintaining a single blanket warmer for family use maintained family satisfaction and also helped staff to change habits and switch to standardized use of the warming system.
- Leadership support and ongoing education were essential aspects of this successful QI initiative.

REFERENCES

1. Beckers Hospital CFO Report (2015). Washing out unnecessary linen costs. Available at: <https://www.beckershospitalreview.com/finance/washing-out-unnecessary-linen-costs.html>. Accessed on: 10 July 2019
2. Stoutzenberger TL, Kitner SA, Ulrich BL, D'Silva I, Shah M. Using Lean strategies to improve operating room efficiency. *OR Manager*. 2014 Jan;30(1):18-20.