



Implementation of an Evidence-Based Wound Care Process at a Regional Burn Center Reduces Hospital Acquired Infections



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Disclosure

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Background

- Burn patients are particularly vulnerable to infection due to:
 - The nature of their injury
 - Prolonged hospitalizations
 - Hypermetabolic and hypercatabolic conditions
 - Inhalation injuries
 - Frequent use of invasive devices³
- Despite national efforts to reduce CLABSI rates, burn patients have higher CLABSI rates than general ICU patients.²
- CLABSIs are associated with increased mortality, prolonged hospitalization, and increased cost.¹
- Improved wound infection control in burn patients may reduce the rate of CLABSI.¹
- Research showed a reduction of surgical site infections (SSI) when gowns, gloves and equipment were exchanged at critical points during surgical procedures.^{4,5}

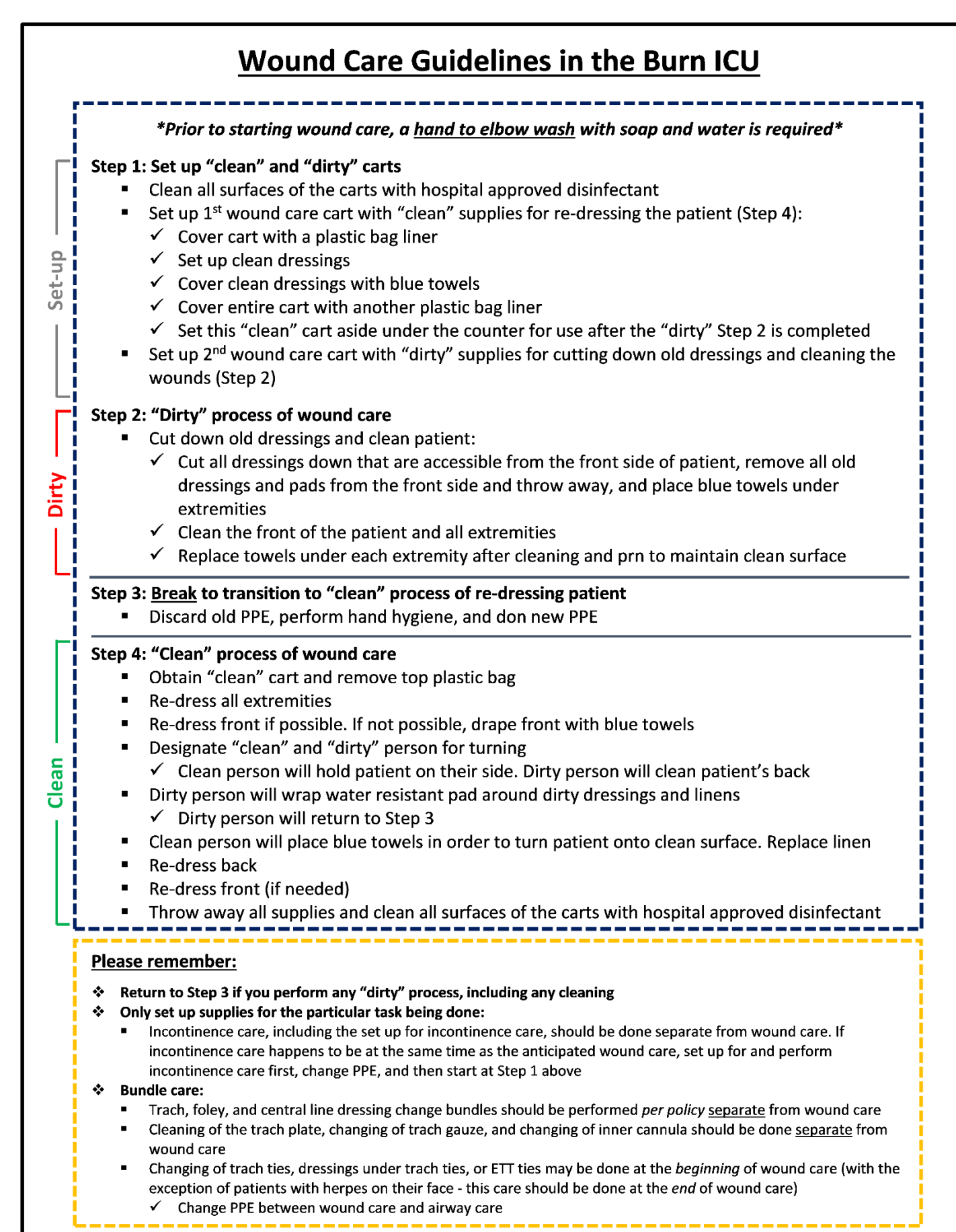
Purpose

- To determine if implementation of an evidence-based process for wound care and central line management reduce infections.

Design & Methods

- Workgroup (Quality and Safety Champion, Nurse Manager, Assistant Nurse Managers, and Clinical Nurse Educators) met from October 2017 – January 2018 to develop guidelines for wound care.
- Wound care guidelines restructured with the following:
 - Hand to elbow wash prior to wound care
 - Separating clean and dirty steps of the wound care process
 - Changing protective gear when going from dirty to clean
 - Performing the Hospital Acquired Infections (HAI) bundle elements separate from wound care, termed "Bundling the Bundles"

Implementation Plan



Development

- Resources include:
 - Colorectal surgical care bundles
 - University of Utah Burn Center wound care practices, as discussed with the Nurse Manager and Clinical Nurse Coordinator
- Feedback from Burn ICU staff evaluated and incorporated into guidelines.

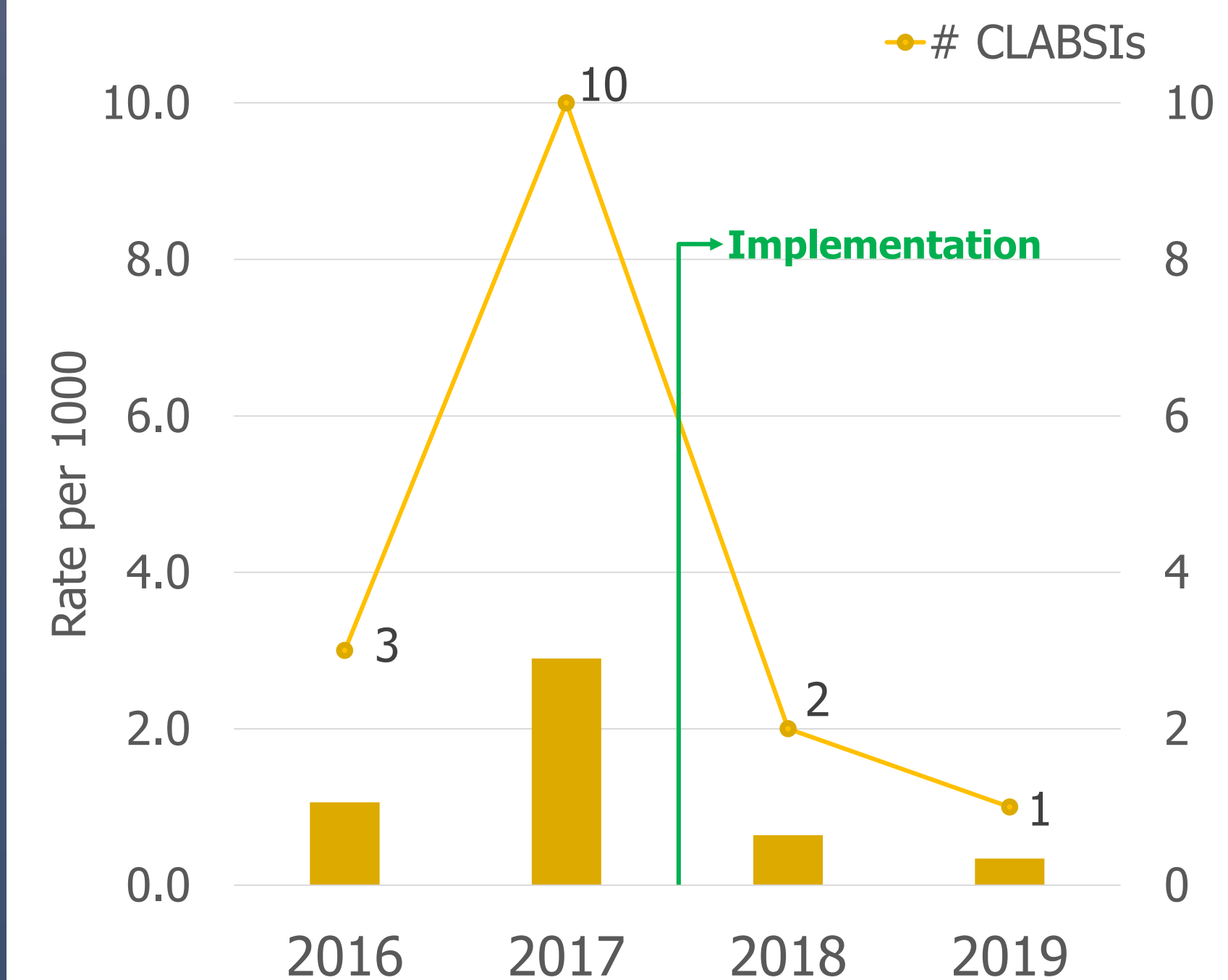
Education

- Multiple modes of education were used to introduce the new guidelines to the staff:
 - Nurse Manager update via e-mail
 - PowerPoint presentations at staff meetings
 - Guidelines laminated and posted in each patient room for reference
 - Addition of guidelines to current policy

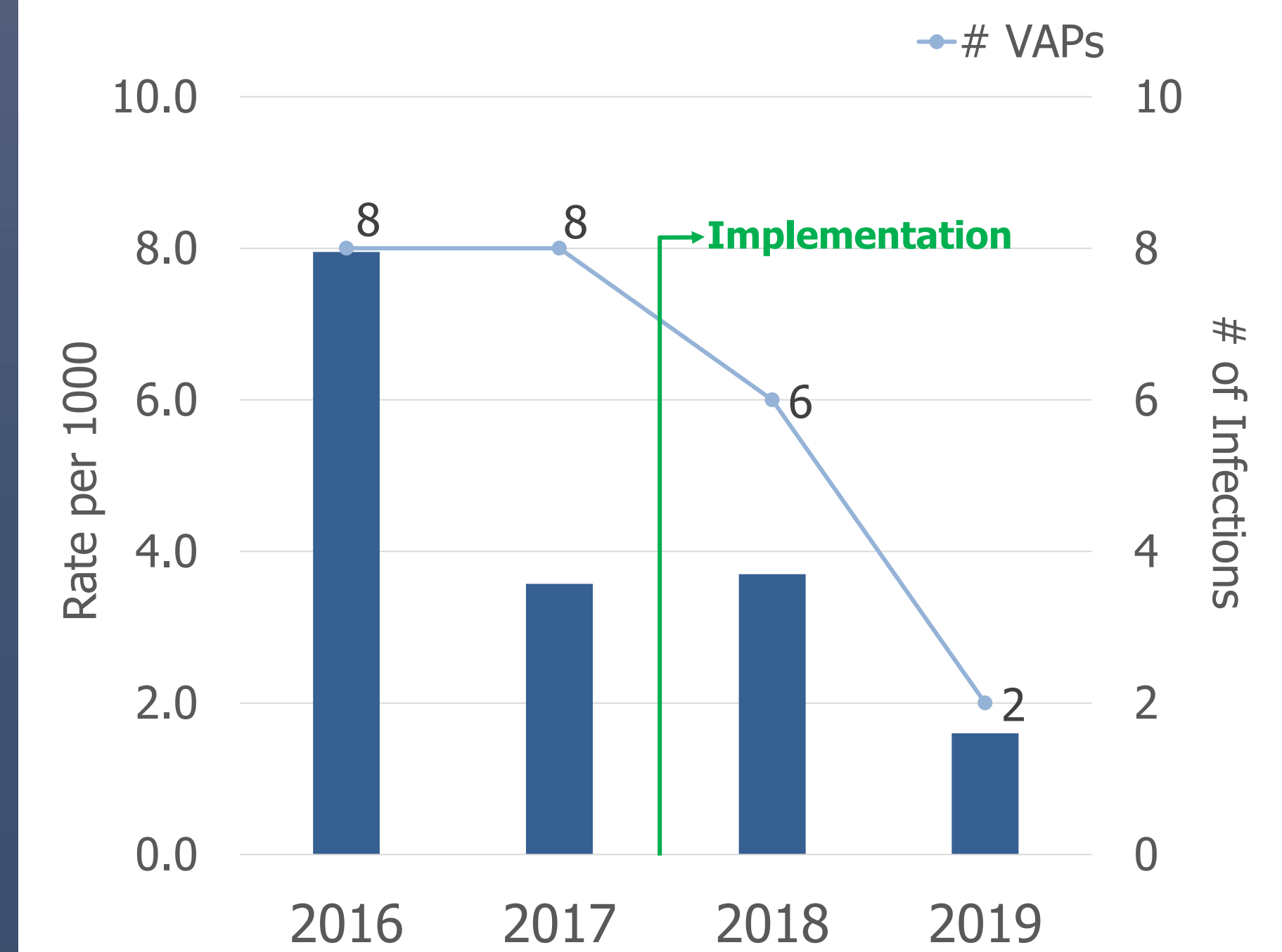
Performance Data

- HAI rates compared pre- and post-implementation using a Rate Ratio.
- The number of CLABSIs declined from 3 in 2016 & 10 in 2017 to 2 in 2018 & 1 in 2019.
- Post-implementation, there was a 76% decrease in the CLABSI rate [RR=0.24, 95%CI (0.07-0.84), p=0.0262].
- The proportion of positive blood cultures decreased by over 50% after implementation.
- There was no statistical difference in central line device days between groups.
- The number of VAPs declined from 8 in 2016 & 8 in 2017 to 6 in 2018 & 2 in 2019.
- Post-implementation, there was a 43% decrease in the VAP rate [RR=0.57, 95%CI (0.24-1.33), p=0.1914].

Results - CLABSI



Results - VAP



Conclusions

- Creating a wound care process that clearly defines and separates clean and dirty steps, similar to colorectal surgical bundles in the reduction of SSIs, reduced infection rates in a clinically and statistically significant way.
- Implementation of an evidenced-based standardized process for wound care improved infection rates at one regional burn center.

Further Study

- It would be beneficial for this process to be replicated at other centers to further test correlation with infection reduction.

References

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