

PUBLISHED ABSTRACT

A Multidisciplinary Approach to Reduce Catheter Associated Urinary Tract Infection Rate at Richmond University Medical Center between 2016 and 2018

Jennifer Collins, Hima Ammana, Khayala Balabayova, George Freg, Foma Munch Kenne, Amirhossein Moaddab, Elaheh Mossayebi, Joseph Moussa, Maryline Nformi, Valmy Ngomba and Jessie Saverimuttu

Corresponding author: Jennifer Collins, MD (JCollins@RUMCSI.org)

Keywords: catheter; UTI; urinary tract infection

Background

Catheter Associated Urinary tract infections (CAUTIs) are one of the most common healthcare-associated infections resulting in increased morbidity, mortality, length of hospital-stay and healthcare costs. The most important risk factor for developing a CAUTI is prolonged use of indwelling urinary catheter. The best way to prevent a CAUTI is to avoid placing an indwelling urinary catheter whenever possible.

Methods

We implemented evidence-based practices in accordance with CDC guidelines to reduce the incidence of CAUTIs. Our strategies included:

1. Educating health care providers with the CDC Guidelines about urinary catheter indications, insertion techniques, maintenance, proper specimen collection and criteria for ordering urine cultures.
2. Nurse driven protocol was instituted to discontinue catheters when no longer indicated. When appropriate external catheters and intermittent catheterization were utilized as alternatives.
3. A Plan-Do-Check-Act (PDCA) model to investigate CAUTI's and factors that may have contributed to them was taken by starting an interdisciplinary CAUTI task force comprising of physicians, nurses and infection control specialists. The task force participated in hospital-wide foley rounds and monthly meetings to review each identified CAUTI to identify any gaps in current practices and discuss ways that we could improve.

Results

1. Reduction of Catheter days from 16211 in 2016 to 11211 in 2017 and to 8867 in 2018.
2. Reduction of CAUTIs from 49 in 2016 to 14 in 2017 and 11 in 2018.
3. Standardized Utilization Ratio was reduced from 1.285 in 2016 to 0.955 in 2017 and 0.794 in 2018.
4. Standardized Infection Ratio (SIR) was reduced from 2.044 in 2016 to 0.92 in 2017 and 0.911 in 2018.

Conclusion

To reduce CAUTI rate at RUMC, we adopted a multidisciplinary approach utilizing PDCA model and CDC Guidelines. As a result of the corrective actions undertaken, we reduced our catheter use by 45.3% and CAUTI rate by 77.55% which resulted in our SIR to drop from 2.084 in 2016 to below 1.0 (National Average) in 2017 and 2018. We will continue to implement new practices to move our institution closer to its goal of "zero" CAUTIs.

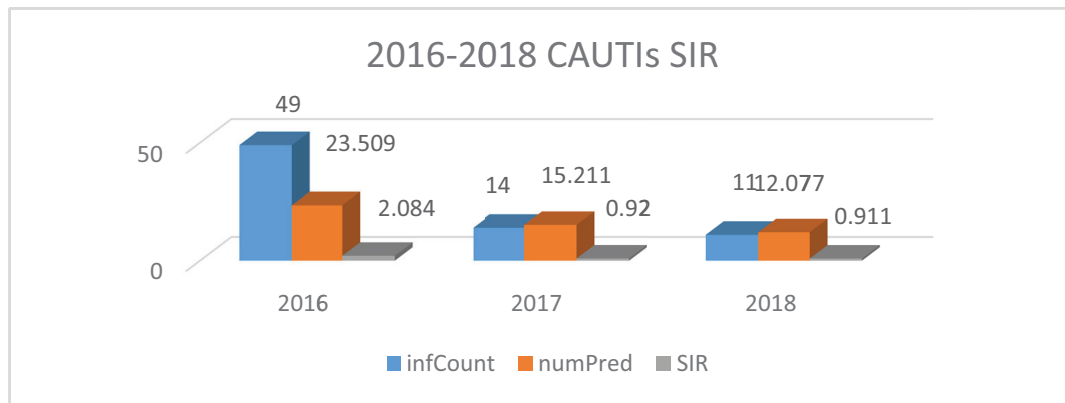


Figure 1.

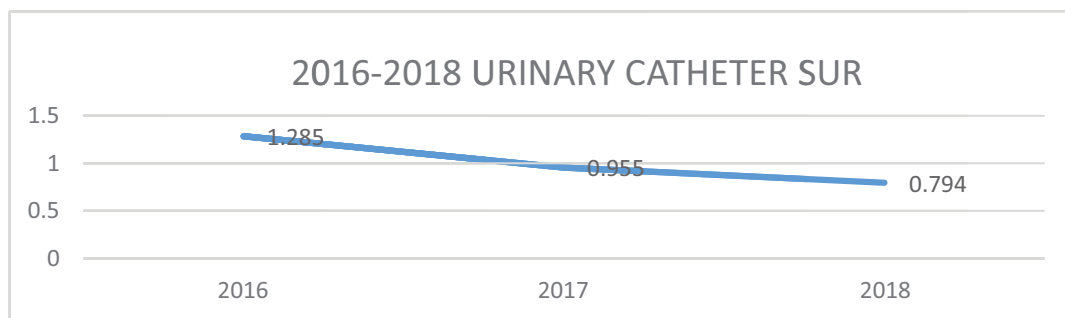


Figure 2.

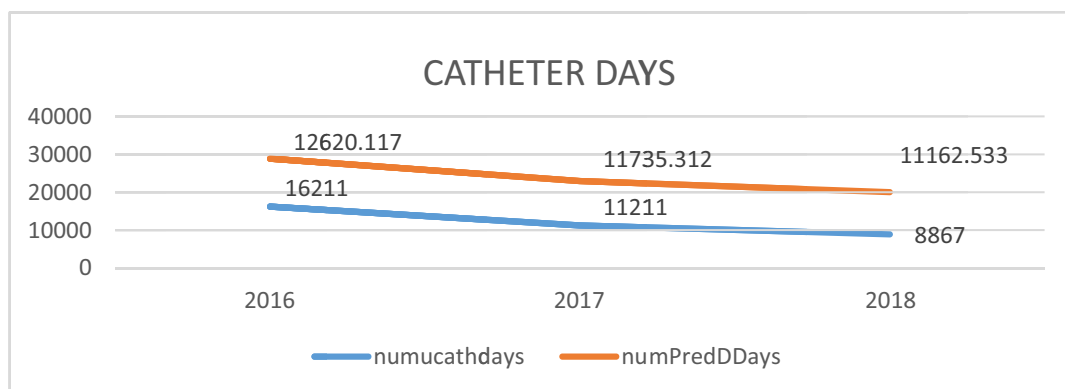


Figure 3.

Acknowledgements

We would like to express our sincere gratitude to the Infection Control team, all the Nurses and Nurse Managers, Residents, and Attending Physicians, IT and Pharmacy departments who helped us in reducing CAUTI rate significantly.

References

1. **Bell MM, Finch C**, et al. "A Multidisciplinary Intervention to Prevent Catheter-Associated Urinary Tract Infections Using Education, Continuum of care, and System wide Buy-In." *Ochsner J.* 2016 Spring; 16(1): 96–100.
2. **Gould CV, HICPAC**, et al. Guideline for prevention of catheter-associated urinary tract infections. CDC; 2009.
3. **Lo E**, et al. Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. *Infection Control and Hospital Epidemiology.* 2014; 35: 464–79. DOI: <https://doi.org/10.1086/675718>

How to cite this article: Collins J, Ammana H, Balabayova K, Freg G, Kenne FM, Moaddab A, Mossayebi E, Moussa J, Nformi M, Ngomba V, Saverimuttu J. A Multidisciplinary Approach to Reduce Catheter Associated Urinary Tract Infection Rate at Richmond University Medical Center between 2016 and 2018. *Journal of Scientific Innovation in Medicine*. 2019; 2(2): 29. DOI: <https://doi.org/10.29024/jsim.41>

Submitted: 06 August 2019

Accepted: 06 August 2019

Published: 27 November 2019

Copyright: © 2019 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.



Journal of Scientific Innovation in Medicine is a peer-reviewed open access journal published by Levy Library Press.

OPEN ACCESS The Open Access logo, consisting of the words 'OPEN ACCESS' followed by a circular icon containing a stylized padlock with an open keyhole.