

## Introduction

According to The Joint Commission, CAUTIs are the most common hospital-associated infection (HAI). Urinary catheter use is associated with urinary tract infections (UTIs) that can lead to such complications as cystitis, pyelonephritis, bacteremia, septic shock, and death. CAUTIs are associated with increased morbidity and mortality, an excess length of stay of 2-4 days, increased costs of \$0.4-0.5 billion per year nationally, and lead to unnecessary antimicrobial use. Furthermore, urinary drainage systems are often reservoirs for multidrug-resistant bacteria and a source of transmission to other patients (Centers for Disease Control and Prevention [CDC], 2009). Urinary catheters are not only associated with infections, but also with nonbacterial urethral inflammation, urethral strictures, mechanical trauma, and mobility impairment. The length of time that a catheter is in place contributes to rates of infection and other complications, so limiting catheter use and duration are important. The Centers for Medicare & Medicaid Services (CMS) identified eight conditions, including CAUTI, which have evidence-based prevention guidelines. If these conditions are acquired in the hospital, the hospital will receive reduced payment for that case because CMS believes they can reasonably be prevented through the application of evidence-based guidelines (The Joint Commission [TJC], 2016).

## Objective

To reduce the incidence of catheter-associated urinary tract infections (CAUTIs) in our Burn Center.

## Methods

Our Burn Center has implemented several interventions over the years to reduce CAUTI rates. Many of those interventions began in 2017 when we saw a drastic increase in our CAUTI rates.

1. In September of 2017, all staff were asked to complete an anonymous survey to gain a better understanding of the overall unit knowledge on CAUTI prevention.

## Methods (continued)

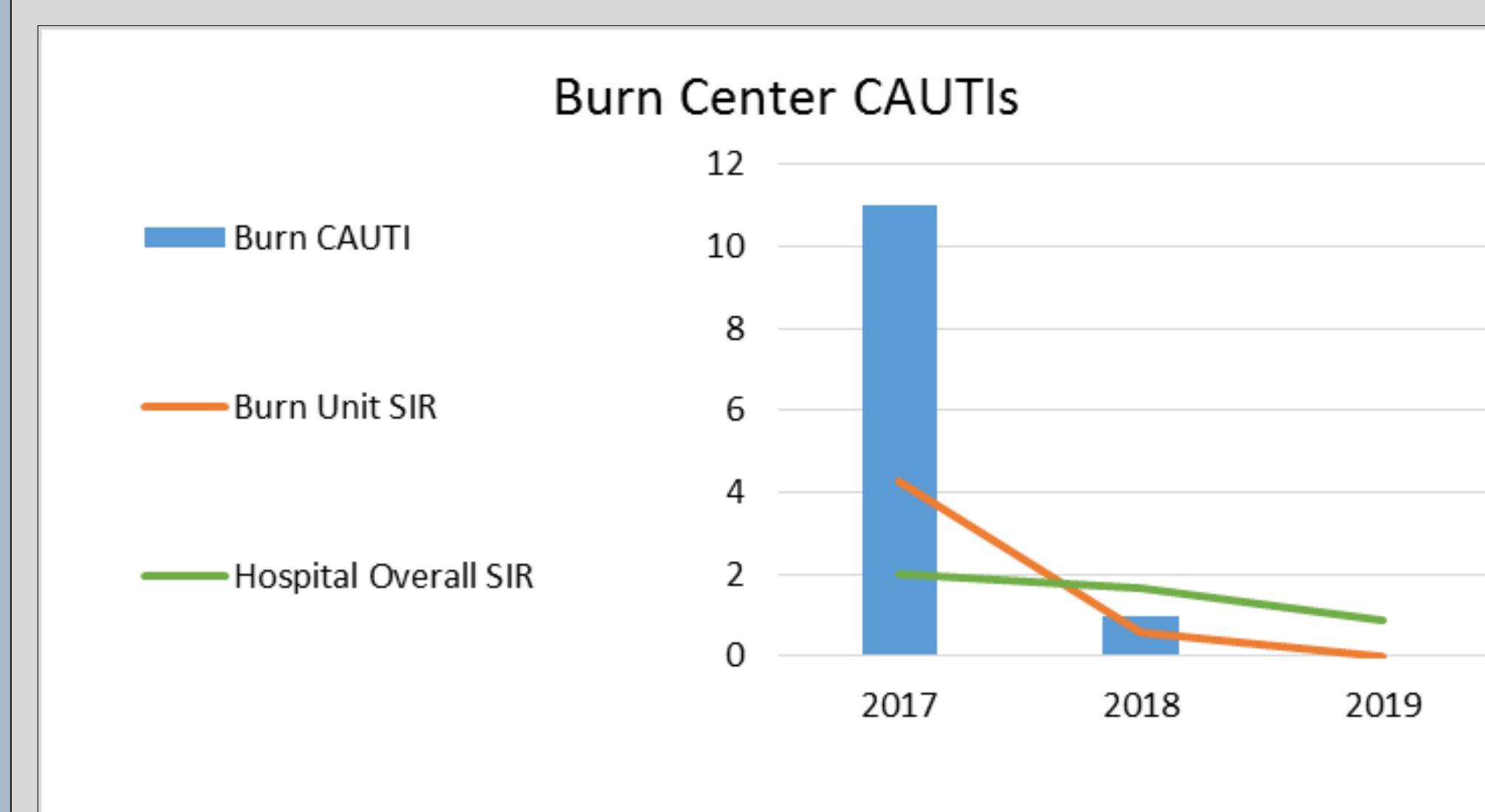
2. In October of 2017, we began in-servicing all nursing staff on:
  - Performing Foley checks during shift handoff (e.g., making sure the Foley is secured to the leg with enough slack so patient movement will not create tension on the catheter, Foley is draining to gravity, the bag is not touching the floor, the drainage system is closed).
  - Physically performing catheter/perineal care with the oncoming RN at shift change.
    - o By November 22<sup>nd</sup>, there were 2 new incidences of CAUTIs in the Burn Center, so we began chart audits for the perineal care and had all staff document in the patient's electronic medical record to better monitor compliance.
3. We expanded our in-services to include burn technicians, physical therapists, and occupational therapists while focusing on care and maintenance of urinary catheters during repositioning or transferring of patients.
4. In January of 2018, we started the practice of obtaining a urine culture on admission for all patients admitted to the Burn Center with an existing indwelling urinary catheter and for catheter day #1 for those patients who had a catheter inserted while in the Burn Center, in order to assess for patients who had a UTI at baseline.
5. In February of 2018, the Burn Center and the 4 Surgical unit became pilot units for the RN driven indwelling urinary catheter (IUC) removal protocol, allowing the RN to remove the IUC if the patient met criteria specified in the hospital's Nursing Standards procedures: BRN 87 protocol.
6. There was concern that diarrhea and/or rectal tubes may increase bacterial exposure to urinary catheters, thus increasing the incidence of CAUTIs. After discussion with the Burn Center's registered dietitian, the Burn Center implemented three different methods to decrease incidences of diarrhea:
  - Use of Guar gum to bulk the stool.
  - Decrease the use of laxatives if the patient is having regular bowel movements or if they have diarrhea with a rectal tube.
  - Try switching tube feed formula to Compleat if clinically appropriate.

## Methods (continued)

7. By August of 2018, all adult inpatient units officially began implementation of BRN 87: Management and Assessment for Discontinuation of Indwelling Urinary Catheter.
8. In November of 2018, the Department of Nursing developed a Quality-Tip sheet to assist with preventing CAUTIs. This "Q-Tip" has been shared with all staff.

## Results

When this project was initiated in September of 2017, there were 9 CAUTIs identified in our Burn Center, per the hospital's Infection Prevention Department. By the end of 2017, there were 11, which equated to a rate of 14.67 per 1000 urinary catheter days. In 2018, our Burn Center had 1 CAUTI, with a rate of 1.92 per 1000 urinary catheter days. In 2019, our Burn Center did not have any CAUTIs per the Infection Prevention Department. We believe all the interventions made have drastically decreased the incidence of CAUTIs.



	2017	2018	2019
Burn CAUTI	11	1	0
Burn Urinary Catheter Days	750	521	496
Burn CAUTI Rate per 1,000	14.67	1.92	0
Burn Unit SIR	4.287	0.561	0
Hospital Overall SIR	1.995	1.685	0.868

## Conclusion

Our Burn Center implemented many new practices in 2017 when the CAUTI rate and SIR were above the hospital's overall SIR. The Burn Center staff practice proper care and maintenance of urinary catheters and continue to provide excellent care to all our patients. Although we have decreased our incidence of CAUTIs for 2018 and 2019, it is equally important we sustain this improvement. Therefore, we will continue to provide an open forum for discussion with staff so we can all do our part in keeping patients safe.

## Applicability of Research to Practice

Our Burn Center decreased the incidence of CAUTIs by educating staff on proper care and maintenance of urinary catheters, removing catheters as soon as possible, and testing for UTIs upon admission to determine the patient's baseline. By doing so, CAUTI rates went from 14.67 to 0 per 1000 urinary catheter days.

## References

- Centers for Disease Control and Prevention. (2009). *Catheter-Associated Urinary Tract Infections (CAUTI)*. Retrieved from <https://www.cdc.gov/infectioncontrol/guidelines/cauti/background.html>
- The Joint Commission. (2016). *R3 Report: Requirement, Rationale, Reference*. Retrieved from <https://www.jointcommission.org/standards/r3-report/r3-report-issue-9-new-and-revised-npsgs-on-cautis/>

## Acknowledgements

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