

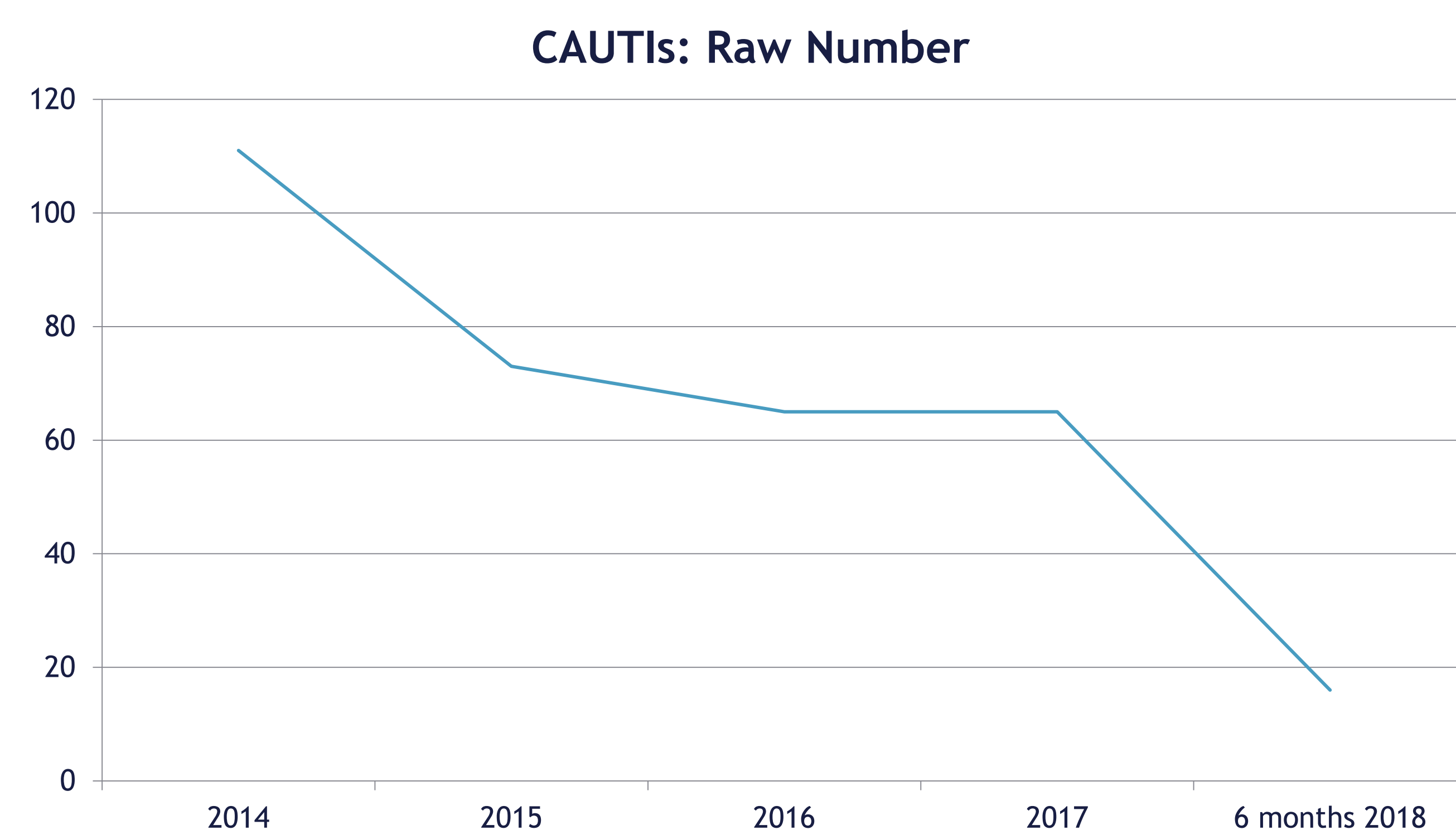
Background

Reducing catheter-associated urinary tract infection (CAUTI) is a national patient safety target, with a goal of a 25% reduction between 2015 and 2020.¹ Multiple types of interventions have shown effectiveness at reducing CAUTI.² Thomas Jefferson University Hospital (TJUH) is a large urban academic medical center with a standardized infection ratio (SIR) similar to that of other institutions of its type. TJUH has improved CAUTI rates over the past 10 years, but continued improvement will require a better understanding of factors leading to CAUTI in our current low-incidence climate.

Project Aim

To target CAUTI-prevention interventions to areas of greatest need using root cause analysis (RCA).

In a low-prevalence environment, we hypothesized that a better understanding of each CAUTI case would be needed to target “high-hanging fruit” to further decrease CAUTIs

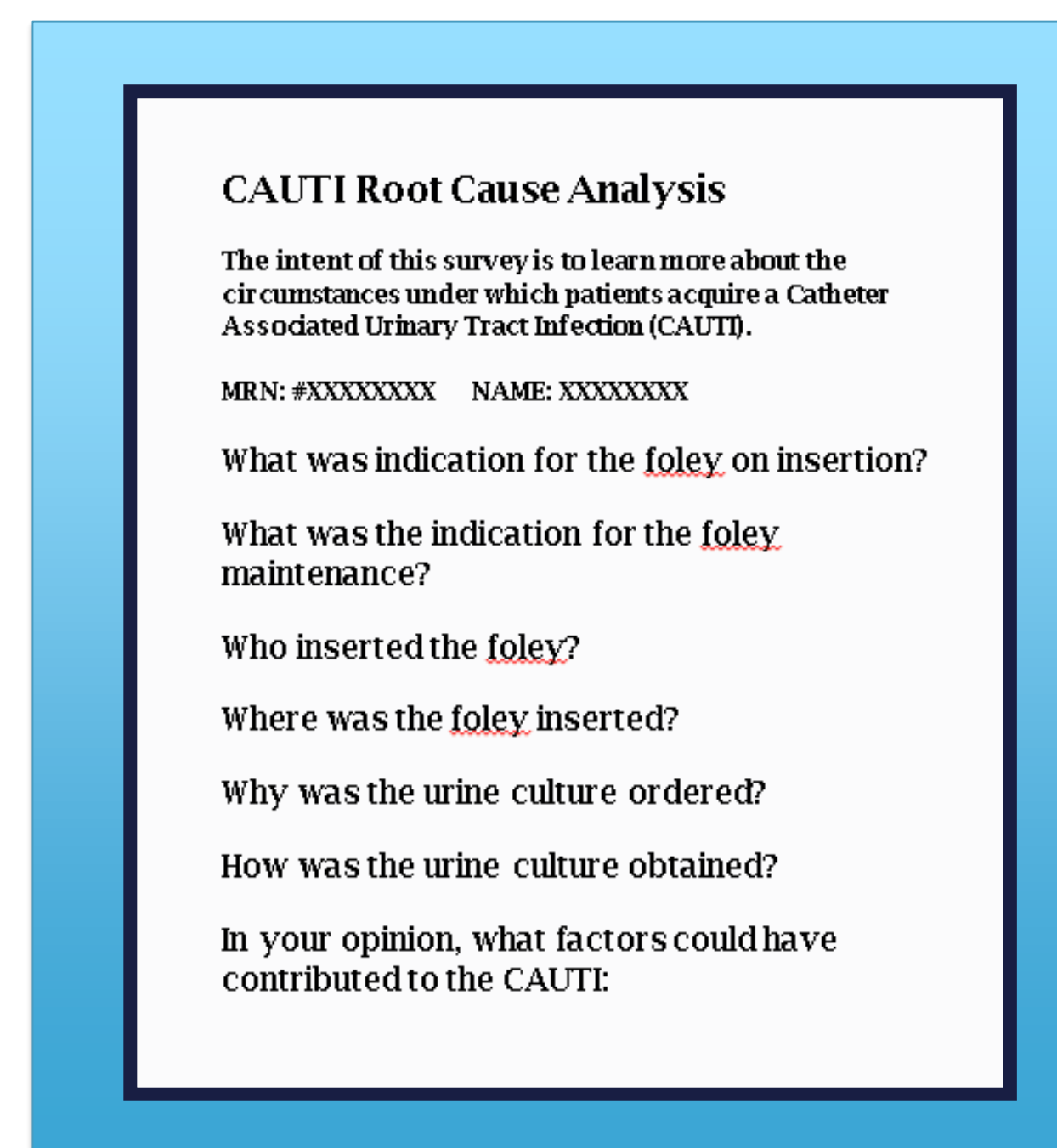


Each cycle of the RCA process led to specific CAUTI prevention interventions, as well as leading to refinements of the RCA process

Project Design & Cycle Changes

Cycle #1: 2013 – Oct 2017

- RCA form completed by unit clinical nurse specialist (CNS)
- Findings presented at monthly CAUTI prevention committee
- Narrative, hypothesis-generating data stimulated discussion

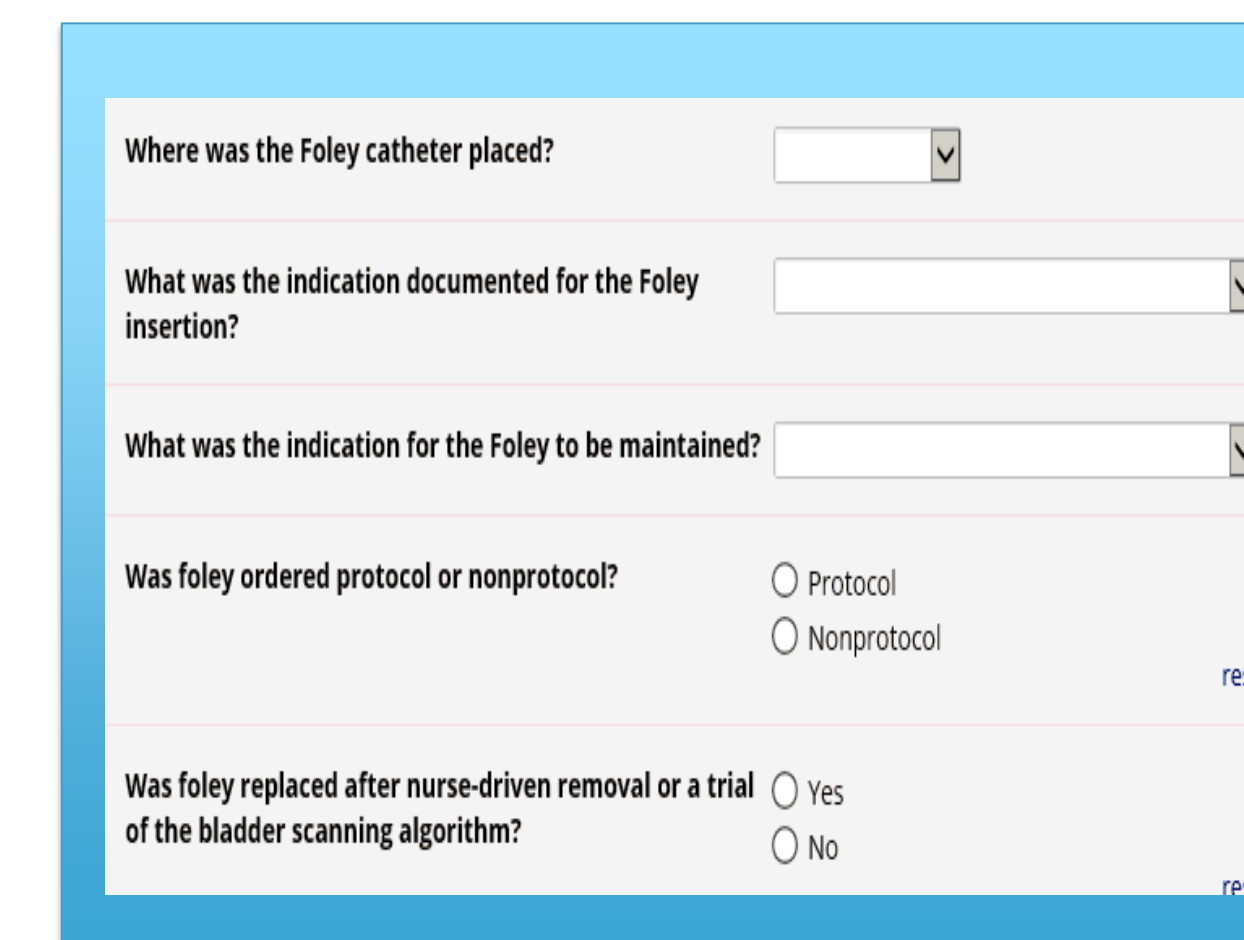


CAUTI Root Cause Analysis
The intent of this survey is to learn more about the circumstances under which patients acquire a Catheter Associated Urinary Tract Infection (CAUTI).
MRN: #XXXXXXXX NAME: XXXXXXXX
What was indication for the foley on insertion?
What was the indication for the foley maintenance?
Who inserted the foley?
Where was the foley inserted?
Why was the urine culture ordered?
How was the urine culture obtained?
In your opinion, what factors could have contributed to the CAUTI:

- Developed Nurse Driven Foley Protocol; including a bladder scanning algorithm. This protocol empowered nurses to remove catheter when no longer met criteria.
- Targeted education was performed in identified areas (e.g. operating room)

Cycle #2: Oct 2017 – Apr 2018

- Web-based form
- Addressed process measures as well as CNS clinical judgment on contributions to the CAUTI.
- I/O monitoring most common insertion (57.7%) and maintenance (69.2%) indication
- Preventability: 65% left blank

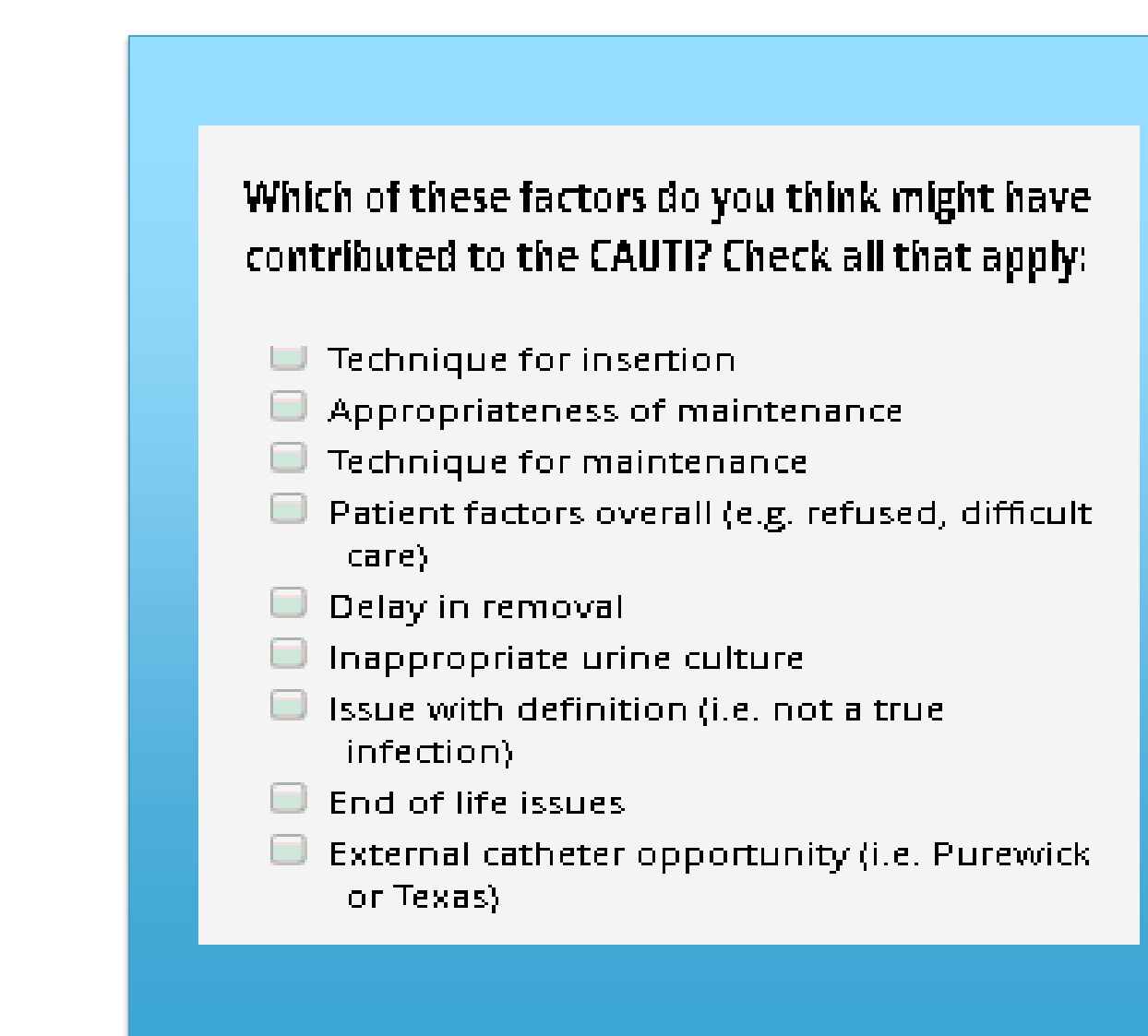


Where was the Foley catheter placed?
What was the indication documented for the Foley insertion?
What was the indication for the Foley to be maintained?
Was foley ordered protocol or nonprotocol?
Was foley replaced after nurse-driven removal or a trial of the bladder scanning algorithm?

- Standardized perineal wipes in ICU and non-ICU settings
- Revised catheter protocol to require specific indication for close monitoring of intake & output

Cycle #3: Apr 2018 – present

- Addressed unanswered questions from the first 6 months of data
- Eliminated questions which had proven unrevealing/confusing
- Specifically queried presence of contributing factors identified as potential intervention targets



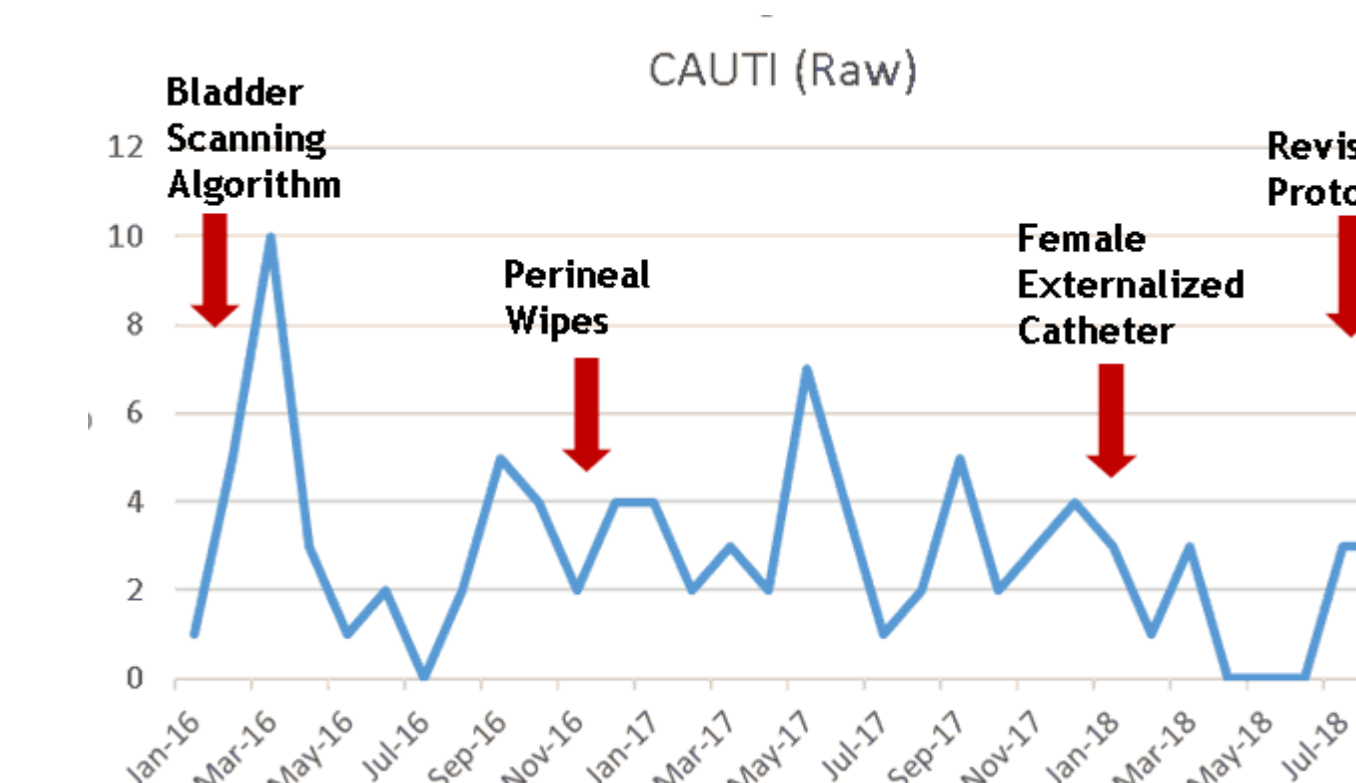
Which of these factors do you think might have contributed to the CAUTI? Check all that apply:

- Technique for insertion
- Appropriateness of maintenance
- Technique for maintenance
- Patient factors overall (e.g. refused, difficult care)
- Delay in removal
- Inappropriate urine culture
- Issue with definition (i.e. not a true infection)
- End of life issues
- External catheter opportunity (i.e. Purewick or Texas)

- Adoption of female external urinary catheter
- Policy to minimize urine cultures in catheterized ICU patients

Outcomes

Our raw CAUTI rate fell from 111, in 2014, to 65 in 2017. As of July 2018, we had 22 CAUTIs, a third of what the last year's data contained.



Our SIR fell from 0.77 to 0.59 from 2016 to 2017. However, in 2017, we began to report data from medical & surgical units along with the ICUs. At the end of 2017, our mixed unit SIR rate was 1.109. With the iteration of the RCA cycle #2, our SIR rate fell to 0.89.

Lesson Learned

The evolving CAUTI RCA process is an effective means of directing CAUTI-reduction interventions; refining a data-collection instrument has helped further decrease CAUTI rates in a low-incidence setting by quickly and systematically identifying contributing factors allowing for targeted interventions.

Earlier versions informed our understanding of CAUTIs in our institutional setting, and the latest versions have enhanced our improvement by enabling us to predict the level of impact of interventions. We will continue to use and adapt this tool to continue improving our CAUTI rates.

References

1. Department of Health and Human Services. Prevent Health Care-Associated Infections (HAI): National Targets and Metrics. <https://health.gov/hcq/prevent-hai-measures.asp>. Updated June 18, 2018. Accessed June 18, 2018.
2. Meddings J, Rogers MAM, Krein SL, et al. Reducing unnecessary urinary catheter use and other strategies to prevent catheter-associated urinary tract infection: an integrative review. *BMJ Qual Saf* 2014;**23**:277-289.



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