Inpatient compliance with acute urinary retention Foley catheter orders and associated patient outcomes

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Background

Catheter-associated urinary tract infections (CAUTIs) are the most common type of healthcare-associated infection[1]

- Lead to increased patient morbidity/mortality, and length of stay[1], with estimated annual associated costs ranging from $115 million to $1.82 billion[2]
- The largest risk factor CAUTIs is prolonged use of of Foley catheters[1]

In December 2025, UM Health-Sparrow updated their electronic health record **order pathway** for when providers place a Foley catheter order for a given indication in all in-patient units. It updated the OurPractice Advisory displayed with every Foley order and added follow-up orders for post-insertion care. The goal was to reduce overall Foley device days and reduce CAUTI risk for patients

- The indication of interest was **acute urinary retention** (AUR), which is the sudden, temporary inability to void urine voluntarily[3]

The primary changes were:

1. The Foley must be **removed after 48 hrs** in the morning after the patient wakes up
2. **Trial of Void (TOV)** procedures: **Bladder scan every 4 hrs** until **2** consecutive post-void residuals of <200 mL and if the residual is >300 mL a straight catheter should be used

Objectives

1. Determine inpatient clinical compliance with UM Health-Sparrow's recently updated Foley catheter order pathway for the acute urinary retention indication
2. Assess differences within and between final patient outcome groups

Methods

This project was a **retrospective chart review** of patients with acute urinary retention Foley catheter orders from 1/1/26 to 4/13/26 (post policy change). These charts were pulled from the electronic health record (*Epic Systems Corporation*) utilized at UM Health-Sparrow. Data was collected on 40 different variables, which fell into 5 categories:

1. **Foley order** (e.g. ordering ID, ordering department)
2. **Inpatient admission information** (e.g. total days admitted)
3. **Foley information** (e.g. insertion/removal date, hours inserted)
4. **Bladder Scanning/TOV information** (e.g. did patient pass the TOV, average hours between scans)
5. **Patient outcome** (e.g. did the patient receive a urology consultation, was there an indication update)

Following data extraction, patients were removed from the final cohort to clean the data before analysis. The analysis occurred in steps, starting with a univariate analysis, then a bivariate analysis, and lastly, final patient outcome comparisons.

Results

Of the **553** charts reviewed, **388** featured unique AUR Foley catheter orders that fit the inclusion criteria and were analyzed in this project

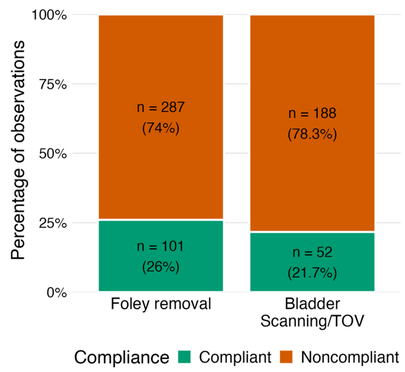

Figure 1: Foley Removal and Bladder Scanning/TOV Compliance

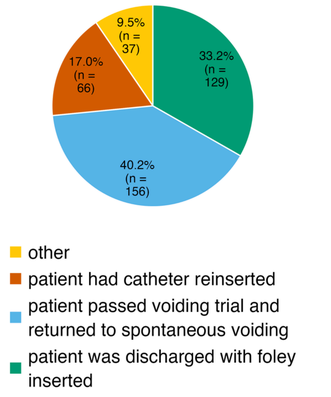

Figure 2: Final Patient Outcomes

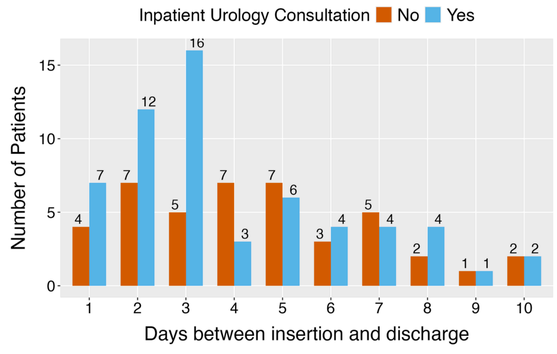

Figure 3: Time from Foley Insertion to Discharge by Urology Consultation Status

Foley Catheter (fig. 1)

- Median time a Foley catheter was in place: **74.2 hrs (3.1 days)**
  - Mean ± SD: 106.6 ± 94.8 hours (4.4 ± 4.0 days)

Bladder Scanning/TOV (fig. 1)

- Mean time between scans (averaged across patients): **6.2 hrs**
- The most frequent number of scans was **1** (mean: 2.5)

Final Patient Outcomes (fig. 2)

- 60% of patients went on to receive continued care
- 13% had an indication update

Final outcome comparisons: Discharged with Foley in (fig. 3)

- **129** patients were discharged with a Foley catheter in
  - **71.1%** of those patients were sent for continued care (compared to 54.1% for other outcomes)
  - **57.4%** of those patients received an inpatient urology consultation, (compared to 25.5% for other outcomes)
  - **61 (47%)** were discharged within ~2 days of Foley insertion

Conclusions

- There was **low compliance with both** Foley removal and Bladder scanning/TOV policies
  - Many Foley catheters remained in at least a day beyond suggested removal date
  - There was noncompliance with both frequency (min. 2) and timing policies for bladder scanning/TOV
- A large portion of patients being discharged with a Foley catheter inserted was an **unexpected final outcome**
  - This suggests that an indication change may have been necessary, yet did not occur in the majority of cases
  - The patients discharged within ~ 2 days of insertion suggest that their inpatient stays were too short for the AUR policy requirements to apply, which would not qualify as noncompliance
  - Early discharges were more frequent amongst the patients that had an inpatient urology consultation, once again suggesting a lack of indication updates
- All this could indicate a **misrepresentation of compliance and non-compliance rates** amongst Foley removal and Bladder Scanning/TOV policies for the AUR Foley Catheter indication
- Efforts should be made to understand why compliance is so low for the new policies through communication with clinical teams

Next Steps

From a Data Perspective:

- Compare CAUTI/device day data from the same time period
- Check into outpatient urology follow-up rates for patients discharged with a Foley in

From a Clinical Perspective:

- Meet with clinical teams/nursing staff to discuss the potential barriers to:
  - Timely Foley removal
  - Consistent bladder scanning/documentation of bladder scanning
  - Updating indications when necessary
- Meet with the urology team to:
  - Ensure nursing and urology are aligned on clinical practices
  - Discuss patients being discharged with the Foley inserted and barriers to indication updates
- Examine potential faults in the electronic health records system related to documentation/indication updates and continue to optimize the workflow

References

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