A Flowing Success: A Comprehensive Indwelling Urinary Catheter Management Algorithm

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Abstract

Catheter Associated Urinary Tract Infections (CAUTIs) are one of the most common healthcare associated infections. CAUTIs negatively impact patient outcomes, increase costs, and prolong lengths of stay. In Fiscal year (FY) 2022, 114 CAUTIs occurred across an 8-hospital academic health system. Apparent cause analyses of the CAUTIs revealed a lack of understanding of when an indwelling urinary catheter (IUC) is indicated and when it can be removed. To address this issue, a comprehensive decision support algorithm was developed to provide guidance for assessing IUC indications.

Objectives

1. Describe obstacles to implementing an algorithm at a large health system and things to consider to overcome these obstacles.
2. List indications for an indwelling urinary catheter.
3. Describe how to evaluate a urinary catheter that has been placed for acute urinary retention.

Study Design

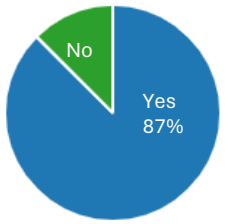
A pilot study was conducted to test the algorithm. A quantitative analysis included measurement of IUCs with inappropriate indications and dwell time > 3 days with an indication of acute retention. A balancing metric measuring IUC reinsertions within 24 hours was used to evaluate harm. A qualitative analysis included a survey to evaluate the algorithm's usability. Categorial metrics were analyzed using Chi-square or, when appropriate, Fisher's exact test, and a p-value < 0.05 was considered statistically significant.

Results

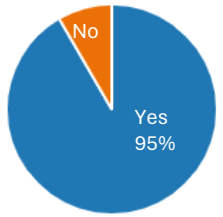
The results of the pilot study showed:

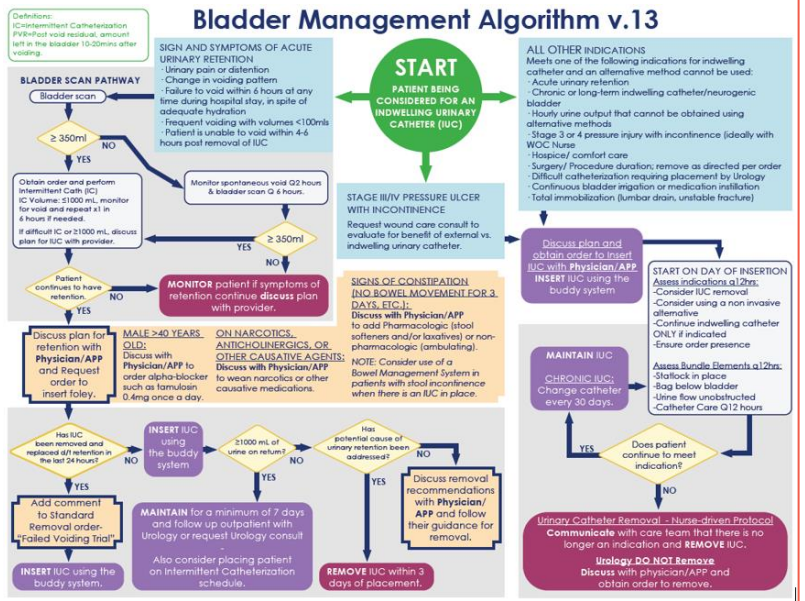
- 18.2% decrease in overall IUC dwell time (decrease from 4.2 days to 3.5 days)
- Decrease in the percentage of IUCs with an inappropriate indication from 2.4% to 1.3% (p=0.02)
- Decrease in the percentage of IUCs inserted for acute retention with a dwell time > 3 days from 82.1% to 72.1% (p=0.004)
- No significant change in the percentage of IUCs reinserted within 24 hours (0.1%, p=0.79) suggesting no increased signal for patient harm

Do you think this algorithm helped in the daily review of the indwelling urinary catheter necessity?



Did this algorithm provide you with clear instructions about what to do if a patient has urinary retention?





Conclusion

In conclusion, implementation of a comprehensive decision support algorithm was helpful during the daily review of the IUC, and facilitated an improved understanding of when an IUC is appropriate to place and when it can be removed.

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Disclosures

None.