Introduction:

A. Approximately 15% to 25% of hospitalized patients receive urinary catheters (UCs)
    1. Nearly one-half million of those patients develop a catheter-associated urinary tract infection (CAUTI)
    2. The greatest risk factor for a CAUTI is prolonged UC use
B. Each day that a UC is in place, the risk for infection increases by 3%-7% per day
    1. A single episode of CAUTI may increase the length of stay by one-half to one full additional day, resulting in a bed cost of $1880 per day.
C. The extended use of an indwelling UC is seen more often for patients with acute urinary retention and complex conditions such as enlarged prostate glands
D. Catheter insertion for complex patients is often difficult
        1. Increasing risk of infection
        2. Increasing risk of urethral injury
E. Unsuccessful attempts can cause further issues
    1. Prolonging relief from bladder distention
    2. Increasing the patient's anxiety and pain
F. To prevent infection and urethral injury it is critical that nurses acquire the knowledge and skills for managing difficult urinary catheterizations.
G. The cost of surgical repair for iatrogenic urethral trauma adds thousands of dollars to the overall hospital stay.
    1. The average cost for a cystoscopy with irrigation is approximately $6000 and treatment costs range from $700 to $2700.
H. Iatrogenic urethral injuries and subsequent complications are believed to be preventable when well-trained care providers insert UCs.

Purpose:

"The purpose of this study was to evaluate the effectiveness of the CNS-led difficult urinary catheterizations (DUC) Program over a 4-year time period (2013-2017) in reducing patient catheter-associated urinary tract infections (CAUTI) and urology consults for difficult catheterization."

Methods:

A. A retrospective cohort study
B. Participants were UTMC patients who had urinary catheters inserted during their hospitalization.
C. Measures
    1. number of consultations, patient's age, male gender, and setting
    2. the shift in which the consultation took place along with the duration of the consultation
    3. type of intervention and how faithful they were to the DUC protocol for male patients
    4. patient CAUTIs, the rate of CAUTIs for UTMC, and the number of CAUTIs who had consultations with the RN DUC team
    5. the successful attempts of urinary catheter insertion for the RN DUC team and the amount of urology consults
D. Procedures
    1. Peer-reviewed journals and databases were used to guide the study.
    2. DUC program developed in May 2012
    3. DUC nurses were trained during July and August
    4. RN DUC team tested from October 2012 to April 2013
    5. 56 patients consulted with an 82% success rate
    6. RN DUC team started May 1, 2013
E. Data collection
    1. collected from EMR along with the performance improvement coordinator and information technology database programmer.
    2. patient CAUTI identifications were cross-referenced with RN DUC consult numbers to determine CAUTIs in RN DUC patients
    3. data was collected during the 4 year study
    4. institutional review board approval obtained in October 2017
F. Analysis
    1. Overall, 95% margin of error was gathered for patient CAUTIs.

Results:

A. The study period was 4 years
    1. 19,816 indwelling UCs were inserted for patients situated in inpatient, emergency department, and same day surgical settings.
    2. The RN DUC team also received 465 patient consultations; outcome data is available for 435 patient consultations.

B. Patient mean age
    1. 67 ± 17 years (range: 16-102 years)
    2. 58.9% (n = 256) of the patients were men
C. Men are more difficult to catheterize than women.
D. Most patients were consulted in the acute care setting (73.1%)
    1. More than two-thirds of them inpatient
    2. ED consultations (69.3%) were initiated on the day shift
E. Urology consults decreased (See image 2)
    1. Almost 50% from baseline (N = 40)
    2. Postimplementation year 3 (N = 21)
    3. However, In year 4, there was nearly a 3-fold increase in URO consults (N = 57) from the previous year.
F. Average RN DUC Consult time
    3. pilot (41 ± 34 minutes)
    4. decreased by 8 minutes (33 ± 30 minutes)
G. Total Number of RN DUC patient consults
    1. 435 in 4 years
H. Patient CAUTI's Decreased (See image 1)
    1. Baseline number of CAUTIs was 169 per year
    2. 24 reported in study year 4
    3. 2 of the 395 patients (0.46%) who received an indwelling catheter by the RN DUC team were reported to have a CAUTI.
    4. Ninety-two percent of the patients (92%, n = 399) consulted by the RN DUC team had a successful outcome
    5. This is an 85.8% decrease in CAUTI's
I. Patient Satisfaction
    1. A male patient declared after receiving 2% lidocaine jelly prior to DUC insertion: "where were you when I got my last catheter?"
    2. A patient who received an RN DUC consult during his previous admission insisted that "forever more," only a DUC RN insert his catheter.
J. Physicians noted the effectiveness of the DUC Program as urology consults are more likely to be for truly difficult patients requiring advanced instrumentation for UC placement.
K. New platform for new staff nurses
    1. The successful DUC Program has provided a program to mentor new staff nurses in complex nursing practice

2. This gives them the opportunity to be in the RN DUC insertion team

Image 1:

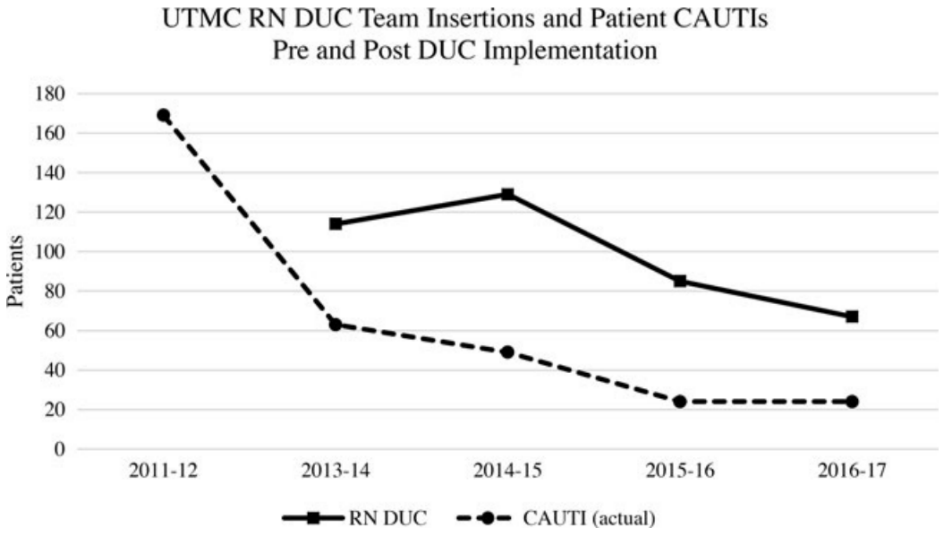
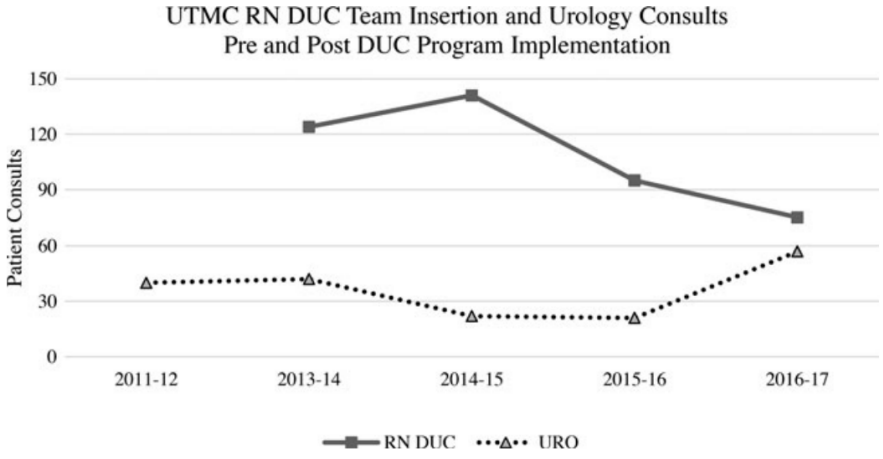


Image 2:



Conclusion:

A. DUC insertion teams led by nurses improve patient safety and satisfaction by decreasing complications which is financially beneficial to the healthcare organization and thus the overall healthcare system.
B. Fewer consultations to urology due to DUC placement allows for additional time for scheduled procedures and office responsibilities.
C. Easy access to experts for DUC insertions is beneficial to staff nurses and provides the opportunity to learn advanced nursing care.

Citation:

Price, D., & McKeon, L. (2020). Outcomes of a nurse-led difficult urinary catheter team in an academic medical center. Journal of Nursing Care Quality, 35(4), 309–316. https://doi.org/10.1097/NCQ.0000000000000464

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