

Educating Nurses on Coude Catheter Placement: A Urology Quality Improvement Project

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Abstract

Over 30 million urinary catheters are purchased annually by hospital systems in the United States, with nearly 1 in every 4 hospitalized patients receiving an indwelling catheter during their stay. Although a majority of placements are uncomplicated and straightforward, a significant portion can be difficult and lead to complications if the healthcare provider is not adequately trained. These complications can range from urinary tract infections and urethral injuries to false passages requiring cystoscopy at bedside or in the operative setting. Our project aims to show that with proper education/training, nursing staff can perform successful Coude catheter placement. This would allow for prompt patient treatment, cost-effective care, and decrease emergent urology consultations.

We trained 14 volunteering nurses from the surgical unit at our 300-bed hospital in a learning session regarding coude catheter placement. The educational intervention's aim was to develop knowledge and comfort with difficult catheter placement using a didactics, hands-on, and question and answer session. Pre and post intervention questionnaires were completed regarding comfort level, perceived usefulness, and number of successes/attempts made at difficult catheter insertion.

Our preliminary data shows that all variables showed improvement and final data is now being collected on an even bigger sample size.

Using appropriate methods of instruction, we were able to demonstrate creation of a nursing team confident and competent in successful coude catheter placement. Our next step is to reproduce this data in a larger sample size.

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Introduction

Over 30 million urinary catheters are purchased annually by hospital systems in the United States, with nearly 1 in every 4 hospitalized patients receiving an indwelling catheter during their stay. Although a majority of placements are uncomplicated and straightforward, a significant portion can be difficult and lead to complications if the healthcare provider is not adequately trained. These complications can range from urinary tract infections and urethral injuries to false passages requiring cystoscopy at bedside or in the operative setting. Our project aims to show that with proper education/training, nursing staff can perform successful Coude catheter placement. This would allow for prompt patient treatment, cost-effective care, and decrease emergent urology consultations.

We trained 15 volunteering nurses from the surgical unit at our 300-bed hospital in a learning session regarding Coude catheter placement. The educational intervention's aim was to develop knowledge and comfort with difficult catheter placement using a didactics, hands-on, and question and answer session. Pre and post intervention questionnaires were completed regarding comfort level, perceived usefulness, and number of successes/attempts made at difficult catheter insertion. Our preliminary data shows that all variables showed improvement and final data is now being collected on an even bigger sample size. Using appropriate methods of instruction, we were able to demonstrate creation of a nursing team confident and competent in successful Coude catheter placement.

Figure 1. Regular Vs. Coude Foley Catheter



Figure 2. Foley Insertion Model



Methods

A total of 15 full time surgical floor nurses participated in our pilot study which consisted of didactics, hands on training as well as a question/answer session. Our goal was to improve nursing staff's knowledge, comfort level and skillset related to the use of Coude catheters. A pre-education assessment was distributed to gain insight on participant's prior experience in nursing as well as standard catheter and Coude catheter placement. This information was then compared with a post-education assessment to gauge perceived comfort level and overall proficiency improvement.

Results

N= 15, Average Years Experience 7.6 Years

Table 1. Standard Catheterization Results (Pre-Education Survey)

Measure	Mean	Mode
Average Success Rate	91.66%	95%
Comfort Level	4.8/5	5/5
Confidence Level	3.7/5	4/5

Table 2. Coude Catheterization Results (Post-Education Survey)

Measure	Mean	Mode
Number of Coude Catheterizations Attempted	2/3	3
Average Success Rate	50.00%	80%
Comfort Level	3.7/5	4/5
Confidence Level	3.2/5	4/5

1/5 = Unsuccessful, 2/5 = Successful (Unsuccessful), 3/5 = Failed (Unsuccessful or Unsuccessful), 4/5 = Successful (Unsuccessful), 5/5 = Successful (Unsuccessful)

Table 3. Domain Tested, Learning Objectives, Teaching Method and Evaluation Tools

Domain	Learning Objectives	Teaching Method	Evaluation Tool
Knowledge	1. Differentiate between standard and Coude catheters. 2. Explain the purpose of the hook on the Coude catheter. 3. Describe the anatomy of the urethra and bladder.	Didactic Lecture Hands-on Demonstration	Pre and Post Survey
Skills	1. Perform a successful Coude catheter insertion on a training model. 2. Demonstrate the correct technique for inserting a Coude catheter into the bladder.	Hands-on Demonstration Practice on Training Model	Observation and Feedback
Attitudes	1. Demonstrate confidence and competence in performing a Coude catheter insertion. 2. Show respect for the patient's privacy and dignity.	Role-play Scenario-based Learning	Self-reflection and Peer-feedback

Figure 3. Perceived Benefit of Education

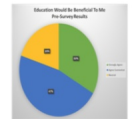


Figure 4. Perceived Benefit of Education

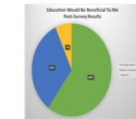
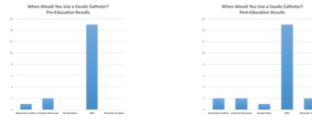


Figure 5 and Figure 6. Assessment of Cognitive Domain Example



Conclusion

- Nearly 25% of hospitalized patients receive an indwelling catheter!
- Absence of training for Nursing in handling difficult catheterizations.
- Typically leads to consulting Urology to perform catheterization after a failed attempt.
- Burdensome to providers and to patients as it can lead to a delay in treatment and increase patient/hospital costs.
- Nurses who were minimally trained and educated on Coude Foley catheter placement not only were more comfortable with complex catheter insertion but also more effective.
- The cost of a Coude catheter is roughly \$20 more than Standard catheter.
- The cost of an inpatient urology consultation can range from \$200-300.

Figure 7. Cost Comparisons



Figure 8. Cost Benefit of Educating Nurses on Coude Placement



Limitations and Future Research

- Small sample size.
- Likely limited the power to detect statistically significant effects for certain measures.
- Short amount of time between the educational intervention and the collection of data was another limitation.
- Future research aimed at measuring traumatic Foley rates with this educational intervention in place.

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