

The CAUTI's Stop Here; A Quality Improvement Project in an Emergency Department

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PROBLEM STATEMENT :

CAUTIs are the most common HAI, with the vast majority of these infections occurring from the unnecessary placement of a urinary catheter. The occurrence of urinary tract infections (UTIs) are the fourth most common type of HAI, with an estimated 93,300 UTIs in acute care hospitals in 2011. UTIs additionally account for more than 12% of infections reported by acute care hospitals. Virtually all healthcare-associated UTIs are caused by instrumentation of the urinary tract2.

UC Davis Medical Center is a level 1 Trauma Center that serves 87,000 Emergency Department (ED) visits per year. Due to increased national focus on the reduction of healthcare associated infection (HAIs) and to improve patient care outcomes, the stakeholders of our ED implemented a taskforce for the reduction of Catheter-Associated Urinary Tract Infections (CAUTIs). This taskforce consisted of the Unit Base Practice Council (UBPC), resuscitation room (RR) leadership team, ED nurse director, ED nurse manager, ED Clinical Nurse Educator, an infection prevention nurse and a Quality & Safety (Q&S) Nurse Champion. To help drive practice change, this collaboration implemented the Institute of Healthcare Improvement's (IHI) PDSA cycle methodology to reduce CAUTIs in our ED.

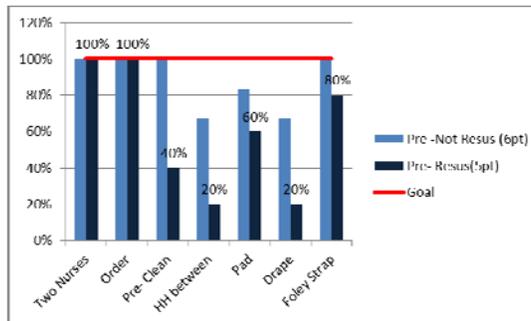
GOALS / OBJECTIVES:

The goal of this ED UBPC "Stop CAUTI" project was to increase the overall compliance to the institution's evidence-based urinary catheter insertion bundle, and to provide alternatives for urinary catheter placement through a PureWick (female external catheter) device trial and condom catheter re-education.



Improvement Strategies: Insertion Bundle:

In order to decrease our insertion-related CAUTI rate, our multidisciplinary task force conducted eleven audits using the standardized indwelling urinary catheter insertion audit tool (see Table 1). The audits were completed on patients located in the RR and the high acuity patient pods. The urinary catheter audit analysis indicated that our adherence to the CAUTI bundle lacked education that focused on pre-cleaning, hand hygiene between pre-cleaning and insertion, and under pad and fenestrated drape usage (Table 2). To increase adherence to the CAUTI insertion bundle, the members of the UBPC targeted their education to the ED leadership and RR leadership teams. They provided just-in-time coaching to all ED team members focused on proper catheter insertion practices and the use of a standardized tool.

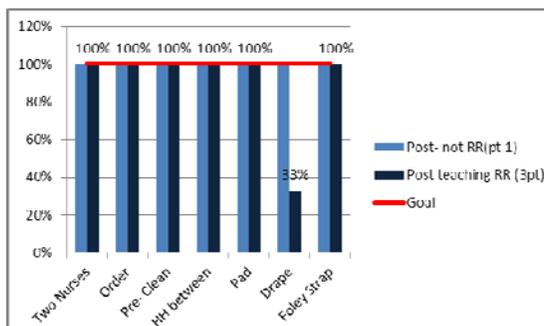


Utilization: Simultaneously, with the education on insertion bundle techniques, our taskforce introduced alternative devices to use instead of placing an indwelling urinary catheter. These alternatives were a Purewick trial and condom catheter education.

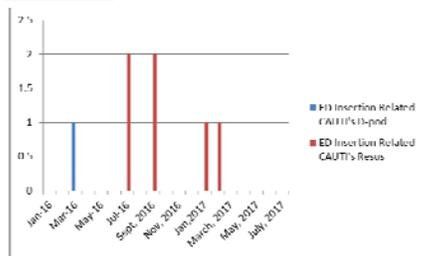
- **Product Trial:** PureWick which is a new female alternative to catheter insertion
- **Existing Product-** Provided education and increased the product availability of the condom catheters

Results:

• **Audits:** The post implementation compliance to the urinary catheter insertion bundle showed significant improvement. Our quality improvement team conducted four post education insertion audits that indicated 7 out of the 8 steps were compliant to the urinary catheter insertion bundle. The exception was with the use of the fenestrated drape (Table 3).



MEASURE:



Since July of 2016, the ED had six insertion-related CAUTI's out of total # of catheter insertions. The ED CAUTI reduction task force performed extensive root cause analysis (RCA) to identify the contributing factors for these insertion-related CAUTI's. The RCA's discovered that all six of the indwelling urinary catheters were inserted in the RR on patients that were coded as 911's, 922's & 944's. These codes are based on our internal triage algorithm which is based on stringent trauma and medical criteria. The team conducted audits on patients that were physically located in the RR and high acuity pods with triage codes of 911, 922 & 944's. Hospital insertion standards are from The Centers of Disease Control and Prevention (CDC) guidelines for the proper techniques for urinary catheter insertion1. All urinary catheter insertion audits were completed using a standardized tool. (Table 1)

Table 1

Foley Insertion Audits												
Date	Site	Area	Ordering Provider/Service	Team	Room	Procedure	Pre-clean (scrub)	Pad (scrub)	Drape (scrub)	Foley Strap	Wetted Insertion	Comments

Trials and Re-Education

Product Trial:

- The PureWick trial was completed with the use of 40 devices. The University of California Davis Medical Center (UCDMC), Products Standards Committee approved continuing use of the device in our Emergency Department. In addition, the committee extended a 500 device trial for the main hospital to determine facility-wide usage (Below)

- The trial concluded that the Purewick device was easy to place, comfortable to wear and if placed correctly, the patient remained dry.

Product usage and patient satisfaction result provided by an evaluation form that was provided by the PureWick Company.

Device	Yes	No	Total
Paraplegic	39	1	40
Obese	39	1	40
Lasix	39	1	40

CONTINUING IMPROVEMENT: NEXT

STEPS:

The next step for our "Stop CAUTI's" project is to implement a stringent urinary catheter placement and utilization guideline set by CDC and implemented in our hospital policy (Listed in Table 5). The preliminary data for adherence to the hospital policy for urinary catheter insertion criteria is 69%. Patients that do not meet these insertion criteria were 31% (Table 5). To increase adherence to the urinary catheter insertion hospital policy criteria our taskforce, in collaboration with the ED resident physician quality improvement program, will provide education and coach providers to cease insertion of urinary catheters that do not meet criteria.

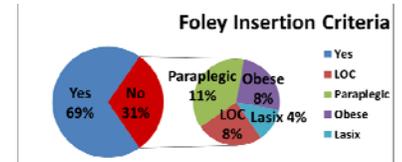
Insertion Criteria

There are six appropriate reasons for placing or maintaining a urethral catheter:

1. Perioperative use for selected surgical procedures
2. Acute urinary retention or obstruction
3. Accurate urinary output in unstable or critically ill patients
4. Assist in healing of Stage 3 or 4 open sacral or perineal pressure ulcers.
5. Decompression of the bladder due to neurological disorders or procedures
6. Advanced terminal illness/comfort care

Table 6

Insertion Criteria for Urinary Catheter Devices



REFERENCES:

- References:
- 1) Guideline for prevention of catheter-associated urinary tract infection 2009. (2009). Retrieved from <https://www.cdc.gov/infectioncontrol/pdf/guidelines/cauti-guidelines.pdf>
 - 2) Urinary tract infection (catheter-associated urinary tract infection [CAUTI] and non-catheter-associated urinary tract infection [UTI]) and other urinary system infection [USI] events. (2017). Retrieved from <https://www.cdc.gov/nhsn/pdfs/pscmanual/7psccurrentcurrent.pdf>
 - 3) <http://www.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol-18-2013/No3-Sept-2013/Articles-Previous-Topics/Electronic-Health-Record-CAUTI-Care-Practices.html> (don't know if I need this reference)