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Reducing Catheter Associated Urinary Tract Infection (CAUTI) Rates Benchmark Study

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Contents

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Executive Summary

On a Medical/Surgical/Telemetry (MST) unit, there are patients that need urinary catheters for different reasons such as patients with acute urinary retention, critically ill patients requiring strict output monitoring, patients undergoing surgical procedures, and patients with pressure ulcers to aid with wound healing. Urinary catheters increase the patients' risk of developing a catheter associated urinary tract infection (CAUTI) the longer they stay in place. CAUTIs are expensive to the hospital as Medicare and Medicaid do not reimburse for hospital acquired infections and the costs must come out of the hospital's budget. There has been issues where the urinary catheters are left in place for too long without an appropriate reason. Patients and family members, in some cases have requested for urinary catheters for the convenience of the patient.

The CAUTI protocol in place does not clearly state guidelines that nurses can follow. The current nurse-driven protocol needs to be reviewed and updated to meet the current evidence-based standards of CAUTI prevention. It is essential for the nurses to be compliant with CAUTI bundles in order reduce or prevent CAUTI rates. Communication among the stakeholders is a critical component to increase nurse compliance in using CAUTI bundle. Effective communication will allow feedback and address challenges that might hinder the successfulness of the project. Continuous education for healthcare staff is also very critical to see effective change in the CAUTI rates. Patient education on CAUTI prevention is also needed to engage patients in their care and safety. This project explains the major processes that will need to take place to implement the new strategies in order to reduce CAUTI rates. It also outlines the key stakeholders who will play major roles to implement this project on the unit and in time in the hospital overall.

1. Rationale for the Project

According to the CDC, one in 31 hospital patients has at least one healthcare-associated infection. These include central line-associated bloodstream infections, surgical site infection, catheter-associated urinary tract infection, and ventilator-associated pneumonia. However, the most frequently reported hospital-acquired infection are CAUTIs. They comprise of more than 40% of all healthcare-acquired infections (CDC, n.d.). CAUTIs can lead to complications such as prostatitis, epididymitis, cystitis, pyelonephritis, bacteremia, endocarditis, vertebral osteomyelitis, septic arthritis, meningitis, and even death in patients. These complications associated with CAUTIs can cause great discomfort to the patient, increase their hospital length of stay, increased cost for both the hospital and the patient. There are at least 13,000 deaths attributed to Urinary Catheter Infections (UTIs) each year (Gray, Skinner, & Kaler, 2016). CAUTIs have also resulted in a negative impact on patient satisfaction. Due to complications that increase patient length of stay, patient view it as a negative when they fill out their post-hospital stay satisfaction survey. These negative reviews impact the hospital as they will not meet CMS requirements to receive grants and reimbursements.

CAUTIs are possibly the most preventable Healthcare Associated Infection (HAI), with significant potential cost savings. According to the Affordable Care Act of 2010, the Centers for Medicare and Medicaid Services (CMS) issued a pay-for performance model for hospitals that included a reduction in federal reimbursement related to the incidence of CAUTI during hospitalization (Roser, Piercy, & Altpeter, 2014). More than 75% of CAUTIs are directly related to the use of an indwelling urinary catheter and 25% of all patients are catheterized during hospitalization. In the United States, a single CAUTI can increase cost by $600 to $20 000. CAUTIs constitute a financial burden of $340 to $370 million for U.S. healthcare organizations annually (Gray et al., 2016).

1.1 Project Goals

The Project is a benchmark project and will allow the unit managers to compare their performance against the surrounding hospitals they view as their competitors. Comparing the CAUTI rates within the organization may result in stunted growth for the organization as they may never reach their full potential, or they may not realize their weaknesses. The capstone project focuses on the education of nurses and explaining the importance of CAUTI bundle use to increase compliance and reduce CAUTI rates on the unit. The ultimate project goal is to decrease CAUTI rates and catheter utilization rates on the unit, so they are below the national benchmark. The focus will also remain on implementing an educational plan that will increase nurse compliance in the use of CAUTI bundle.

2. Literature Discussion to Support Project

Catheter-associated urinary tract infections (CAUTIs) are the most frequently reported hospital-acquired infection in the National Health Safety Network (NHSN) and is usually associated with multiple clinically relevant complications such as pyelonephritis, urosepsis, and bacterial endocarditis (Gray, Skinner, & Kaler, 2016). According to the economic analysis done by the CDC, if hospitals could prevent 20% of hospital-acquired infections using evidence-based research, the cost benefits of prevention would reach approximately (US) $5.7 billion (Gray et al., 2016). The men allocated to drainage with an external catheter device had lower incidences of urinary tract infections than men randomized to the indwelling catheter groups (70/1000 patient days vs 131/1000 patient days), as well as lower hazard ratios (hazard ratio = 4.84; 95% confidence interval = 1.46-16.02) (Gray et al., 2016). Multiple knowledge gaps were discovered in the research, including efficacy studies and cost analyses of CAUTI prevention bundles that incorporate ECDs. This systematic review is ranked at a Level IV according to the level of evidence hierarchy.

CAUTIs have a significant impact on morbidity, mortality, and healthcare expenditure, but to a greater extent, they can be prevented. UTI complications could potentially increase a patient's hospital stay by 0.4 days for an asymptomatic UTI and 2.0 days for a symptomatic UTI (Schiessler et al., 2019). A month after CAUTI nurse-driven protocol implementation and bundle compliance, there was evidence of a 60% decrease in catheter days in their pediatric intensive care unit (PICU) (Schiessler et al., 2019). The more the unit decreased their catheter days, it led their CAUTI rates to come down to zero identified. According to Schiessler et al (2019), "A nurse-driven indwelling urinary catheter removal protocol has proven to reduce CAUTIs and the length of catheter days in this PICU". This project helped empower the bedside nurses, increased the development of their critical thinking skills, and acted as a reminder for the daily risk reduction.

On all hospital-acquired infections, CAUTIs account for 36 % of those and affects both inpatient and ICU patients (Parker et al., 2017). Four acute hospitals from two health districts in NSW, Australia were purposefully selected for the project to determine how these hospitals can reduce indwelling urinary catheter usage rates by reducing inappropriate urinary catheterization and duration of catheterization (Parker et al., 2017). This Quality Improvement Project is ranked as a level VI on the level of evidence hierarchy. The pilot study showed a 50 % (39.5 to 14.6 %) decrease in indwelling urinary catheter insertion rates (Parker et al., 2017). The evidence-based research results will add to the existing literature through enhancing understanding of interventions to reduce CAUTI, using a control device to reduce secular effects (Parker et al., 2017).

In surgical procedures, CAUTIs are the most common adverse effects due to the need for catheterization and could result in significant financial expenses on healthcare systems. CAUTIs are also the third most common healthcare associated infection and increases medical costs (Haifler, Mor, Daton, Ramon, & Zilberman, 2016). According to Haifler et al. (2016), the use of

a one-time dose antibiotic therapy as a prophylaxis before a laparoscopic robot-assisted radical prostatectomy (RALP) to prevent CAUTIs showed that it reduces patient length of hospital stay, reduce morbidity, and reduce medical costs. A single preoperative dose of antibiotics did not show an increase in the CAUTI rates post RALP compared with prolonged antibiotic treatment but was found to be associated with short length of stay in the hospital reducing morbidity and medical costs (Haifler et al., 2016). Compliance rate following the RALP policy was 59% in 2012, and that might have affected the CAUTI rate results (Haifler et al., 2016). The sample sizes were small, and a few studies were done making the results not very conclusive (Haifler et al., 2016). There is still a need for a larger sample sizes and more research on the effect of a one-time dose of antibiotic therapy prior to RALP in reducing the CAUTI rates.

The use of nurse-directed catheter removal protocols can help in reducing catheter utilization rates and in turn CAUTI rates by empowering nurses to remove urinary catheters early. A cohort study was done in a surgical trauma intensive care unit (STICU) to "compare the CAUTI rate and indwelling urinary catheter utilization before and after unit ownership of a nurse-driven urinary catheter removal protocol in a large level 1 trauma tertiary care academic center surgical trauma intensive care unit (STICU)" (Tyson et al., 2018, p. 2). The cohort study confirmed that nurse-driven protocols in conjunction with catheter care and maintenance, early catheter removal, urine culture ordering, and improved urine collection methods can result in catheter utilization rates and CAUTI rates in STICU (Tyson et al., 2018). The study adds to the existing literature further confirming and reinforcing the importance of using a bundled approach and how it helps reduce the catheter utilization and CAUTI rates (Tyson et al., 2018). The selected CAUTI patients were adults with no significant difference in age between the pre- and post-protocol cohorts (Tyson et al., 2018). Data collection methods could have an impact on the results in the study as there is

no way to determine if the implementation of this protocol had unintended consequences according to Tyson et al (2018).

According to Zurmehly (2018), the purpose of the quasi-experimental design "was to develop and implement a nurse-led EBP urinary catheter protocol (UCP) and measure the impact on catheter-days and CAUTI rates among CCI patients in a large LTACH" (p. 373). The results showed that after an education program and evidence-based nurse-driven protocol were implemented, there was a significant decrease in catheter utilization days and CAUTI rates (Zurmehly, 2018). The study targeted a small group and that could impact the infection rates and make statistical outcomes more difficult to determine. The Registered Nurses involved in the study were aware of the evaluation before and after education sessions and they might have been more aware when performing catheter care (Zurmehly, 2018). Other limitations to the study were that there was no evaluation of the new urinary catheter protocol and that there was no control group to compare findings and evaluate reliability of the test questions (Zurmehly, 2018).

A quality improvement project was used to review the effect of nurse-driven removal protocol on catheter-associated urinary tract infections (Ballard, Parsons, Rodgers, Mosack, & Starks, 2018). Level of evidence for the project was ranked at a level V, and the results were non-significant but potentially clinically meaningful in the reduction of catheter utilization on a medical-surgical unit (Ballard et al., 2018). The improvement team had difficulty with the computer system in entering orders and insertion conditions which might have impeded improvements to be made (Ballard et al., 2018).

According to the Centers for Disease Control and Prevention's (CDC) 2009 CAUTI prevention guidelines, catheters should only be inserted for appropriate indications and removed promptly when they are no longer medically necessary, to effectively reduce CAUTI rates (Durant,

2017). The nurse-driven protocol (NDP) provides professional nurses with a rubric to follow and make decisions on their own, with less physician consultation (Durant, 2017). A systematic review of studies was performed and concluded that NDPs have a positive impact on the clinical predictors and the prevalence of CAUTI (Durant, 2017). Level of evidence for the systematic review is ranked at a Level IV. The systematic review used a comprehensive search strategy and Limitation to the review is a need for improving the study design of quality improvement projects conducted within the patient care setting. It was also not possible for a meta-analysis of results to be conducted because of heterogeneous nature of the outcome measures and methodologic approaches (Durant, 2017, p.1340).

A quality improvement study was conducted to evaluate the impact of medical student placement of urinary catheters on rates of postoperative CAUTI (Sultan, Kilic, Arnaoutakis, & Kilic, 2018). Urinary catheter insertion using sterile technique is important as it lowers the risk of introducing an infection during urinary catheter placement. The study concluded that medical student placement of urinary catheter showed a significant increase in risk-adjusted odds of postoperative CAUTI (Sultan et al., 2018). Limitations to the study included lack of information on the number of times the student, resident, or nurse had placed a urinary catheter previously (Sultan et al., 2018). Another limitation to the study is "other CAUTI-related outcomes such as rates of urosepsis, costs attributable to this complication, and other morbidity or mortality resulting from the CAUTI were not evaluated, but are important" (Sultan et al., 2018, p. 501).

3. Project Stakeholders

The stakeholders impacted by the proposed change are unit staff nurses, physicians, unit director, charge nurses, chief financing officer (CFO), chief nursing officer (CNO), nurse educator, Infection control and prevention nurse, the patients, and certified nurse assistants

(CNA). The physicians will work with the nurses to draft a nurse-driven protocol using evidence-based research as well as approve CAUTI bundles. The director will oversee the change project overall and will work with charge nurses who will be supervising the project and making sure all the phases are being followed as planned. The CFO will handle the funding that is needed to conduct the project and to determine any financial differences after the change project has been implemented. The CNAs are trained to empty urinary catheters and perform catheter care when they are giving patient baths and are vital to the success of the change project. For the change project to commence, approval is needed from the unit director. The gate keeper is the unit director, and other allies in the organization that might assist in the change project are nurse educators and infection control department. The patients will also play a role in the change project as CAUTIs directly impact their well-being. They will be educated on CAUTI prevention and encouraged to take initiatives in early urinary catheter removal when not contraindicated.

4. Proposed Outcomes

The proposed outcomes after the successful implementation of the project include a reduction in the incidence of CAUTI and in turn decreasing the unit and hospital CAUTI rates and decreased urinary catheter utilization rates. Another desired outcome is 100% nurse compliance in using all the CAUTI bundles as a collective for effective results.

5. Evaluation Design

The first step in the evaluation plan would be track the appropriateness and prevalence of catheter use. This could be done through daily rounding on all patients by the unit nurse managers and charge nurses and recording the indication of each catheter use. The daily prevalence rate will be calculated by dividing the number of catheterized patients on the unit by the total number of patients. Audits will be conducted for sterile catheter insertion compliance

and the number of validated staff that have inserted the indwelling catheter for the three-month post-intervention period.

The next step would be to conduct a survey after the implementation phase has been completed. This helps the change project team get feedback on how effective the education program is and if it helped improve CAUTI bundle use compliance. The survey would also give room for the healthcare staff to give suggestions on what they think will work better to increase their compliance with CAUTI bundle use. A post education test can also be conducted to evaluate the healthcare members' awareness on CAUTI bundle use. The unit would also identify the number of symptomatic CAUTI cases each month, and this can be defined by using the National Healthcare Safety Network (NHSN/CDC) to identify and count CAUTI cases on the post-surgical unit.

EBP Change Model

The model of choice for this project is the Iowa Model of Evidence-Based Practice to Promote Quality Care (Melnyk & Fineout-Overholt, 2015, p. 283). The model fits the change process because it provides step-to-step process of initiating and implementing the change project. It will guide the team in performing the changes needed for the project such as following the nurse-driven protocol. The model also allows the team to ask question on better ways of doing things that are evidence-based and challenges the nursing staff in performance improvement.

6. Timetable/Flowchart

At this time there is no definite time frame in place as to when the project will be implemented. The unit manager is currently working on another project on her unit and we had decided to implement our project in the fall. However, due to the Covid-19 pandemic, plans are

not certain but will continue to communicate with the manager until it is safe to implement. The last phase of the project will also involve the unit director, managers, educators, and project team leader as they review the number of CAUTIs that occurred during the 3 months post nurse education and protocol update and compare it to the period before the nurse education. These number will help determine if the entire process was effective or if the hospital need to come up with a new plan on decreasing the CAUTI rates. The ANA CAUTI prevention tool will also be used as a guideline within the unit and if successful it can then be rolled out to the entire hospital.

7. Data Collection Methods

The data collection methods will include chart reviews of hospitalized patients with indwelling urinary catheters and the unit's CAUTI rates before implementing the project. Chart reviews will also be conducted after the project has been implemented to determine if CAUTI rates increased or decreased with the use of CAUTI bundles. The performance of CAUTI bundle use would be reviewed in patients' charts to see if the RNs noted CAUTI bundle use in their practice. CAUTI rates will be calculated using the CDC/NHSN surveillance tool. The surveillance tool will be used in measuring catheter days by dividing the number of UTIs by urinary catheter days multiplied by 1,000 (UTIs per 1,000 Foley catheter-days). The ANA CAUTI prevention tool will be used as guide to insertion of urinary catheters. It will act as a guideline to the nurses to determine the appropriateness of urinary catheter insertion. Chi-square analysis will be used to compare the CAUTI rates pre and post intervention, and all tests would be one-tailed at the $p < 0.05$ level of significance (Zurmehly, 2018). A survey will be conducted post implementation to determine how the easy the CAUTI bundle is to use for the nurses and hear the challenges and recommendations they have. After the education program has been implemented, the nurses will have post education test or quiz at the end of each module to

evaluate their retention. The unit data collected will then be used to compare with similar units in other hospitals.

8. Discussion of Evaluation

There is not an official evaluation of this benchmark study currently. The evaluation of the project will be done after the project has been implemented. There has been a discussion with the unit manager and currently there are plans to implement this project in the fall when it is safe to do so.

9. Costs/Benefits

The only costs that are anticipated will be for printing materials for creative posters, pamphlets, and education packets for orienting nurses. The rest of the costs will remain the same as all products to be used are already included in the unit budget. The hospital costs due to CAUTIs are anticipated to decrease as catheter utilization and CAUTI rates decrease over time. Patient healthcare costs will also decrease as prevention of CAUTIs will shorten their hospital stay.

Conclusions/Recommendations

Early removal of the indwelling urinary catheter has proved to reduce the rate of CAUTIs, as the risk of urinary tract infections increases the longer the catheter remains. It is important that the clinical staff is compliant with the urinary catheter insertion guidelines as well. The evidence shows that patients with indwelling foley catheters for a prolonged time are more at risk for CAUTIs than patients without the foley catheter or when foley catheters are removed early. However, in some surgical procedures, critically ill patients, patients with wounds and pressure ulcers due to long-term immobilization, and patients experiencing acute urinary retention, they have a foley catheter insertion in order to improve the patient outcome. In cases like these, it is important for clinical staff to minimize the risk and exposure of urinary tract

infects in patients with foley catheters. This can be done by consistently providing catheter care and documenting the task when done, using less invasive methods first and placing an indwelling catheter left as a last resort.

All these interventions when included as a bundle will reduce the CAUTI rates and improve patient outcome, as well as saving money for both the patient and the hospital. CAUTI bundle should become part of a culture of patient safety, this way all healthcare staff is mindful of the patient well-being and prevent them from harm. Other studies showed strong evidence of reduced CAUTI rates when a CAUTI bundle is implemented and healthcare staff is compliant. The unit educator will provide education to healthcare staff in form of mandatory in-service. The educators will also provide continuous education to all staff members and provide them with the resources they need to remain compliant with CAUTI bundle use.

References

Alexaitis, I., & Broome, B. (2014). Implementation of a nurse-driven protocol to prevent catheter-associated urinary tract infections. *Journal of Nursing Care Quality, 29*(3), 245-252. doi:10.1097/ncq.0000000000000041

ANA CAUTI Prevention Tool. (n.d.). Retrieved from https://www.nursingworld.org/practice-policy/work-environment/health-safety/infection-prevention/ana-cauti-prevention-tool/

Ballard, J.P., Parsons, S., Rodgers, J., Mosack, V., & Starks, B. (2018). HOUDINI impacts upon utilization and infection rates – A retrospective quality improvement initiative. *Urologic Nursing, 38*(4), 184-191. doi:10.7257/1053-816X.2018.38.4.184

Durant, D. J. (2017). Nurse-driven protocols and the prevention of catheter-associated urinary tract infections: A systematic review. *American Journal of Infection Control, 45*(12), 1331-1341. doi:10.1016/j.ajic.2017.07.020

Gray, M., Skinner, C., & Kaler, W. (2016). External collection devices as an alternative to the indwelling urinary catheter. *Journal of Wound, Ostomy and Continence Nursing*, *43*(3), 301–307. doi: 10.1097/won.0000000000000220

Haifler, M., Mor, Y., Dotan, Z., Ramon, J., & Zilberman, D. E. (2016). Prophylactic antibiotic treatment following laparoscopic robot-assisted radical prostatectomy for the prevention of catheter-associated urinary tract infections: did the AUA guidelines make a difference? *Journal of Robotic Surgery*, *11*(3), 367–371. doi: 10.1007/s11701-016-0667-8

Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing & healthcare*. Philadelphia: Woltsers Kluwer Health.

Olson-Sitki, K., Kirkhride, G., & Forbes, G. (2015). Evaluation of a nurse-driven protocol to remove urinary catheters: Nurses' perceptions. *Urologic Nursing, 35*(2), 94. doi:10.7257/1053-816x.2015.35.2.94

Parker, V., Giles, M., Graham, L., Suthers, B., Watts, W., O'Brien, T., & Searles, A. (2017). Avoiding inappropriate urinary catheter use and catheter-associated urinary tract infection (CAUTI): A pre-post control intervention study. *BMC Health Services Research, 17*(1). doi: 10.1186/s12913-017-2268-2

Roser, L. P., Piercy, E. C., & Altpeter, T. (2014). Targeting zero: One hospital's journey to reduce CAUTI. *Nursing Management (Springhouse), 45*(12), 18-20. doi:10.1097/01.numa.0000456652.02404.b5

Schiessler, M. M., Darwin, L. M., Phipps, A. R., Hegemann, L. R., Heybrock, B. S., Shriver, K., & Macfadyen, A. J. (2019). Do not have doubt, get the catheter out. *Pediatric Quality and Safety, 4*. doi: 10.1097/pq9.0000000000000148

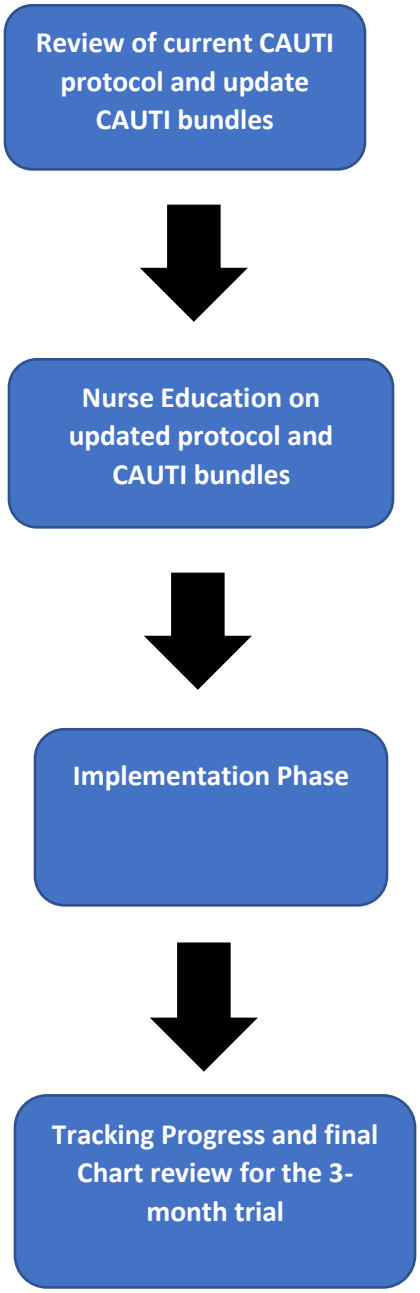
Sultan, I., Kilic, A., Arnaoutakis, G., & Kilic, A. (2018). Impact of foley catheter placement by medical students on rates of postoperative urinary tract infection. *Journal of the American College of Surgeons, 227*(5), 496-501. doi:10.1016/j.jamcollsurg.2018.08.182

Tyson, A. F., Campbell, E. F., Spangler, L. R., Ross, S. W., Reinke, C. E., Passaretti, C. L., & Sing, R. F. (2018). Implementation of a nurse-driven protocol for catheter removal to decrease catheter-associated urinary tract infection rate in a surgical trauma ICU. *Journal of Intensive Care Medicine*. doi:10.1177/0885066618781304

Zurmehly, J. (2018). Implementing a nurse-driven protocol to reduce catheter-associated urinary tract infections in a long-term acute care hospital. *The Journal of Continuing Education in Nursing, 49*(8), 372-377. doi:10.3928/00220124-20180718-08

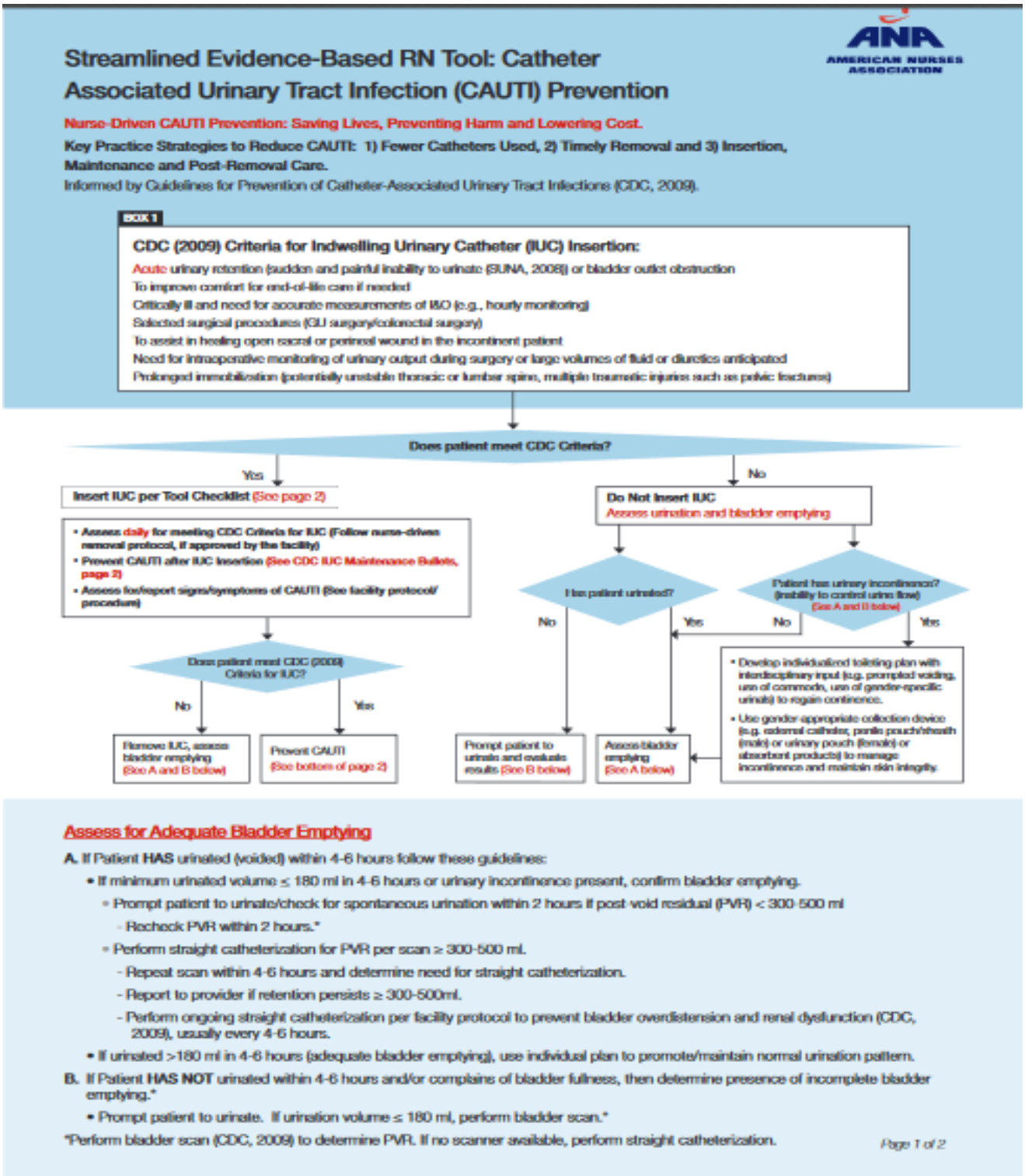
Appendix: A

Flow Chart



Appendix: A

American Nurses Association CAUTI Prevention Tool



Indwelling Urinary Catheter (IUC) Insertion Checklist to Prevent CAUTI in the Adult Hospitalized Patient: Important Evidence-Based Steps.	Yes	Yes with Reminder	Comments
Before IUC insertion:			
1) **Determine if IUC is appropriate per the CDC Guidelines** (CDC, 2009) (See page 1, Box 1).			
2) **Select smallest appropriate IUC** (14 Fr., 5ml or 10 ml balloon is usually appropriate unless ordered otherwise).			
3) **Obtain assistance PRN** (e.g., 2-person insertion, mechanical aids) **to facilitate appropriate visualization/insertion technique.**			
4) **Perform hand hygiene.**			
Patient Preparation/Insertion of IUC:			
1) **Perform peri-care,** then, **re-perform hand hygiene.**			
2) **Maintain strict aseptic technique throughout the actual IUC insertion procedure, re-perform hand hygiene upon completion.** • Use sterile gloves and equipment and establish/maintain sterile field. • Do not pre-inflate the balloon to test it, as this is not recommended.			
3) **Insert IUC to appropriate length and check urine flow before balloon inflation to prevent urethral trauma.** • In males, insert fully to the IUC "Y" connection, or in females, advance ~1 inch or 2.5 cm beyond point of urine flow.			
4) **Inflate IUC balloon correctly:** Inflate to 10 ml for catheters labeled 5 ml or 10 ml per manufacturer's instructions.			
After IUC insertion completion:			
1) Perform **Triple Action for IUC/Drainage System:** • **Secure IUC** to prevent urethral irritation. • **Position drainage bag below the bladder** (but not resting on the floor). • **Check system for closed connections and no obstructions/kinks.**			

Note: Refer to Expert Nurse for consults (e.g., urology, WOC, infection control, geriatrics, rehabilitation) and other team members per facility protocol to reduce iuc use and days and to manage complex care (e.g., incontinence, immobility).

BOX 2

Maintenance of IUC/Drainage System and Other Patient Care to Prevent CAUTI (CDC 2009)

- **Maintain appropriate catheter securement** per facility protocol/procedure and the drainage bag below the level of the bladder at all times (but not on the floor, even when emptying).
- **Empty the drainage bag regularly** using a separate, clean collecting container for each patient; avoid splashing, and prevent contact of the drainage spout.
- **Maintain unobstructed urine flow** by keeping the catheter and tube free from kinking.
- **Maintain a closed drainage system.**
- **If breaks in the closed system are noted** (e.g., disconnection, cracked tubing), replace the catheter and collecting system following above IUC insertion checklist.
- **Perform perineal hygiene** at a minimum, daily per facility protocol/procedure and PRN.
- **Use timely fecal containment device when appropriate for fecal incontinence.**
- **Teach nursing assistants and patient/family iuc maintenance.**

References
Gould, C.V., Umscheid, C.A., Agarwal, R.K., Kuntz, G., Pegues, D.A. (2010). Guideline for prevention of catheter-associated urinary tract infections. Infect Control Hosp Epidemiol, 31(4), 319-326. Retrieved from http://www.jstor.org/stable/10.1086/651091.

Lo, E., Nicolle, L.E., Coffin, S.E., Gould, C., Maragakis, L.L., Meddings, J., Yokoe, D.S. (2014). Strategies to prevent catheter-associated urinary tract infections in acute care hospitals: 2014 update. Infect Control Hosp Epidemiol, 35(5), 464-479. Retrieved from http://www.jstor.org/stable/10.1086/675718.

Meddings, J., Rogers, M.A., Krein, S.L., Fakih, M.G., Olmsted, R.N., Saint, S. (2013). Reducing unnecessary urinary catheter use and other strategies to prevent catheter-associated urinary tract infection: an integrative review. BMJ Qual Saf, 23(4), 277-289. Retrieved from http://qualitysafety.bmj.com/content/23/4/277.long.

Stone, P.W., Pogorzelska-Maziarz, M., Herzig, C.T., Weiner, L.M., Furuya, E.Y., Dick, A., Larson, E. (2014). State of infection prevention in US hospitals enrolled in the National Health and Safety Network. Am J Infect Control, 42(2), 94-99. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/24485366

Acute Urinary Retention (2008). Society of Urologic Nurses and Associates. http://www.suna.org/resources/acuteUrinaryRetention.pdf