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Educating Staff on the ANA CAUTI Prevention Tool in Order to Reduce Infections on the Nursing Unit

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This project was undertaken as an Evidence-based change of practice project at San Francisco VA Medical Center and as such was not formally supervised by the Institutional Review Board.”
Educating Staff on the ANA CAUTI Prevention Tool in Order to Reduce Infections on the Nursing Unit

Clinical Leadership Theme

The goal of this project is to educate staff of the proper utilization of the ANA CAUTI prevention tool (see Appendix A) and to improve staff understanding of catheter-associated urinary tract infections (CAUTIs). A quiz (see Appendix B) and a simulation lab that will be orchestrated by me will determine staff’s understanding. The goal is to have 90% of the staff pass the quiz, which will prove to be an effective understanding of the teaching material. The aim is to ensure staff understanding of the protocol with the ultimate goal to reduce infections rates; this goal is not part of this project. Functioning as the Clinical Nurse Leader (CNL) role of Educator, I will lead the team by providing education material and instructions to staff and evaluating performance via mock simulation. This will be done by researching data and information and presenting staff with material on the etiology of CAUTIs and guiding staff on the proper use of the ANA CAUTI prevention tool. In addition, I will serve as reference guide on the unit if needed until the end of my rotation.

Statement of the Problem

Catheter-associated urinary tract infections (CAUTIs) are one of the most common hospital-associated infections. Researchers have found that these infections are the fourth most common type of healthcare associated infections and accounts for more than 12% of infections (CDC, 2016). According to the Arizona Nurse (2015), more than 560,000 patients are plagued with CAUTIs each year increasing patients’ morbidity and mortality. In addition, CAUTI increases length of stay, healthcare costs, and pain and suffering to patients. In many instances CAUTIs are preventable. However, many facilities continue to struggle with high incidence
rates. The surgical unit observed for this project has had issues with catheter-associated infections. The unit currently utilizes the ANA CAUTI prevention tool, however, infections continue to occur and has no sign of decline in the past two years. The ANA tool is based on an algorithm used to ensure catheters are not inserted unnecessarily and that they are removed as soon as possible. The ANA CAUTI tool is centered on evidence-based practices and has been proven effective in combating infections by three areas: (1) Prevention of inappropriate short-term catheters use (2) Nurse-driven timely removal of urinary catheters and (3) Urinary catheter care during placement (NPSF, 2015). The tool helps to keep patients safe by assisting nurses assess bladder emptying and incontinence. The purpose of this project is to educate nursing staff on the proper use and understanding of the prevention tool and increase nursing skills in order to decrease and/or eliminate infections caused by catheters. Increasing the staffs’ knowledge and nursing skills will lead to positive patient care outcomes and increase the culture of safety within the microsystem. In addition, applying evidence-based practices will also aid in delivering continuous care and increase patient and family satisfaction.

**Project Overview**

This project takes places on a small but busy unit at a Veteran’s facility in Northern California. The unit consists of 20 beds consisting of surgical and medical-surgical patients. The unit consist of four private rooms and the eight semi-private rooms The staff represents nurses, patient care assistants (PCAs), one to two ward clerks, the nurse managers, attendings, residents, medical students, and other health care professionals that are always on the unit, but play a major role in patient care plans. This is a teaching facility; therefore there are a variety of healthcare professionals and students in and off the unit. The unit’s core consists usually between four and
five nurses, a charge nurse, and two PCAs working on the unit. In addition to the clerks, the unit’s manager is also part of this core.

As stated the unit is usually busy and can be come chaotic at any point in time. Patients coming from surgery usually have a catheter in place when upon returning to their room. Non-surgical patients also have catheters in place at times. Infection rates on the unit have been steadily between eight and ten per dating back two years (SFVAMC, 2016). These numbers are too high for this unit. The ultimate goal for this facility and any other facility is to eliminate infections completely. The unit has implemented the ANA CAUTI prevention tool, but the number of infections has not improved within the past two years. Due to this reason, measures must be taken to improve catheter-associated urinary tract infections on the unit.

The primary goal for this project is to educate nursing staff on CAUTIs and reeducate staff on the proper use of the ANA’s prevention tool. The staff reception of the learning will be measured by taking a quiz (see Appendix B) after the in-service session. The goal is to have 90% of the staff pass the quiz with 90% or better. Also staff will be put through a simulation in order to critical think in similar situations they are likely to encounter with indwelling catheters. This portions is not measured on a grading scale, but this will allow nurses to work together with problem solving which will further increase knowledge. The SMART criteria will be applied to the project in order to meet the goals. The SMART method means goals should be: specific, measurable, attainable, relevant, and timely (Revello & Fields, 2016). The need for education is staff is necessary as the rates of CAUTI has not decreased in two years. Once the education is administered, staff will be quizzed and perform a mock simulation to test (measure) their knowledge. The project goals are attainable because the evidence and research has proven the ANA CAUTI tool has been proven effective. The project is relevant to the needs of the
microsystem as represented by the infection rates. Lastly, the time frame for the project fits into the course of the semester, which is more than enough time to complete the project.

This project is intended to improve the microsystem by educating nursing staff and improving nurses skills in order to reduce infections associated with indwelling catheters. The project aim is to improve patient care administration on the surgical unit by implementing the ANA CAUTI guidelines properly. By informing nurses on proper utilization of the protocol, this relates to the global aim statement, which is reducing and hopefully eliminating CAUTIs on the unit.

**Rationale**

The data collected from the infectious control department at the facility showed that there has been between eight and ten catheter-associated urinary tract infections on the surgical unit each quarter over the past two years (SFVAMC, 2016). For this facility these numbers are below the facilities achievement. However, any one patient who develops an infections from an indwelling catheter is one too many. The department of infectious prevention and control keeps a record of all hospital-acquired infections and diseases. The department does an excellent job with tracking data throughout the facility. The data suggest that there is a need for an intervention, which sparked the interests of for this project. Since this unit is already utilizing the ANA CAUTI prevention tool, an assessment was done to assess the knowledge of staff on the protocol and their understanding of CAUTIs: definition, causes, signs and symptoms, and treatments.

Before starting the planning of this project I developed SMART goals to ensure the objectives were feasible in the time of the semester. I then created a SWOT analysis (see Appendix C) to give me an idea of what is effective and less effective in the microsystem. The
SWOT analysis allowed me to brainstorm and create an overview of expectations when conducting my project. In addition to the SWOT analysis, I developed a stakeholder analysis (see Appendix D) to show the members of the microsystem who are the stakeholders in this project. I created a list of the stakeholders and made points on how each group will benefit from the project and improve project goals. I then utilized the root cause analysis method to further identify the problem.

When approaching the issue of my project, the root cause analysis (RCA) method was utilized to assist me in identifying the causes of the problem. I created a fishbone diagram (see Appendix E), which allowed me to stimulate ideas on the root causes. In the diagram I created 4 topics: Man, Method, Environment, and Material. Under each topic I listed issues that I thought were causing an effect that led to the nursing staff understanding of CAUTIs and the prevention tool. Creating an RCA helped me develop the groundwork of my project and from this I was gradually build the framework.

I created a survey (see Appendix F) to determine the nursing staff current knowledge of the prevention tool and their knowledge of CAUTIs. It consisted of questions asking the nurses how strongly they felt about their participation and understanding of the CAUTI prevention tool. The survey also assessed their understanding of the etiology of CAUTIs. After observing data from the survey, I concluded that about 50% of the nurses did not completely understand the CAUTI prevention tool. However, majority of the staff understood the etiology of infections from indwelling catheters. The data from the survey gave me a baseline to start. With the information I obtained, I was able develop an action plan and create goals for this project.
Cost-Analysis

This project is focused on educating staff about the ANA’s CAUTI prevention tool. In addition to ensuring that staff understands and implement the guideline correctly; the long-term goal is to reduce the occurrences of CAUTIs on the unit, which is not part of this project. According to Gelinas (2015), CAUTIs are the most common reportable conditions resulting in more than 560,000 cases each year. According to Warknine (2013), CAUTI’s cost can range from $603 to $1189 per admission. For this project teaching will be done during pre-shift huddles lasting 30 minutes. 3-5 huddles are planned for this project. In addition, a short 10-minute simulation will be done during the shift using 3-4 nurses at time.

After looking up previous posts on the job-posting site, I determined that a part-time instructor/nurse educator salary would average about $65 per hour. I multiplied this by 110 hour, the number of hours I spent on this project, which resulted in $7150. The supplies I used consisted of printing handouts of the prevention tools, printouts of articles and material I obtained from online, and material to create posters and pictures (which some had to be enlarged). This cost was about $500 dollars. Although the salary of the nurses varied, I used data from the Bureau of Labor Statistics (2016) to estimate the average nurse salary of $55 per hour at this facility. The unit has 26 registered nurses on staff. I took in consideration that the time for the in-services and simulation portion would be around an hour. Therefore, the number of staffed nurses was multiplied by the averaged salary, which resulted in $1430. Once all of the figures were calculated, the cost of this project would be $9080. However, since I am conducting the project and not on salary for this work, the portion for the instructor was eliminated resulting in the actual cost of this project to be $1930 (see Appendix G).
Since this project is small, I attempted to make the budget as minimal as possible. The goal is to increase knowledge and skills in order to reduce CAUTI infections on the unit. The unit has averaged between eight and ten CAUTIs per quarter for the past two years. This means cost for CAUTIs can be as much as $11,890. If these education sessions can lead to a 20% drop in infection rates in the first year, infection cost could decrease to as low as $9,512. The potential net benefit for this project could be as much as $7,582 per admission. This could be even more as the number of infection rates decreases.

**Methodology**

The objective for this project is to provide staff with proper information on how to recognize signs and symptoms of infection, etiology of infection, and treatment measure for infections. Another objective is to educate staff on the prevention tool so that they understand how to follow the algorithm properly. With success of this project, the ultimate goal is decreasing and/or eliminating infection rates on the unit. This goal a future desire; therefore, data will not be obtained for that goal in this paper.

The Lewin’s change model is utilized for direction on this project. This change theory was chosen because the project is small and the concepts of this theory best fit the objectives of the project. The Lewin’s model is comprised of three major concepts: (1) unfreezing, when change is needed; (2) moving, when change is initiated; and (3) refreezing, when change has been established (Mitchell, 2013). The unfreezing stage in this project is represented by the fact that for the past two years, the infection rates due to catheter remained between eight and ten per quarter. The range has been consistent, but these rates could be improved and/or eliminated. Secondly, the moving stage is the project itself. Once data was collected and the teaching process began, the moving stage began leading the third and final stage. Staff obtaining
knowledge and skills and applying in to patient care represents the refreezing stage. This component of the model will be associated with the decrease in infection rates. Once equilibrium has been established, staff will utilize the protocol properly and infection rates will be reduced on a consistent basis, then the change model is deemed permanent and successful.

In addition to applying Lewin’s change theory, the S.M.A.R.T. goal concept is applied to meet each objective goal. Based on the SMART method, goals should be: specific, measurable, attainable, relevant, and timely (Revello & Fields, 2016). Applying this concept provides a sense of clarity to achieve the objective goals. In addition, it provides motivation and encouragement in the change process.

Before the project began an assessment of the nursing staff was obtain regarding their knowledge of CAUTIs and the prevention tool. This was done by survey (see Appendix F). Based on this data, a teaching plan was constructed to educate staff on the proper usage of the tool. Staff was informed of the project and expected goals explained. Collaborating with the nurse manager, it was agreed that in-services could be held during the morning huddles. During the in-services, the CAUTI prevention tool algorithm was explained to the nursing staff. Operating as the clinical nurse leader (CNL) role of Team Manager, I was in charge of presenting the information to staff and leading the in-services. One of the essentials of the CNL competencies is to design and implement change strategies that will improve the care administration and improve the microsystem (AACN, 2013). The development and implementation of this project is a representation of this criterion. In addition, CAUTI definition, etiology, signs and symptoms, and treatment options were explained to staff. At the end of the in-services, a short quiz (see Appendix B) regarding the teach material was administered. As a group we went over the quiz and any questions or concerns were
acknowledge at this time. Staff was explained that over the course of the next week or two, they would be pulled off the floor for a short 5-10 minute simulation to test their knowledge and skills. It was addressed that staff would monitor one another patients during this time. The use of applying the simulation portion was to bridge the gap between what was learned and applying the new knowledge to nursing practice. Faulcon (2015) writes, simulation provides an opportunity for the nurse to think critically and problem-solve using clinical reasoning in an environment that is non-threatening; and is used to improve learning outcomes in the clinical setting. The simulation activity will also gauge the nursing staff knowledge and their ability to use and apply teamwork.

To test the effective of the project, the quiz results will be the gauge of nursing staff’s understanding of the material. In addition, the simulation will also be used to observe staff knowledge of the material presented for the project. The simulation will not only be away to gauge staff’s knowledge, but also provide means of further educating staff on real example of the protocol. Meeting the project goal of improving nursing staff knowledge of the protocol will lead to a reduction in infections in the up coming months (quarters). I predict that staff will have a better understanding of CAUTIs and the prevention tool after the project is over. In addition, staff will perform better when it comes to caring for patient with indwelling catheters. Staff’s improved skill performance will be exemplified in the coming months when reduction of catheter related infections are reported.

**Data Source/Literature Review**

When trying to identify the best practice to solve the problem for the current issue, I formulated a PICO search. PICO, which stands for: Population, Intervention, Comparison, and Outcome, assists the searcher group search terms into thematic groups (Sayers, 2008). This
approach assisted with providing me with resourceful research. Sayers (2008) writes, successful search strategies are usually highly structured and centered on a PICO structure. The Pico search for this project consisted of the following:

P: Patient with indwelling catheters
I: ANA CAUTI tool
C: Current method
O: Reduce infections

The PICO question that I raised to search for data reads: Will patients with indwelling catheters benefit from the ANA CAUTI prevention tool compared to current methods used on the unit in order to reduce infection rates. I was able to find multiple articles that support my aim statement. As mentioned, Trevellini (2015), reported how St Francis Hospital in New York implemented the ANA CAUTI prevention tool successful outcomes resulted in Catholic Health Services Long Island making it a policy for all facility to utilize the tool. In addition to this article, I was able to find other article that showed success rates of using this tool and articles in which health professionals and urology based associations the health care world to institute this tool; as mentioned before. This evidence-based tool has been shown to be effective in decreasing rates. Therefore, this project, educating staff on the correct implantation of the tool in time will decrease the rates of infection and change the culture of infection control on the unit. I mostly used the university’s library to search for this project. By typing in “ANA CAUTI Protocol,” I was able to retrieve several articles on this topic. I also did a Google search, which provided additional articles and also the actual protocol guidelines. I use this guideline as part of the handout to give to the staff during the in-service part of the education portion of the project.
The literature surrounding the effectiveness of the ANA CAUTI prevention tool has shown that it is effective in decreasing infections in the hospital setting. More and more facilities are beginning to implement this tool as a way to combat infections associated with catheters. After a thorough trial of this tool in one hospital, the Catholic Health Services Long Island (CHSLI) system implemented the protocol to policy system (Trevellini, 2015). It is a big statement for an entire health system to implement a safety tool in its policy. Another facility saw improvements over three quarters and a 45% reduction in CAUTI rates (Smith, 2015). The utilization of this tool has shown to be very effective in reduction rates. By educating staff about proper use of the tool will assist with reduction in infection rates and change the culture within this microsystem. In addition, many providers that work in the healthcare industry are making a push for facilities to implement the tool as means of preventative measures against CAUTIs. In two different articles, authors Gelinas (2015) and Smith (2015) explain the evidence that has shown why facilities should implement this tool in to practice. Gelinas (2015) message is stressing the importance of using the ANA CAUTI tool. She points out data that shows an increasing rate of infection caused by catheters. She is encourages readers to implement the tool in efforts to decrease infection rates. The article points out approval from nursing staff that has implemented the tool. Smith (2015) points out how a team made up of multiple providers collaborated and planned efforts to decrease infection rates on five noncritical care units in a 140 bed facility. By employing evidence-based practices and promotion a culture of safety, they exceeded in meeting their goals for reducing infections. This prevention tool is highly respected as an effective instrument in the medical field.

Another supportive organization for CAUTI prevention tool is the Society of Urologic Nurses and Associates (SUNA). SUNA (2015) is an article in which this organization provides
support and recommendation to facilities to implement the protocol. The goal of this association regarding the protocol is to support efforts of nursing and educate staff in competences needed to provide evidence based and quality care for patients. An organization like this group whose foundation is based on improving urological conditions means much when it promote something like the CAUTI prevention tool. This support strengthens the idea that this tool is effective.

In her article, Trevellini (2015) discussed how the ANA CAUTI protocol was implemented in a hospital, which lead to a reduction of infections. Expectations were exceeded which lead to this guideline put in policy system wide. In the process, nursing staff obtained a better understanding of the importance of preventing CAUTIs. In addition, the CAUTI tool helped change the culture around insertion, maintenance, and discontinuing catheters. This article is a great example of a facility applying evidence-based practices to improve a problem. The facts related to this article further prove and strengthen the effectiveness of the ANA’s CAUTI prevention tool.

After reviewing the data for this particular unit, the numbers of infection rates was concerning. As mentioned earlier, for the past 2 years, infection rates were between 8 and 10 per quarter. There have not been any signs of decline in infection rates, which sparked the idea for this project. Although the unit had the ANA’s CAUTI prevention tool in place, the numbers were continuous at a standard. Though the number infections did not exceed ten, these numbers were concerning to me. Every quarter at least eight patients suffered from an infection. This means eight individuals spent extra time in the facility, took extra medication to fight the infection, and suffered unnecessary physical and emotional pain. After interviewing random staff member on the reason infection rates were not decreasing, it was found that some staff
members did not fully understand the protocol. This data made it appropriate to create this project in order to improve the unit in providing safe and effective care to the patient.

**Timeline**

The project began in August 2016 and concluded at the beginning of November 2016. There have not been any encounters that have preventing the flow of the project. Staff and management have been supportive and participated with the project. This support has made it easy for me to conduct the project and gave me encouragement to work hard toward achieving the objective goals. (see Appendix H for timeline).

**Expected Results**

Following teaching in-services and the mock simulation, I expected that staff would have a better understanding of CAUTIs and the protocol. After collecting the quizzes I led a general review of the quiz and went over the correct answer. It was an informal review in which anyone could call out the answer after I read the question. Staff seemed to understand the concepts. After reviewing the test scores, 90% of the staff scored over 92% on the quiz. This data suggest that staff understood the information that was explained during the in-services. The simulation portion also proved to show that staff understood the teaching concepts from the in-services.

Staff worked together to solved the mock situation. If a staff member was not sure what to do, their coworker was there to assist in the situation. The framework of this project showed that an education intervention was need for this issue. Several nurses have stated how they now understand the protocol and were appreciative of the project. Nursing staff also praised the decision to keep printouts of the protocol at the nurse’s station and break room for easy access as a referral, as it is often times too difficult to locate on the facilities based website.
Nursing Relevance

Preventing catheter-associated urinary tract infections has many positive effects for nurses, patients, and the nursing profession. For nurses preventing CAUTIs expresses the ethical statues of beneficence, nonmaleficence, and fidelity. Nurses have a duty to support and protect the patient emotional and physical well-being. Many CAUTIs can be prevented with proper care and management; therefore, it is solely the responsibility of not only nurses, but also the entire healthcare team to play a role in preventing such occurrences. Preventing CAUTIs also has positives implications for the patient. CAUTIs affect over 560,000 patients each year increasing hospital stays, health care cost, and unnecessary pain and suffering for the patient (Arizona Nurse, 2015). In addition to preventing these mishaps, the prevention of CAUTIs also decreases morbidity and mortality in patients. This is definite the case for the increasingly older population as many in this group suffers from chronic ailments. The implication this project has on the nursing field is numerous. Trevellini (2015) writes how the implementation of the ANA CAUTI prevention tool helped changed the culture around indwelling catheters at St. Francis Hospital in New York. The nurses involved in this project have a better understanding of CAUTIs and why it is important to prevent and/or eliminate occurrences. They understand that their role and actions are important in improving patient outcomes. By implementing a guideline to improve this problem, we not only will decrease infection rates, but will also improve the microsystem, which is beneficial to the nursing field.

Summary Report

For this project my goal was to increase nursing staff knowledge on the etiology of CAUTIs and improve understanding of the ANA prevention tool. I met these goals by presenting learning material by performing in-services to staff. During these in-services, I
presented staff with information on the causes and prevention of CAUTIs and insertion and maintenance of indwelling catheters. In addition, I went over the current prevention tool and explained the algorithm of the guideline. At the end of the in-services I provided time for staff members to ask questions. A quiz was then given to test the knowledge and understanding of the staff. The goal was to achieve a 90% percent passing rate of the staff, which was later proven to be a success. After the in-service portion, I set up a time with the staff to implement a simulation lab. The simulation lab took place in the break room on the unit and in an empty patient’s room when it was available. During this portion of the project, I wanted to put staff in mock situation in which they would have to utilize the prevention tool and apply the etiology of CAUTI that was presented in the in-services. Staff members were grouped in twos and threes for the simulation. They were allowed to work together in developing an action plan for the situation. The simulation lab provided the staff an opportunity to use their knowledge from the in-service presentation, use critical thinking skills, and work as a team. For this project the goals were met and staff appreciated the refresher course of the etiology of CAUTIs and the prevention tool.

This project was performed on a surgical/medical surgical unit. The nursing staff is a fairly close nit group as the unit is small. The environment is busy as any with most units of this nature. The patient population is made up of middle age to elderly demographic. Patients interact with nurses, students, and medical teams that are made up of doctors, residents, and medical students. The institution is a teaching facility, which increases the busyness of the environment. As mentioned before the need for the project was demonstrated by the amount of infection rates that has plagued the unit. The ANA protocol has shown to be effective in decreasing catheter-associated infections. After assessing the unit I concluded that staff deficient
in knowledge correlated with the infection rates. This sparked the implementation of the project.

I am confident that meeting the goals of this project will improve the nursing unit moving forward. The surgical and medical patients who will have catheters will benefit from the nursing staff improved understanding of CAUTIs and the protocol. Staff members now will implement measures that will improve patient care for the entire unit. In time infections rates should decrease and hopefully be eliminated. In order for this to occur and in order for the project to maintain sustainability several factors must ensue. The project can achieve and maintain sustainability by the following factors: having a champion and support from stakeholders. The nursing staff will benefit from a CAUTI champion by having a resource to turn to when having issues with indwelling catheters and/or needing information on the protocol. The champion can be any nurse who is knowledge or the nurse manager can act as the CAUTI champion for the unit. It will be his or her duty to continue what I started and make changes or improve the project that best benefits the unit. Another factor will be support from stakeholders. McMillan (2013) writes sustainability is threatened without high functioning stakeholder collaboration and interaction. Stakeholders are an important component for this project sustainability. The stakeholders, nursing staff, nursing manager, and patients, must be influential and actively participate in the project in order to maintain sustainability.

**Conclusion**

This project has been given me a real-life perspective of the role of the CNL position. Throughout the course of this program the information has been presented of what CNLs are and their role they play in the nursing field. However, implementing this knowledge and information into action shows the many tasks and roles the CNL plays in the change process. I have learned
that it takes time and intricate planning to make changes to improve the microsystem. The CNL
can be the driving force to make these changes and the person to ensure that successful
improvements continue over time. I have also learned from taking on this project that the CNL
must have participation from staff members in order to implement changes and achieve
improvement goals. Collaborating with each member of the multidisciplinary team is critical to
ensure everyone is on the same page to improve the work environment. This project was a
success with the full participation of the staff member and their willingness to change and
improve their patient care delivery. I am pleased to be part of this project and working with the
staff on that unit. I want to give my thanks to each member that helped me on this project. It
was a great learning experience and a pleasure to work with this group of people.
References


San Francisco VA Medical Center. (2016). Infectious control data report.


Streamlined Evidence-Based RN Tool: Catheter Associated Urinary Tract Infection (CAUTI) Prevention

Nurse-Driven CAUTI Prevention: Saving Lives, Preventing Harm and Lowering Cost.

Key Practice Strategies to Reduce CAUTI: 1) Fewer Catheters Used, 2) Timely Removal and 3) Insertion, Maintenance and Post-Removal Care.


**Appendix A**

**ANA’s Prevention Tool**

**Page 1**

**BOX 1 (2009) Criteria for Indwelling Urinary Catheter (IUC) Insertion:**

- Acute urinary retention (sudden and partial inability to urinate) (SUAR, 2008)
- Bladder outlet obstruction
- Critical illness and need for accurate measurements of I&O (e.g., hourly monitoring)
- Selected surgical procedures (e.g., surgery/colorrectal surgery)
- To assist in healing open sacral or perineal wound in the incontinent patient
- Need for intravenous infusion during surgery or large volumes of fluid or dyes anticipated
- Prolonged immobilization (potentially unstable thoracic or lumbar spine, multiple traumatic injuries such as pelvic fractures)

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**Assess for Adequate Bladder Emptying**

A. If Patient HAS urinated (voided) within 4-6 hours follow these guidelines:

- If minimum unirited volume ≤ 150 ml in 4-6 hours or urinary incontinence present, confirm bladder emptying.
  - Prompt patient to urinate/check for spontaneous urination within 2 hours if post-void residual (PVR) < 300-500 ml
  - Repeat scan if retention persists ≥ 300-500 ml.
- Perform straight catheterization per facility protocol to prevent bladder overdistension and renal dysfunction (CDC, 2009), usually every 4-6 hours.
- If urinated > 150 ml in 4-6 hours (adequate bladder emptying), use individual plan to promote/maintain normal urination pattern.

B. If Patient HAS NOT urinated within 4-6 hours and/or complains of bladder fullness, then determine presence of incomplete bladder emptying:

- Prompt patient to urinate. If urination volume ≤ 150 ml, perform bladder scan.

*Perform bladder scan (CDC, 2009) to determine PVR. If no scanner available, perform straight catheterization.
Appendix A
ANA’s Prevention Tool
Page 2

<table>
<thead>
<tr>
<th>Indwelling Urinary Catheter (IUC) Insertion Checklist to Prevent CAUTI in the Adult Hospitalized Patient: Important Evidence-Based Steps.</th>
<th>Yes</th>
<th>Yes with Reminder</th>
<th>Comments</th>
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**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 gown, gloves, 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**

<table>
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<th>Maintenance of IUC/Drainage System and Other Patient Care to Prevent CAUTI (CDC 2009)</th>
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- Maintain appropriate catheter care 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 devices when appropriate for fecal incontinence.

- Teach nursing assistants and patients/family iuc maintenance.

**References**


(ANA, 2014)
Appendix B

In-Service Quiz

1. Explain what a CAUTI is and provide 3 examples of symptoms a patient may express.

2. Give 2 examples of how CAUTIs are treated.

3. What should you do next if a patient has not urinated greater than 180 ml within 4-6 hours?

4. Give 2 examples for a patient who is appropriate for an indwelling catheter.

5. Give 3 examples how a nurse can prevent infections, once a catheter is in place.

6. True or False. It is safe for a patient to go prolonged periods of time with a catheter?

7. True or False. As a nurse it is ok not to question the doctor about removing a catheter as soon as possible after a patient has had surgery.

8. True or False. Keeping an actual record of urine output is safe practices for CAUTIS?

9. True or False. It is unimportant to assess for complete bladder emptying as urine in the bladder is sterile and will not cause infections.

10. Give 3 examples in which the ANA recommends indwelling catheters.
Appendix C

SWOT Analysis

**Strength**
- Open-minded
- Willingness to learn
- Skilled Nurses
- Support from stakeholders
- Protocol in place

**Weakness**
- Negative views of extra work
- Busy unit
- Poor Communication

**Opportunities**
- Increase knowledge
- Improve nursing skills
- Improve safety
- Improve pt's satisfaction

**Threats**
- Lack staff support
- Negative Attitudes
Appendix D

Stakeholder Analysis

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Nursing Staff</td>
<td>Perform safety measures and precautions</td>
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<tr>
<td></td>
<td>Maintain protocol</td>
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<tr>
<td></td>
<td>Provide team work environment</td>
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<tr>
<td>Patients</td>
<td>Improve satisfaction</td>
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<td></td>
<td>Reduces hospital stay</td>
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<tr>
<td></td>
<td>Reduces unnecessary medication administration</td>
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<tr>
<td>Nursing Manager</td>
<td>Ensure nursing staff is continuing protocol</td>
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<td></td>
<td>Resource person for staff regarding protocol and procedures</td>
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<td>Facilitates inpatient operations</td>
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Appendix E
Root Cause Analysis
Fishbone

MAN
- Lack of knowledge
- Algorithm difficult to read
- Not understanding protocol
- Lack of direction from leadership
- Lack of confidence in protocol

METHOD
- No postings of protocol to easily refer
- Staff depends on next nurse to take the initiative
- Staff not charting properly

Environment
- Heavy patient load
- Busy work environment

Material
- Lack of material to care for catheters

Lack of understanding of prevention tool that may lead to infection rates
Appendix F

Nursing Staff CAUTI Prevention Tool Survey

This survey is to determine your understanding of the ANA’s CAUTI prevention tool and your understanding of CAUTIs. This survey is anonymous and is not a judgment of your intelligence, nursing skills, or character. Please answer each question as honest as possible.

1. Do you understand the CAUTI prevention tool and its algorithm?  
   Yes  No  Sort of  
   Explain:

2. Are you confident using the tool independently?  
   Yes  No  Sort of  
   Explain:

3. Do you think the tool is effective in CAUTI prevention?  
   Yes  No  Sort of

4. Please explain a CAUTI, etiology, s/s, and treatments.

5. What would you like to know about the prevention tool and/or CAUTIs that you do not understand?

6. What measure can staff take to decrease the number of CAUTIs on this unit?

7. When it comes to catheter maintenance, how would you rate yourself and staff?
Appendix G

Project Cost-Analysis

COST

Instructor Part-Time $65/hr
Time for project/implementation $7150 (This portion is hypothetical, see total for true cost).
X 110hrs

Supplies (handouts/posters) $500

Training Time 1 hour/26 RNS
X Avg nurse Salary 55/hr $1430

TOTAL $9080 (Includes project part-time instructor cost, not the actual cost)

True Total $1930

The total cost for this project will be around $1930. The cost of $9080 is an estimation of the cost of the project, if a salaried nurse was to run the project. This portion is used to show the reader how much projects could actually cost.
## Appendix H

### Timeline

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