pointers for the aversion of CAUTI. The researchers carried out a point incidence examination of the use of IUC by reviewing all 696-inpatient beds across two sites over the two-day duration. The first site compared 520 acute inpatient beds while the other compared 176-aged care along with rehabilitation beds within one organization. IUC insertion was more common in individuals over 70 years and especially women as compared to men. Out of all the patients with an IUC, sample urine of 12 of them was sent in the 24 hours prior to the examination. Bacterial colonization tested positive in 5 (41.6%) of the 12 samples. This study demonstrates that the use of IUCs places patients at an amplified CAUTI risk.

Tyson et al., (2018) performed a quality enhancement project intending to lessen CAUTIs at a medical center. A criteria-grounded nurse-driven procedure for termination of IUCs along with the application of bladder ultrasonography together with intermittent catheterization was the basis for change. Following the execution of the project, CAUTIs' rate, the count of CAUTIs, the cost of medication and supplies related to treating CAUTIs, length of stay in the ICU, and catheter duration decreased. The results indicate the connection between the use of IUCs and CAUTIs. They also indicate that discontinuation of their use could lessen CAUTI incidents. The nurse-driven protocols could be implemented in 5 NW unit at the University of Chicago Medicine to lessen CAUTI incidents among the hospitalized patients.

Schuur, Chambers, and Hou, (2014) used a cross-sectional study design of E,D visits by adult patients in the U.S., utilizing the National Ambulatory Medical Care Survey (NHAMCS) ED module, amalgamating yearly examinations from 1995 to 2010. The study aimed at explaining the utilization of IUCs in U.S. EDS in addition to determining the fraction, which was possibly avoidable. The researchers established that 8.5% of hospitalized patients received IUCs and that 64.9% of the admitted patients with IUCs did not require receiving them. The researchers concluded that lessening the utilization of IUCs outside of

the CDC recommendationmeasures in ED patients is an encouraging approach to decreasing CAUTIs. The study demonstrates the magnitude of the problem of unnecessary UC insertions in patients. Adhering to the CDCs' guideline criteria for UC use could significantly reduce the number of patients receiving UCs. The researcher's conclusion illustrates the need for lessening UC use to decrease CAUTI incidents.

Minimizing Urinary Catheter Duration

Lee et al., (2016) performed a prospective study intending to establish risk factors of CAUTIs in pediatric patients. Patients with CAUTI were independently matched to control those with an UC but without infection by date, gender, age, as well as the hospital site of the contamination to determine risk factors. One of the critical establishments was that patients with infection had a higher likelihood of having a catheter in place for an extended time (29 days). According to the researchers, the CDC distinguishes impaired immunity as a CAUTI risk factor in adults, and it might be reasonable that in some children numerous admissions with a preference for positive contact precautions status might designate a chronically sick, immunocompromised child. Therefore, they conclude that a protracted period of UC drainage appears to be related to an advanced CAUTI risk in hospitalized pediatric patients and especially those that are immunocompromised. They recommend the reduction of catheterization period, more so in patients that meet these benchmarks, to lessen CAUTI risk. Primarily, the study demonstrates the increased risk of CAUTI in immunocompromised patients and confirms the need to lessen the duration of catheterization among this population to drop CAUTI risk.

Meddings et al., (2014) performed a systematic review to explore the interventions to lessen the use of UC along with CAUTIs. They identified 30 studies with possibility for incorporation in the review. In 11 studies, the CAUTI rate (episodes in every 1000 catheter-

days) was decreased by 53% employing a stop or reminder, with 5 articles also incorporating interventions to lessen initial insertion of UC. The researchers concluded that UC reminders along with stop orders seemed to decrease rates of CAUTI and recommended their use to enhance the safety of patients. Notably, reminders are excellent interventions that remind nurses to remove UC without orders from physicians. Therefore, the study demonstrates that the use of reminders can lessen UC duration and thus catheter days and consequently decrease the number of CAUTI incidents.

Khan, Venkateshwarlu, Sreenivas, and Rahul, (2016) utilized a multivariate research design to find out the frequency of CAUTI and its factors in a tertiary healthcare organization. The purpose of the exploration was to determine enhanced precautionary approaches to lessen the pervasiveness of CAUTIs along with their complications to decrease the length of hospital stays together with mortality. The study involved 200 patients that received IUCs along with urinary drainage system in different units. The diagnosis for CAUTI was made consistent with the CDC procedures to investigate its frequency along with related risk factors that were evaluated utilizing multivariate analysis. Khan et al., (2016) found out that CAUTI incidence was high (70.58%) in patients between 51 and 70 years, followed by females (69.44%). They also established that CAUTI incidence was directly proportional to catheterization duration. Additionally, they established that CAUTI was present in all patients who had HIV. The researchers concluded that while CAUTI is common in all age groups, prevalence amplifies with age. The researchers recommend a variety of approaches to lessening the occurrence of CAUTI, with a drop in catheter duration being a key strategy. The study indicates that in addition to age, impaired immunity is a significant risk factor for CAUTI. Specifically, the results indicate that CAUTI was found in all HIV patients, who are considered to have impaired immunity. While the study focused on the

elderly and those with impaired immunity, it indicates that reducing catheter duration, therefore, could be a promising approach to lessening CAUTI incidents among inpatients.

Hand Hygiene

Martínez-Reséndez et al., (2014) embarked on an exploration comprising of three six-month periods to assess chlorhexidine (CHX) bathing and compliance with hand hygiene (HH) in the lessening of nosocomial infections (Nis) in the ICU. The three six-months periods consisted of the pre-intervention period (PIP) intervention (water alongside soap bathing), the intervention period (IP) intervention (CHX-impregnated wipesbathing), and the post-intervention period (PoIP) intervention (water and soap bathing). 1007 patients were involved in the study. The researchers established a higher infection rate per 100 discharges in PIP as well as PoIP compared to IP. The IP intervention lessened specific infection rates including those of CAUTI related to *Candida spp.* The study confirms that the use of CHX is a practical solution to lessening nosocomial infections in healthcare facilities.

McCalla, Reilly, Thomas, and McSpedon-Rai, (2017) performed a retrospective cohort study to explore whether the implementation of hand hygiene compliance system (HHCS) led to enhanced compliance with hand hygiene in addition to a decrease in the rates of common HAIs including CAUTI. Even though a reduction in multidrug-resistant organisms and CAUTI were observed, they represented a non-significant difference.

Practice Recommendations

This synthesis of literature highlights the need to implement evidence-based interventions to lessen the problem of CAUTIs among hospitalized patients. Two-person approach showed a significant promise to reducing CAUTI incidents among inpatients with U.C. the studies incorporated illustrated a substantiallessening in CAUTI incidents following the implementation of the approach. Reducing the use of UCs along with the duration of catheterizations are also evidence-based approaches that have been supported by most of the

incorporated studies in reducing CAUTIs among hospitalized patients. Moderate strength evidence exists on hand hygiene along with other CAUTI prevention approaches. Studies incorporated in the review were limited by the short duration ~~they were performed~~ in addition to the number of participants. The strength of the studies lies in healthcare organizations, which have successfully implemented CAUTI prevention measures such as Two-person approach, reducing UC's usage, and catheterization duration through stop orders and reminders. CAUTI incidents were lessened substantially following the implementation of the measures.

Based on the evidence, the implementation of CAUTI prevention measures should involve a two-person insertion approach to reducing CAUTI incidents in 5 NW unit at the University of Chicago Medicine. Nurse leadership can initiate the CDC guideline on the application of the approach. This can assist in the reduction catheterization duration and consequently reduce incidents of CAUTIs among the inpatients. Furthermore, while studies on the impact of hand hygiene on CAUTIs reduction are limited, the existing studies demonstrate the need for proper hand hygiene. Nurse leaders can initiate the use of CHX for proper hand hygiene when handling catheterized patients as opposed to the usual water and soap protocol. Nurse leaders can then share with nurses the advantages of reduced incidents of CAUTIs among hospitalized patients to encourage them to adhere to the new protocols. Notably, the involvement of the leadership in CAUTI's reduction measures may influence the decrease of CAUTI's rate among hospitalized patients.

Evidence-Based Practice: Verification of Chosen Option

~~I will be implementing~~ a two-person catheter insertion approach in 5 NW unit at the University of Chicago Medicine to lessen CAUTI incidents among admitted patients. My PICOT question will be: For patients with urinary catheter in 5 NW unit at the University of Chicago Medicine, does the implementation of team (two-person) technique for catheter

insertion compared to current practice impact the number of catheter-associated urinary tract infections in eight to ten weeks.

Theoretical Framework

The CAUTI deterrence project will significantly influence the way nurses deliver patient care in addition to how patients perceive their care. Caregivers, together with patients, will require being educated as well as willing to cooperate for actual success to occur. Regularly, the nurse-patient connection can substantially influence the accomplishment of the nursing intervention, which is the reason a nurse-patient relationship model must be incorporated. Hildegard Peplau was the leading nursing theorist to stress the significance of the nurse-patient bond. Peplau's theory will be used as the theoretical framework for the implementation of CAUTI prevention measures in inpatient population.

Hildegard Peplau's theory defines nursing as a substantial therapeutic process, which serves as an educative instrument that encourages the forward movement of personality to be more constructive as well as productive (Peplau,Travelbee, & Orlando, 2015). In the issue of using a two-person UC insertion approach, the nurse endorses the patient's forward movement to a working urinary exclusion pattern. Peplau exemplifies the role of the nurse as vital since it brings professional proficiency along with indispensable knowledge to the association (~~Peplau et al., 2015~~). Usually, patients are unaware of the danger related to UC, and thus, might not have an insistence for appropriate insertion. Also, patients might find the UC expedient or might be increasingly nervous to talk about an issue they regard private. The nurses' part is to serve as the resource person as well as the teacher. Therefore, is vital that the nurse initiates the impression of appropriate insertion at the time of UC placement, besides continuing to stress the necessity for doing so in teams of two.

Peplau's theory also purports that for the therapeutic nurse-patient association to happen ultimately, the nurse requires having knowledgeable, social, as well as interpersonal

skills (Feo, Rasmussen, Wiechula, Conroy, &Kitson, 2017). She did not encourage nurses to get involved in meaningless conversations but emphasized that all interactions must be therapeutic in addition to encouraging forward movement (Feo et al., 2017). Further, nurses require being cognizant of the impact of their behavior on patients. Such impressions will be accentuated during the CAUTI prevention program execution using unit rounds, online instruction, staff meetings, along with one-on-one counseling.

Exploring Peplau's theory further, there are three stages to the nurse-patient relationship. The orientation period, which is the initial phase, is increasingly essential because it establishes the relationship. The period occurs when the nurse commences patient assessment (Peplau et al., 2015). During the assessment, the nurse evaluates the needs of the patient, as expressed by the patient. Trust is established when the patient and the nurse work together to create goals along with outcomes (~~Peplau et al., 2015~~). The second chapter is the working period, which the theory describes as the exploitation stage (~~Peplau et al., 2015~~). The stage involves the patient exploiting the nurse to meet their needs. The patient can act autonomously, interdependently, or dependently (~~Peplau et al., 2~~015). The nurse requires acting as the resource person to assist in balancing the autonomy and dependency. Concerning CAUTI prevention through a team insertion strategy, patients require being encouraged to set goals that are safe as well as achievable. Alternatives to a catheter, along with available human resources, require being present to help the patient with urinary elimination needs. Proper hygiene must also be a priority. Nurses are responsible for the establishment of a reasonable plan of care for proper hygiene alongside urinary elimination that may necessitate a substantial magnitude of dependency during the first phase. Patients require feeling comfortable depending on nurses and their expertise to allow for forward movement toward independence, which leads to the final phase.

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The concluding chapter of the nurse-patient association, according to Peplau's theory, is resolution (Peplau et al., 2015). The chapter occurs when the patient moves forward from dependence to independence (~~Peplau et al., 2015~~). New goals that encourage the independence of the patient may be established during this phase. In CAUTI prevention, the nurse is encouraged to establish the independent urinary elimination habits of the patient until full independence or discharge care plan is determined.

Change Model

The implementation of planned change, especially in nursing, can be problematic. The use of a change theory can be very helpful in assisting change agents in augmenting the likelihood of accomplishing change. Many change models can be applied in the implementation of new CAUTI prevention approaches. Nevertheless, Kurt Lewin's change model would be most appropriate in the background of the present suggested transformation. The model would be suitable because it involves a few phases, which can be easily comprehended by the change agent. Additionally, the model considers the opposition, which might come about during the execution of the change. Lewin's model of change constitutes three phases, including the unfreeze, move, and refreeze periods (Cummings, Bridgman, & Brown, 2016). Primarily, this model presents the change agent an impression of what executing change means. The three stages of the model serve as a guide on how to get people to transform. New processes will be implemented, and tasks will be reassigned, but transformation will only be effectual if the persons engaged embrace ~~it~~ and assist in putting ~~it~~ into practice.

Stage 1: Unfreeze

When a practice has been in position for some time, routine together with habits have indeed settled in. While the organization might be moving in the right direction, processes, or people might have strayed off course (Cummings et al., 2016). For instance, initial UC

placement, which can result in CAUTI, may still be performed by force of habit, devoid of questioning its consequences. Furthermore, people may have adopted one way of performing activities devoid of taking into account other, more effective approaches. Unfreezing implies making such persons to attain perspective on their daily actions, unlearn their behaviors, and adopt new approaches to accomplishing their purposes (Cummings et al., 2016). Primarily, the present practices, together with processes, require being re-evaluated for the wheels of transformation to be in motion.

Stage 2: Move

Once people have opened up to novel approaches, transformation can commence. The process of transformation can be an increasingly vigorous one. If it is to be effectual, it will possibly take some time in addition to involving a period of transition. Gaining efficiency will require people taking on new tasks along with duties that necessitate a learning curve, which will ~~firstly~~ slow down the institute (Batras, Duff, & Smith, 2016). A transformation process must be perceived as an investment, both concerning time, along with the allotment of resources (~~Batras et al., 2016~~). Following the rolling out of the new processes, inevitable chaos may ensue, but that is the charge to pay to accomplish enhanced efficacy within the practice.

Stage 3: Refreeze

The transformation will only attain its complete effect if it is made perpetual. Once the organization's transformations have occurred and the structure has re-attained its efficacy, every attempt must be made to cement them as well as ensure the new organization becomes the standard (Batras et al., 2016). Additional changes will be made down the line, but the moment the structure has established a way to enhance how it carries out its operations: refreezing" will present the chance to thrive in the new organization and exploit the transformation fully (~~Batras et al., 2016~~).

Project Design and Methods

Research can be either qualitative, quantitative, or a mixture of both. Quantitative research encompasses the collection of quantitative data, which is then scrutinized to make the preferred deductions (Creswell & Creswell, 2017). Quantitative study entails the gathering as well as the analysis of qualitative data (Creswell & Creswell, 2017). This project will necessitate the collection of pre- and post-intervention implementation CAUTI data in 5 NW unit at the University of Chicago Medicine and as such, a quantitative approach would be most appropriate.

Organizational Need

The organizational need was established through dialogue with my unit manager. She stated that fall and CAUTI are the current big issues at the Hospital's 5 NW unit now, but that CAUTI is the big one. She emphasized the need to have interventions, which would assist in eradicating or at least lessening the number of CAUTI incidents on the unit.

Organizational Support

The support was confirmed through several emails from the Director of Cardiovascular and Neurosciences. She stated that the project is a good one, and it is needed. However, I have not received the letter of support as required by the school because of the bureaucratic nature of the approval policies. I am hopeful that I will receive the approval as soon as possible so that I commence working on the project.

Project Stakeholders

This project will affect various stakeholders including the nurses, patients, infection control department, Quality improvement, risk assessment committees, and physicians.

Barriers and Facilitators

One of the greatest facilitators is that the University of Chicago Medicine, ~~which will be the site of the project,~~ has attained its magnet status, which supports the utilization of

evidence-based practice (EBP). The other facilitator lies in the active support of this project by the leadership of the organization in addition to the highly qualified nursing staff working within the hospital. However, a major barrier in implementing this project ~~might be~~ staff resistance to change. Specifically, this project is intended to introduce new ways of patient safety, which might eradicate or lessen the prevalence of CAUTI. Since the staff is used to doing things in a certain approach, the introduction of these new strategies might face opposition. Dealing with the resistance will require appropriate education together with communication ~~on~~ the reason for the change (Moore et al., 2017).

Project Schedule

The project is scheduled to take eight weeks. The first will entail the collection of pre-implementation data, and the second week will encompass educating the nursing staff on appropriate interventions as required by the CDC to mitigate CAUTI incidents. After training the staff, the use of the interventions will ~~be done practically~~ for five weeks. The final week will entail a comparison of the pre- and the post-implementation data to establish enhancements or failures of the intervention. This schedule is illustrated as a timeline and included as Appendix A.

Resources Needed

Some resources will be necessary for the success of the project. Time along with infection control, will be necessary resources for the collection of data together with educating the nursing staff. Further, a venue along stationary including papers and pens will be required during the education sessions. The venue will be provided ~~for~~ by the hospital and as such, an expense will not be incurred. The budget is still being determined, but the 5WN unit has expressed its financial support together with resource for this project. A preliminary budget can be found in Appendix B.

Project Manager Role

As the agent of change, I will require remaining actively involved throughout the implementation process to ensure buy-in in addition to serving as a resource concerning the rationale for CAUTI prevention. I will also serve the role of choosing a change champion to assist me in delivering the change.

Plans for Sustainability

Sustaining the project after its completion will require that I become a member of the CAUTI prevention committee within the institution. I will serve as an expert in addition to guiding CAUTI prevention interventions in other practice settings within the organization. In the event that post-implementation data favors maintaining the practice change, I will pursue the creation of an organizational policy mandating its utilization in all cases, which might require the use of urinary catheters.

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Appendices

Appendix A: Project Schedule

Timeframe	task
Week 1	collection of pre-implementation data
Week 2	Educating the nursing staff on appropriate interventions
Week 3 to week 7	Project implementation
Week 8	~~Comparison of the pre- and the~~ post-implementation data

Appendices B: Budget

Resources	Amount (USD)
Infection control	500
Stationary	10
Total	**810**