Catheter-Associated Urinary Tract Infection (CAUTI) Prevention

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The Center for Disease Control and Prevention (CDC) defines catheter-associated urinary tract infection (CAUTI) as a characteristic urinary tract infection (UTI) in individuals with an indwelling urinary catheter (IUC) at the period of or inside 48 hours before the commencement of the event (Roney et al., 2017). There is no least time, which the catheter must be in position for the UTI to be regarded as catheter-related. CAUTI is one of the most prevalent hospital-acquired infections (HAI) globally, and in 2008, the Center for Medicare and Medicaid Services (CMS) mandated healthcare institutions to report on HAIs including → 3 CAUTI to receive reimbursement for care (Calderwood, Kawai, Jin, & Lee, 2018). However, most healthcare institutions are becoming concerned due to CMS' non-pay rule initiative that → 4 mandates them to absorb the cost of care, grounded on the evidence that CAUTI is preventable (Calderwood et al., 2018). This paper presents CDC's guidelines, which could be employed at the 5 NW unit at the University of Chicago Medicine in the prevention of CAUTI.

Problem Statement

The universal prevalence of CAUTIs has been persistently rising. Over 500,000 patients develop the condition annually. This results in amplified healthcare cost, extended hospital stay, increased patient mortality as well as morbidity, and reduced reimbursement for hospitals (Pena, Febre, & Loftus, 2018).

The rise in CAUTI incidents is reflected in the 5 NW unit at the University of Chicago Medicine. Despite augmented efforts by the management to curb the rise, many

patients have ended up acquiring the condition. This was attributed to the inefficiency of existing practices and protocols for the prevention of CAUTI in the unit.

However, the implementation of the CDC guidelines can have a significant impact on the efforts to curb the rise of the CAUTIs at the hospital. The CDC guideline for the deterrence of CAUTI is structured to enhance care processes as well as patient outcomes, to decrease CAUTI incident in addition to amplifying awareness among the staff (Cooper, 2018).

Objectives and Aims

The proposed DNP project aims to achieve a sustainable reduction in CAUTI in the 5 NW unit at the University of Chicago Medicine through the application of the CDC guidelines. Varieties of objectives have been established to assist in meeting the primary aim of this project including

- To explain the impact of CAUTI on hospitals
- To determine the appropriate use of catheters
- To identify the appropriate methods for catheter insertion
- To determine the appropriate techniques for catheter maintenance

Significance of the Practice Problem

HAIs are among the most preventable causes of mortality in the U.S., besides being a substantial economic burden to the health care system. About a fourth of all admitted patients have a urinary catheter (UC) placement during their stay (Pena et al., 2018).

To curb the rising incidents of CAUTI, Medicare instituted a pay-for-performance scheme that attaches incentives or disincentives for performance in CAUTI prevention among healthcare organizations. The policy, which was instituted in 2008, penalizes health care institutions if patients acquire any of eight conditions including, CAUTI during their stay (Pena et al., 2018). Some researchers have indicated that the policy can have a considerable

impact on the financial performance of hospitals as reimbursement depends on how efficiently a hospital can deter CAUTI incidents among its hospitalized patients (Bae, 2017). Conceptually, the policy is formulated to provide an incentive for health care institutions to enhance their infection control practices to avoid financial loss (~~Bae, 2017~~).

An IUC is a primary factor for CAUTI development (Cooper, 2018). In spite of the peril of extended placement of a catheter, few healthcare organizations aggressively track catheterized individuals (~~Cooper, 2018~~). Many physicians are usually not aware of individuals with catheters when such patients are under their care. As such, they do not monitor them closely and therefore, the patients end up developing CAUTI in most cases.

Nurses have a crucial role in catheter care. As the practitioners, most involved in the management of patients with UCs, they have the responsibility for IUC placement, daily management of catheters, as well as the removal of IUCs (Niederhauser et al., 2018). Nonetheless, the role of nurses in the deterrence of CAUTI has not be extensively highlighted by many publications.

The safety of patients with UCs is usually at a compromise when nurses are not immensely involved in catheter care. The development of CAUTI among patients has substantial consequences for them, their families, as well as the community. The development of CAUTI increases the length of stay as well as the cost of care, which places enormous economic burdens on families as well as the community (Bardossy et al., 2016). Furthermore, studies have established that over 13,000 patients die annually from CAUTI, which implies that CAUTI is a serious condition and should be prevented at all cost (Bardossy et al., 2016).

At the 5 NW unit at the University of Chicago Medicine, there has been an increase in CAUTI incidents among hospitalized patients. This was mainly attributed to the inefficiency of present practices and protocols for the prevention of CAUTI at the unit. As the primary

providers dealing with catheterized patients, nurses lack the proper protocols to deter CAUTI development. For this reason, nursing care has been significantly impacted as nurses lack the proper approaches to managing catheterized patients. Consequently, most patients end up developing CAUTI, which is a reflection of the ineffectiveness of nursing care.

The rise of CAUTI incidents at the 5 NW unit at the University of Chicago Medicine has had substantial impacts on the financial position of the hospital. As mentioned earlier, ~~the Center for Medicare and Medicaid Services~~ (CMS) mandated healthcare institutions to report on HAIs ~~including, CAUTI~~ to receive reimbursement for care (Calderwood et al., 2018). The rise of CAUTI incidents among hospitalized patients ~~in the hospital~~ has resulted in the organization absorbing the cost of care as mandated by the CMS' non-pay rule initiative.

What is more, the increased length of stay among patients who develop CAUTI while in the hospital has had significant impacts on the efficiency of the hospital to deliver care. Notably, increased length of stay denies other patients the chance for hospitalization for close monitoring due to the reduced capacity to take in more patients. As a result, some patients are referred to other facilities for hospitalization.

The CAUTI problem at the 8 South unit is a micro problem, as it encompasses the ineffective practices along with protocols utilized by nurses in caring for catheterized patients. As the practitioners, most involved with urinary catheter patients, nurses have the responsibility for catheter placement, daily management of catheter, as well as the removal. Equipping nurses with the appropriate evidence-based guideline for CAUTI preventions can save the hospital from substantial amounts of loses associated with the CMS non-pay initiative in addition to enhancing the safety of the patients.

Synthesis of the Literature

Literature highlights various approaches to CAUTI prevention among patients who are admitted patients. The CDC introduced guidelines for deterrence in admitted patients. The procedures consist of a variety of strategies including a team insertion or two-person insertion approach, reduction in urinary catheter use, reduction in catheter duration, as well as hand hygiene. A thorough review of the literature revealed the efficacy of a variety of the CDC's CAUTI prevention guidelines that are discussed below.

Team insertion approach

Carter, Retimeier, and Goodloe (2014) performed a single site unit research on a 28-bed surgical/medical telemetry department, to assess the impact of executing an evidence-based care bundle to deter CAUTI. Notably, a contrast of CAUTI outcomes was assessed pre- as well as post-bundle implementation. Even though the investigation did not provide an apparent data concerning the statistical analysis procedure, the findings illustrated an elimination of CAUTIs for over 12 months after intervention implementation. Although the article was a level V of evidence, it was incorporated due to the insertion checklist intervention. The second nurse's role was to halt the process and begin again with a new U.C if aseptic approach was compromised. The study indicates that a two-person insertion strategy would deter CAUTIs, which is the ground for this proposal.

Belizario, (2015) conducted a study with the aim of discussing how nurses together with clinicians considerably reduce the CAUTI rates on a postop unit by starting a two-person UC insertion approach to ascertain that sterile process was upheld through the process. The researchers discuss the implementation of a two-person insertion process that was conducted by a clinical educator alongside a clinical manager for six months. This implied that each registered nurse (RN) would request a second one to observe the insertion of a U.C. The procedure applied to both straight in-and-out and indwelling catheterization and both adult male as well as female patients. Six months pre-execution of the two-person UC

insertion, five incidents if CAUTIs were observed per 746 device days. The unit's CAUTI rate was 6.7 cases per 1000 catheter days. However, six months post implementation, only three CAUTI cases were observed with 729 device days in addition to a CAUTI rate of 4.11 cases per 1000 catheter days. Two of the cases were associated with U.C insertion and one was associated with diarrhea. What is more, six months following the completion of the project, only a single CAUTI was observed in 625 device days and the CAUTI rate was 1.6 cases per 1000 catheter days. Even though a substantialvariance in the number of device days pre- and post-intervention was not observed, the result of the study indicate a 39% reduction in CAUTIs six months following the introduction of the two-person UC insertion processes, which is the basis for this paper.

Minimizing Catheter Use

Vincitorio et al., (2014) implemented a CAUTI surveillance program according to the CDC Prevention's National Healthcare Safety Network approach. The purpose of their study was to explain CAUTIs' epidemiology along with correlated outcomes in hospitalized patients in an acute geriatric healthcare organization in central Italy. 483 catheterized patients out of the 2,773 patients of 65 years and beyond were examined for the risk of CAUTI. The researchers established that elderly patients with catheters were at an advanced risk of CAUTI development than patients who were not catheterized. The catheterization rate was 16.7%, and the total CAUTI prevalence was 14.7 per1000 device days. While the study focused on the geriatric population, it confirms that catheter use is a significant risk factor for CAUTIs and it should be minimized to lessen CAUTI incidents, which is the focus of this paper.

The findings of Vincitorio et al., (2014) correlate to those of Wynne et al., (2014) study, which aimed at determining the occurrence of IUC utilization within a key urban tertiary-referral teaching health care organization in addition to exploring nurse-sensitive