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# Nurse Factors Influencing Compliance with CDC Guidelines for Catheter Associated Urinary Tract Infection Prevention in a Referral Hospital in Kenya

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**Abstract** Urinary tract infections are the most frequently occurring health-care associated infections. 75% of these infections are linked with utilization of an indwelling urinary catheter. However, 40% of urinary tract infections are preventable. The researcher sought to assess nurse related factors influencing compliance with Centre for Disease Control (CDC) guidelines for CAUTI prevention among nurses working at Embu level 5 hospital. The study was carried out in 2017. **Methods:** A descriptive cross-sectional study was conducted among nurses working at Embu level 5 hospital between 107 participants were selected using systematic random sampling. Data collection tools included a self-administered structured questionnaire, and an interview schedule for key informants and an observation checklist. Data analysis was done using SPSS version 21 and thematic analysis. **Findings:** Compliance among the nurses was found to be low (46.7%). However, most respondents had adequate knowledge of the guidelines on CAUTI prevention (overall knowledge score of 71%). A majority (60.2%) of the respondents also had a positive attitude towards CAUTI prevention. There was no significant association between nurse related factors (knowledge & attitude) and nurse' compliance (all $p > 0.05$). However, some of the key informants felt that inadequate knowledge on CAUTI prevention guidelines was a factor hindering nurse' compliance. **Conclusion & Recommendation:** The nurses' level of compliance with CAUTI guidelines was poor. The null hypothesis ($H_0$) was accepted ($p > 0.05$) which implies that nurses' knowledge and attitude do not influence their compliance with CAUTI guidelines. Further studies should be carried out on other factors, for example institutional factors that might influence nurse' compliance with guidelines for CAUTI prevention.

**Keywords** Compliance, Urinary tract infection, Nurses, CDC, Indwelling urinary catheter

## 1. Introduction

Urinary tract infections (UTIs) account for approximately 34% of all nosocomial infections worldwide. These infections are the most common hospital associated infections in developed countries. 75% of UTIs are attributed to the use of indwelling urinary catheters [1]. According to the United States Centre for Disease Control (CDC) a catheter associated urinary tract infection (CAUTI) is defined as an infection occurring in an individual who has had an indwelling catheter for 2 days or more and is experiencing one or more signs and symptoms (urinary frequency or urgency, fever, suprapubic tenderness, dysuria or costovertebral angle tenderness) or has a urine culture of >10CFU/mL bacterial species [2]. In a report released by the CDC in 2013 the pooled means for CAUTI for intensive care units (ICUs) varied from 1.2 per 1000 urinary catheter days in medical-surgical ICUs to 4.1 in burn ICUs. Non-ICU rates ranged from 1.3 to 1.5 per 1000 catheter days. The incidence of CAUTI in ICUs in selected low and middle-income countries was found to be 4.8 per 1000 device days [3]. In Kenya, the burden of CAUTI has been reported only at a facility level, that is at Kenyatta Hospital where CAUTI incidence was found to be 32% [4].

Catheter associated urinary tract infections have been linked to a number of complications namely secondary blood stream infections, extended hospital stays, increased treatment costs, local and systemic morbidity and mortality. As it is estimated that 69% of CAUTI are avoidable [5], the CDC in collaboration with the Association for Professionals in Infection Control and Epidemiology (APIC) developed guidelines for the prevention of CAUTI in 1981 which were then updated in 2009. These guidelines offer the best

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