Best Practices for Reducing Catheter-Associated Urinary Tract Infections in the Medical Intensive Care Unit

Joanna Marie B. Trinidad, BSN, RN, WTA-C, CCRN
Elenita A. Quindoza, BSN, RN, CCRN

UF Health
UNIVERSITY OF FLORIDA HEALTH

MAGNET RECOGNIZED
AMERICAN NURSES CREDENTIALING CENTER

Introduction

The Medical Intensive Care Unit (MICU) and Trauma-Surgical Intensive Care Unit (TSICU) had catheter-associated urinary tract infection (CAUTI) rates well above national benchmarks due to the fact that neither unit were using a nurse-driven CAUTI prevention protocol as described by Flodgren et al. (2013) and Wald et al. (2012).

CAUTI is the most common type of healthcare-associated infection (HAI), with an estimated 560,000 nosocomial UTIs annually (Wald et al., 2012). It contributes to increased morbidity & mortality, with an estimated 13,000 attributable deaths annually (Wald et al., 2012). Additionally, it results to an increased length of stay by 2-4 days and increased cost of $0.4-0.5 billion per year nationally (Wald et al., 2012).

Objectives

The purpose of this unit-based quality improvement project is to improve MICU's CAUTI rates to below benchmark by means of implementation of a research-based, nurse-driven protocol.

This project will discuss effective interventions to reduce CAUTI rates in the MICU through unit-based protocol formulation, aggressive staff education, and hands-on simulation.

Methods

Action Steps	Time Frame
Unit Team Formed (multidisciplinary: staff nurses, nursing management, CNS, physicians)	Oct 2014
Protocol developed after review of literature and current unit practices (Flodgren et al., 2013, Wald et al., 2012)	Completed Dec 2014
Mandatory Staff Education with Skill Fair check-offs	Jan-Feb 2015
Daily Charge Nurse Huddles	Start Jan 2015
Unit champions on day and night shift to round on all catheterized patients twice weekly	Start Feb 2015

Table 1: Action Plan

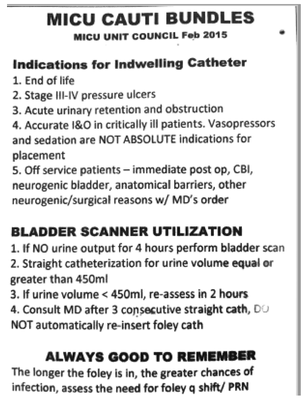
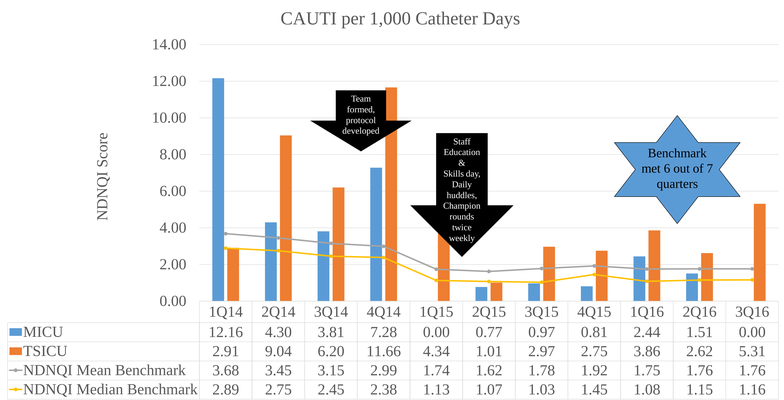


Image 1: Badge Buddy

Image 2: MICU Ownership Wall

Results



	1Q14	2Q14	3Q14	4Q14	1Q15	2Q15	3Q15	4Q15	1Q16	2Q16	3Q16
MICU	12.16	4.30	3.81	7.28	0.00	0.77	0.97	0.81	2.44	1.51	0.00
TSICU	2.91	9.04	6.20	11.66	4.34	1.01	2.97	2.75	3.86	2.62	5.31
NDNQI Mean Benchmark	3.68	3.45	3.15	2.99	1.74	1.62	1.78	1.92	1.75	1.76	1.76
NDNQI Median Benchmark	2.89	2.75	2.45	2.38	1.13	1.07	1.03	1.45	1.08	1.15	1.16

Conclusions

A drastic fall in CAUTI rates starting in the first quarter of 2015 proved that evidence-based changes in nursing interventions are indispensable in preventing CAUTIs. Based on the most recent NDNQI data, MICU's CAUTI rate is ZERO, well below the national benchmark. The utilization of the MICU CAUTI Bundles and aggressive staff education proved to be a success.

Nursing implications include lessons learned regarding the need for integration of nurse-driven CAUTI prevention protocols into daily practice, the need for monthly unit council review of nurse-sensitive indicator data, and continuing assessment of skills and knowledge of nursing staff to be successful indicators of decreased CAUTI rates.

References

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Wald, H. L., Fink, R. M., Makic, M. B., Oman, K. S. (2012). Catheter-associated urinary tract infection prevention. In M. Boltz, E. Capezuti, T. Fulmer, & D. Zwicker (Eds.), *Evidence-based geriatric nursing protocols for best practice* (pp. 388-408). New York, NY: Springer.