

Partnership Between Nursing and Infection Prevention to Reduce Healthcare-Associated Infections in a Medical Intensive Care Unit

Elissa Buck, BSN, RN, CCRN; Michelle Brown, BSN, RN; Ashley Burbey, BSN, RN-BC
Aurora St. Luke's Medical Center

Introduction

- Healthcare-associated infections (HAIs) are associated with high morbidity and mortality (CDC, 2017)
- Approximately 1.7 million patients suffer a HAI and almost 100,000 die annually (Dick et al., 2015)
- Estimated direct annual cost of HAIs ranges from \$28 to \$45 billion (Dick et al., 2015)
- Patients who are chronically colonized may be identified with positive Clostridium difficile (C. diff) PCR testing due to the high sensitivity of the test (Furuya-Kanamori et al., 2015)
- Infection prevention has specialized expertise in the identification of infection risks and can effectively partner with nursing services to improve outcomes

Purpose

- The Medical Intensive Care Unit (ICU) was challenged with high-risk patients who experienced catheter-associated urinary tract infections (CAUTI) and hospital-acquired Clostridium difficile infections (HO-C. diff) and aimed to prevent patient harm through HAI reduction

ASLMC High Risk Patient/ CAUTI Prevention Observation Tool	Answer	Comments
1. Patient observed within 15 minutes of Foley catheter insertion?		
2. Does the patient have any of the following? Select all that apply. If high incidence of stool and Foley Catheter >1 day, answer questions #2-6. If only >1 day, answer questions #5-8. Comment behind incidence of stool if patient has a bowel management program.		
3. Was soap and water used while observing nursing team member perform pericatheter care?	Yes No NA	
4. Was "fooling in the moment" performed with the nursing team member after non-compliance was witnessed?	Yes No NA	
5. Were all "Best Practice Bundle Elements" completed? (Bundle elements include the following: securement device in place, collection bag below bladder and not on the floor, and taping free of kinks and loops)	Yes No NA	
6. Was "fooling in the moment" performed with the nursing team member after non-compliance was witnessed?	Yes No NA	
7. Was "fooling in the moment" performed with the nursing team member after non-compliance was witnessed?	Yes No NA	
8. "Is the red seal intact and maintaining a closed system?"	Yes No NA	
9. Was the PCM of the unit notified of any caregiver non-compliance?	Yes No NA	

Figure 1. CAUTI Observation Tool

Methods

- Sample and Setting: 24-bed Medical ICU in a quaternary acute care medical center
- Intervention: Beginning in April, 2018, infection prevention nurses began to conduct daily rounds on high-risk patients in inpatient units to ensure best practices are in place (Figure 1). The unit nurse clinician sends a list of patients identified as being high-risk to infection prevention who collaborates with the unit nursing leaders to conduct rounds on patients, audit practice and documentation, and coach nursing staff on infection prevention strategies. A testing algorithm designed to prevent over-testing of C. diff was implemented with dual nurse sign-off to optimize accuracy and compliance (Figure 2). Algorithms are reviewed daily by the unit nurse clinician and infection prevention nurse
- Methods of Evaluation: Outcomes are monitored and progress is tracked against benchmarks from the National Database of Nursing Quality Indicators (NDNQI) and the National Hospital Safety Network (NHSN)
- Analysis: Pre-post comparison of data from October 2017 through January 2019

Unit: _____ DATE _____ TIME _____ Patient Sticker
Nurse 1 initials _____
Nurse 2 initials _____
C Diff Checklist for Sending Specimens

Directions: 2 Nurses to checkoff before sending specimen

During 1st 48 hours after admission
 Any loose stool can be sent

More than 48 hours after admission

3 or more loose stools in 24 hours without use of laxatives, enemas or lactulose in prior 48 hours
AND one or more of the following symptoms in last 48 hours

- Temp >100.4 F
- WBC > 10.0 K/mL
- Unexplained abdominal pain
- Patient does NOT have 1 of the above symptoms BUT provider wishes to send specimen for testing (e.g. immunocompromised, ileus). RN reviews the algorithm with provider AND documents this in a progress note along with reasons for exceptions.
- Patient does NOT meet criteria, RN will discuss with provider and obtain order to cancel specimen. **If provider refuses, please state that and indicate name of provider.**

YES



NO

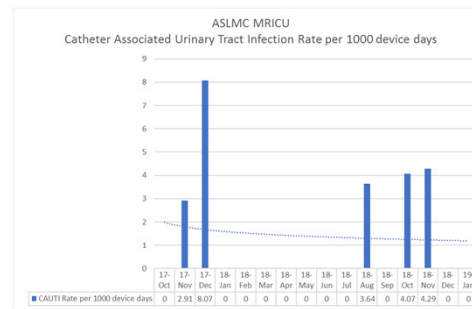


Stool will be rejected by lab if it doesn't take the shape of the container
Turn in completed document to the umc's CNS

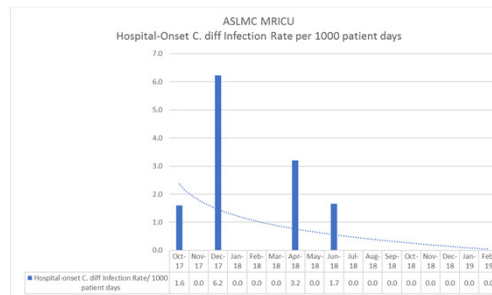
Figure 2. C. diff Dual Nurse Sign-off Checklist

Results

- When comparing baseline performance to data through January, 2019, the unit achieved a 35% reduction in CAUTI rates and a 63% reduction in HO-C. diff rates
- The unit sustained zero HO-C. diff infections for eight consecutive months
- When surveyed, nurses verbally reported the partnership with infection prevention and actively work together to improve practice



Graph 1. CAUTI rate per 1000 device days



Graph 2. C. diff rates per 1000 patient days

Discussion

- Daily partnership between nursing and infection prevention with the implementation of a C. diff testing algorithm was effective in reducing HAIs
- Continued efforts, including a focus on central line-associated blood stream infections (CLABSIs), are underway
- Sharing expertise between departments was verbally reported to be well-received by both teams

Implications for Practice

- The partnership between nursing and infection prevention may be implemented by other units to assist in identifying high risk patients, reducing HAI, and improving patient outcomes

References

- Centers for Disease Control and Prevention. (2017). CDC winnable battles final report: Healthcare-associated infections (HAIs). Retrieved from <https://www.cdc.gov/winnablebattles/report/HAIs.html>
- Dick, A. W., Perencevich, E. N., Pogorzelska-Maziarz, M., Zwanziger, J., Larson, E. L., & Stone, P. W. (2015). A decade of investment in infection prevention: A cost-effectiveness analysis. *American Journal of Infection Control*, 43, 4-9.
- Furuya-Kanamori, L., Marquess, J., Yakob, L., Riley, T. V., Paterson, D. L., Foster, N. F., & Clements, A. C. A. (2015). Asymptomatic Clostridium difficile colonization: Epidemiology and clinical implications. *BMC Infectious Diseases*, 15(516). doi: 10.1186/s12879-015-1258-4

Acknowledgements

- Sara Marzinski, BSN, RN, CCRN-K
- Lee Jeske, MS, RN, GCNS-BC
- Mari St. Clair, PhD, RN, AGCNS-BC
- Theresa Vos, MS, BSN, RN



Aurora St. Luke's Medical Center is proud to be Magnet® recognized by the American Nurses Credentialing Center