Changing Culture: Central Line Maintenance Practices to Reduce CLABSI in a Medical Oncology Unit

Margaret Blissenbach, BSN, RN
Autumn Gode, MS, APRN, CNS
Cassandra Lynch, BSN, RN OCN, NE-BC
Ryan Sagorski, MPH, CIC, CCRC
Kyla Joerger, BSN, RN

(1)Medical Oncology, Abbott Northwestern Hospital/Allina Health, Minneapolis, MN, USA
(2)Med/Surg/Oncology, Abbott Northwestern Hospital/Allina Health, Minneapolis, MN, USA
(3)Abbott Northwestern Hospital/Allina Health, Minneapolis, MN, USA

Background:

Central Line Associated Blood Stream Infection (CLABSI) prevention has largely focused efforts on insertion in the intensive care setting (Loftus, 2015; Perin, Erdmann, Higashi & Sasso, 2016; Saguna & Hyzy, 2013). In addition to insertion practices, guidelines for maintenance practices are referenced in various organizations such as the American Society of Clinical Oncology (ASCO) clinical practice guideline, the Infusion Nurses Society (INS), and Society for Healthcare Epidemiology of America (SHEA) (Gorski et al., 2016; Marschall et al., 2014; Schiffer et al., 2015).

Upon review of hospital-wide 2016 CLABSI cases, 88% of infections were occurring on day 5 or later post insertion. Infections that occur after day 5 post insertion may suggest are related to maintenance practices. Maintenance efforts became the focus for the inpatient acute care areas. Our medical oncology unit held the highest CLABSI rate and highest central line count outside the ICU. To identify the problem, our first step in February of 2017 was to initiate leader rounding. Two leaders would round one to two times a week to observe the dressing integrity and status of central lines. Inconsistent maintenance practice was identified as an area for improvement. In addition, nurses reported inconsistent implanted port needle access and dressing change practice.

It was evident that an educational approach was needed to improve maintenance practices. An educational approach has had success in similar units. An oncology department implemented a simulation based education program which resulted in improved CLABSI rates from 5.86 to 3.45 (Page, Tremblay, Nickolas, & James, 2016). Changing culture around the importance of maintenance practice by rounding was also a top priority to support sustainability of the education. One facility demonstrated central line maintenance sustainability with leader rounding implementation (Owings et al., 2018).

Description:

In 2017, our quality improvement initiative expanded to develop an interdisciplinary team on our 30-bed Medical Oncology unit consisting of Registered Nurses from the IV team and Medical Oncology unit, an Infection Preventionist (IP), the Patient Care Manager (PCM), the Patient Care Supervisor (PCS), and the medical-surgical Clinical Nurse Specialist (CNS). The team worked to develop an educational plan for all RNs on the Medical Oncology unit. The education plan consisted of filming a video to demonstrate accessing a port and applying dressing correctly, developing a port access procedure, providing tips for maintaining aseptic technique for access, standardizing practice for dressing change indications, and establishing a timeframe for all nurses to demonstrate an implanted needle access and dressing application. The educational plan was mandatory for all nurses who access implanted ports on the Medical Oncology unit. Education occurred in 4th quarter of 2017.
Weekly rounding on all central line patients started before implementation of the educational plan and continued throughout and after. The IP maintains a consistent expectation of maintenance for central lines by rounding one to two times a week with either the PCM, PCS, or CNS. Leader rounding allows for identification of improvement, immediate follow up with bedside nurses including immediate attention to inadequate maintenance practices, and follow up with other departments as needed for maintenance care deficits. Rounding also provided an acute awareness to maintenance practices by creating an open culture for nurses to ask questions, report concerns, and/or anticipate maintenance care needs for patients. This proactive communication between leaders and bedside nurses has identified further areas of improvement outside of the Medical Oncology unit.

Findings:

Dressing compliance was measured as either needing a dressing change or not during leader rounding. In 2017, 16% of dressings needed a leader to request a change. From January through June in 2018, leaders only identified 6% of dressings that need changing at the point of rounding two times a week. Between 2017 and 2018 (January to June) over 500 central lines were rounded on. The CLABSI rates on the medical oncology unit decreased from 1.06 (2017) to 0.63 (Jan-June 2018).

Conclusions:

Simulation based nursing education in combination with routine leader rounding to monitor the consistency in practice and to provide on the spot coaching has decreased CLABSI rates on the Medical Oncology unit. Engaging bedside nurses in the planning and implementation of interventions as well as implementing a leader monitoring and surveillance program is an effective way to reduce CLABSI.

Title:
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Keywords:
Central Line Infection, Oncology and Rounding

References:


Abstract Summary:
This educational activity describes a quality improvement project to prevent catheter associated bloodstream infection (CLABSI) on a Medical Oncology unit with the implementation of a simulation based education program and leader rounding to improve maintenance practices.

Content Outline:

1. Introduction
   1. A large portion of the research for preventing CLABSI has been done in ICU with minimal research in non-ICU units.
   2. CLABSI continues to be a focus for many hospitals.
   3. Sustained CLABSI elimination has been accomplished but requires continued effort.

2. Body
   1. Engaging bedside RNs as part of the team to change unit culture towards central line maintenance
      1. Development of educational tools with interdisciplinary team
         1. *Team assessed need for education and reviewed current literature*
         2. RN champions developed education plan with unit leaders, Clinical Nurse Specialist (CNS) and Infection Preventionist (IP)
      2. Mandatory education implementation for all RNs on the Medical Oncology unit
         1. *Staff RNs produced a video for RNs to watch before simulation*
         2. RN champions delivered education to peers through simulation
         3. Hospital CLABSI team created detailed central line dressing change procedure
   2. Leadership rounding on all central lines to increase awareness, change culture, and sustain maintenance practices
      1. CLABSI awareness improved when leaders round on maintenance practices.
         1. *Leaders round two times a week using a standard template*
         2. *Immediate follow up with staff to change culture towards central line maintenance*
      2. CLABSI outreach to collaborating stakeholders to improve maintenance practices.
         1. *Follow up with other departments for concerns from rounding*
         2. *Develop partnership for central line maintenance by increasing communication between departments*

III. Conclusion

1. Collaborative efforts between bedside nurses, CNS and IP improved central line maintenance practices on a Medical Oncology unit and reduced central line dressing change requests
2. Changing culture by increasing awareness and improving maintenance practices reduced CLABSI rates
Margaret Blissenbach, BSN, RN  
Abbott Northwestern Hospital/Allina Health  
Medical Oncology  
Assistant Clinical Nurse Manager  
Minneapolis MN  
USA

**Professional Experience:** Staff RN for 38 years Assistant Nurse Manager for Medical Oncology unit  
Charge Nurse for Medical Oncology Unit  
Central Line Associated Blood Stream Infection (CLABSI) clinical action team and hospital-wide CLABSI committee member since 2016

**Author Summary:** Margaret has been a staff nurse on the Medical Oncology Unit of a large tertiary teaching hospital for 38 years. On this unit she is a charge nurse, preceptor, and assistant clinical nurse manager.

Autumn Gode, MS, APRN, CNS  
Abbott Northwestern Hospital/Allina Health  
Med/Surg/Oncology  
Clinical Nurse Specialist  
Minneapolis MN  
USA

**Professional Experience:** 2010-2018 - Clinical Nurse Specialist for Med/Surg including the Medical Oncology unit, Abbott Northwestern Hospital, Part of Allina Health, Minneapolis, Minnesota 2001-2010-Staff RN and Educator for a medical telemetry unit, Fairview Southdale Hospital, Fairview Health Services, Edina, Minnesota  

**Author Summary:** Autumn graduated from the University of Minnesota School of nursing with a Master’s of Science, Adult Health Clinical Nurse Specialist degree in 2010. In her current role as a Clinical Nurse Specialist (CNS) at a large tertiary center in Minneapolis, Minnesota she collaborates with infection preventionists for both Catheter Associated Urinary Tract Infection and CLABSI prevention efforts. Currently she leads the CLABSI clinical action team for med/surg.

Cassandra Lynch, BSN, RN OCN, NE-BC  
Abbott Northwestern Hospital/Allina Health  
Medical Oncology  
Patient Care Manager  
Minneapolis MN  
USA

**Professional Experience:** - Oncology Certified Nurse through ONS 1990-current - ANCC Nurse Executive Certified 2003-current - Patient Care Manager Medical Oncology and Infusion Center services 1995-current - Multiple presentations on Oncology related topics and CLABSI education. - Overseen professional practice, competence and education for 85 RN’s. - Member of ANW CLABSI team since inception May 2013.

**Author Summary:** Cassandra is currently a Patient Care Manager for a Medical Oncology unit at a tertiary teaching hospital in Minneapolis, MN. She serves as a member of the hospital-wide CLABSI committee and rounds at the bedside for central lines twice a week.
Fourth Author
Ryan Sagorski, MPH, CIC, CCRC
Abbott Northwestern Hospital/Allina Health
Infection Preventionist
Minneapolis MN
USA


**Author Summary:** Ryan leads the hospital-wide Central Line Associated Blood Stream Infection (CLABSI) committee and represents the hospital at the system level which includes 11 other hospitals. As part of the Infection Prevention department, he reviews potential infection cases and applies the NHSN definition.

Fifth Author
Kyla Joerger, BSN, RN-C
Abbott Northwestern Hospital/Allina Health
Medical Oncology
Patient care Supervisor
Minneapolis MN
USA

**Professional Experience:** Abbott Northwestern Hospital - Minneapolis - Nursing Professional Development Certified 2007-current - Patient Care Supervisor Medical Oncology 2012- current - Nurse Education Coordinator Med/Surg/Oncology 2002-2012 - Staff RN Medical Oncology 2000-2002 - Unit champion for CLABSI

**Author Summary:** Kyla is a patient care supervisor on the Medical Oncology unit where she directly supervises staff who care for patients with central lines. She contributes to leader rounding at least once a week for patients with central lines.