

ELIMINATING BLOOD CULTURE FALSE POSITIVES: HARNESSING THE POWER OF NURSING SHARED GOVERNANCE

Author: Dawn Moeller, MHA, RN, CEN, BSN, Barrington, IL

Problem: Our emergency department struggled with unacceptable blood culture contamination rates for several years. The objective of this project was to create a self-governing culture within nursing that would generate and sustain the achievement of monthly blood culture contamination rates below the national benchmark of 3% and the hospital laboratory acceptable threshold of 2.3%.

Methods: The ED shared governance council partnered with the laboratory team to review the monthly epidemiology reports for all adult and pediatric ED patients having blood cultures performed from January 2010 through December 2015. A written competency assessment test completed by ED personnel performing phlebotomy showed opportunity for improvement. After a review of the literature, a blood culture collection education tool was created and imple-

mented. The final step was to design a monthly monitoring and peer-review process to perform ongoing causal analysis with those individuals who were linked with contaminated specimens.

Results: The evidence shows that the new process decreased the blood culture contamination rate from a baseline rate of 5.37% to 1.76%.

Implications for Practice: The chief recommendation is to engage staff through clinical leadership. This quality-improvement project translates to improved patient care and a reduction in unnecessary treatment and costs.

Key words: Blood culture; Contaminated specimens; Nursing shared governance; Peer review; Quality improvement

Introduction

Numerous emergency departments across the United States have been working diligently to address and conquer the issue of contaminated blood cultures and have been highly successful with reducing contamination rates. Those successful in achieving dramatic reductions in contamination rates have adopted altered draw techniques and/or have additionally implemented the use of checklists, monitoring and feedback methods, or step-by-step resource tools. A great majority of the literature published about reductions in blood culture contamination rates has only shown data compiled over a period of 1 year or less. This article will

make it evident that by harnessing the power of nursing shared governance and empowering nurses to take direct control over their nursing practice, a culture of sustained and transformative change can occur. Our team proudly shares 6 years' worth of data, which exhibit not only a progressively improved annual reduction rate in contaminated blood cultures but also an embedded new nursing practice culture that has undeniably achieved sustained change. This article also describes the processes used to substantially reduce the incidence of contaminated blood cultures in our emergency department.

Emergency departments are an essential area for the diagnosis and initiation of interventions for bacteremia, which may cause a considerable risk for a continued decline in health leading up to death.¹ For patient survival, it is imperative to rapidly and correctly identify the organism of bacteremia to expedite the appropriate treatment.² The blood culture is a vital laboratory test for the clinician as a means of discovering the perilous existence of living organisms in the bloodstream.³ When blood cultures are contaminated, the ability of the clinician to accurately identify legitimate bacteremia can be hindered, and like any test, contaminated blood cultures can limit the usefulness of this significant tool.⁴ Numerous studies have shown that

Dawn Moeller, *Member, Illinois ENA Chapter NCE*, is Clinical Manager of Emergency and Trauma Services, Advocate Good Shepherd Hospital, Barrington, IL.

For correspondence, write: Dawn Moeller, MHA, RN, CEN, BSN, Advocate Good Shepherd Hospital 450 W. Hwy 22, Barrington, IL 60010; E-mail: dawn.moeller@advocatehealth.com.

J Emerg Nurs ■
0099-1767

Copyright © 2016 Emergency Nurses Association. Published by Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jen.2016.07.001>

false positives considerably affect patients, health care staff, and health care costs.⁵ It is exceedingly important to be able to distinguish between a true pathogen and a contaminant. “An accurate interpretation of culture results is critical not only from the perspective of individual patient care but also from the standpoint of hospital epidemiology and public health.”³ A contaminated blood culture is defined simply as a blood culture having unwanted or foreign microbes that have intruded into the growth media. Blood culture contaminants are most commonly derived from the patient’s own skin surface. Coagulase-negative staphylococci are one of the most common organisms detected in contaminated blood cultures.³

False-positive blood cultures adversely affect quality of care in a number of ways: a delay in initiation of the correct antibiotic, inappropriate use of antibiotics that may lead to an increased risk of multidrug-resistant organisms, the potential for decline in health status, increased risk of *Clostridium difficile* infection, and the use of unnecessary antibiotics.¹ In addition, financial impacts of contaminated blood cultures can be considerable and can include increased lengths of stay because of inadequate treatment, lost revenue because of unreimbursed care, additional supply costs, additional testing, and increased staff workload.⁴ The emotional impact of repeated blood draws because of false-positive cultures on pediatric patients and their parents was an additional concern of our staff. Marini and Truog⁶ recognized the additional negative impact false positives had on patient satisfaction in their pediatric patients in their dedicated pediatric emergency department. Gander et al⁵ identified that contaminated blood cultures increased patient costs by 47% compared with costs for patients without the presence of bacteria in the bloodstream. We can significantly reduce patients’ and health care’s economic burdens associated with false positives⁴ by sufficiently educating health care professionals on the correct techniques for obtaining a specimen for blood culture. To ensure optimal management of patient infections, antibiotic stewardship was an education focus for our department. Kaki et al⁷ reported that between 30% and 50% of the antibiotics used in hospitals are unnecessary or inappropriate, and the Infectious Diseases Society of America guidelines directed hospitals to create programs to improve antimicrobial stewardship.⁸ Our nursing staff fully embraced antibiotic stewardship and came to the realization that nursing must share this responsibility with physicians.

Background

Our 24-bed suburban emergency department is a Level II Trauma Center with an average of 33,500 ED patient visits

annually. Our hospital is an American Nurses Credentialing Center–designated Magnet institution. Nursing shared governance is the cornerstone to empowering and engaging staff within a collaborative process. It not only helps to support one’s nursing practice but also advances the level of professional excellence. Researchers tell us that there are compelling reasons to promote power in nursing. Nurses need power to be able to influence their patients, families, physicians, and coworkers, as well as other health care team members.⁹

The ED Nursing Shared Governance Quality and Safety Council is expected to create and implement 1 to 2 patient-centric, quality- and/or safety-improvement projects per year. Projects are chosen by the council members and are based on the “key result areas” ED score card goals. The council membership is composed of a well-rounded representation of all the ED nursing team roles: registered nurses, ED technicians, and unit secretaries. The ED Nursing Shared Governance Quality and Safety Council was presented by the hospital laboratory and ED leadership team with the challenge of reducing blood culture contamination rates. Although the national benchmark is 3.0%¹⁰ and our own internal hospital laboratory goal is 2.3%, our average ED contamination rate in 2010 was 5.37%. ED nursing staff members are responsible for phlebotomy and obtain an average of 350 blood culture specimens per month, or 4,200 specimens annually.

Process

Our hospital laboratory provides a detailed monthly report to hospital areas where nursing is responsible for obtaining blood culture specimens. The ED nursing shared governance council began the project by reviewing the adult and pediatric patient blood culture data compiled and validated by the laboratory. Analysis included the microorganism contaminant present and the patient’s characteristics. The emergency department has multiple distinct reasons that can lead to unacceptable blood culture contamination rates: high staff turnover, staffing shortages, the type or criticality of presenting patients, and numerous rapid arrivals, which may result in staff hurrying to collect blood samples.⁵ Informal appreciative inquiry sessions were held with the staff to elicit what they thought were the root causes of blood culture contamination in our department. Responses included the following: a sense of being rushed, rapid turnover of patients in the room, lack of patient cooperation, lack of equipment at the bedside, criticality of the patient’s condition, and knowledge deficit regarding the impact of improper technique. The team asked questions such as Why was our hospital laboratory

Download English Version:

<https://daneshyari.com/en/article/5563219>

Download Persian Version:

<https://daneshyari.com/article/5563219>

[Daneshyari.com](https://daneshyari.com)