

OUTCOMES OF AN INNOVATIVE EVIDENCE-BASED PRACTICE PROJECT: BUILDING A DIFFICULT-ACCESS TEAM IN THE EMERGENCY DEPARTMENT

Authors: Madeleine Whalen, MSN, MPH, RN, CEN, Barbara Maliszewski, MS, RN, NEA-BC, Rebecca Sheinfeld, MSN, RN, Heather Gardner, MSN, RN, and Diana Baptiste, DNP, MSN, RN, Baltimore, MD

Contribution to Emergency Nursing Practice

- Peripheral intravenous (IV) catheter placement is a quintessential nursing task. Delays in establishing IV access can lead to risks to patient safety.
- Difficult venous access is a common issue, and improving venous access approaches can lead to tangible gains in patient and staff satisfaction, as well as emergency department workflow.
- The implementation of a dedicated difficult venous access team can generate a significant decline in the time needed to obtain IV access for critical diagnostics and medical interventions.

Abstract

Problem: Difficult venous access is a common problem in health care—especially in the emergency setting—that relies on quick diagnostics to differentiate patient acuities and administer critical medications. The creation of a dedicated team to address difficult venous access (DVA) is a possible solution to the problems of delayed venous access, yet no studies have been published on implementing such a team in the emergency department.

Methods: This was a quasi-experimental study in an urban emergency department. Researchers performed chart audits of

staff-identified patients with DVA to gather baseline data. A DVA team was subsequently implemented 16 hours a day, 7 days a week. Data were recorded on patients referred to the team and included time, number of IV attempts, and patient characteristics.

Results: Baseline data were collected on 53 patients, and postintervention data included 135 patients. The implementation of a DVA team decreased the mean lab order-to-lab completion time by 115 minutes ($P < 0.0001$). Decreases in the number of attempts were not statistically significant. Patients requiring increased numbers of IV attempts also had many common characteristics including history of multiple attempts, poor skin quality, and IV drug use.

Discussion: The use of a dedicated team for DVA reduces the lag time from physician orders to actionable diagnostics or administration of medication. A dedicated DVA technician is a concrete solution to threats of patient safety, as well as ED crowding, and has the potential to affect both patient- and department-level care.

Keywords: Intravenous access; Difficult venous access; Emergency department; Emergency nursing; Patient safety

Madeleine Whalen is Clinical Nurse, Johns Hopkins Hospital, Baltimore, MD. Barb Maliszewski is Interim Director of Nursing, Johns Hopkins Hospital, Baltimore, MD.

Rebecca Sheinfeld is Clinical Nurse, Johns Hopkins Hospital, Baltimore, MD.

Heather Gardner is Program Manager, Clinical Informatics, Johns Hopkins Hospital, Baltimore, MD.

Diana Baptiste is Assistant Professor, Johns Hopkins School of Nursing, Baltimore, MD.

For correspondence, write: Madeleine Whalen, MSN, MPH, RN, CEN, 1800 Orleans Ave, Baltimore, MD 21287; E-mail: mwhalen8@jhmi.edu.

J Emerg Nurs ■
0099-1767

Copyright © 2018 Emergency Nurses Association. Published by Elsevier Inc.
<https://doi.org/10.1016/j.jen.2018.03.011>

Introduction

Venipuncture for peripheral intravenous (IV) access is one of the most common procedures performed in emergency departments across the United States. Studies have found that 8% to 59% of adults have difficult venous access (DVA), causing associated delays in diagnostics and treatments.¹⁻⁴ These delays are especially palpable in the ED setting, which relies on timely interventions for both individual patient safety and overall patient flow. Delayed or incorrect diagnosis can lead to inappropriate patient care and poor outcomes.⁵ The Emergency Nurses Association (ENA) has established the importance of timely vascular

access by skilled practitioners and has drafted guidelines to assist in the clinical implementation of DVA best practices.⁶

Difficult venous access is defined as a condition among patients requiring more than 2 attempts to establish a peripheral venous catheter.⁶ Factors such as female gender, obesity, sickle cell disease, history of chemotherapy treatments, and a history of IV drug use have been associated with DVA.^{2,3,7,8} Difficult venous access is detrimental to the patient experience and is associated with agitation, needle phobia, skin infections, bruising, and delays in medical treatments such as fluid resuscitation and pain management.^{2,6,9} Current departmental guidelines follow the ENA Guidelines and dictate that a clinical technician or nurse may attempt 2 IV placements. If unsuccessful, the task is escalated to a more proficient staff member, who may also attempt twice. If he or she is unsuccessful, an advanced-practice provider is notified to place a more advanced line, including ultrasound-guided peripheral IV lines. At present, nurses and clinical technicians are not allowed to place ultrasound-guided lines at this institution. It is also important to note that often an advanced-practice provider is unavailable, and, after conversation with the patient, more catheter placement attempts are made beyond the 4 outlined in the ED Standards of Practice. The literature suggests that establishing a dedicated, expert DVA team increases efficiency, decreases physician intervention, decreases the number of skin punctures, and improves patient satisfaction.^{2,8-11} However, there are no data on how the deployment of a DVA team in the emergency department affects patient care. Therefore, we executed this evidence-based practice project to measure the impact of a dedicated DVA team consisting of expert clinical technicians performing traditional phlebotomy (without the use of ultrasound), on the lab order-to-lab collection time and the number of venipuncture attempts among patients with DVA.

Methods

This was a quasi-experimental pre/post study in a level 1 tertiary-care, urban academic emergency department, that cares for approximately 70,000 patients per year, with approximately 70% of patients requiring blood draws or IV catheter placement. All patients considered by staff to have DVA (patients who required more than 2 insertion attempts) were eligible for inclusion. Researchers performed chart audits of staff-identified patients with DVA to gather baseline data for the pre-intervention phase of the study. Data collection stopped with the inclusion of 53 patients because a great need for a solution to the problem of DVA was apparent while analyzing incoming data.¹² The DVA team was implemented

Location
Medical Record Number
Date of Service
Lab/Order Date and Time
Procedure Complete Date and Time
Name of Technician
Number of IV access attempts prior to DVA technician
Number of IV access attempts by DVA technician
Type of IV access
Success or failure to complete
Reason for DVA

FIGURE 1
Difficult Venous Access Data Collection

daily from 11:00 am to 3:00 am, Monday through Sunday as a dedicated, supplemental resource throughout the shift. Members of the team were selected using self-nomination. The DVA technician recorded postimplementation data on patients referred to them by primary clinical technicians or nurses on an Excel spreadsheet. Recorded data points are displayed in Figure 1. Technicians were provided with a finite number of options to select from for “Reason for DVA,” based on previous literature reviews and the consensus of the staff.¹² This list was then reviewed and consolidated to collapse overlapping terms. When the technician cited more than 1 reason the patient had DVA, each characteristic was recorded as a discrete value. Quantitative data analysis was performed using Excel (Microsoft Corp, Redmond, WA) and SPSS (SPSS Inc, Chicago, IL) on pre- and postintervention data. Venipuncture attempts were summed for each patient in the pre- and post-intervention stages and included ultrasound-guided attempts for definitive venous access by a physician or physician assistant. A Mann-Whitney U test was conducted to determine statistical significance of the lab order-to-lab collection time because of the nonparametric nature of the data set.

Ethical Considerations

The Institutional Review Board at the study organization deemed this a quality improvement project, and expedited approval was obtained.

Results

Pre-intervention data included 53 patients; postintervention analyzed 135. There was a significant reduction in the mean times to labs collection among (N = 135) patients ($P < 0.0001$) from pre-intervention and postintervention

Download English Version:

<https://daneshyari.com/en/article/10158760>

Download Persian Version:

<https://daneshyari.com/article/10158760>

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