



EMERGENCY BEDSIDE ULTRASOUND GUIDED INTRAVENOUS ACCESS

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Introduction

In recent literature there has been a shift towards development of nurse driven protocols. One in which seemed beneficial for those working in a rural hospital was USGPiV. This educational program is an efficient method to train nurses to provide IV access using ultrasound technology. Several studies have had success in instituting and promoting USGPiV and have found it as an advantageous tool. It has been shown to have less frequency of complications by using real time quantitative images. (Aponte, 2007). These studies have also proven USGPiV to be beneficial in avoiding more invasive procedures such as central lines or EJ's, which are mainstays in rural hospitals with little resources. A recent study found that of the 60 patients in whom at least three attempts to place an IV line had failed, ultrasound-guided peripheral vein access was successful in 84% (Evans, J. (2008). Registered nurses at Wexner Medical center at The Ohio State University successfully placed USGPiV 90% to 98% of the time. Their methodology was similar as it created a standardized training for registered nurses including a 4-hour didactic and hands-on course individualized instruction (Moore, Cindi, MBOE, BBA, R.N., C.E.N. (2013).

Purpose

The purpose of this study was to institute a training program to institute more widespread emergency bedside evaluation in which to create a more thorough assessment and plan of care for patients.

Methodology

- Local rural hospital
- Permission:
 - Chief of Medicine in Emergency and also the Chief Nursing Officer of the hospital.
- Emergency department nurses
- Program initiated, displayed on hospitals “intranet”, nurses took the podcast and post test, then met to do hands on
- The teaching strategies included:
 - On-line video podcasts and hands on competency.
- Post test
- Post test reviewed to see what could have done better

Methodology

- Expert review was obtained before and during the education
- 49 nurses in the hospital completed the education program using the on-line format their educational component of watching didactic podcasts on-line.
 - 22 of these were ED nurses of which the statistics for the study was used
- All participants completed post-test
- A hands-on practice was used for learning to address all learning modalities
- Informational education was also passed out during all phases of the program to insure success.

Results

- Of the 22 ED nurses tested, three received a score of 100%, sixteen received and 83%, and one received a 67%.
- Nurses found ultrasound-facilitated placement of peripheral IV's in patients with difficult access and when other maneuvers had previously failed.
- Nurses found it easy to visualize the needle tip puncture the vein and watch the catheter puncture the vein
- Also found in the didactic experience was ultrasound guidance required less number of IV punctures, was associated with greater patient satisfaction, and was more cost effective then alternative PICC placement.
- Only one patient in the study necessitated a PICC placement, but it is to be noted the patient still had an ultrasound guided 22 gauge IV, which was just not sufficient enough for their fluid resuscitation needs and blood drawing needs.

Dissemination Plan

- Plan to submit manuscript to The Journal of Emergency Nursing
- My hope in creating this education was to institute a protocol within the hospital that continues beyond my graduation in the ED.
- Hopefully other hospitals will also employ this technology
 - Interest has already begun to be voiced

Thank you...

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