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Ultrasound-Guided Intravenous Access as a First-Line Approach by Nurses: A Quality Improvement Project

James Austin Burkhart
University of Tennessee, Knoxville, jburkh18@vols.utk.edu

Pamela Hardesty
University of Tennessee, Knoxville

Melissa McDonald
University of Tennessee Medical Center

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James Burkhart, BSN, RN, DNP-FNP student, Pamela Hardesty, PhD, RN, Melissa McDonald, MBA, MSN, RN, NE-BC

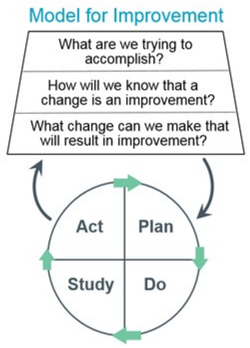
BACKGROUND

- Evidence suggests that the best practice for the patient with difficult IV access (DIVA) is the use of ultrasound (US) guided access. The evidence further suggests that Registered Nurses using the US for IV access is a beneficial solution in the ED as it can free up physician time and possibly avoid patient care delays.

LOCAL PROBLEM

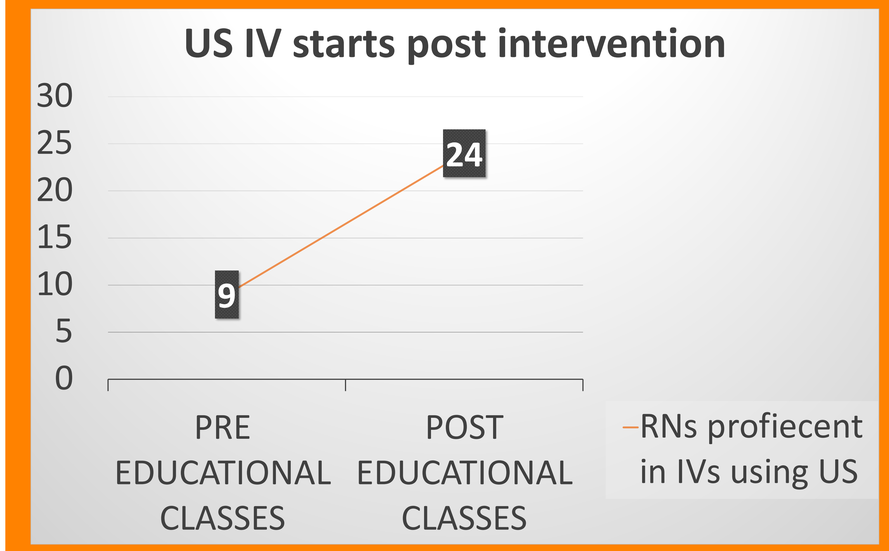
- The project site for this practice improvement project was a Level 1 Trauma Care Emergency Department associated with a teaching medical center located in the southeastern U.S.
- Prior to the implementation of the project, there was no formal education of RNs in the use of US, and the two ED US machines had limited use.
- Consequently, there were often multiple delays in care for DIVA patients. The purpose of the project was to improve patient care delays by the training of ED RNs in its use for these specific patients.

METHODS



- The Model for Improvement was used to guide this QI project.
- Educational US classes were taught to 15 RNs
- Measurements included door to IV start time, door-to-blood collection time, number of RNs trained on the US for IV access, number of IV starts of physician versus RN

Ultrasound educational classes resulted in more RN availability for US-guided access and less physician time spent on the task.



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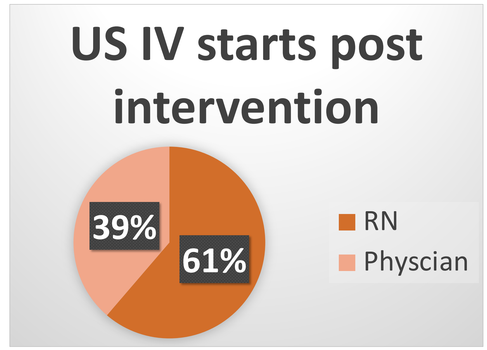
INTERVENTIONS

- The educational class started with 2 classes of 8 RNs and was taught by an MD.
- Gel models and didactic methods were used in the classes

RESULTS

- The ED increased the number of RNs proficient in the US to 24.
- Physician IV starts decreased by 12%.
- Although there were more RNs trained, there were no significant differences between pre and post-intervention time to IV (p=0.552 or time to blood draw p=0.081). A high patient census during the post-intervention collection also influenced the data.



CONCLUSIONS

- The project resulted in more RN availability for US-guided access and less physician time.
- The project site will continue the education sessions for RNs.

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