

Is Less More? Finding the Right Number of Ultrasound Guided Peripheral **Children's** Intravenous Insertions In Pediatric Populations to Determine Nurse Competency Hospital Candice Palmisano, MSN, RN, AGCNS-BC, VA-BC, CPN, CEN, MICN, CCRN

BACKGROUND

- Initiating a peripheral intravenous line (PIV) is one of the most frequently performed medical procedures, with over 330,000 million inserted annually (3).
- Many complexities can hamper the successful establishment of a PIV in pediatric populations, including the severity of illness and chronicity of medical conditions (4).
- Utilization of ultrasound-guided IV (USGIV) insertions have helped optimize first-stick success rates in patients with difficult IV access.
- Training guidelines for USGPIV insertion are frequently based on adult literature (1).
- Literature suggests that ONLY five to ten successful (USGIV) cannulations deem competent to perform this advanced skill (1).

PUPROSE

To explore the required number of ultra-sound guided peripheral intravenous (USGPIV) insertions in pediatrics to determine nurse competency

METHODS

- The vascular access team (VAT) developed an ultrasound-guided peripheral intravenous training program
- Unit managers assigned seven nurses from various units to participate in four-hour didactic and hands on training using ultra sound on a phantom to learn ultrasound
- Requirements to be deemed "competent" and practice independently was 50 USGIV starts with a first-time time stick success of 70% = 35 successful first attempts starts
- Trainees were assigned 12-hour shifts with a preceptor from the hospital's vascular access team to fulfil the required USGIV starts
- Each trainee had individual Qualtrics© links that tracked every attempt, identify difficult IV access patient's (DIVA) and assessed confidence with the skill

Vascular Access Team, Children's Hospital Los Angeles

RESULTS





11.1% 4.6% 84.3%

- First stick success within the first 10 attempts was 88%
- Among all first stick attempts it was an 86% success rate and continued to remain high during training
- Trainees reported that their confidence continued to grow after every USGIV attempt

- Pediatric nurses may have a comfort level that is different from adult nurses because of their frequent exposure caring for this population
- This cohort frequently established IV access using traditional methods in pediatric patients
- During preceptor shifts trainees had continuous coaching during the USGIV insertions and supervision from the vascular access team which allowed the trainee to correct a possible failed USGIV attempt in real-time
- Future USGIV cohorts might need less support during precepted shifts to determine if the trainee can actually make corrections on their own when establish USGIV without constant oversight and guidance from vascular access team members
- Future training program design may require 10 closely supervised USGIV starts by the vascular access team, then the trainee will have less supervision to complete the required 50 first-time stick success with 70% accuracy



KEY FINDINGS

CONCLUSIONS

REFERENCES



