

Pediatric Peripheral IV Access

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Pediatric Peripheral IV Access: A Quality Improvement Project

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Purpose

- Project Purpose:
 - Evaluate if initiating specialized pediatric peripheral IV access training to new graduates increases confidence, and patient outcomes for the Children's Hospital.

PICO QUESTION

PICO QUESTION:

Will specialized pediatric IV training for new graduates increase confidence and better patient outcomes for LVHN's Children's Hospital?

P: All pediatric units in the Children's Hospital at LVHN (Pediatrics, PICU, CHER, NICU) - or any places pediatric population goes for a procedure.

I: Would more specialized training increase confidence in new graduates and better outcomes in peripheral IV insertions

C: Current practice: no pediatric specific IV training, or practice time inserting IVs in live patients

O: Increased confidence in new graduates, increased patient satisfaction, decrease in failed IV attempts - standardizing training and current practice.

EVIDENCE

- Goff et al (2013) found median cost of pediatric PIV insertion was \$41 and that 60% of IV placements occurred with first nurse (72% were successful in 1-2 attempts)
- Goff et al (2013) found 28% of children who required ≥ 3 IV attempts, cost \$69 to $> \$125$, and cost 43% of the total IV costs (these patients were often < 2 years old or dehydrated)
- Larsen et al (2010) found in a convenience sample of 592 patients (1132 venipunctures) that successful IV placement in a children's hospital required on average 2 attempts and 28 minutes, and predictors of success included nurse experience, self-rated competence, time of day, predicted difficulty of the venipuncture, and cooperativeness of the child.

EVIDENCE

- Walsh (2006) studied the quality of IV insertion practice and found that parents are willing to spend more time and money for painless IV placement in their child.
- Lyon and Kasker (2012) studied the benefits of continuing education with a formal IV course. They discovered there was improvement in knowledge, infection prevention, and policy adherence.
- Loukas et al (2010) found using a VR simulator with both intermediate and novice learners with IV cannulation reduced the completion time and errors made with IV insertion
- Mundy (2007) discussed the need to use high-tech equipment such for example veinpuncture arms, videos, and IV training simulators to help student gain competence and confidence in IV insertion before attempting on live patients.

BARRIERS & STRATEGIES

- Barriers:

- Difficulty in quantifying correlation of results between IV training and better IV insertion outcomes
- Each patient situation is unique - variables: age, size of veins, patient reaction, level of difficulty of stick
- Lack of recent, strong statistical evidence on IV training, especially in pediatrics

- Strategy to Overcome:

- Announce project at staff meeting and gain support from director, PCM/PCS, charge nurses
- Conduct survey of IV insertion practices on our unit
- Create pilot pediatric IV training class with assistance of pediatric CRS/PCS and allot orientation time for IV start training with PCS
- Contact other hospitals that have pediatric IV training to gain insight
- Conduct survey of new graduate confidence before and after IV class and training in the ED

Expected Outcomes

- Increased confidence in IV insertion for new staff members on the pediatric unit
- Increased patient and family satisfaction
- Increase in Press Ganey scores for “IV skill of nurse”
- Less peripheral IV attempts
 - Less stress and pain to patients
- Decrease cost for IV supplies, and time taken per staff member= lower costs for pediatric unit
- More knowledge about IV insertion techniques

PROJECT PLANS

- Develop pediatric-specific IV/phlebotomy training course for new staff nurses
 - Created power point based on best evidence based practice and policy tech for peripheral IV insertions in pediatric population
 - Hand outs given to new staff on choosing the best sites for IV insertion in pediatric patients
 - Survey on confidence pre and post class
 - Hands on practice setting up for IV insertions in pediatric mannequin arms and feet
 - Orientation time with CRS shadowing and attempting IVs in the ED on adult patients
- Look at evidence based practice on specialized training on peripheral IV insertion

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Make It Happen

- Contact all leaders of LVHN Children's Hospital, plan a meeting to present plan for tracking IV attempts, duration, quality of stick, and IV insertion practices/standards
- Collect data for cost effectiveness, and quality of current practices
- Implement pediatric-specific IV insertion/ phlebotomy training for new nursing staff
- Assess change in success and cost of IV insertions before and after training, and in confidence of new nursing staff
- **FOR THE FUTURE:** Implement a pediatric IV insertion team and assess cost effectiveness

