Few practice improvement registries exist that describe opportunities to improve intraosseous (IO) use. The goal of this project was to assess the success rate of the procedure by emergency nurses and identify opportunities to improvement” Dymond et al (2018).

Abstract:
INTRODUCTION: Few practice improvement registries exist that describe opportunities to improve intraosseous (IO) use. The goal of this project was to assess the success rate of the procedure by emergency nurses and identify opportunities to improvement. Secondary goals were to assess success rates based on clinician type, age of patient, and procedural factors.

METHODS: Emergency nurses assigned to the resuscitation area of a tertiary care emergency department completed an education module and skill lab on IO placement. Tracking forms were completed whenever IO access was attempted, and the clinical nurse educator collated the forms.

RESULTS: Over 2 years, quality improvement forms were submitted for 17 pediatric patients (receiving 23 IO insertions) and 35 adult patients (receiving 40 intraosseous insertions). Prior to an IO attempt, the average number of IV attempts for pediatric and adult patients was 4 (range 0 to 10) and 2 (0 to 5), respectively. Successful pediatric IO insertion rate was 6/15 (40%) for physicians (both residents and attending physicians) and 6/7 (86%) for emergency nurses. Physicians were more likely to perform IO insertions in children <12 months of age and emergency nurses in patients >12 months of age. The leading cause of failed insertions in pediatrics was selecting a needle that was too short: either not reaching the intramedullary canal or quickly becoming dislodged, especially with flushing the IO cannula after insertion.

For adult patients, IO insertion success rates for physicians were 13/14 (93%) and 18/20 (90%) for emergency nurses.

DISCUSSION: The registry identified opportunities to improve clinical practice on the clinical threshold for IO use in pediatric patients and the appropriate selection of IO cannula.

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