



Kenneth Yen, MD
Recipient of the Ken Graff Young Investigator
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VeinViewer™ for peripheral IV placement in children with difficult IV access

A study proposal

*For the American Academy of Pediatrics, Section on Emergency Medicine,
Ken Graff Young Investigator Grant Program*

ABSTRACT

Hypothesis: The first attempt success rate for peripheral IV insertion for children with difficult IV access (DIVA score = 4) by nurses using the VeinViewer™ guided technique is better than conventional method.

Specific Aims: To investigate if use of the VeinViewer™ can improve the success of peripheral IV placement in children with difficult IV access

Design: Prospective randomized controlled trial

Subjects: Children (0-18) presenting to the emergency department who require an IV as determined by examining physician and with DIVA score = 4

Variables: Outcome Variables: First IV attempt success rate

Predictor Variables: IV technique used, other potential modifiers (age, weight, height, skin shade, prematurity, and vein visibility/palpability)

Methods: Subjects who meet inclusion criteria will be randomized to either conventional or VeinViewer™ guided IV technique. Success or failure on first IV attempt will be recorded. If unsuccessful, other attempts will be tried until a successful IV is placed or the physician decides to give an alternative therapy.

Statistics: A chi square test will be used to compare the proportion of subjects with successful first attempt IV placement using the VeinViewer™ technique to that using the conventional method with 95% confidence interval. Logistic regression will be performed to test for independent associations.

Risks: No extra risks are expected above that of receiving a standard IV. The VeinViewer™ may increase the time needed to place an IV.

Potential Benefits: With this study, we hope to find a method to improve the IV placement success rate of children with difficult IV access.