Stop Sticking to Stick: An Evidence-Based Practice Project to Promote Early Identification of Difficult Intravenous Access

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Introduction: Difficult intravenous access (DIVA), defined as repeated unsuccessful IV insertion attempts, is associated with patient pain, anxiety, treatment delays, and complications. In our preoperative unit at an outpatient surgery center within an academic university hospital, a 20-gauge catheter is recommended for adults.

Identification of the Problem: Nurses reported increased IV attempts and use of smaller gauge catheters. An audit of 878 charts revealed that 19% of patients experienced at least one IV-related issue, including a smaller catheter, more than two insertion attempts, suboptimal location, or missing documentation. Although institutional guidelines limit each clinician to two insertion attempts, there are no limits per patient.

EPB Question/Purpose: This evidence-based practice project aimed to identify patients at risk for DIVA and was guided by the IOWA Model. The guiding PICO Question was: In adult patients at an outpatient surgery center, is the Modified A-DIVA tool reliable and valid for objectively assessing a patient's veins before inserting a peripheral IV? A literature search was conducted in CINHAL and PubMed, and pediatric studies were excluded.

Methods/Evidence: Two Level II and one Level III sources supported the tool's use. We sought input from clinicians, provided frequent educational opportunities, and obtained ultrasound machines. During implementation, nurses assessed patients with the tool before IV insertion. Ultrasound-guided placement on the first attempt was recommended for high-risk patients. Each shift included one nurse competent in ultrasound-guided IV insertion.

Significance of Findings/Outcomes: Over two months, nurses used the Modified A-DIVA tool in 76% of cases (558 of 736 patients). Among high-risk patients (n = 34), 41.2% (n = 14) received a 22-gauge catheter. In the moderate-risk group (n = 130), 33.8% (n = 44) received a 22-gauge catheter. Ultrasound was used in five patients. These findings indicate that nurses more frequently selected smaller catheters over ultrasound-guided placement for moderate- and high-risk patients.

Implications for perianesthesia nurses and future research: Use of the Modified A-DIVA tool may reduce IV attempts and improve outcomes. To improve adherence, efforts are underway to integrate the tool into the electronic medical record. Plans include protocol development for early use of ultrasound-guided placement and expanding the tool's use to other departments. Future research should evaluate its impact on workflow efficiency and clinical outcomes.