

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



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Background

- In a 13-bed preoperative unit at an outpatient surgery center (OPSC) with an average daily census of 45 adult patients, nurses noted increased IV attempts and use of smaller-than-recommended gauges.
- Resources for difficult IVs are limited, with no defined attempt limits and limited ultrasound (U/S) availability.
- Difficult IV access can contribute to procedural delays.
- An audit of 878 IVs showed 19% were placed with a smaller-than-recommended IV gauge, required > 2 attempts, were placed in an incorrect location, or lacked documentation.

Model Used

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care (Iowa Model Collaborative, 2017)

PICO Question: In adult patients at an outpatient surgery center, is the Modified A-DIVA tool reliable and valid for objectively assessing venous access prior to peripheral IV insertion?

Synthesis of Evidence

The Modified A-DIVA tool is reliable and valid in adult populations, and has been shown to decrease the number of IV attempts when used in conjunction with U/S (van Loon et. al, 2016; van Loon et. al, 2019; Patterson et. al, 2022).

Practice Change

- Before placing an IV, score each patient using the Modified A-DIVA scale.
- Escalate high risk patients to an U/S guided IV placement.
- Schedule one nurse per shift competent in U/S guided IV placement

Modified A-DIVA Tool

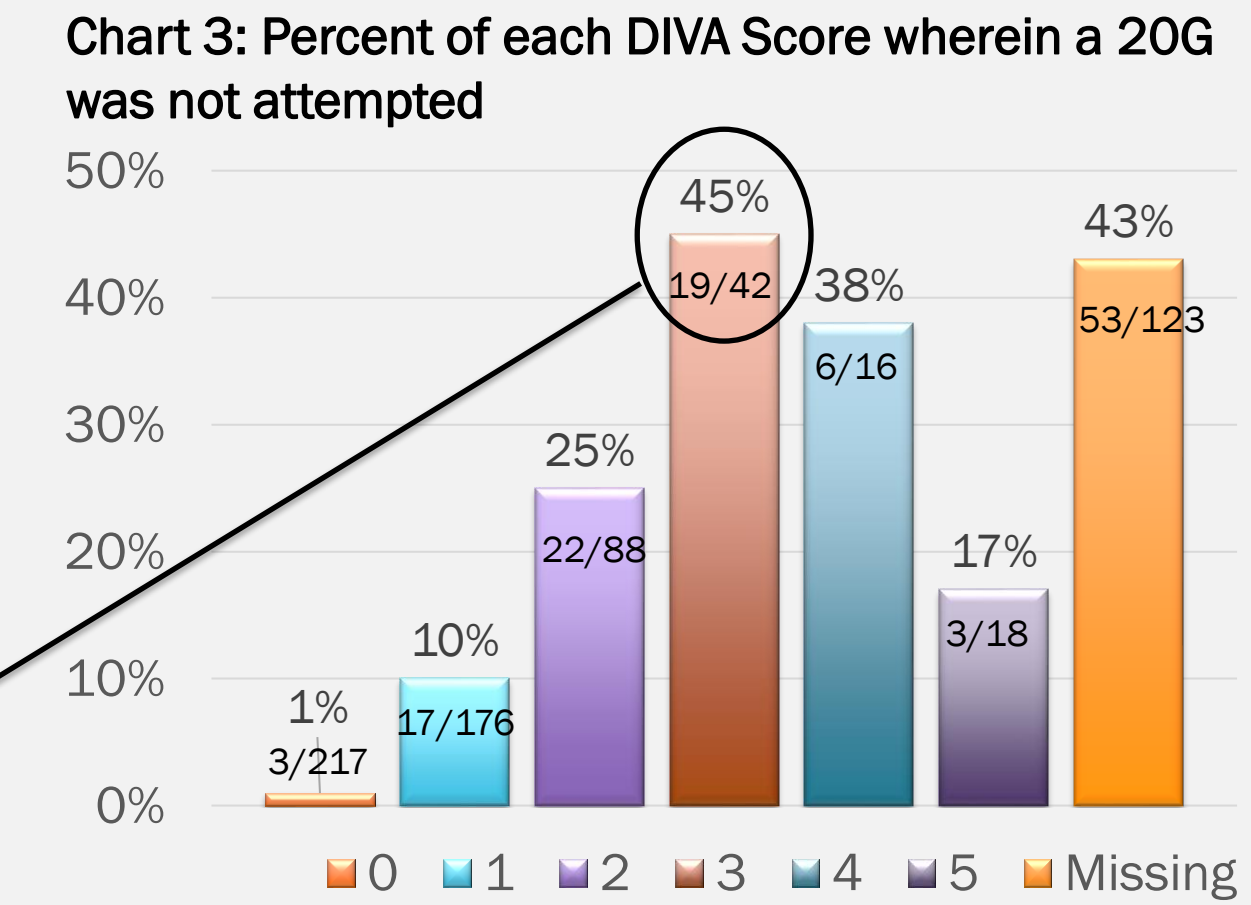
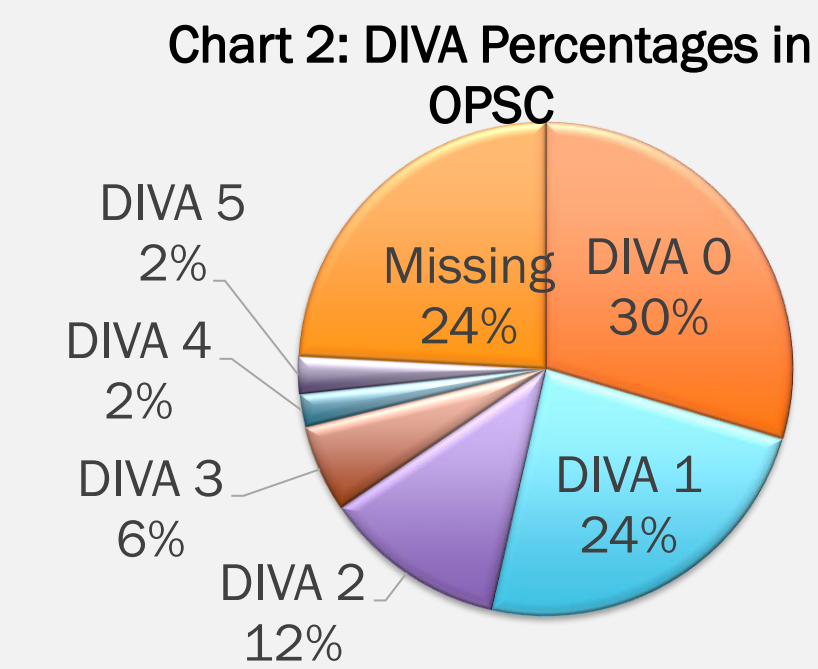
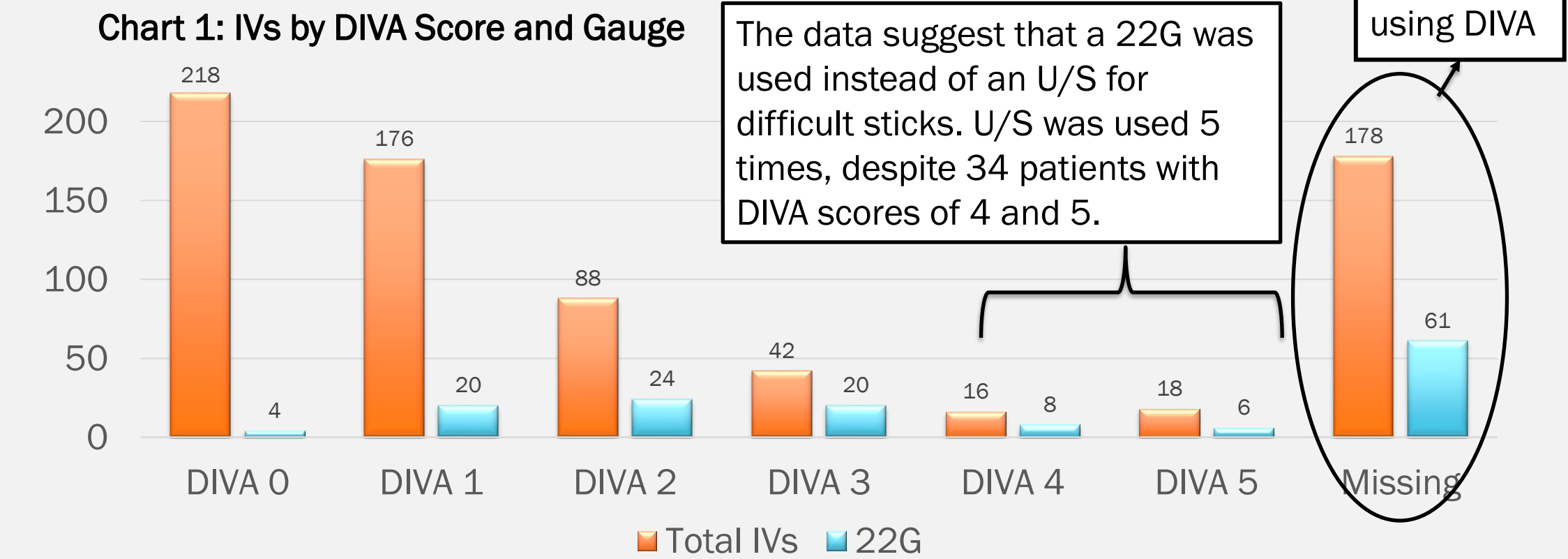
Answer each question and add the scores	Yes = 1 No = 0
1. Is there a known history of a difficult intravenous access?	
2. Do you expect a failed first attempt or a difficult intravenous access?	
3. Is there an inability to identify a vein by palpating the upper extremity?	
4. Is there an inability to identify a dilated vein by visualizing the upper extremity?	
5. Has the largest dilated vein a diameter less than 3 millimeters?	
Total Score	

Score of 0-1 = Low Risk (90-98% first attempt success rate);
 Score of 2-3 = Moderate Risk (55-69% first attempt success rate);
 Score of 4-5 = High Risk (2-14% first attempt success rate)

Implementation Strategies

PHASE 1 Create Awareness & Interest	PHASE 2 Build Knowledge & Commitment	PHASE 3 Promote Action & Adoption	PHASE 4 Pursue Integration & Sustained Use
<ul style="list-style-type: none"> Elevator Speech Slogan Daily unit huddles and staff meetings Display Modified A-DIVA scale around unit 	<ul style="list-style-type: none"> In-services Frequent educational outreach Clinician input Case studies Obtain U/S machines U/S training 	<ul style="list-style-type: none"> Change champions Audit indicators Build tool in EMR Feedback to staff Troubleshoot at bedside Resource materials 	<ul style="list-style-type: none"> Trend data Staff recognition Clinician input Align policy Present at educational programs

Evaluation



Conclusions & Next Steps

- Pre-IV use of the Modified A-DIVA tool identifies patients at risk for difficult IV access and those who may benefit from U/S guidance.
- Future efforts include escalating high scores to U/S, integrating A-DIVA into EMR, and redesigning implementation to improve compliance to 85%.

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References available upon request from Samantha McGuigan at fue7mw@uvahealth.org

