

Table 12: Practice Notes from the Evidence

KEY INTERVENTION	DETAILS FROM THE EVIDENCE
<p>Health provider experience</p>	<ul style="list-style-type: none"> ■ Insertions were completed by a variety of health providers, including registered nurses, nurse practitioners, nurse anesthetists, emergency physicians and anesthetists (22, 121-126, 128, 130). ■ It was noted that provider comfort and previous experience affected the success and implementation of the intervention (122, 123, 125). <ul style="list-style-type: none"> □ One systematic review reported that provider expertise level and technique (e.g., one-person versus two-person, and dynamic versus static) were associated with better results (122). □ One study reported significant health provider effect on needle redirections, total time and needle manipulation time (123). □ One study noted that attending physicians and nurses may have had higher success rates inserting PVADs than fellows because of more experience with placing ultrasound-guided VADs (125).
<p>Details of ultrasound technique</p>	<ul style="list-style-type: none"> ■ Dynamic Needle Tip Positioning (123, 125-127). ■ Short axis (121, 123, 125). ■ Long axis (121). ■ Single-operator technique (121, 125-127). ■ Two-provider technique (22, 121, 122). <ul style="list-style-type: none"> □ One nurse operated the equipment and examined vessels in transverse and longitudinal directions with a 90-degree angle of the transducer, then chose the vein to be used. Another nurse performed skin antisepsis and the catheter insertion, analyzing the image on the screen (22).

Supporting Resources

RESOURCE	DESCRIPTION
<p>Pitts S, Ostroff M. Position paper: the use of visualization technology for the insertion of peripheral intravenous catheters [Internet]. [place unknown]: American Vascular Association; 2019. Available from: https://cdn.ymaws.com/www.avainfo.org/resource/resmgr/files/position_statements/Visualization_for_Peripheral.pdf</p>	<ul style="list-style-type: none"> ■ Statement on the use of ultrasound technology for the insertion of short PVADs. ■ Provides considerations for the use of ultrasound technology.
<p>American Institute of Ultrasound in Medicine (AIUM). Practice parameter for the use of ultrasound to guide vascular access procedures. <i>J Ultrasound Med.</i> 2019;38(3):E4-E18. doi: 10.1002/jum.14954.</p>	<ul style="list-style-type: none"> ■ Practical guide for the use of ultrasound in vascular access procedures.
<p>Hallam C, Denton A. Vessel health and preservation 1: minimising the risks of vascular access [Internet]. <i>Nursing Times.</i> 116:7;22-5. Available from: https://cdn.ps.emap.com/wp-content/uploads/sites/3/2020/04/200610-Vessel-health-and-preservation-1-minimising-the-risks-of-vascular-access.pdf</p>	<ul style="list-style-type: none"> ■ Publication outlining vessel health preservation framework. ■ Details the use of ultrasound, assessment and device selection.