



To report our success and complication rates with emergency department (ED) technician-performed ultrasound (US)-guided peripheral intravenous (IV) catheter placement and to compare our results to similar studies in the literature” Duran-Gehring et al (2016).

Abstract:

**OBJECTIVES:** To report our success and complication rates with emergency department (ED) technician-performed ultrasound (US)-guided peripheral intravenous (IV) catheter placement and to compare our results to similar studies in the literature.

**METHODS:** We conducted a retrospective review of a prospective database of patients who underwent US-guided peripheral IV catheter placement attempts for clinical care in the ED. All patients meeting difficult IV access criteria who had a US-guided peripheral IV catheter placement attempted by a trained ED technician were included. Average attempts per success and overall success rates were compared to similar published studies.

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**RESULTS:** There were 830 participants, with an overall success rate of ED technician-

performed US-guided peripheral IV catheter placement of 97.5%. Clinicians categorized 82.6% of participants as having difficult IV access and reported that in 46.5%, a central venous catheter would have been necessary if the US-guided peripheral IV catheter failed. Of successful catheter attempts, 86.8% were placed on the first attempt; 11.6% were placed on the second attempt; and 1.6% were placed on the third attempt. For this study, the average number of attempts per success was 1.15 (95% confidence interval, 1.12-1.18), which was lower than in 6 other published studies, ranging from 1.27 to 1.70. The overall success rate of our ED technician-performed attempts was 0.970 (95% confidence interval, 0.956-0.983), which was higher than that reported in previous ED technician studies (0.79-0.80), and closer to that reported for physicians or nurses (0.87-0.97). The arterial puncture complication rate was 0.8%, which was also lower than in other published studies (1.25%-9.80%).

**CONCLUSIONS:** With brief but comprehensive training, ED technicians can successfully obtain US-guided peripheral IV catheter access in patients with difficult IV access.

Reference:

Duran-Gehring, P., Bryant, L., Reynolds, J.A., Aldridge, P., Kalynych, C.J. and Guirgis, F.W. (2016) Ultrasound-Guided Peripheral Intravenous Catheter Training Results in Physician-Level Success for Emergency Department Technicians. *Journal of Ultrasound in Medicine*. September 14th. .

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