



This study aimed to evaluate ED nurses’ success rate in establishing pediatric IO access using semiautomatic devices” Feldman et al (2018).

Abstract:

**BACKGROUND:** No study has examined the performance of emergency department (ED) nurses in establishing intraosseous access (IO) access. This study aimed to evaluate ED nurses’ success rate in establishing pediatric IO access using semiautomatic devices.

**METHODS:** A randomized crossover simulation study was conducted. The success rates of ED nurses were compared with those of paramedics with similar years of experience. The study instruments were the new spring-loaded injector (NIO) and the battery power drill (EZ-IO). Uncooked piglets’ bones were used as the study model. All attempts were filmed by a video camera. Successful placement was defined as the visualization of flow from the marrow cavity. Participants recorded their ranking of the “ease of use” of each device.

**RESULTS:** No differences in 1-attempt success rate was found between nurses and paramedics (27/34 [79.4%] vs 25/30 [83.3%],  $P = 0.68$ ). Nurses and paramedics had similar success rates with the 2 semiautomatic IO devices (12/17 vs 12/15 with the spring-loaded injector,  $P = 0.69$ , and 15/17 vs 13/15 with the battery power drill,  $P = 0.9$ ). The number of failed attempts and the causes for failure were equally distributed between nurses and paramedics. Median ease-of-use Likert-scale scores of the spring-loaded injector and the

battery power drill were 4 (interquartile range = 3-4) and 5 (IQR = 5-5) ( $P < 0.04$ ) for the nurses and 5 (IQR = 4-5) and 5 (IQR = 4-5) ( $P = 0.44$ ) for the paramedics, respectively. CONCLUSIONS: Emergency department nurses and paramedics had a similarly high insertion success rates on a pediatric bone model. This pilot study suggests that ED nurses can successfully perform this procedure.

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### Reference:

Feldman, O., Nasrallah, N., Bitterman, Y., Shavit, R., Marom, D., Rapaport, Z., Kabesa, S., Benacon, M. and Shavit, I. (2018) Pediatric Intraosseous Access Performed by Emergency Department Nurses Using Semiautomatic Devices: A Randomized Crossover Simulation Study. *Pediatric Emergency Care*. September 25th. .

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