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5 Know Your Pressor: Table-Top Simulation for Push “micro” Dose Pressor Preparation and Use

Andrew Bloom, Jaron Raper, Helena Kons, Emily Green

Introduction: The practice of preparing and administering small doses (micro or push) of vasopressors in hemodynamically unstable patients is an essential skill in Emergency Medicine (EM). Using micro dose pressors (MDP) can be lifesaving but is also a high-risk practice with opportunities for errors in calculation, preparation or administration. Simulation provides a low-stake forum for learners to practice and fine-tune skills. There exists little to no formal education of MDP administration and preparation. Here we collaborated with our pharmacists to develop a table-top based MDP simulation for our EM residents.

Educational Objectives:

- 1) Explain indications for MDP in the ED
- 2) List appropriate supplies to prepare MDP
- 3) Determine appropriate MDP, dose, and frequency of administration based on clinical scenario
- 4) Prepare MDPs and propose appropriate dose to a patient

Curricular Design: The curriculum was designed by EM Clinical Pharmacists with EM faculty support. Pre-learning slides were provided to learners prior to the simulation highlighting MDP use and preparation. Learners participated in a 20-minute table-top simulation with our Pharmacy team with pre-brief and debriefing sessions. During the simulation MDPs were prepared, indications were discussed, and appropriate dosing and frequency was highlighted. Learners completed pre and post surveys using a 10-point Likert scale outlining comfort and knowledge of MDPs.

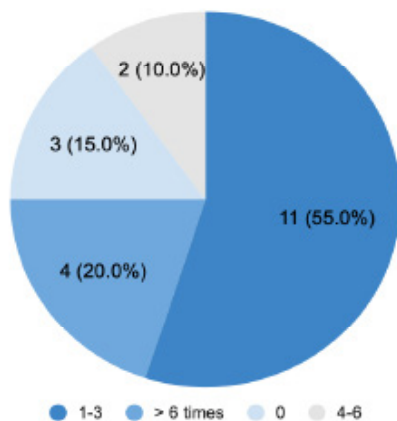


Figure 1. Prior learner experience with Micro-dose Epi.

Impact/Effectiveness: 20 EM residents participated in the simulation. A majority (65%) of residents had not prepared MDPs in a clinical setting highlighting the need for ongoing training. After the simulation residents reported significant improvement in performing (4.63 vs. 8.74), dosing (5.42 vs 9.0) and teaching (4.11 vs 9.0) MDP administration and preparation. Overall residents felt the activity was worthwhile (9.9) with high satisfaction (9.95).

6 Utilizing Simulation to Integrate Social Determinants of Health into Emergency Medicine Medical Student Clerkships

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Background: Medical education has increasingly focused on the social aspects of healthcare in recent years, with programs incorporating training on the social determinants of health (SDH). Despite this progress, a gap remains in standardized simulation scenarios with SDH training objectives, and efficacy data is limited. This study introduced a series of emergency medicine (EM) training scenarios that integrated both clinical and SDH objectives. These scenarios aimed to provide learners opportunities to diagnose and manage common urgent and emergent complaints while also considering social factors.

Objectives: To incorporate SDH into medical student curriculum using simulation-based education.

Methods: A medical student and EM faculty developed simulation scenarios for use during a required third-year medical clerkship. The scenarios incorporated realistic SDH themes into common EM presentations, followed by debriefing. Pre- and post-intervention surveys were administered to participants.

Results: 30 students participated in the simulation and completed pre- and post-surveys. Post-survey results showed improved comfort in identifying (62% to 78%) and addressing (48% to 74%) patients' social needs. Confidence in awareness of SDH resources also increased (44% to 67%), and participants felt more confident connecting patients with these resources (44% to 75%). Learners also reported greater consideration of SDH in patient care post-training (68% to 87%). Participants overwhelmingly found the training valuable (96%). A slight increase was noted in the belief that medical students should be trained to address social needs (90% to 95%), reinforcing a pre-existing interest in SDH training. Overall, the scenarios were considered meaningful and broadened the students' perspectives on patient care.

Conclusion: This series of EM simulation scenarios demonstrates the feasibility, effectiveness, and perceived value of integrating SDH training into EM education.