

Introduction: Cardioactive steroid poisoning occurs worldwide with the use of pharmaceutical digoxin and botanical cardiac glycosides. The wholesale price of the antidote, digoxin immune fab, has increased over 300% from 2010 to 2015. Our objective was to identify gaps in the existing literature with respect to the use of digoxin immune fab in cardioactive steroid toxicity in acute care settings. **Methods:** We used scoping study methodology, as described by Arksey and O'Malley, to assess the range and scope of empiric research and will report: 1) sources of cardioactive steroid toxicity in acute settings; 2) doses of digoxin immune fab used in treatment; and, 3) intervention outcomes of acute cardioactive steroid toxicity following the administration of digoxin immune fab as first or second-line therapy. We collaborated with a library scientist to devise search strategies for PubMed, CINAHL, EMBASE, CENTRAL and Toxnet. We sought unpublished literature through the Canadian Electronic Library, Proquest, and Scopus and searched reference lists of included studies. We hand searched relevant conference proceedings and applicable guidelines. Two reviewers independently reviewed titles and abstracts using predetermined criteria. Using a structured data abstraction form, two reviewers independently extracted data. All discrepancies were resolved through consensus. **Results:** Our search strategy yielded 3458 results. After screening titles and abstracts 384 underwent full text screening. We included 147 studies and are currently extracting data from 12 French studies and 135 English studies. To date we have extracted data from 90 case reports and case series. **Conclusion:** Given concerns over rising costs, our findings will shed light on the extent of the evidence for use of digoxin immune fab in acute care settings.

Keywords: cardiac glycosides, digoxin immune fab

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The Devil may not be in the detail - training first-responders to administer publicly available epinephrine – microskills checklists have low inter-observer reliability

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Introduction: Improving public access and training for epinephrine auto-injectors (EAI) can reduce time to initial treatment in anaphylaxis. Effective use of EAI by the public requires bystanders to respond in a timely and proficient manner. We wished to examine optimal methods for assessing effective training and skill retention for public use of EAI, including the use of microskills lists. **Methods:** In this prospective, stratified randomized study, 154 participants at 15 sites receiving installation of public EAI were randomized to one of three experimental education interventions: A) didactic poster (POS) teaching; B) poster with video teaching (VID), and C) Poster, video, and simulation training (SIM). Participants were tested by participation in a standardized simulated anaphylaxis scenario at 0-months, immediately following training, and again at follow-up at 3 months. Participants' responses were videoed and assessed by two blinded raters using microskills checklists. The microskills lists were derived from the best available evidence and interprofessional process mapping using a skills trainer. The interobserver reliability was assessed for each item in a 14 step microskill checklist composed of 3-point and 5-point Likert scale questions around EpiPen use, expressed as Kappa Values. **Results:** Overall there was poor agreement between the two raters. Being composed or panicked had the highest level of agreement $K = 0.7$, but a result that did not reach

statistical significance (substantial agreement, $p = 0.06$) calling for EMS support has the second highest level of agreement, $K = 0.6$ (moderate agreement, $p = 0.01$), the remainder of the items had very low to moderate agreement with a Kappa value range of -103 to 0.48 . **Conclusion:** Although microskills checklists have been shown to identify areas where learners and interprofessional teams require deliberate practice, these results support previously published evidence that the use of microskills checklists to assess skills has poor reproducibility. Performance will be further assessed in this study using global rating scales, which have shown higher levels of agreement in other studies.

Keywords: education, epinephrine auto-injectors, first responders

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A procedural skills needs assessment targeting physicians providing emergency department coverage in rural Newfoundland and Labrador

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Introduction: Maintaining competence in high-acuity low-occurrence (HALO) procedures is often difficult due to their infrequent occurrence. While simulation is a valuable tool to hone skills, providing effective simulation-based education (SBE) to learners outside academic centers can be challenging. Utilizing a mobile tele-simulation unit (MTU) with expert instruction from a geographically separated mentor could prove a valuable approach to overcoming barriers in this setting. However, to maximize benefit and buy-in, the training modules developed for this unique delivery method must align with the needs of those practicing in rural settings. **Objectives:** - To evaluate the procedural skills training needs of emergency medicine (EM) physicians in rural Newfoundland and Labrador (NL) - To inform the development of simulation modules designed for use in a MTU **Methods:** A web-based needs assessment was distributed to physicians registered with the NL Medical Association, working in rural locations, and having EM listed as their primary specialty. Participants evaluated their comfort, performance frequency and desire to have further training for 12 HALO procedures. Two EM physicians selected these from a broader list of core procedural skill competencies for CCFP-EM residents at Memorial University. Participants were also able to suggest other procedures that might benefit from SBE. **Results:** The data collection occurred for 8 weeks with a 68% response rate ($N = 22$). No respondents had formal EM training outside of exposure in family medicine residency. 60% had 10+ years practicing EM. Chest tube insertion (100%), difficult intubation (92.3%) and surgical airway (92.3%) were the procedures that most respondents felt required more SBE. In practice, they most often performed bag-valve ventilation, splint application and procedural sedation (>10 per year). Additional procedures felt to require SBE were central venous line placement and trauma assessment. Opportunities to participate in SBE were limited (66.7%-less than annually). Despite this, most participants agreed SBE would be a significant benefit if accessible (93.3%). The greatest barriers to SBE included lack of equipment, rural location, and time necessary for travel to larger centres. **Conclusion:** The provision of medical care in rural settings can be particularly challenging when HALO procedures must be performed. Unique delivery methods of SBE targeted to the needs of rural practitioners may help bridge gaps in knowledge and technical skills. **Keywords:** procedural skill, rural practice, simulation-based education