Training first-responders to administer publicly available epinephrine – a randomized study.

Background:
- Improving public access and training for epinephrine auto-injectors (EAIs) can reduce time to initial treatment in anaphylaxis and therefore save lives, especially in rural settings.1,2,3
- In southern New Brunswick, this is being addressed with unlocked, alarmed EAI cabinets.
- PREM data shows significantly higher scores in the SIM group at 0 months (post-assessment) than in POS and VID.
- Effective EAI use depends on timely and proficient bystanders.
- We asked: what is the best teaching modality for effective EAI training?

Methods:
- Prospective, stratified, block randomized study:
  - 154 participants at 15 sites were block randomized to one of three education interventions:
    - A) didactic poster (POS) teaching;
    - B) poster with video teaching (VID); and
    - C) poster, video, and simulation training (SIM).
  - Participants tested at 0-months and at 3-months (post-intervention).
    - Tests were videoed and assessed by blinded raters. Patient-recorded experience measures (PREMs) were used to assess participant-simulated patient interaction.
  - PREM data analyzed using Kruskall-Wallis-Rank Sum test, same planned for video assessment.

Results:
- Differences found between group baseline characteristics for age and first aid training (Table 1) – plans in place for a multivariable analysis on effect size of these differences.
- PREM data and video assessment data were not normally distributed.
- PREM data showed significantly higher scores in the SIM group at 0-months (median=6.5, IQR=5; p=0.05) and 3-months (median=5, IQR=3; p<0.01), compared to those groups that did not receive SIM (Figure 1).
- 3-month SIM average video assessment performance scores show trends in better skill retention (Figure 2).
  - Full data analysis planned for a later date: weighted scoring (consensus process) and an inter-rater agreement analysis.

Conclusion: Participants in the simulation training group provided a significantly better patient experience at both the 0-month and 3-month assessments when compared to the other two groups. Blinded video assessment shows the simulation group has improved retention of skills in proper dosing, ensured delivery, and an organized approach to anaphylaxis response.