Goals

- To use patient simulation to mimic pediatric critical events that residents may encounter in the operating room
- To evaluate whether patient simulation helps residents learn about pediatric critical events as measured with a pre- and post-test

A pretest composed of 18 questions modified from the Pediatric Anesthesia Critical Events Checklist was given to CA-1 residents with the assumption of not having any formal pediatric training. Topics included:

- Bradycardia
- Tachycardia
- Cardiac arrest
- Airway fire
- Hypoxia
- Transfusion medicine

Residents assigned random number to allow for anonymity and allow for matching of post test questionnaire.

Methods

Case 1: You are the anesthesia provider for a 5 y/o female that is intubated for a laparoscopic appendectomy. Patient becomes bradycardic with insufflation.

Case 2: You are called to the ED for help with an 8 y/o female that presents to the ED with an episode of SVT.

- Both groups were given a “points of interest” one page topic sheet reviewing the topics addressed in the quiz as a teaching tool for debriefing.
- Given reference to Pedicrisis app
- All 10 residents were given identical post-test one month after initial pretest. One month time frame was used to prevent immediate recall of questions.

Results

Raw score pre/post test

Figure 1: Raw scores of each resident. Blue indicates pretest score; purple indicates repeat exam score.

Results cont’d

Average Raw Data

Figure 2: Average raw scores in each group. Average delta showing the change in score. No significant change in score (sim group p=0.08).

Discussion

- The simulation group had a lower average pre-test score and improved to a higher average post-test score compared to the control group.
- Individually, residents in the control group trended toward improvement following simulation, although this was not statistically significant.
- The difference between the average raw score of the control group and simulation group was not significant.
- It is likely that a larger study is needed to establish whether simulation is an effective adjunct in teaching residents about pediatric critical events. It would also be useful to evaluate the timing of simulation and whether there is greater benefit earlier in training.
- Future directions may include evaluation of simulation at different times during residency and incorporation of more data sets throughout continued simulation.