Introduction
Physician educators have sought to establish procedural competency and safe practice benchmarks (1). We developed an UGRA simulator that provides real-time feedback about technical skills. We recently reported that our UGRA simulation and cognitive test models improved preclinical UGRA technical skills and cognitive testing scores of pediatric anesthesia fellows at 6 and 12 months of fellowship compared to their baseline performance at first month (2). Simultaneously, we assessed all fellows’ technical skills and specific UGRA knowledge when they clinically performed UGRA in children.

The aims of this educational research are as follows:
1. Develop an objective assessment tool for evaluation of clinical UGRA performance by pediatric anesthesia fellows.
2. Utilize preclinical UGRA simulation to assess and improve UGRA technical and cognitive skills.
3. Correlate preclinical testing and UGRA simulation with clinical performance of UGRA by pediatric anesthesia fellows.

Methods
Pediatric anesthesia fellows had preclinical UGRA skill assessments at 0, 6 and 12 months with our cognitive tests and UGRA simulation models (technical accuracy and efficiency) (2). When fellows clinically performed UGRA throughout the fellowship year supervising faculty evaluated their technical and cognitive skills using a 1 (poor) to 5 (excellent) scoring system.

Results
10 pediatric anesthesia fellows participated in the study over 1 academic year. Preclinical cognitive and UGRA technical skills of all fellows improved at 6 and 12 months from baseline skills (Figure 1). Faculty evaluations of clinical UGRA performance of fellows in terms of mean technical and cognitive scores remained between 4 (very good) and 5 (excellent) (Figure 1). Due to multiple factors discussed below, we did not find statistically significant correlations between preclinical and clinical assessments.

Conclusion
Using our objective and standardized preclinical UGRA assessment tools, we were able to discriminate fellows needing additional help while improving all fellows’ cognitive and technical skills (2). Supervising faculty had subjective bias when assessing clinical UGRA skills. We had a relatively small sample size to demonstrate correlations between preclinical and clinical assessments. A more objective clinical UGRA assessment tool (3) that would give appropriate considerations to training level, patient factors, difficulty of nerve block, performance time and outcome of the block would be ideal in assessing UGRA performance and competency.