Real-time, Media-enhanced Feedback Improves Neonatal Intubation Skills
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BACKGROUND
- Neonatal intubation = “low frequency, high consequence” event
- Low median success rates in trainees, as low as 33%. Success rates if <20 attempts: 37%
- Neonatal intubation using videolaryngoscopy (VL) was used in the delivery room and NICU without complications or difficulties. VL is feasible
- No differences were noted in success rate or times with VL or direct laryngoscopy (DL). In difficult airway scenarios, time to intubate was longer with VL. VL is preferred but not helpful

OBJECTIVES
General Aim:
- To evaluate the use of a video-enhanced educational tool with real-time feedback capabilities, Google Glass™ (GG), on endotracheal intubation (EI) performance.
Specific Aims:
- To measure students’ performance,
- To improve students’ basic clinical knowledge and
- To improve students’ level of confidence, in performing a neonatal endotracheal intubation (EI) with the use of Google Glass™ (GG).

METHODS I
- Prospective, interventional, randomized controlled trial
- IRB-approved, AY 2015-16. OU medical students, class of 2017 during Pediatric clerkship
- After consent, Students were randomized (by group) to traditional or GG training groups for EI education.
- Maximum of 3 Practice attempts (traditional/GG), and 3 Test attempts (all w/o GG) was allowed. Each EI attempt was limited to 30 seconds
- A successful EI was defined as:
  - correct placement within 30 seconds
  - confirmed by chest wall movement and visual confirmation by the instructor

METHODS II
- Seven clerkships were randomized, and after exclusions for administrative reasons, a total of 72 students were included. (22 in the control group and 50 in the GG group.
- The proportion of successful attempts did not differ significantly between groups.
- Time to intubation for practice attempt 2, test 1 time, and test 2 time were all significantly shorter in the treatment group.
- Also, subjects in the treatment group report a significantly higher confidence scores but did not differ significantly from the controls with regard to the NRP exam scores, which were high for both groups.

RESULTS I

RESULTS II

CONCLUSIONS
- Google Glass™ is a feasible tool for teaching endotracheal intubation.
- The addition of Google Glass™ when teaching neonatal intubation shortens time to successful intubation and increases confidence scores in a simulation environment.