New Orientation Curriculum with Simulation and Contest Improves Background Knowledge and Clinical Training Experience

Tanna J. Boyer, DO[1], MS Kelli Braun, MD[2] Nadine Odo, BS[1] Mary Arthur, MD[1]

[1] Dept. of Anesthesiology and Perioperative Medicine

[2] Dept. of Obstetrics and Gynecology

MCG at Augusta University

AUGUSTA UNIVERSITY

Disclosure Statement of Financial Interest

I, Tanna J. Boyer, DO, MS,

DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.

DO NOT anticipate discussing the unapproved/investigative use of a commercial product/device during this activity or presentation.

Background

- After completion of an internship year, all anesthesia (CA1) residents across the US participate in an intensive 1 month training program.
- We noticed our department was nationally behind other anesthesia training programs because of a lack of 1 on 1 faculty:CA1 resident training.
- To meet the needs of our residents and be on par with national standards, we decided to revamp our July CA1 curriculum and clinical training.

Goal

- To develop a new one month curriculum that was engaging, interactive, low cost, and utilized existing validated resources.

Methods

- We used nationally recognized sources for inspiration
  - Google search using "CA1 lecture series"
  - PubMed search using "anesthesia resident AND curriculum"
  - MedEdPORTAL search for all anesthesia topics

Methods

- During July of 2014 10 CA1 residents (CA1-IT) completed the new curriculum.
  - Residents attended Monday morning simulations for 1.5 hours and daily educational activities from 3-5pm.
  - They were closely supervised in the OR for the entire month.
    - Either 1:1 with faculty
    - Or 1:1 with senior resident

49 Topics and Simulations Identified as Necessary for our Residents

21 Lectures

5 High-fidelity and 8 Low-fidelity Simulations

3 Workshops

3 Facility Tours

AUGUSTA UNIVERSITY

Methods

- On working day 1 CA1-IT residents took the Anesthesia Knowledge Test (AKT) pre-test and on working day 23 the AKT post-test.

- All residents logged their cases in the ACGME case log system and participated in our CA1 Olympics for prizes (top 3 point earners won extra book monies, $300 total).

- USMLE step 1 and 2 scores and AKT pre- and post-test scores were compared from the 2014 year to previous year's residents (CA1-HC) with a comparison of the mean t-test.

# Intensive OR Training Improved Clinical Experience

	CA1-IT	CA1-HC
Total number of Residents	10	10
Total number of procedures	1636	599
# Procedures/Resident/Month	163.6	59.9
# Procedures/Resident/Day	7.8	3
% General Anesthesia (GA) age 12-65	82%	89%
% GA	89%	87%
% Oral Endotracheal Tube	70%	50%
% Direct Laryngoscopy	60%	30%
% Other Airway Management	20%	22%
% Indirect Laryngoscopy	13%	9%

	CA1-IT	CA1-HC
# Specialized Vascular access	118	33
# Arterial lines/Resident/Month	7.6	3
# Central lines/Resident/Month	2.5	2
% ASA 3&4	59%	65%
% Life Threatening Pathology	23%	36%

AUGUSTA UNIVERSITY

New Curriculum + Olympics Improved Test Scores

Comparison of AKT Pre- and Post-test Scores
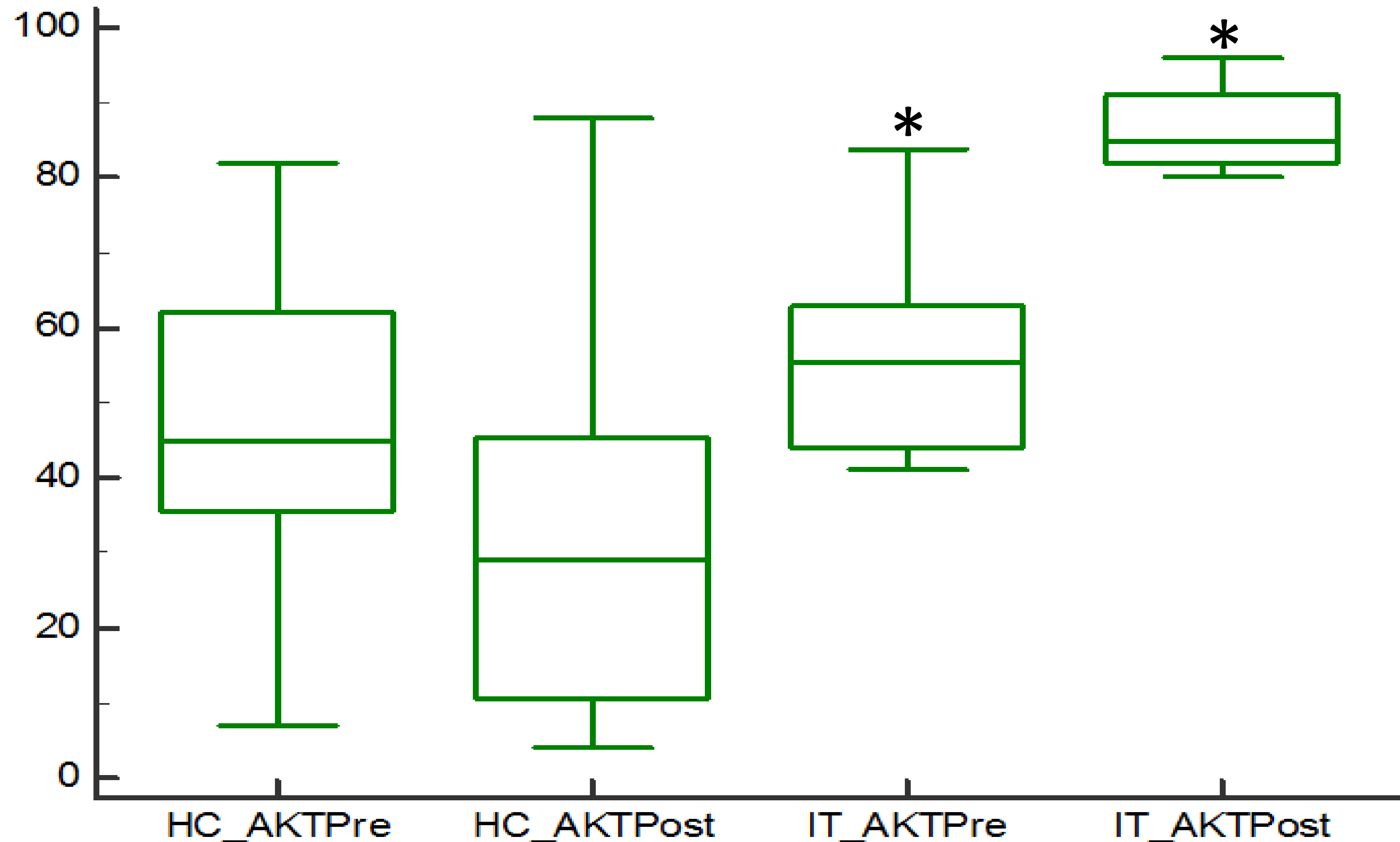
- **IT group: significant difference between Pre AKT (56% ± 14) and Post AKT (87% ± 5)**
  - **Conditions; t(9)= 8.51, p < 0.0001**
- **HC group: no significant difference in the Pre AKT (45% ± 23) and Post AKT (34% ± 28)**
  - **Conditions; t(10)= -1.59, p=0.143**

Olympics + Prizes Improved Enthusiasm in Studying for Test

- CA-IT residents improved their performance by 10-42% in an AKT pre-to post-test comparison, with a mean improvement of 29%.
- Because residents attended nearly all lectures, and equally earned points in other parts of the Olympics, % improvement in AKT pre- and post-test scores was the deciding factor in awarding prizes.

Conclusions

- This preliminary investigation suggests that curriculum improvement paired with intensive OR training is effective in improving both the clinical experience (via case logs) and knowledge (via AKT scores) of new anesthesia residents.

- Engaging residents in a contest with prize money contributed significantly to the residents' enthusiasm when studying for the AKT post-test.

References

1. Wecksell M, Vick A. The Use of a Scavenger Hunt in CA - 1 Orientation to Facilitate Rapid Identification and Location of Anesthetic Equipment. MedEdPORTAL Publications; 2013. Available from: https://www.mededportal.org/publication/9506

2. Novalija J, Henry A, Ellinas H. Anesthesia Core Skill Simulation Package for Anesthesia Newbies. MedEdPORTAL Publications; 2011. Available from: https://www.mededportal.org/publication/9051

3. Rebel A, DiLorenzo A, Fragneto RY, Dority JS, Rose GL, Nguyen D, Hassan ZU, Schell RM. Objective Assessment of Anesthesiology Resident Skills Using an Innovative Competition-Based Simulation Approach. AA Case Rep. 2015; Sept 1;5(5): 79-87

AUGUSTA UNIVERSITY