



ASSESSING KNOWLEDGE AFTER A MIXED REGIONAL ANESTHESIA TRAINING IN RESOURCE-LIMITED SETTING: A PRELIMINARY DESCRIPTION

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Introduction

In 2021 a study by Zha et al. identified that public hospitals in Guatemala fail to meet the World Federation of Societies of Anesthesiologists (WFSA) standards for safe anesthetic care.¹ To address these findings, the Universidad Rafael Landívar (URL) and the Guatemalan Health Ministry, established an anesthesiology residency program **for** rural hospitals. In these hospitals, over 50% of the surgeries are orthopedic, typically requiring general anesthesia or neuraxial techniques. The use of basic ultrasound-guided regional anesthesia (RA) is almost nonexistent due to insufficient training and limited access to appropriate equipment. We developed and implemented a formal training course in basic RA and Point of Care Ultrasound (POCUS) for anesthesiology residents and attending physicians from the URL.

Methods

The division of Regional Anesthesia at the University of Florida (UF):

- Designed a RA and POCUS curriculum tailored to the needs of the anesthesia residents and staff at URL
- Translated relevant literature and e-learning training materials to facilitate curriculum review
- Nonprofit foundation donated ultrasound machines to each of the three participating hospitals
- Hybrid online and in person course: Total 16-week course.
- Instructors traveled to Guatemala for a week and instructed/supervised over 200 U/S guided procedures
- Pre- and 3,6,12-month post course assessments (*3 months)

The Big Idea

A structured, hybrid training program—combining online and in-person instruction in regional anesthesia—had a significant impact on clinical practice in rural Guatemala. Preliminary data also indicate effective knowledge acquisition and retention among participants.

Regional Anesthesia Knowledge Test

Pre-Course

Post-Course

Post- 3-Months

54%

56%

63%

- Total Group performance

Results

A total of 26 anesthesiologists enrolled in the workshop. Of these, 20 participants completed the pre-course knowledge assessment, while all participants completed the immediate post-course test. Follow-up assessments at 3, 6, and 12 months post-course are scheduled as planned. The average pre-course score was 54%, which increased to 56% immediately following the course and further improved to 63% at the 3-month follow-up. Analysis by question category revealed progressive improvement in participant performance across all domains, including upper extremity, lower extremity, and truncal block-related content.

Discussion

Preliminary findings demonstrate the feasibility of implementing this hybrid training program. The data collected could also provide valuable insights into areas that may require further reinforcement to optimize the course curriculum for future iterations. Although adjustments are necessary to address identified weaknesses and enhance participant outcomes, the success of this initial program demonstrates that the course can be scalable.

References

¹ Zha Y, Truché P, Izquierdo E, Zimmerman K, de Izquierdo S, Lipnick MS, Law TJ, Gelb AW, Evans FM. Assessment of Anesthesia Capacity in Public Surgical Hospitals in Guatemala. *Anesth Analg*. 2021; 132(2):536-544.