

Assessing Anesthetic Capacity in Low-Middle Income Countries (LMIC): Use of a novel questionnaire in Guatemala and Nicaragua to assess availability of pulse-oximetry and capnography

GLOBAL HEALTH



PATHWAYS TO DISCOVERY

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Introduction

- The WFSA has published international standards for the safe practice of anesthesia¹ and the WHO has published the “WHO Model List of Essential Medicines”² which include essential anesthesia and analgesia medications
- Given limited finances and available resources in LMIC, these recommendations are not always met
- A comprehensive assessment tool is necessary to assess current state of anesthetic capacity. This assessment can then serve to highlight disparities and prioritize future goals

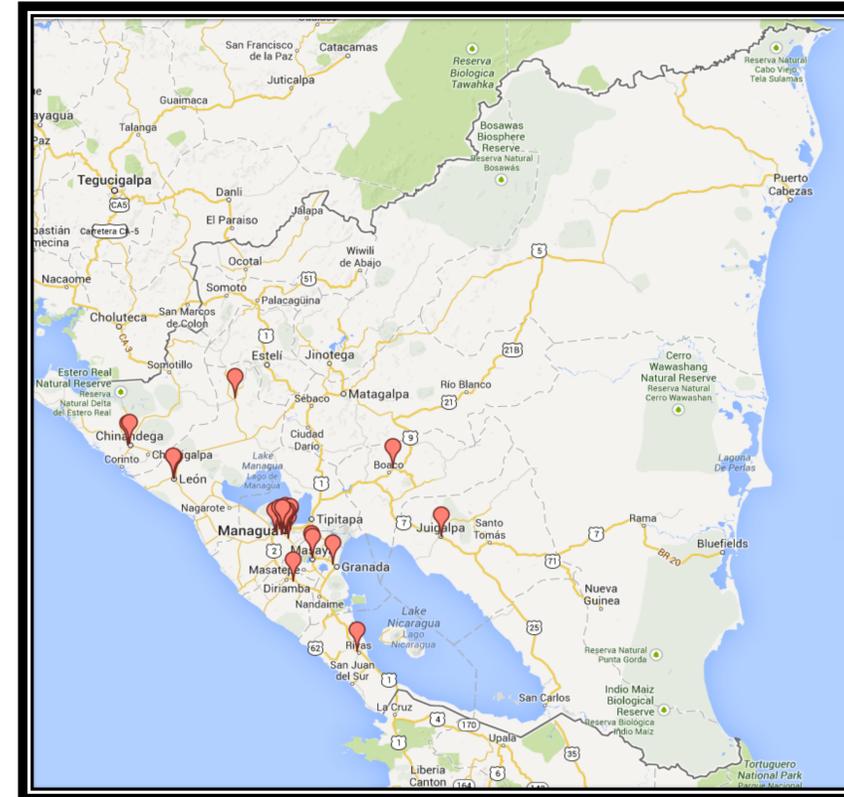
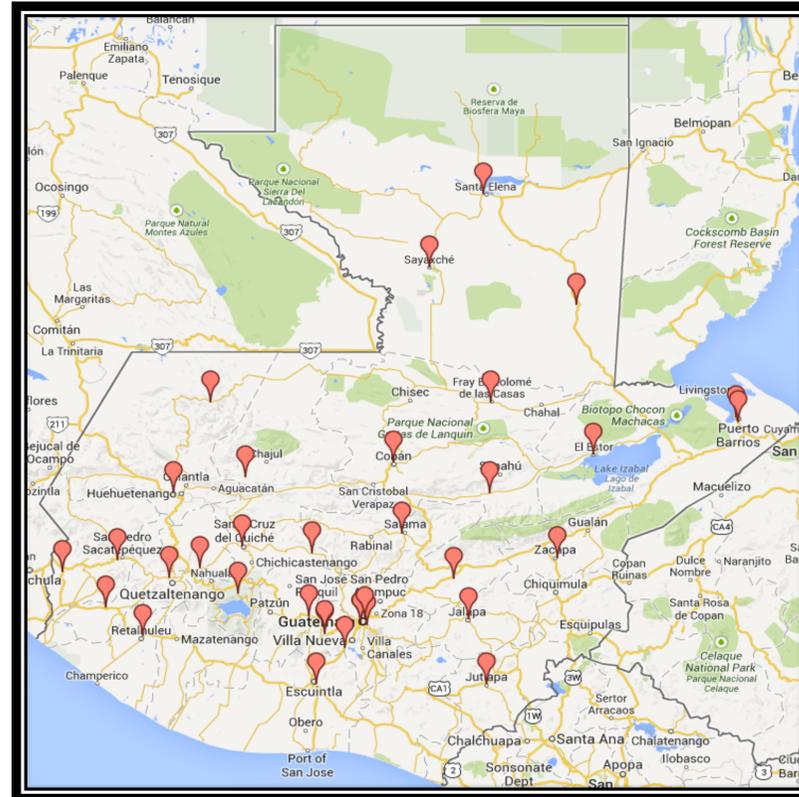
Objective

- The goal of this study was to determine the anesthetic capacity in surgical hospitals in Guatemala and Nicaragua
- Specifically we highlight here the availability of intraoperative pulse-oximetry, recovery room pulse-oximetry, and capnography

Methods

- We developed a questionnaire to assess anesthetic capacity using minimum standard recommendations from the World Federation of Societies of Anaesthesiologists (WFSA) and World Health Organization (WHO)
- This questionnaire assessed available equipment, medications, personnel, training, and organization
- The questionnaire was completed via direct hospital site visits in Guatemala and Nicaragua
- Also distributed among anesthesia providers attending a Lifebox pulse-oximetry training session in Guatemala City, Guatemala; Managua, Nicaragua; and Leon, Nicaragua from November 11th to the 15th

Hospital Sites



Conclusion

- Availability of pulse-oximetry and capnography varied among hospitals surveyed in Guatemala and Nicaragua
- In both countries, most operating rooms had pulse-oximetry available
- Availability of monitoring equipment including pulse-oximetry is lower in post-operative recovery areas
- Capnography availability is limited and usually only available for laparoscopic or neurosurgical cases.

References

1. Merry et al. International Standards for a Safe Practice of Anesthesia 2010. *Can J Anesth/J Can Anesth* (2010) 57:1027–1034
2. WHO Model List of Essential Medicines, 18th list. April 2013. <http://www.who.int/medicines/publications/essentialmedicines/en/index.html>

Results

Guatemala - 42 anesthesia providers representing 35 hospitals were surveyed

- 68% of hospitals had intraoperative pulse-oximetry
- 23% sometimes had intraoperative pulse-oximetry
- 9% did not have intraoperative pulse-oximetry
- 23% had pulse-oximetry in the PACU
- 40% sometimes had pulse-oximetry in the PACU
- 37% did not have pulse-oximetry in the PACU
- 17% of hospitals had capnography
- 23% sometimes had capnography
- 60% did not have capnography.

Nicaragua - 57 anesthesia providers representing 25 hospitals were surveyed

- 84% of hospitals had intraoperative pulse-oximetry
- 12% sometimes had intraoperative pulse-oximetry
- 4% did not have intraoperative pulse-oximetry
- 63% had pulse-oximetry in the PACU
- 25% sometimes had pulse-oximetry in the PACU
- 12% did not have pulse-oximetry in the PACU
- 46% of hospitals had capnography
- 33% sometimes had capnography
- 21% did not have capnography.

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