

Safe Anesthesia Care in Western Kenya: A Preliminary Assessment of the Impact of Nurse Anesthetists at Multiple Levels of Government Hospitals.

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Abstract

BACKGROUND:

Only 20% of the surgical burden in eastern sub-Saharan Africa is currently met, leaving >17 million surgical cases annually in need of safe surgery and anesthesia. Similarly, there is an extreme shortage of anesthesia providers in East Africa, with just 0.44 anesthesiologists per 100,000 people in Kenya compared to 20.82 per 100,000 in the United States. Additionally, surgical access is not equally distributed within countries, with rural settings often having the greatest unmet need. We developed and tested a set of tools to assess if graduates of the Kenya registered nurse anesthetist (KRNA) training program, who were placed in rural hospitals in Kenya, would have any impact on surgical numbers, referral patterns, and economics of these hospitals.

METHODS:

Cross-sectional data were collected from facility assessments in 9 referral hospitals to evaluate the possible impact of the KRNAs on anesthesia care. The hospitals were grouped based on both the number of beds and the assigned national hospital level. At each level, a hospital that had KRNA graduates (intervention) was matched with comparison hospitals in the same category with no KRNA graduates (control). The facility assessment survey included questions capturing data on personnel, infrastructure, supplies, medications, procedures, and outcomes. At the intervention sites, the medical directors of the hospitals and the KRNAs were interviewed. Descriptive statistics were used to present the findings.

RESULTS:

Intervention sites had a density of anesthesia providers that was 43% higher compared to the control sites. Intervention sites performed at least twice as many surgical cases compared to the control sites. Most KRNAs stated that the anesthesia training program had given them sufficient training and leadership skills to perform safe anesthesia in their clinical practice setting. Medical directors at the intervention sites reported increased surgical volumes and fewer referrals to larger hospitals due to the anesthesia gaps that had been addressed.

CONCLUSIONS:

Our findings from this study suggest that KRNAs may be associated with an increased volume of surgical cases completed in these rural Kenyan hospitals and may therefore be filling a known anesthetic void. The presence of skilled anesthesia providers is a first step toward providing safe surgery and anesthesia care for all; however, significant gaps still remain. Future analysis will focus on

surgical outcomes, the appropriate anesthesia delivery model for a rural population, and how the availability of anesthesia infrastructure impacts referral patterns and safe surgery capacity.