

Can High-volume Centers in India Serve as Anesthesiology, Critical Care and Emergency Medicine Training Locations for African Physicians?

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CAN HIGH-VOLUME CENTERS IN INDIA SERVE AS ANESTHESIOLOGY, CRITICAL CARE, AND EMERGENCY MEDICINE TRAINING LOCATIONS FOR AFRICAN PHYSICIANS?

Based on a report from the Royal College of Anaesthetists, UK, it is evident that anesthesia training in East, Central, and Southern Africa (ESCA) has fallen behind surgical training volumes.¹ The countries grouped under ESCA are Kenya, Malawi, Mozambique, Rwanda, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe. The shortage of anesthesia providers and critical care specialists is a significant barrier to providing high-quality surgical and intensive care in the ESCA. In fact, the shortage of trained anesthesiologists is greater than the shortage of surgeons in ESCA countries. The shortage of trained anesthesiologists in subspecialties like cardiac and neurosurgery is even more pronounced. The lack of trained providers may be a contributing factor to Sub-Saharan African nations having one of the world's highest maternal mortality rates. Similarly, high postsurgery death rates within Africa have been attributed to inadequate anesthesia care.

The estimated population of ESCA countries is 231 million, and the number of trained anesthesiologists available to serve this population is estimated to be 567. The recommendations of the Lancet Commission Global Surgery 2030 suggest that the surgical manpower that includes anesthesiologists, surgeons, and obstetricians should attain a target of 20 specialist physicians per 100,000 population.² Currently, there are only 0.25 physician anesthesiologists per 100,000 in the ESCA region, and this significant shortfall will require a dedicated and concerted effort to meet these targets.¹ A recent study from Ethiopia highlighted major deficiencies in the availability of basic and advanced intensive care unit resources, including a lack of critical care physicians outside major urban areas.³ Findings from a study exploring critical care capacity across 54 African countries demonstrated that there was an average of 3.10 intensive care unit beds and 0.97 ventilators per; 100,000 people. Overall, there was an average of 2.42 (physician and nonphysician) anesthesia providers per 1,00,000 people ranging from 1.24 and 0.66 in low-income countries and in the Middle African region, respectively, to 6.91 and 6.64 providers per 100,000 in upper-middle-income countries and the North African regions, respectively.⁴ A significant number of health care professionals trained in anesthesia in ESCA have often delegated roles in other disciplines due to a shortage of personnel.⁵ There is an urgent need to address this workforce deficit, as the demand for care has outpaced the supply of adequately trained providers. Despite the

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existing training programs in ESCA countries, the pace at which providers are being trained will not keep up with the significant workforce shortfalls.

A unique opportunity exists to meet this shortage of trained anesthesiologists. High-volume centers in India may be used as training sites for African providers. Large volume hospitals in India, such as Narayana Health (NH), located in Bengaluru, India, are perfectly situated to fill the gap in training providers. Healthcare leaders worldwide are searching for innovative care delivery models that lower costs, improve quality, and increase access to services. NH is one of the best-known examples of a health system that has achieved these goals. This group has created one of India's largest multispecialty hospital chains, comprising 31 tertiary hospitals across 19 cities.⁶ Safety and efficiencies are achieved through leveraging economies of scale, surgery flow models, and reengineering the design, materials, and use of medical equipment, thus reducing the average length of stay and cost. Because of these innovations, the average cost of open-heart surgery is approximately \$2,000 at NH. The same procedure at a United States hospital typically costs over \$100,000.

Narayana Health (NH) is a successful high-volume clinical care and teaching institution, conducting postgraduate and postdoctoral courses for physicians under the National Board of Examinations, New Delhi. Additionally, Bachelor's and Master's training programs for nurses and allied health care professionals



Fig. 1: Dr Senait Tekeba Kifl, from Ethiopia underwent training in Cardiac Anaesthesia from January 2017 to June 2019. Dr Kifle is receiving certification of training from Dr Devi Shetty and Dr Muralidhar Kanchi seen in the picture.



Fig. 2: Dr Gissela Nyakunga, Dr Abid Sadiq, Dr Alex Lwiza, and Dr Murad Tarmohamed from Tanzania are currently undergoing training in Cardiology, Cardiac Anaesthesia and Cardiothoracic Surgery under the Minneapolis Heart Institute Foundation program. Dr Kumar Belani from Minnesota University, USA, and Dr Muralidhar Kanchi, Narayana Hrudayalaya, Bengaluru, India, are also seen in this picture

are available. NH offers fellowship to physician trainees from African nations after obtaining a temporary license from the National Medical Commission. To date, 132 physicians have been trained for 1–3 years in various specialties, of whom 48 were trained in cardiac anesthesiology. Where applicable, the anesthesia trainees were offered fellowships in cardiovascular anesthesia under the guidance of the Indian College of Anaesthesiology (Figs 1 and 2).

Cultivating global medical partnerships with private, public, and nongovernmental international organizations will provide a framework to successfully train medical professionals. Other major Indian hospitals and teaching institutions that are accredited by Joint Commission International, National Accreditation Board for Hospitals may be approached for additional training positions and support to address the current provider shortage in Africa.

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