

## Improving Guyanese Healthcare through Safe Anesthesia Services

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### Article

#### Abstract

Safe anesthesia is vital for enhancing healthcare access and patient safety. The shortage of anesthesia providers in Guyana limits the availability of safe anesthesia services. Training more nurses and future nurse anesthesia providers will provide more Guyanese citizens with essential access to safe anesthesia. This project aims to develop and share information about the importance of the nursing profession, educational requirements, and steps to becoming a nurse in Guyana. A thorough literature review was performed using selected keywords. Articles, organizational, and government site information from this search contributed to creating an original nursing recruitment brochure. The brochure highlights the opportunities and benefits of a nursing career and addresses factors contributing to the nursing shortage. It was distributed in person and electronically to a small group of Guyanese nurses and key stakeholders, then anonymously evaluated through a Likert-scale survey and open-ended questions to assess its design and how well it reflects changes in Guyana's healthcare system. Feedback indicated that the brochure was well received, with respondents praising its clarity, readability, accurate presentation, and representation of the nursing profession. Challenges noted in the open-ended section included limited career counseling, language barriers, a lack of public awareness about nursing, and a need for more nursing schools in Guyana. Future collaboration between the Georgetown School of Nursing and the Middle Tennessee School of Anesthesia is recommended to evaluate its effectiveness in fostering interest in nursing in Guyana.

**Key Words:** nurse, nurse anesthesia providers, humanitarian, limited resources, Guyana, low-income countries, global access, resources, recruiting, migration, training, governance, and brochure

Safe anesthesia care is a vital part of successful surgery, defined as access to trained anesthesia providers, proper equipment, medications, and facilities. As surgical techniques have advanced since 1950, safe anesthesia provided by trained professionals with monitoring equipment has become essential to reduce the global burden of diseases requiring surgery ([McQueen et al., 2015](#)). Historically, the importance of safe anesthesia care and its impact on surgical outcomes have been underestimated. It was not until the 1950s that efforts to improve patient safety and surgical results were evaluated.

Anesthesia providers became recognized as essential members of surgical teams in high-income countries; however, low- and middle-income countries still face challenges in providing safe anesthesia care, partly due to a shortage of anesthesia providers ([Guyana, 2020](#); [Meara et al., 2014](#)). The disparity of safe anesthesia care is notable between higher-income countries (HICs), reporting a gross national income per capital of over US \$13,486, and low and middle-income countries (LMICs) with a gross national income per capita of US \$1136 and \$4465 (Khan & Merry, 2018; [World Bank Country and Lending Groups – World Bank Data Help Desk, n.d.](#)). The shortage of anesthesia providers is linked to complex healthcare delivery systems and limited access to educational resources, highlighting a humanitarian crisis in some nations.

**The shortage of anesthesia providers is linked to complex healthcare delivery systems and limited access to educational resources, highlighting a humanitarian crisis in some nations.**

Healthcare is delivered through complex systems that include infrastructure, human resources, and essential supplies. Higher-income countries have trained anesthesia providers and equipment to monitor and provide safe anesthesia care. In contrast, lower-income countries lack the infrastructure, resources, necessary medicines, equipment, and supplies crucial for safe anesthesia care. A meta-analysis by Bainbridge et al. evaluated the use of the UN Human Development Index, which is based on life expectancy, literacy, enrollment in further education, and per-capita income, to examine anesthesia mortality ([Kaufman, 2018](#); [Khan & Merry, 2018](#); [Walker et al., 2014](#)). When considering the UN Human Development Index of low-income countries, anesthesia mortality increased over time ([Walker et al., 2014](#)). The Lancet Commission on Global Surgery lists expanding the number of anesthesia providers among its six core indicators to achieve safe surgical and anesthesia care globally ([Meara et al., 2014](#)). One solution to the shortage of anesthesia providers is to educate nurses in safe anesthesia practices.

Certified Registered Nurse Anesthetists (CRNAs) are non-physician anesthesia providers who have been delivering safe anesthesia care in the United States for over a century. CRNAs comprise a large portion of anesthesia providers in high-income countries, including the U.S., where their numbers are comparable to those of physician anesthesia providers ([Ray & Desai, 2016](#)). In the 1800s, nurses were the first healthcare providers to administer anesthesia in the U.S. ([Bharati et al., 2014](#)). During the early 1900s, as demand for anesthesia increased during the World Wars, nurse anesthesia providers stepped in to meet the need for safe anesthesia care ([Ray & Desai, 2016](#)). Formal education programs for nurse anesthetists developed during this period. In 1945, a board certification exam was required to practice nurse anesthesia in the United States ([Ray & Desai, 2016](#)). Certified Registered Nurse Anesthetists continue to practice safe anesthesia care and deliver many anesthetics in rural areas and underserved populations.<sup>8</sup> The quality of anesthesia care provided by Certified Registered Nurse Anesthetists is consistently equal to physician anesthesia care. ("[Lewin's Change Theory](#)," n.d.)

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**Nurse anesthesia providers offer a solution to promote safe anesthesia care in low- and middle-income countries.**

Nurse anesthesia providers offer a solution to promote safe anesthesia care in low- and middle-income countries. Guyana, a country in the northeast corner of South America with an estimated population of 767,000, is a low- and middle-income nation with limited access to safe anesthesia care ([Guyana Population 2023 \(Live\)](#), n.d.). Guyana falls below the World Federation Society of Anesthesiologists' recommendation of at least 5 physician anesthesia providers per 100,000 people, with the country staffing 3.2 providers per 100,000 ([Guyana, 2020](#); [Kempthorne et al., 2017](#)). In response, Guyana launched a program to increase both physician and nonphysician anesthesia providers, such as nurses ([Guyana, 2020](#)). The shortage of nurses in Guyana limits the number of qualified candidates for nurse anesthesia training ([Opportunities and Challenges in Strengthening Human Resources for Health in Guyana - PAHO/WHO | Pan American Health Organization](#), n.d.; "[Public Health Ministry to Enhance Health Education Curricula in Guyana](#)," 2019; [Vansell et al., 2015](#)). By expanding the nursing workforce through education, more candidates would become eligible for nurse anesthesia programs, leading to more anesthesia providers, improved access to safe anesthesia, and a reduction in surgical complications and deaths. Guyana faces a significant shortage of qualified providers capable of delivering safe anesthesia care. Currently, 66 Guyanese anesthesia providers serve the country's population: 25 are physician anesthesia providers, 11 are physician providers with anesthesia qualifications, and 30 are nurse anesthesia providers. Nurses providing anesthesia in Guyana are called nurse anesthesia providers. To be recognized as a registered nurse, students must complete a certificate, diploma, or degree in nursing. Entry into nurse anesthesia training requires working as a registered nurse with the Nurse and Nurse Midwives Council, followed by a two-year training program ("[Public Health Ministry to Enhance Health Education Curricula in Guyana](#)," 2019; [Vansell et al., 2015](#)).

Advancing nurses to become nurse anesthesia providers in Guyana is hindered by the nursing shortage ([Anthony et al., 2015](#)). A major cause of this shortage is migration, which affects the Guyanese nursing workforce. Migration occurs when healthcare workers leave their home country in search of better career opportunities and living conditions ([WHO Global Code of Practice on the International Recruitment of Health Personnel](#), n.d.). A study by PAHO in 2011 examined the migration issue to understand why nurses leave remote and rural areas for urban centers or go abroad. Guyanese nurses surveyed about their reasons for migrating to other countries cited concerns such as nurse welfare, workload, job-related stress, physical facilities, equipment, and limited supplies ([Valdes, 2012](#)).

Guyanese nurses discussed how authority figures in the healthcare system did not consider nurses' welfare, and the surveyed nurses stated they were not involved in decision-making processes. Nurses in public hospitals identified a lack of professional support structures, occupational health and safety practices, and professional recognition. This issue was only different in Georgetown, where nurses at the private hospital reported experiencing managerial support ([Valdes, 2012](#)). The workload was a concern, as nurses described back injuries from lifting patients and the manual labor involved in their positions. Workplace aggression, exposure to infectious diseases such as TB and hepatitis, the risk of stick and sharp injuries, and exposure to toxins and chemicals increased job-related stress ([Valdes, 2012](#)). Additional job stresses included inadequate compensation related to salary, location differentials, and retirement plans ([Valdes, 2012](#)). Overcrowding and lack of orientation were issues related to physical facilities ([Valdes, 2012](#)). These problems were worsened by a lack of equipment, limited medications, and insufficient physical supplies ([Valdes, 2012](#)).

The reasons for the nursing shortage in Guyana are complex. This project aims to answer the question: Would a brochure promoting a career in nursing and highlighting current nursing opportunities in the country increase interest in the profession and boost the number of applicants to Guyanese nursing programs? The project seeks to identify factors contributing to the nursing shortage in Guyana and develop a strategy to address it by providing information about the value of the nursing profession, educational requirements, and the steps to become a nurse. The material was reviewed by key nursing stakeholders in Guyana. Revisions were made based on feedback from an anonymous survey. The goal is to deliver nurse recruitment materials to a targeted audience effectively. Increasing the number of Guyanese nurses may also raise the number of qualified applicants to become anesthesia providers and improve access to safer anesthesia care, as more nurses will be available for training as anesthesia providers.

## Review of Literature

To understand access to anesthesia care in Guyana, a literature search was conducted using PubMed, CINAHL, Google Scholar, and grey literature sources, including the US State Department Guyana, the Educational System of Guyana, IFNA, WHO, PAHO, AANA, ICN, the Guyana Nurse Association, the Nurse and Midwife Council, and the Guyana Ministry of Health. The keywords searched included: Nurse, Nurse anesthetist, Non-physician anesthetist, nurse anesthesia providers, organization, limited resources, Guyana, international, anesthesia, post-graduate, advanced practice nurse, medical, nursing education institution, staffing, providers, low-income countries, high-income countries, global access, global health, medically underserved, outcomes, resources, collaboration, recruiting, migration, courses, training, seminar, program development, nurse education, governance, and brochure. Inclusion and exclusion criteria: All articles and documents were screened for inclusion, and criteria were applied to select articles to understand Guyana's legislation, nursing and anesthesia practices, and governmental site information. Documents older than 2010 were excluded.

### **Global Access to Safe Anesthesia Care**

Approximately 70% of the global population lacks access to safe anesthesia care ([Kempthorne et al., 2017](#)). Safe anesthesia care is defined as care provided by appropriately trained personnel in an environment that promotes anesthesia delivery, including access to medications and equipment. Many low- and middle-income countries have few or no anesthesia providers for millions of people ([Dubowitz et al., 2010](#)). Most low- and middle-income countries surveyed had fewer than one anesthesia provider per 100,000 people ([Dubowitz et al., 2010](#)).

The global volume of major surgery in 2004 was between 187 and 281 million cases; approximately one in every 25 underwent an operation requiring anesthesia ([Davies et al., 2018](#)).

However, recent estimates highlight a much greater need for surgical intervention and reveal significant global inequities in access to care. It is estimated that two billion people worldwide—about 30% of the global population—lack access to surgery, not to mention safe anesthesia care. When looking at major surgeries, 75% are performed in the wealthiest third of countries, while the poorest third of the population accounts for only 3.5% of procedures ([Neuen, 2014](#)). This demonstrates a severe disparity in access to essential surgery and safe anesthesia, representing a substantial, untreated global burden of disease.

A recent systematic review and meta-analysis by Bainbridge et al. reported that anesthetic-related mortality was three times higher in low- and middle-income countries compared to high-income countries. However, the review excluded many countries with a gross domestic product per capita lower than any of the included countries. Therefore, anesthetic-related mortality may be even higher in low- and middle-income countries ([Bainbridge et al., 2012](#)). The World Health Organization and the World Federation of Societies of Anaesthesiologists outlined the International Standards for a Safe Practice of Anesthesia, which specify resources needed for safe anesthesia care based on hospital facility level and case mix ([Gelb et al., 2018](#)). These standards cover professional aspects, facilities and equipment, medications and intravenous fluids, monitoring, and the conduct of anesthesia ([Gelb et al., 2018](#)). To enable providers to practice at the specified standard, they must be adequately trained. Having enough qualified anesthesia providers is essential for safe anesthesia delivery. Recommendations for provider numbers are based on observational studies comparing provider densities internationally with patient mortality rates, especially maternal mortality rates. Given this data, the minimum number of combined surgery, anesthesia, and obstetric providers is recommended to be 20 per 100,000 population ([Davies et al., 2018](#); [Morriss et al., 2019](#)). As a general guideline, 4–5 anesthesia providers per 100,000 people are considered a necessary minimum for safe anesthesia care. Even reaching this minimum remains a challenge for low- and middle-income countries.

Safe anesthesia care is defined as appropriately trained personnel in an environment promoting anesthesia delivery, including access to medications and equipment. ([Khan & Merry, 2018](#); [Law, Lipnick, et al., 2019](#); [Law, Bulamba, et al., 2019](#); [Hendel et al., 2015](#)) A shortage of a nursing workforce can be attributed to multiple factors: workload and job-related stress, physical facilities, equipment, and supplies ([Valdes, 2012](#)). Other factors include overcrowding in hospitals and clinics, staff quantity and quality, supervision, lack of orientation and in-service education, and workplace aggression ([Valdes, 2012](#)). These issues lead nurses to migrate to other countries.

The Ministry of Health and the Pan American Health Organization note that Guyana's medical infrastructure is divided into ten health regions, each with its own local ministry branch ([Walker et al., 2014](#)). The country has 22 district hospitals, 70 health centers, four regional hospitals, 32 health posts, and one psychiatric hospital ([Ministry of Health - Home, n.d.](#)). A 2015 systematic survey of nine hospitals in Guyana found an average of 0.7 OB/GYN doctors, 3.5 non-OB surgeons, and one anesthesiologist per hospital ([Vansell et al., 2015](#)). Although there is an essential medication list that includes inhalation agents, anesthetics, analgesics, local anesthetics, and cardiovascular agents, a shortage of workforce and other resources makes it difficult to access routine medications and medical care, especially for specialty needs like neonatal, obstetric, or anesthesia care ([Vansell et al., 2015](#)).

### **Analysis of Workforce and Causes of Shortage**

The Ministry of Health oversees the governance of the Guyanese healthcare system ([Ministry of Health - Home, n.d.](#); [Published by the Authority of the Government, n.d.](#)). Nurses receive diploma-level training and then register with the Nurse and Midwife Counsel, which manages and tracks nurse providers, including nurses, nurse midwives, and nurse assistants in Guyana ([Published by the Authority of the Government, n.d.](#)). Nursing education in Guyana is progressing from the Georgetown Nursing School's Diploma Registered Nurse Training Programme to the Bachelor of Science in Nursing offered at the University of Guyana ([A Bright Future Ahead for Nursing in Guyana, n.d.](#)). Guyana is a member of a group of 20 countries focused on mutual policies and economic goals called the Caribbean Community and Common Market ([Caribbean Community and Common Market \(CARICOM\) Definition, n.d.](#)). To meet the healthcare needs of Caribbean nations, provider migration is a recognized practice monitored by the Caribbean Community and Common Market ([Blouin & Debnath, 2011](#)). However, the Caribbean Community and Common Market emphasizes the ethical considerations of the individual nurse migrant's right to live and work in their country of choice.

### **Collaborative Tactics to Increase the Nursing Workforce and Improve Healthcare in Guyana**

In 2019, the Minister of Health and the World Health Organization / Pan American Health Organization held a meeting in Guyana to discuss the future of health education and the importance of collaboration ([Ministry of Health - Home, n.d.](#); ["Public Health Ministry to Enhance Health Education Curricula in Guyana," 2019](#)). The Minister of Health announced a program partnership with the Pan American Health Organization to train nurses through a hybrid computer platform ([GTIMES, 2023](#)). The Middle Tennessee School of Anesthesia has a partnership with the nurse anesthesia program at Georgetown Public Hospital Corporation to raise students' awareness of nurse anesthesia providers' role in improving patient care and to train providers in regional techniques ([Guyana Mission Report, n.d.](#); [Guyanese Students Visit MTSA Campus, n.d.](#); [International Mission Effort Expands to Guyana, n.d.](#)). In July 2022, the Minister of Health announced a healthcare initiative through collaboration with Mount Sinai Health System and the Hess Corporation to address healthcare gaps in Guyana by focusing on education, staff retention strategies, and improvements to medical infrastructure.

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**Guyana faces a serious humanitarian challenge in healthcare due to severe shortages of nurses and anesthesia providers...**

Guyana faces a serious humanitarian challenge in healthcare due to severe shortages of nurses and anesthesia providers, which limits access to safe surgical care and contributes to preventable illness and death. With only 3.2 anesthesia providers per 100,000 people—far below global recommendations—the country struggles with inadequate infrastructure, essential supplies, and trained personnel, especially in rural areas. Contributing factors to the nursing shortage include poor working conditions, low pay, high workloads, lack of professional recognition, limited opportunities for career growth, and significant workforce migration. Barriers to nursing education—such as financial hardships, limited training facilities, language barriers, and lack of career guidance—further restrict the pipeline of qualified professionals. This shortage worsens healthcare disparities, compromises surgical safety, and raises ethical concerns over balancing healthcare workers' rights to migrate with the needs of underserved populations. Increasing the number of nurses could help address these issues.

### **Plan-Do-Study-Act**

The Plan-Do-Study-Act model guides the project by breaking down the process into tasks to direct conceptualization, allowing for assessment and refinement as the implementation progresses. The model emphasizes individual steps over a short period and is well-suited for small-group evaluations ([How to Apply the Plan-Do-Check-Act \(PDCA\) Model, 2019](#)). The brochure includes content to raise awareness of the nursing and nurse anesthesia professions in Guyana and addresses the factors impacting the nursing workforce identified in the literature review. Training opportunities for nurses and nurse anesthesia providers in Guyana are included, and the vital roles that nurses and nurse anesthesia providers play in Guyana are highlighted.

### **Strengths**

Project strengths include a well-established relationship between the Middle Tennessee School of Nurse Anesthesia and Guyana (*Guyana Mission Report, n.d.*; *Guyanese Students Visit MTSA Campus, n.d.*; *KNews, 2019*). A strong and reliable relationship is essential for successful collaboration (*Hill et al., 2021*). Collaborations often build on existing relationships that take many years and multiple projects to develop (*Hill et al., 2021*). This relationship will support the evaluation of materials by key nursing stakeholders in Guyana, including nurses in advanced roles, current practicing nurses, those interested in career options, and the Ministry of Health (*Ministry of Health - Home, n.d.*; *Published by the Authority of the Government, n.d.*).

## Weaknesses

Connecting with stakeholders in Guyana to advertise, support, and distribute the brochure is crucial for its success (*Hill et al., 2021*). This could pose a challenge to the project. Another concern is mistrust of materials from outside the country. Efforts should focus on the needs of the local community and remain culturally appropriate, emphasizing the project's purpose and value (*Hill et al., 2021*). It is vital not to be viewed as socially insensitive by practitioners in the country and to be mindful of local culture and practices (*Hill et al., 2021*).

## Opportunities

An \$84.9 billion infrastructure plan is underway in Guyana (*Government of Guyana Announces National Healthcare Initiative in Collaboration with the Mount Sinai Health System and Hess Corporation | Mount Sinai - New York, n.d.*). This plan involves constructing seven hospitals across the country. The Ministry of Health has launched a program to train 3,000 nurses to staff the new facilities over the next three years (*3,000 Nurses to Be Trained in Three Years, 2023*). Job opportunities will be guaranteed to all nursing graduates, providing a recruiting avenue for those interested in pursuing a career in nursing (*GTIMES, 2023*).

Midwives are highly respected advanced practice nurses in Guyana. Nurse midwifery is often the training received by nurses in roles such as supervisors, educators, and managers (*Burke, 1977*). Nurse midwives are seen as the health authority in many Caribbean regions. Information about the advanced practice of nurse anesthesia will be included in the brochure, highlighting another pathway for advanced practice nursing, like nurse midwifery.

## Threats

Despite strong support from the Ministry of Health for nurse anesthesia education and training, resources still need improvement. Recruiting future nurses remains a continuous challenge in Guyana, risking the success of the project. Factors such as workload, job-related stress, facility overcrowding, salary concerns, and limited chances for advancement discourage potential students from entering the nursing field (*PAHO Documents, n.d.*). By recruiting more general nurses, more individuals will have the opportunity to pursue further education and become nurse anesthesia providers. This will help grow the anesthesia workforce and improve access to safe anesthesia nationwide. The promotional brochure and the attached survey will serve as initial steps in evaluating the progress of this expansion. The survey responses can help direct efforts to promote nursing education and inspire careers in nursing.

## Project Design & Methodology

An evidence-based brochure was distributed to Guyanese nurses and key nursing stakeholders, who were then surveyed about it. The brochure provided information on educational pathways for general nursing and nurse anesthesia providers. It promotes the positive aspects of a nursing career and highlights opportunities in the country due to the expanding healthcare infrastructure. A consent document indicating implied consent was given to participants. Participants evaluated the brochure's effectiveness, accuracy, cultural relevance, and potential to recruit nursing school candidates in Guyana. The anonymous feedback survey included a Likert scale and open-ended questions. The Likert scale data provided categorical responses to assess opinions. Based on the feedback, the team will adopt the brochure as recommended by participants.

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**An evidence-based brochure was distributed to Guyanese nurses and key nursing stakeholders...**

## Participants/Setting

The brochure was delivered in person in March 2024 during an MTSA mission trip to Guyana. A convenience sample of eight Guyanese nurses and key nursing stakeholders completed the initial survey. Future participants may include Guyanese nurses and nursing stakeholders affiliated with MTSA during upcoming MTSA events. Guided by feedback from the initial

study, the brochure and survey may also be shared electronically through platforms like WhatsApp and email. The brochure contained the following information:

1. Nursing roles and responsibilities in Guyana described in a culturally appropriate and visually appealing way
2. Nurse training programs available in the country
3. Opportunities available in nursing due to the expanding healthcare infrastructure in Guyana
4. Information on the education and role of nurse anesthesia providers in Guyana.

Participants were asked to identify distribution methods and groups most likely to find the brochure valuable and recommend distribution routes, such as schools, communities, church groups, electronic means, and websites most frequently used in Guyana. The survey evaluation was included with the brochure. It consisted of 11 questions. Five questions used a 5-point Likert scale, with 5 indicating "strongly agree" and 1 indicating "disagree," "neutral," "disagree," and "strongly disagree." One question asked respondents to rate the likelihood of an event with options such as: "very likely," "somewhat likely," "neither," "somewhat unlikely," and "very unlikely." Four short-answer questions and one "yes"/"no" question were also included (*CDC Coffee Break, 2023*).

## Results

Eight respondents were surveyed after reviewing the brochure. Seven out of eight agreed that the brochure format matches the learning styles of prospective Guyanese students. The most common social platforms used were Facebook, Instagram, WhatsApp, and TikTok, with Facebook being the most popular. Several barriers to promoting nursing as a career were listed, with the language barrier cited most often. Other barriers included a lack of reliable information about nursing, insufficient on-the-job training, low salaries, contract issues, poor working conditions, and education requirements that many nursing candidates could not meet. One respondent mentioned the negative impact of increased brain drain of nurses in Guyana. Inadequate high school career guidance sessions were also cited as a reason why nursing is undervalued. Respondents identified numerous obstacles to nurse education, such as a shortage of nursing schools in each region and limited resources for practical skills, like clinical laboratories. Language barriers and unreliable internet access were also noted as challenges. Financial constraints and the candidate's location negatively affect access to nursing education. Additionally, a lack of support from superiors for the advancement of junior staff is another obstacle.

The survey included items to evaluate visual appeal, cultural relevance, and the quality of information about educational opportunities, nursing roles, and nursing responsibilities in Guyana. The team members analyzed the responses to assess the brochure's effectiveness. Since the survey data provided categorical values, it showed that the brochure delivers information considered relevant by key stakeholders to raise awareness and interest in nursing within the Guyanese community. Based on the feedback, the team will adopt the digital brochure and revise it to incorporate respondents' suggestions.

Survey results showed the brochure aligned with respondents' learning styles and was clear and accurate in explaining the role of nurses in the country. The next step in recruiting for the nursing profession would be to distribute the brochure through the recommended social media platforms. Respondents indicated that the nursing shortage in Guyana is caused by multiple factors. The most common barrier to promoting a nursing career was the language barrier. Other obstacles included a lack of reliable information about nursing, internet access, the location of nursing schools, financial constraints, and required prerequisite education. A shortage of on-the-job training and resources for developing practical skills, along with limited opportunities for advancement, were also mentioned as issues. Identifying the precise reasons for the decline in the nursing workforce and pool of candidates can be challenging. Improvements are needed across all areas cited by respondents. Efforts from the government, institutions, and the private sector should be evaluated to implement meaningful changes. These findings can guide future initiatives aimed at increasing interest in nursing and recruiting students into nursing schools in Guyana. Raising the number of nursing school graduates will increase the pool of candidates able to pursue further education to become nurse anesthesia providers, which may help improve the safety of anesthesia care in the country.

## Conclusion

Tackling Guyana's shortage of nurses and anesthesia providers is crucial for improving access to safe surgical care and reducing preventable health disparities. Enhancing nursing education, broadening training programs for nurse anesthesia providers, and establishing supportive working environments can help keep the local workforce while decreasing the factors that encourage migration. Collaborative efforts between local institutions, government agencies, and international partners

present promising opportunities to build capacity, upgrade infrastructure, and promote professional growth. By investing in these strategies, Guyana can develop a sustainable healthcare workforce, improve surgical results, and ensure all citizens have access to safe, equitable, and high-quality care.

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Wendy Hoersting, DNAP, MBS, CRNA, APRN, CNE, has been practicing as a nurse for 32 years and has specialized as a CRNA for the past 27. Currently, she cares for patients at an outpatient surgery center in Savannah, GA. As adjunct faculty at the Middle Tennessee School of Nurse Anesthesia, she supports both the Doctorate of Nurse Anesthesia Completion and Nurse Educator programs.

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Beimal Yazdanparast, DNAP, MS, CRNA, CNE, brings 6 years of experience to Vanderbilt Medical University and Tennessee Surgery Center, where her practice includes obstetrics, pediatrics, and adult specialty anesthesia. Recently, she has become an adjunct faculty member teaching OB Anesthesia at the Middle Tennessee School of Anesthesia.

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Hallie Evans, DNP, CRNA, APRN, CNE, serves as Director of the Middle Tennessee School of Nurse Anesthesia Doctorate of Nurse Anesthesia Completion Program and Nurse Educator Track. Throughout her academic career, she has maintained a strong clinical practice. Her scholastic interests include Evidence-Based Practice, Nursing Education, Leadership, and Regional Anesthesia, to name a few.

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