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Review Article

Undergraduate medical education in Nigeria: a critical reassessment of regulatory frameworks, pedagogical practices and systemic reform

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ABSTRACT

This review critically examines the evolution, challenges, and reform prospects of undergraduate medical education in Nigeria, aiming to identify the structural, policy, and operational factors that influence its quality and effectiveness. Its foundation was established during the colonial era, with early medical schools focused primarily on training auxiliary health workers, and was later strengthened by the mandates of the Medical and Dental Council of Nigeria (MDCN) and the National Universities Commission (NUC), which continue to define accreditation, professional standards, and curriculum frameworks. Despite this institutional base, medical training faces persistent challenges, including chronic underfunding, inadequate infrastructure, faculty shortages and low motivation, outdated curricula, and overlapping regulatory oversight, all of which reduce instructional quality, limit clinical exposure, and weaken graduate competence. By reviewing historical records, policy documents, and contemporary literature, this paper highlights how traditional educational models have not adapted sufficiently to Nigeria's changing healthcare needs. Recent reform efforts, however, show promise, including the introduction of competency-based curricula, blended learning, simulation-driven clinical training, and community-oriented education programs that follow international best practices. The analysis emphasizes that lasting improvement requires addressing foundational deficits in governance, funding, and infrastructure alongside curriculum and pedagogical innovations. The review concludes that harmonized regulatory standards, sustained political commitment, and strategic investment in modern teaching and learning approaches are essential to developing a medical education system in Nigeria that is effective, responsive, and aligned with national healthcare priorities.

Keywords: Undergraduate medical education, Nigeria, Curriculum reform, Competency-based education, Simulation-based training, Community-based medical education, Medical education policy

INTRODUCTION

The strength and resilience of a nation's healthcare system are inextricably linked to the quality and capacity of its medical education channel. For Nigeria, a country facing significant public health challenges, this linkage is particularly critical. The nation's health indices, including a high burden of maternal and infant mortality, remain a grave concern, reflecting a healthcare system under immense strain.[1,2] A primary contributor to this strain is the critical shortage of healthcare professionals. Based on estimates from the Medical and Dental Council of Nigeria (MDCN) and corroborating reports, Nigeria's doctor-to-population ratio is roughly 1:3,000 to 1:3,500, a figure widely cited in academic and media sources and often compared with the frequently attributed World Health

Organization (WHO) benchmark of 1:600.[3,4] This deficit is not merely a numerical problem; it is a direct impediment to achieving universal health coverage and ensuring the well-being of over 200 million citizens. Consequently, the process of producing competent, compassionate, and locally responsive physicians is not simply an academic exercise but a national strategic imperative.

The quality of undergraduate medical education serves as the bedrock upon which the entire healthcare system is built, determining the calibre of practitioners who will safeguard the nation's health in the near and distant future. Medical education in Nigeria has evolved over time within a dual regulatory framework supervised by the National Universities Commission (NUC) and the MDCN to ensure academic quality and professional competence.

As of recent data, the country has 42 accredited medical schools, comprising 17 federal, 18 state, and 7 privately-owned institutions, although the exact number may vary based on ongoing accreditation updates by the MDCN.[5,6] The standard undergraduate medical program, leading to the Bachelor of Medicine, Bachelor of Surgery (MBBS) degree, spans a minimum of six years.[7] This duration is typically divided into three distinct phases: a foundational first year in the Faculty of Science studying basic sciences like physics, chemistry, and biology; approximately 18 months of pre-clinical training in anatomy, physiology, and biochemistry; and the subsequent years dedicated to clinical sciences, where students complete basic training in pathology and pharmacology and then rotate through major specialties such as medicine, surgery, paediatrics, and obstetrics and gynaecology. Upon successful completion of the final professional examinations, graduates receive a provisional license from the MDCN and are required to undertake a mandatory one-year supervised internship, known as the housemanship, before they can be fully licensed to practice medicine in Nigeria.[8]

Nigerian undergraduate medical education stands at a critical inflection point, caught between a legacy of systemic neglect and the urgent need for reform. The system is grappling with a constellation of chronic ailments like inadequate funding, infrastructural decay, curricular stagnation, and incessant academic disruptions that have compromised the quality of training.

This review critically dissects these interconnected challenges, exploring their impact on the educational environment and the competency of graduates. Simultaneously, this analysis will explore pockets of pedagogical innovation and propose a holistic, evidence-based roadmap for sustainable reform, arguing that a resilient and effective medical education system for Nigeria's future can only be built upon a foundation of harmonized regulation, strategic investment, and a curriculum fundamentally realigned with the nation's health priorities.

METHODS

Study design

This paper employed a narrative critical review design, integrating policy analysis and pedagogical critique to assess the state of undergraduate medical education in Nigeria. The approach enabled a broad synthesis of published evidence, regulatory documents, and contextual realities, providing both descriptive and analytical insights into how regulation, curriculum, and institutional practices influence educational quality and health workforce outcomes.

Scope of review

The review focused on three core domains: regulation, pedagogy, and systemic factors. Regulatory analysis examined the roles of the MDCN, NUC, and the Federal Ministry of Health, emphasizing accreditation standards and governance. The pedagogical dimension explored curriculum content, teaching approaches, and assessment methods across the pre-clinical and clinical phases. Systemic issues, including funding, infrastructure, faculty capacity, and academic stability, were analysed in relation to training quality and relevance to national health needs. Together, these domains provided a structured lens for evaluating policy–practice gaps and reform priorities.

Literature search and data sources

A comprehensive search was conducted between January and April 2025 across PubMed, Scopus, African Journals Online (AJOL), and Google Scholar using terms such as "*medical education in Nigeria*," "*undergraduate curriculum*," "*MDCN standards*," "*medical school reform*," "*health workforce policy*," and "*competency-based medical education*." Additional grey literature including policy reports, accreditation manuals, and institutional guidelines was sourced from the MDCN, the NUC, the Federal Ministry of Health, and the WHO. To capture current debates and reform perspectives, relevant analyses and reports were also reviewed from reputable Nigerian newspaper outlets, including *The Punch*, *The Guardian*, *The Cable*, and *Premium Times*. Materials were included if they addressed any aspect of undergraduate medical education, regulation, or reform within Nigeria. Commentaries and institutional reports were considered where they provided valuable contextual or critical insights.

Data extraction and analytical framework

Information from the selected sources was extracted under three thematic areas: (1) regulatory and policy frameworks guiding medical education, (2) pedagogical approaches and curricular trends, and (3) institutional and systemic challenges affecting programme delivery. Findings were synthesised narratively to highlight key themes, areas of agreement, and points of divergence across the literature.

No meta-analysis or formal quality scoring was conducted, as the objective was to develop a contextual and integrative understanding of medical education in Nigeria rather than to generate pooled statistical outcomes. All materials used were publicly available, and no human participants or primary data collection were involved; therefore, ethical approval was not required.

HISTORICAL FOUNDATIONS AND REGULATORY SYSTEM

Evolution from colonial foundations to post-independence expansion

The origins of formal allopathic medical training in Nigeria can be traced to the colonial era, which was initially characterized by an emphasis on producing auxiliary health workers rather than fully qualified physicians. An early five-year diploma program established in 1930 proved ineffective due to inadequate facilities and faculty, producing graduates who were not recognized internationally and faced discriminatory service conditions.[9,10]

The colonial administration's focus was primarily on training African medical assistants and nursing aides to serve the needs of colonial staff and military personnel, rather than establishing university-level medical education for the indigenous population.[9-11]

A paradigm shift occurred in 1948 with the establishment of the University College in Ibadan as a branch of the University of London.[11] This institution was founded on the principle of training Nigerian doctors to a standard on par with their British counterparts, with graduates receiving a degree from the University of London.[11,12] The curriculum was, therefore, a direct mirror of the British system.[12]

Following Nigeria's independence in 1960, a period of national expansion began, with new medical schools being established across the country between 1960 and 1972. This growth has continued, with medical universities now present in almost every state, encompassing federal, state, and private institutions.[5,6] However, this expansion often involved the replication of the original British-based curriculum with minimal or no alteration, embedding a foreign educational model that has proven slow to adapt to local health realities.[5-11]

The dual regulatory framework: roles and mandates

The oversight of undergraduate medical education in Nigeria is a shared responsibility, creating a complex dual regulatory framework. The two principal bodies are the MDCN, which governs professional standards, and the NUC, which oversees academic standards across all universities (Table 1).

The MDCN – guardian of professional standards

Established by the Medical and Dental Practitioners Act of 1963, the MDCN is the statutory body responsible for regulating the practice of medicine and dentistry in Nigeria.[13] Its core mandate is to ensure the provision of safe and effective healthcare by maintaining high professional standards.[14] In the context of undergraduate education, the MDCN's functions are paramount. It is tasked with "determining the standard of knowledge and skill to be attained by persons seeking to become members of the medical or dental profession and reviewing those standards from time to time".[15] To execute this mandate, the MDCN accredits medical and dental schools, sending visitation panels to inspect institutions and approve their training programs.[14] A cornerstone of its regulatory power is the publication of the "Guidelines on Minimum Standards of Medical and Dental Education in Nigeria," often referred to as the "Red Book".[15] This document is highly prescriptive, outlining detailed minimum requirements for physical facilities (from lecture halls and laboratories to student hostels), staffing levels, staff-student ratios, and the core disciplines that must be included in the curriculum.[15] The Red Book serves as the definitive benchmark for the professional adequacy of a medical training program in Nigeria.

The NUC – steward of academic quality

The NUC was established in 1962 as an advisory agency but was transformed into a statutory body by Decree No. 1 of 1974, granting it significant powers over the Nigerian university system.[16] The NUC is responsible for the orderly development of university education and the maintenance of academic standards across all disciplines, including medicine.[16] Its key objectives include ensuring quality education, fostering innovation, and working with universities to achieve full accreditation for at least 80% of their academic programs.[17] For medical education, the NUC's primary tool is the Benchmark Minimum Academic Standards (BMAS), which has recently been revised into the Core Curriculum and Minimum Academic Standards (CCMAS).[18,19] This document outlines the philosophy, objectives, admission requirements, course credit system, and graduation requirements for the MBBS and Bachelor of Dental Surgery (BDS) degrees. Unlike the MDCN's focus on professional and physical inputs, the NUC's BMAS is more concerned with academic structure, learning outcomes, and ensuring that the medical program aligns with the broader academic governance of the university system.[15-19]

Assessment of the interplay and overlap of regulatory authority

The existence of two powerful regulatory bodies with overlapping jurisdictions creates a significant challenge for medical schools. Although the MDCN focuses on professional competence and the NUC on academic standards, both conduct separate accreditation exercises

that assess many of the same parameters, such as faculty numbers, library resources, and physical facilities. This duplication of effort is not only inefficient and costly for the universities but also creates a complex bureaucratic system that can stifle agility and innovation. The very structure of this dual oversight may contribute to the system's resistance to change. Medical schools must satisfy two distinct sets of detailed, prescriptive standards, making any significant curriculum reform a high-stakes and cumbersome process. It is often safer and more expedient for institutions to maintain the accredited status quo rather than risk non-compliance with either body's regulations. This dynamic helps explain why, despite the existence of comprehensive guidelines, the core curriculum has seen "minimal or no alteration" in over six decades.[11] The regulatory framework, designed to assure quality, may inadvertently be preserving an outdated model. This inefficiency has led to calls for the harmonization of the MDCN and NUC guidelines and the conduct of joint accreditation visits to maximize efficiency and reduce waste.[20-22] Observers have noted that the MDCN's regulatory independence can be constrained by political and institutional pressures, particularly when evaluating government-funded medical schools, raising concerns that it may function more as a procedural body than an independent arbiter of standards.[20,21] This highlights a fundamental tension between the roles of regulator and state-sponsored developer, which can compromise the very quality the council is meant to protect.

Table 1: The dual regulatory system of Nigerian medical education.[13-19]

Feature	Medical and dental council of Nigeria (MDCN)	National universities commission (NUC)
Primary mandate	Regulating professional practice standards and ethics for medicine and dentistry.	Ensuring academic quality and orderly development of all university programs.
Key document	"Guidelines on minimum standards" (the red book).	"Core curriculum and minimum academic standards" (CCMAS), formerly BMAS.
Focus of standards	Prescriptive requirements for clinical facilities, staff-to-patient ratios, professional conduct, and specific curriculum content.	Broader academic outcomes, course credit systems, university governance, and minimum academic requirements.
Scope of authority	Restricted to medical, dental, and alternative medicine programs.	Encompasses all programs in the entire Nigerian university system.
Accreditation process	Independent professional accreditation visits focused solely on the medical/dental school and its affiliated teaching hospital(s).	University-wide academic accreditation visits that assess all faculties and programs, including medicine.

CHALLENGES IN UNDERGRADUATE MEDICAL TRAINING

Despite its long history and expansive network of institutions, undergraduate medical education in Nigeria is beset by a host of inherent, systemic challenges that collectively undermine the quality of training and the competency of its graduates. These issues span funding, curriculum, human resources, and the stability of the academic environment itself.

Funding limitations and resultant deficits in infrastructure and learning resources

Chronic and severe underfunding is arguably the most critical challenge facing medical education in Nigeria.[5] For years, the national budgetary allocation to the education sector has consistently fallen short of the 4-6% of GDP or 15-20% of public expenditure recommended by UNESCO, with actual figures well below these benchmarks.[23,24] As medical education largely depends on public-sector financing (ministries of education and health and related agencies), these meagre allocations leave medical schools and teaching hospitals perpetually short of the capital and recurrent resources required for this capital-intensive training.[25] The consequences of this financial neglect are stark and visible across medical campuses and their affiliated teaching hospitals. Institutions suffer from inadequate and decaying infrastructure, including overcrowded lecture halls, poorly equipped laboratories, decaying hostels, intermittent power and water supply, and limited access to contemporary clinical equipment, all of which impair teaching, skills acquisition, and research.[5-26] This dire situation has compelled many institutions to rely on alumni donations, philanthropic gifts, and external grants to supplement meagre state funding and keep basic functions running.[5] Although the recent federal government initiative to inject N110 billion from the Tertiary Education Trust Fund (TETFund) for the rehabilitation of 18 medical schools is a welcome development, these are time-limited and project-specific interventions that do not by themselves correct years of chronic underinvestment in recurrent budgets, staff, and maintenance.[27]

Outdated curriculum and pedagogical practices requiring systemic reform

The curriculum used in most Nigerian medical schools remains largely anchored to the British model inherited at independence over 60 years ago, and critics note that substantive curricular modernization has lagged, describing it as being static, fragmented, and outdated.[5-11] A significant criticism is the structure of the pre-medical/foundation year, which often forces students to study some peripheral subjects like botany that are of little

relevance to their future medical careers, rather than providing a focused introduction to human biology and clinical reasoning.[5-28] Furthermore, the teaching of basic medical sciences in the pre-clinical years is often delivered by non-medical lecturers (e.g., PhDs in Anatomy or Biochemistry) who may lack the clinical perspective to make the subjects relevant to future practice.[29] This creates a sharp, artificial divide between foundational knowledge and its clinical application. The pedagogical approach is predominantly teacher-centred, emphasizing rote memorization of vast amounts of information. This culture fosters a learning environment where the primary goal becomes passing examinations rather than acquiring the deep, integrated knowledge and critical thinking skills necessary for competent medical practice.[5-29]

Faculty shortages, limited capacity, and declining motivation among academic staff

Nigeria's rapidly expanding number of medical schools has not been matched by proportionate growth in qualified academic staff, and a persistent shortage of senior clinicians and academic teachers is widely reported.[3-5] This human resource deficit is a direct consequence of poor motivation, inadequate remuneration, and the pervasive brain drain that sees experienced clinicians and academics leave the country for better opportunities abroad.[3] The few lecturers who remain are often overburdened with heavy teaching loads, large class sizes, and administrative duties, which diminishes the quality of instruction, mentorship, and student supervision.[29] This scarcity of senior academics and mentors creates a critical gap in the transmission of knowledge and professional values, weakening the very foundation of medical training.

Recurrent industrial actions and their disruptive impact on training continuity

The Nigerian public university system is notorious for frequent and prolonged industrial actions by academic and non-academic unions, most notably the Academic Staff Union of Universities (ASUU). These strikes, typically rooted in disputes over funding, salaries, and university autonomy, cause severe disruptions to the academic calendar.[30] The impact on medical students is particularly devastating. Unlike other university programs, the medical curriculum is a continuous, year-round process that requires uninterrupted, hands-on clinical exposure.[31]

Strikes halt all academic and clinical activities, leading to prolonged graduation times, significant knowledge gaps, and the deterioration of practical skills. Studies have shown that these incessant disruptions negatively affect students' motivation to study, diminish the long-term retention of medical knowledge, and increase the likelihood of academic failure.[30]

Each strike effectively slows down and disrupts the development of a future physician, with cumulative effects that compromise their ultimate competence and confidence.

Deficiencies in clinical exposure and the persistent gap between theory and practice

The clinical phase of training, where students are expected to translate theoretical knowledge into practical skills, is fraught with challenges. Many teaching hospitals remain inadequately equipped to support the full range of clinical training, limiting students' opportunities to perform basic procedures and gain supervised clinical competence.[31] The lack of basic consumables, simulation resources and reliable diagnostic equipment forces trainees to learn under suboptimal conditions and undermines confidence and readiness for independent practice.[5-31] A more profound issue is the quality of clinical supervision. Surveys and qualitative studies report insufficient structured supervision, variable bedside teaching and instances of mistreatment or "toxic" bedside cultures, all of which point to the need for systematic faculty development in pedagogical skill.[29-32] Many clinician-teachers are highly skilled practitioners but have not received formal training in medical education. As a result, teaching is frequently regarded as a natural extension of clinical expertise rather than a specialized professional skill. This assumption often leads to unstructured and ineffective bedside teaching, where students learn primarily by observation instead of guided practice. The absence of structured supervision and educational methodology creates a significant gap between theoretical knowledge and practical application, ultimately producing graduates who possess sound theoretical understanding but are inadequately prepared for the practical responsibilities of patient care.[29-33]

EMERGING PRACTICES AND INNOVATIONS IN UNDERGRADUATE MEDICAL EDUCATION

Amidst the systemic challenges, there are discernible efforts within Nigerian medical education to adopt more modern and effective pedagogical approaches. These innovations, while not yet widespread, represent some level of progress and point towards potential pathways for future reform. However, their implementation is often constrained by the same foundational deficits that plague the broader system.

Gradual adoption of problem-based learning as an alternative pedagogical approach

Problem-Based Learning (PBL) represents a significant departure from traditional, didactic teaching methods. As a student-centered educational strategy, PBL uses hypothetical clinical cases to stimulate self-directed investigation, critical thinking, and collaborative learning among students.[34] This approach is designed to develop skills in clinical reasoning, integrate basic science knowledge with clinical practice, and foster lifelong learning habits.[34] Research conducted in Nigeria indicates

that medical students have a positive perception of PBL, finding it more effective than traditional lectures for achieving learning objectives, promoting student participation, and acquiring teamwork skills.[35] Despite this positive reception and its suitability for medical education, the adoption of PBL in Nigeria remains limited and is described as "unpopular" in many institutions, with the conventional lecture method still dominating the curriculum.[35]

Integration of digital tools and e-learning platforms in medical instruction

The COVID-19 pandemic served as a global catalyst for the adoption of e-learning in medical education, and Nigeria was no exception.[36] E-learning, defined as the use of multimedia technologies and the internet to enhance the quality of learning, offers the potential to increase access to information and facilitate remote collaboration.[37] Studies show that a majority of Nigerian medical students have a good attitude towards and express readiness for online medical education.[36,37] However, the transition from complete traditional face-to-face teaching to a mixed approach is fraught with significant challenges. The most commonly cited barriers are infrastructural: poor and unreliable internet connectivity, erratic power supply, and the high cost of data and personal devices, with less than half of students in one study owning a functional laptop.[36] There is also a notable disparity in capacity, with private institutions significantly outperforming public universities in terms of internet provision and staff training for e-learning.[38] Furthermore, many medical trainers are hesitant to use e-learning for crucial hands-on components of the curriculum, such as laboratory demonstrations, clinical demonstrations, and bedside teaching, believing these require in-person interaction.[36,37] This suggests that a "blended learning" approach, combining online delivery of theoretical content with face-to-face practical sessions, may be the most viable path forward.[37]

Expansion of simulation-based learning for clinical competency development

Simulation-Based Education (SBE) provides a crucial bridge between classroom knowledge and real-world clinical practice. It allows students to practice clinical skills, from basic procedures to complex emergency scenarios, in a safe and controlled environment on mannequins or virtual patients, without risk to actual patients.[39] This method is strongly supported by adult learning theories, as it encourages deliberate practice, repetition, and reflection.[40,41] Despite its proven efficacy, exposure to simulation-based training during undergraduate medical education in Nigeria is very low.[42] The primary obstacles to its widespread adoption are a lack of funding to procure and maintain expensive simulation equipment, a shortage of instructors trained in simulation pedagogy, and a general lack of awareness of its potential benefits.[42,43] Recognizing this gap, the Nigerian government has recently announced a significant initiative to build eight state-of-the-art medical simulation centres across the country, a move that could transform this aspect of medical training if implemented and sustained effectively.[43,44]

Strengthening community-based medical education for learning and service delivery

CBME is a curricular strategy designed to align medical training with the health needs of the population by using the community as a primary learning environment.[45] Programs such as the Community-Based Experience and Service (COBES), pioneered by the University of Ilorin, immerse students in rural and underserved communities for extended periods.[46] During these postings, students engage in primary healthcare activities, conduct community diagnoses, and gain firsthand experience of the social determinants of health. This exposure is intended to produce physicians with a strong inclination towards community care and preventive medicine.[46] Studies have shown that such experiences can positively influence students' motivation to practice in rural areas after graduation. However, the effectiveness of CBME programs in Nigeria is often hampered by logistical challenges, inconsistent support from faculty, and a lack of structured programming.[47] The pursuit of these 21st-century pedagogical tools reveals a fundamental mismatch within the Nigerian system. The desire to implement high-tech innovations like e-learning and advanced simulation is being built upon a foundation of 20th-century infrastructure. The primary barriers to scaling these modern methods are not pedagogical but foundational, and include unreliable electricity, poor internet connectivity, and chronic underfunding.[36] This indicates that for innovation to be sustainable, a "foundations-first" approach is essential. Simply funding the construction of a simulation lab without guaranteeing the recurrent budget for its maintenance, the stable power required to operate it, and the trained faculty to run it will likely result in another showcase project that falls into disuse. Therefore, policy and investment must address these basic infrastructural deficits in parallel with the promotion of advanced educational technologies.[36,42,44]

FUTURE DIRECTIONS AND STRATEGIC RECOMMENDATIONS

To navigate the complex challenges and move towards a more resilient and effective system, a multi-faceted and strategic approach to reform is required. The path forward for Nigerian undergraduate medical education must address fundamental issues in governance, funding, and curriculum.

Strengthening governance and funding

Harmonizing regulatory standards and joint accreditation

The current dual regulatory system, with separate accreditation processes by the MDCN and NUC, is

inefficient and creates a burdensome compliance environment for medical schools. A crucial first step towards reform is the formal harmonization of the basic requirements of the MDCN's "Guidelines on Minimum Standards" and the NUC's "Core Curriculum and Minimum Academic Standards".[48] This should be followed by the implementation of joint accreditation visits conducted by a single team comprising representatives from both bodies. Such a unified approach would reduce redundancy, maximize efficiency, ease the administrative burden on universities, and present a coherent set of standards for quality assurance.

Ensuring sustainable and increased financial commitment

No meaningful reform is possible without addressing the chronic underfunding of the sector. The Nigerian government must demonstrate political will by significantly increasing the budgetary allocation to education and health, striving to meet the 15-20% benchmark recommended by UNESCO.[24] Beyond government subventions, universities and medical schools should be encouraged and empowered to explore alternative and supplementary funding streams. This includes fostering robust public-private partnerships (PPPs) for infrastructure development, establishing endowments, and engaging alumni and philanthropic organizations more systematically to support specific projects and research initiatives.[49]

Reforming the medical curriculum for contemporary healthcare needs

Mandatory pedagogical training for clinical educators

The quality of teaching is paramount, yet many clinical educators are experts in their medical specialty but novices in pedagogy. To bridge this gap, it should be mandatory for all academic staff in medical schools, particularly clinician-teachers, to undergo formal training in modern educational methods, curriculum design, and student assessment. This would equip them with the skills needed to be more effective teachers and mentors, thereby improving the quality of instruction and clinical supervision.

Integrating digital innovation and community-oriented training approaches

The curriculum must evolve from its static, content-heavy origins to a dynamic, competency-based model fit for the 21st century. This requires a strategic shift towards a blended learning framework. This model should leverage e-learning platforms for the delivery of theoretical knowledge, which can be particularly effective where infrastructure permits. This must be complemented by a significant investment in hands-on training through the establishment and proper maintenance of simulation laboratories in all accredited medical schools.[50,51] Furthermore, community-based medical education should be expanded and strengthened, making it a mandatory and well-supported component of the curriculum for all students. This reorientation towards primary healthcare which is similar to the community-oriented, prevention-focused Cuban training model that has informed reforms in countries such as South Africa, remains essential for producing physicians equipped to meet Nigeria's specific health needs and aligns with the WHO's global recommendations for transforming and scaling up health professionals' education.[52,53]

CONCLUSION

Undergraduate medical education in Nigeria reflects both potential and persistent systemic weakness. Despite its broad institutional base and historical importance, it continues to be limited by chronic underfunding, inadequate infrastructure, faculty demotivation, and outdated curricula that fail to meet modern healthcare needs. The result is a cycle of compromised training quality and reduced graduate competency. Nonetheless, ongoing innovations in pedagogy, simulation, and digital learning, together with renewed attention to health education reform, present opportunities for meaningful change. Achieving lasting transformation will require consistent political commitment, coordinated regulation, sustainable funding, and the implementation of a competency-based curriculum that integrates technology and community engagement. By addressing these structural deficiencies with strategic intent, Nigeria can rebuild its medical education system into a foundation for a stronger and more responsive healthcare sector.

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REFERENCES

1. UNICEF. Nigeria — Demographics, Health and Child Mortality. UNICEF Data. 2024. Available at: https://data.unicef.org/country/nga/. Accessed on 02 January 2026.
2. World Health Organization. Nigeria country overview — maternal mortality and child survival indicators. WHO GHO; 2025. Available at: https://data.who.int/countries/566. Accessed on 02 January 2026.
3. Umar AA, Salihu HM, Azuine RE. Crisis of brain drain in Nigeria's health sector: challenges, opportunities, and the path forward. Int J MCH AIDS. 2025;14:e011.
4. Adedipe A. 58,000 out of 130,000 doctors renewed licence in 2023, says MDCN. Punch Newspapers. 2024. Available at: https://punchng.com/58000-out-of-130000-doctors-renewed-licence-in-2023-says-mdcn/. Accessed on 02 January 2026.
5. Osoba M, Usman S, Oyadiran O, Odeyemi J, Abode M, Usman O, et al. Undergraduate medical education

in Nigeria: current standard and the need for advancement. Pan Afr Med J. 2021;40:40.
6. Medical and Dental Council of Nigeria. List / Accreditation documents for medical schools. MDCN. 2025. Available at: https://www.mdcn.gov.ng/page/media/downloads. Accessed on 02 January 2026.
7. National Universities Commission. CCMAS: Medicine and Dentistry — minimum duration and structure. NUC-CCMAS. 2022. Available at: https://nuc-ccmas.ng/download/ccmas-medicine-and-dentistry/. Accessed on 02 January 2026.
8. Medical and Dental Council of Nigeria. Housemanship — background information / registration. MDCN. 2025. Available at: https://www.mdcn.gov.ng/page/housemanship/background-information. Accessed on 02 January 2026.
9. Longo LD. Medicine and medical education in Nigeria. N Engl J Med. 1963;268(19):1044-55.
10. Schram R. A History of the Nigerian Health Services. Ibadan: Ibadan University Press, University of Ibadan. 1972.
11. Ibrahim M. Medical education in Nigeria. Med Teach. 2007;29(5):443-7.
12. Monekosso GL. A brief history of medical education in Sub-Saharan Africa. Acad Med. 2014;89(8):S11-5.
13. Medical and Dental Practitioners Act (Cap M8, Laws of the Federation of Nigeria). MDCN. 2004. Available at: https://www.mdcn.gov.ng/public/storage/ckeditor/upload_7405511.pdf. Accessed on 02 January 2026.
14. Medical and Dental Council of Nigeria. Mandate, mission and vision. MDCN. 2025. Available at: https://www.mdcn.gov.ng/page/about-us/mdcn-mandate-mission-vission. Accessed on 02 January 2026.
15. Medical and Dental Council of Nigeria. Guidelines on Minimum Standards of Medical and Dental Education in Nigeria (The Red Book). Abuja: MDCN. 2006. Available at: https://mdcn.gov.ng/public/storage/documents/document_894422509.pdf. Accessed on 02 January 2026.
16. National Universities Commission. About Us — History and Statutory Status. NUC. 2024. Available at: https://www.nuc.edu.ng/about-us/. Accessed on 02 January 2026.
17. National Universities Commission. Servicom — Mandate and Objectives. NUC. 2024. Available at: https://www.nuc.edu.ng/servicom/. Accessed on 02 January 2026.
18. National Universities Commission. Benchmark Minimum Academic Standards (BMAS) for Medicine and Dentistry. NUC. 2007. Available at: https://nuc.edu.ng/publication/bmas-medicine-dentistry/. Accessed on 02 January 2026.
19. National Universities Commission. Core Curriculum and Minimum Academic Standards (CCMAS) for Medicine and Dentistry. NUC-CCMAS. 2023. Available at: https://nuc-ccmas.ng/download/ccmas-medicine-and-dentistry/. Accessed on 02 January 2026.
20. Salami M, Adebumiti A. NUC worries over professional bodies' overreach, seeks harmonised accreditation system. The Guardian Nigeria. 2025. Available at: https://guardian.ng/features/education/nuc-worries-over-professional-bodies-overreach-seeks-harmonised-accreditation-system/. Accessed on 02 January 2026.
21. Agency Report. Health, Education Ministries to harmonise accreditation of teaching hospitals. Punch Newspaper. 2023. Available at: https://punchng.com/health-education-ministries-to-harmonise-teaching-hospitals-accreditation/. Accessed on 02 January 2026.
22. Makinde OA, Meribole EC, Oyediran KA, Fadeyibi FA, Cunningham M, Hussein-Fajugbagbe Y, et al. Duplication of effort across development projects in Nigeria: an example using the Master Health Facility List. Online J Public Health Inform. 2018;10(1):e218.
23. World Bank. Public spending on education, total (% of GDP) — Nigeria. World Bank Open Data. 2022. Available at: https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?locations=NG. Accessed on 02 January 2026.
24. UNESCO. Member states unite to increase investment in education. UNESCO. 2021. Available at: https://www.unesco.org/en/articles/unesco-member-states-unite-increase-investment-education. Accessed on 02 January 2026.
25. Ogunode NJ, Mgbemena N. Medical education and barriers to funding in tertiary institutions in Nigeria. Int J Health Sys and Med Sci. 2023;2(11):249-57.
26. Mopa WN, Duan X. Health infrastructural deficit — Nigeria: the time to act is now. Cent Afr J Public Health. 2022;8(5):203-12.
27. Agency Report. Nigerian govt to rehabilitate 18 medical schools with N110 billion — official. Premium Times. 2025. Available at: https://www.premiumtimesng.com/health/health-news/791288-nigerian-govt-to-rehabilitate-18-medical-schools-with-n110-billion-official.html. Accessed on 02 January 2026.
28. Adesola AA, Akoki DM, Abraham MI, Jegede SW, Labaika LA, Yusuf BA, et al. Evaluation of student engagement among Nigerian medical students using the AMEE ASPIRE criteria. BMC Med Educ. 2025;25(1):1156.
29. Olasoji HO, Mu'azu AB, Garba MH. A study of clinical teachers' attitude to teaching and perceived learning needs in a medical college in Nigeria. Adv Med Educ Pract. 2019;10:605-17.
30. Ezinne U, Ademusire B, Makata C, Ozonta N, Okeke K, Abu H, et al. Effect of incessant strike actions on the academic performance of University of Ibadan medical students. Pan Afr J Educ Soc Sci. 2024;5(2):167-84.

31. KingPriest PT, Alayande BT, Clement EW, Muhammed M, Egbiri JO, Shanabo M, et al. A national perspective on exposure to essential surgical procedures among medical trainees in Nigeria: a cross-sectional survey and recommendations. BMC Med Educ. 2023;23(1):913.
32. Olasoji HO. Broadening conceptions of medical student mistreatment during clinical teaching: message from a study of "toxic" phenomenon during bedside teaching. Adv Med Educ Pract. 2018;9:483-94.
33. Yarhere IE, Ogundipe O, Williams A, Farouk AG, Raji Y, Makanjuola V, et al. Scaling up numbers and competency of graduating medical and dental students in Nigeria: need to improve medical trainers' competency in teaching. Niger J Clin Pract. 2023;26(7):1016-24.
34. Schmidt HG, Rotgans JI, Yew EHJ. The process of problem-based learning: what works and why. Med Educ. 2011;45(8):792-806.
35. Okoye HC, Meka IA, Ugwu AO, Yahaya IA, Otokunefor O, Ojo OO, et al. Perception of problem based learning versus conventional teaching methods by clinical medical students in Nigeria. Pan Afr Med J. 2019;33:311.
36. Ossai EN, Eze II, Umeokonkwo CD, Izuagba CO, Ogbonnaya LU. Readiness, barriers, and attitude of students towards online medical education amidst COVID-19 pandemic: a study among medical students of Ebonyi State University Abakaliki, Nigeria. PLoS One. 2023;18(4):e0284980.
37. O'Doherty D, Dromey M, Lougheed J, Hannigan A, Last J, McGrath D. Barriers and solutions to online learning in medical education: an integrative review. BMC Med Educ. 2018;18:130.
38. Fasiku AV, Abdulsamad I, Adegoke JK, Afolabi AS, Adedayo SO, Olanipekun A, et al. Perception of medical students on the effect of COVID-19 on medical education in Nigeria. Int J Med Students. 2021;9(3):197-201.
39. Owolabi JO, Gardner K, Agboola R, Yesudas RR, Shaw JH. Use of simulation for teaching biomedical sciences to undergraduate medical students — a scoping review. BMC Med Educ. 2025;25:1259.
40. Alonso-Peña M, Álvarez CÁ. Clinical simulation in health education: a systematic review. Invest Educ Enferm. 2023;41(3):e12.
41. Wickramasinghe D, Vincent J. The use of deliberate practice in simulation-based surgical training for laparoscopic surgery: a systematic review. BMC Med Educ. 2025;25:1047.
42. Agbajileke O. FG inaugurates committee to oversee medical simulation centres. The Guardian Nigeria. 2025. Available at: https://guardian.ng/news/fg-inaugurates-committee-to-oversee-medical-simulation-centers/. Accessed on 02 January 2026.
43. TheCable. FG to establish eight medical simulation centres nationwide. The Cable. 2025. Available at: https://www.thecable.ng/fg-to-establish-eight-medical-simulation-centres-nationwide. Accessed on 02 January 2026.
44. World Health Organization. Transforming and scaling up health professionals' education and training: WHO guidelines. WHO (Geneva). 2013. Available at: https://www.who.int/publications/i/item/9789241506502. Accessed on 02 January 2026.
45. Mustapha MJ, Muthana A, Sulaiman AO, Hoz SS. Enhancing medical education experience through community-based experience and services. Surg Neurol Int. 2024;15:200.
46. Community-Based Experiences and Services, University of Ilorin. Student-Centered, Community-Based and Problem-Solving (COBES) Programme. University of Ilorin. 2025. Available at: https://cobes.unilorin.edu.ng/. Accessed on 02 January 2026.
47. Amalba A, Van Mook WNKA, Mogre V, Scherpbier AJJA. The perceived usefulness of community based education and service (COBES) regarding students' rural workplace choices. BMC Med Educ. 2016;16:157.
48. National Universities Commission. NUC parleys professional bodies on multiple accreditation in NUS. NUC News. 2025. Available at: https://www.nuc.edu.ng/nuc-parleys-professional-bodies-on-mutiple-accreditation-in-nus/ . Accessed on 02 January 2026.
49. Agbajileke O. Despite record N3.52tr budget, education funding still poor. The Guardian. 2025. Available at: https://guardian.ng/features/education/despite-record-n3-52tr-budget-education-funding-still-poor/. Accessed on 02 January 2026.
50. Vallée A, Blacher J, Cariou A, Sorbets E. Blended learning compared to traditional learning in medical education: systematic review and meta-analysis. J Med Internet Res. 2020;22(8):e16504.
51. Elendu C, Amaechi DC, Okatta AU, Amaechi EC, Elendu TC, Ezeh CP, et al. The impact of simulation-based training in medical education: a review. Medicine (Baltimore). 2024;103(27):e38813.
52. Squires N, Colville SE, Chalkidou K, Ebrahim S. Medical training for universal health coverage: a review of Cuba–South Africa collaboration. Hum Resour Health. 2020;18(1):12.
53. Sui X, Reddy P, Nyembezi A, Naidoo P, Chalkidou K, Squires N, et al. Cuban medical training for South African students: a mixed methods study. BMC Med Educ. 2019;19(1):216.

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