

## Strategies for health professionals education in Nigeria for 2050

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### Abstract

**Introduction:** The World Health Organization recommends new approaches in healthcare delivery that move away from tertiary care hospitals to initiatives that foster community engagement. Traditionally, clinical aspects of medical education adhere to a master-apprenticeship system that discourages individual thinking and innovation, and leaves learners unprepared to face challenging issues which confront the modern health professional. Such professionals may not be relevant in evolving areas of need in their communities. To improve health systems and outcomes, it is important to consider the relational significance of medical education and healthcare strategies in sub-Saharan Africa.

**Challenges of current and future medical education in Nigeria:** The constant threat of emerging and re-emerging infectious diseases, climate change, population explosion and the rising incidence of cancer and other non-communicable diseases is transforming the healthcare environment in Nigeria. Therefore, medical education in Nigeria must be modified to address our current and future health challenges. The development of new healthcare policies/strategies and medical education must address these issues. Health care workers must be trained them to develop original thought and adapt global advances to solve local medical related problems.

**Global trends in medical education/strategies and possible solutions for sub-Saharan Africa:** Developments that need to be well-established and functional for the progress of health professionals education in sub-Saharan Africa include: Continuing Health Care Education which includes all the ways by which medical personnel learn after formal completion of their training, curriculum review which is innovative and which addresses new forms of healthcare challenges, innovative medical technology that enhances learning by simulation and the development of high quality audiovisual production

development of high quality audiovisual production to permit long distance real time or offline learning. **Conclusion:** A needs-driven medical education, which includes community knowledge and involvement, will lead to the formulation of relevant healthcare strategies which will make health professionals relevant both now and in the future.

**Keywords:** Health professional education, sub-Saharan Africa, curriculum review.

### Résumé

**Contexte :** L'Organisation Mondiale de la Santé recommande de nouvelles approches dans la prestation des soins de santé qui abandonnent les hôpitaux de soins tertiaires pour des initiatives qui favorisent l'engagement communautaire. Traditionnellement, les aspects cliniques de la formation médicale adhèrent à un système de maîtrise-apprentissage qui décourage la réflexion et l'innovation individuelle et laisse les apprenants non préparés à faire face à des problèmes difficiles auxquels le professionnel de la santé moderne est confronté. Ces professionnels peuvent ne pas être pertinents dans l'évolution des domaines de besoins dans leurs communautés. Pour améliorer les systèmes de santé et les résultats, il est important de considérer l'importance relationnelle de l'éducation médicale et des stratégies de soins de santé en Afrique subsaharienne.

**Défis de l'éducation médicale actuelle et future au Nigéria:** La menace constante des maladies infectieuses émergentes et ré-émergentes, du changement climatique, de l'explosion démographique et de l'augmentation de l'incidence du cancer et d'autres maladies non transmissibles transforme l'environnement des soins de santé au Nigéria. Par conséquent, l'éducation médicale au Nigéria doit être modifiée pour répondre à nos défis sanitaires actuels et futurs. L'élaboration de nouvelles politiques / stratégies de soins de santé et la formation médicale doivent répondre à ces questions. Les agents de santé doivent être formés à développer une pensée originale et à adapter les avancées mondiales pour résoudre les problèmes médicaux locaux.



*Tendances mondiales de l'éducation / stratégies médicales et solutions possibles pour l'Afrique subsaharienne:* Les développements qui doivent être bien établis et fonctionnels pour le progrès de la formation des professionnels de la santé en Afrique subsaharienne comprennent: la formation continue en soins de santé qui comprend toutes les façons par lequel le personnel médical apprend après l'accomplissement formel de sa formation, une révision du curriculum qui est innovante et qui répond à de nouvelles formes de défis en matière de soins de santé, une technologie médicale innovante qui améliore l'apprentissage par simulation et le développement d'une production audiovisuelle de haute qualité pour permettre un apprentissage de longue distance en temps réel ou hors ligne.

#### *Conclusion*

Une éducation médicale axée sur les besoins, qui comprend les connaissances et la participation de la communauté, conduira à la formulation des stratégies de soins de santé pertinentes qui rendront les professionnels de la santé pertinents aujourd'hui et à l'avenir.

**Mots-clés :** *Formation des professionnels de la santé, Afrique subsaharienne, révision du curriculum*

#### **Introduction**

The World Health Organization (WHO) recommends new approaches in healthcare delivery that emphasize community engagement rather than treatment in hospitals [1]. In the 21st Century, health professionals are expected to work with community health workers and provide satisfactory healthcare under financially constrained circumstances. Yet, the implementation of policy recommendations that could transform medical education to meet the additional demands of these strategies, and provide an enabling context for addressing community healthcare have remained static. Traditionally, clinical aspects of medical education adhere to a master-apprenticeship system where the fundamental condition for learning is that of an infallible expert who has a set of skills which cannot be communicated but only experienced by a novice [2]. This model may discourage individual thinking and innovation, and leaves learners unprepared to face challenging issues that confront the modern health professional upon graduation. Such professionals may find it difficult to be relevant in evolving areas of need in their communities. To improve health systems and outcomes, it is important to consider the relational significance of medical education and healthcare strategies in sub-Saharan Africa.

#### **Challenges of current and future medical education in Nigeria**

The constant threat of emerging and re-emerging infectious diseases, climate change, population explosion and the rising incidence of cancer and other non-communicable diseases is transforming the healthcare environment in Nigeria [3]. According to a recent United Nations report, Nigeria's population is projected to surpass that of the United States by 2050, to become the third most populous country in the world [4]. These challenges are made worse by the continued migration of human resource for health to other countries [5]. It is therefore evident, that the existing medical education in Nigeria must be modified to address our current and future health challenges.

The need for interventions to strengthen medical education and hence the health security of Nigeria is urgent. Factors contributory to the current state of health insecurity are poor health awareness and adherence to treatment by patients, insufficient health facilities, endemic corruption affecting virtually all sectors in health, the unremitting brain drain, ineffective regulatory bodies, limited political will or guidance, poor policy implementation, increasing levels of poverty and insecurity [4]. Apart from the development of new healthcare policies and strategies, medical education must also be empowered to address these issues. This can be achieved through curriculum reforms in medical education. For healthcare workers to remain relevant in the future of Nigeria or Africa, they will need to be exposed sufficiently to a comprehensive current and future fitted curriculum. Such a curriculum must prepare these HRH to develop critical thinking processes that will enable develop innovative solutions to solve local healthcare and help them adapt global advances to solve local medical related problems on the continent.

#### **Global trends in medical education and healthcare strategies and possible solutions for sub-Saharan Africa**

Nigeria is a fit and proper example of what happens in most of sub-Saharan Africa. The medical education goals for sub-Saharan Africa should be comparable to minimum international standards, and should embrace evidence-based changes in medical advancement:

#### *Continuing Health Care Education (CHCE)*

CHCE includes all the ways by which medical personnel learn after formal completion of their training [6]. CHCE may take the form of teaching at



ward rounds, reading journal articles or even informal discussions with colleagues. In the recent past, formal lectures have formed a major format for CHCE. A study however showed that interactive, learner centered, active learning relevant to the learner's needs has more impact on performance or health care outcomes than formal presentation to a passive audience [7]. Swedish experiences in CHCE among general physicians also indicated that small group sessions are more effective for learning than traditional "lecture-based" education [8]. As such CHCE in sub-Saharan Africa could be structured into small interactive groups that are tasked with delivering education and proffering solutions to current and future healthcare issues.

Currently, CHCE mostly takes place amongst doctors and hardly involves any other health professional (medical sciences) groups. The peculiar problems in Africa requires that the current CHCE method should change and be based on the interests of the various groups/disciplines involved in health education and healthcare delivery. Aside from the recognized health professions, this groups would include biochemist, pharmacist, economist, agriculturist and any other discipline deemed relevant, all of which should be invited for discussions on practical solutions to identified or potential medically related problems. This approach is reflected in a recent supplementary publication of African Journal of Medicine and medical sciences, in which specialists in economics, population strategy, food and nutrition, climate and culture were requested to submit invited reviews towards health security in Nigeria by 2050 [9].

The COVID-19 pandemic is an excellent practical example of a health challenge that should be managed by multi-sectoral approach of health care professionals (doctors, pharmacists, virologists, nurses etc), law enforcement officers, policy makers, manufacturing industries, information management agencies and also by community participation. Going forwards, health professional's education needs to learn from the outcomes of strategies used to manage this pandemic and use this knowledge/experience to modify goals and practices.

#### *Curriculum review*

Medical educationists have introduced many curriculum innovations to address the new forms of healthcare challenges emerging for the coming century. These include professionalism, communication skills, inter-professional teamwork, patient-centered practice, early clinical experience, structured work-based learning with briefing and

debriefing and learning through simulation with actor-patients and high-tech manikins. To achieve this goal, the various curricula for health professional's education (HPE) should be locally sensitive and relevant whilst being of global standards [10, 11]. This is achievable by incorporating the medical humanities into medical education as core and integrated provisions. Health professions education curricula in Nigeria remained static for a long time but recently significantly progress has been made in overwhelming of the training curriculum.

In this regard, the revised medical and dental curricula developed at the College of Medicine, University of Ibadan [12], is currently being adopted by the Nigerian national agency in charge of [medical] education. This document is currently limited to the Medicine and Dentistry programs, but a similar appraisal is being done for the curricula for all biomedical courses in Nigeria. This is to encourage the much-needed cohesive integration of the systems for acquisition of knowledge, skills and attitude in order to reverse the downward trend in African healthcare and subsequent health security. A major review reflected in the Ibadan curriculum is the shift from a 'science-based' to a 'competency-based' curriculum that integrates education and health systems to produce graduates who can contribute positively within health systems anywhere [13]. In other words, there should be emphasis on multimodal integration of concepts – within each professional group, between different health professions and between healthcare workers and other partners in the society. Towards these objectives, reforms in HPE in recent years have led to evolution from traditional methods of instruction to alternatives such as problem-based learning, community-based education and multidisciplinary team-based learning [14, 15].

Curriculum review could also be made relevant to the needs of the country by incorporating outcomes of quality research outcomes into methods of instruction. Research outcomes from properly conducted studies need to translate to evidence-based practices and affect policies. Currently, most high impact research projects are funded by foreign organizations who then hold the rights to the data generated. Rigorous analysis of such big data can yield outcomes which may positively influence change. Therefore, Africa needs to own its research by funding the projects, so that the data can be fully accessible and useful to local researchers and institutions. In the past, Africans were satisfied with any collaboration scheme, just to get their research to a conclusive end. However, there is a recent awareness of knowledge economics and biosecurity



developing on the continent which will gradually re-define collaborations in partnerships and joint projects with foreign funders. These partnerships must be done with equal access to the knowledge derived and the benefits of the knowledge created.

The curriculum should also expose the health professionals to the value inherent in adopting art and medicine as intertwined social concepts. HPE of the future will need to incorporate elements of literature, story-telling, folklore, music, drama, creative writing, poetry and other tools that augment the ability to bring health education as close to the community as is possible [16].

### *Innovative technology*

Internationalization and the concept of the world as a 'global village', is not only based on connectivity online but the unfolding reality that borders will become easier to cross. This means that healthcare professionals must understand the management of local and global diseases using international standards. Traditional Colleges of Medicine in Africa must therefore push for economic and technological development of their countries, for this is the background upon which medical innovative technology can grow.

Cutting-edge technology is always in evolution in the medical sciences and sub-Saharan Africa needs to significantly increase practical application of global informatization, especially regarding simulation technology, as this will be a continuous requirement for healthcare trainers and trainees. This is because actual interaction with patients for training purposes is declining globally and this is leading to greater innovativeness in simulation technology. For example, current technology is replacing human cadaver dissection, introduced by Vesalius circa 1500s, with the virtual cadaver [16]. This means teaching sessions can take place at any time and place and individuals can have unrestricted access to practice. Another advancement is robotic surgery that requires nimble dexterity, and is based on a computational (ICT) framework and could be deployed across borders.

Distance learning is the fastest mode of formal and informal education and includes e-learning, mobile learning and immersive learning environments [17]. Sub-Saharan Colleges of Medicine must develop models for instructional design and invest in requisite infrastructure for high quality audiovisual production to permit real time or offline learning. This modality should also facilitate telemedicine activities between the various colleges, its teaching hospital and the

community. Whilst we wait for this advancement, we can begin with already available platforms like Zoom, WhatsApp or Twitter to share lectures in teleconferencing or document modes, or use Massive Open Online Courses to share lecture materials and grade assignments.

### **Conclusion**

A needs-driven medical education, which includes community knowledge and involvement, will lead to formulation of relevant healthcare strategies and vice-versa. Other systems that are essentially needed for moving sub-Saharan Africa medical education forward include: opening up policy making to both technocrats and end user groups, tackling and overcoming the policy implementation bottle-neck and infrastructure problems with government and non-governmental commitment and cooperation, and having international collaboration that truly seeks to benefit Sub-Saharan Africa

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