A Brief History of Medical Education in Sub-Saharan Africa

G.L. Monekosso, MD

Abstract

Developments in medical education in Sub-Saharan Africa over the past 100 years have been characterized by the continent's unique history. During the first half of the 20th century, the Europeans effectively installed medical education in their African colonies. The years 1950 to 1960 were distinguished by successful movements for independence, with new governments giving priority to medical education. By 1980, there were 51 medical schools in Sub-Saharan Africa. The period from 1975 to 1990 was problematic both politically and economically for Sub-Saharan Africa, and medical schools did not escape the general difficulties. War, corruption, mounting national debts, and political instability were characteristics of this period. In many countries, maintaining medical school assets—faculty members, buildings, laboratories, libraries—became difficult, and emigration became the goal of many health professionals. In contrast, the past 20 years have seen rapid growth in the number of medical schools in Sub-Saharan Africa. Economic growth and political stability in most Sub-Saharan African countries augur well for investment in health systems strengthening and in medical education. There are, nonetheless, major problem areas, including inadequate funding, challenges of sustainability, and the continuing brain drain. The 20th century was a time of colonialism and the struggle for independence during which medical education did not advance as quickly or broadly as it did in other regions of the world. The 21st century promises a different history, one of rapid growth in medical education, leading to better care and better health for the people of Africa.

Downloaded from http://journals.lww.com/academicmedicine by BhDMf5ePHKav1zEoum1tQfN4a+kJLhEZgbsIHo4XMi0hCywCX1AWnYQp/IlQrHD3i3D0OdRyi7TvSFl4Cf3VC4/OAVpDDa8KKGKV0Ymy+78= on 01/14/2021

Too often, we fail to review our own history for the wisdom it can teach and the hazards it can help us avoid. As medical education in Sub-Saharan Africa enjoys a period of rapid growth, it behooves us to reflect on the brief but instructive history of Western medical education in the region.

For more than 50 years I have had the opportunity to practice and teach medicine in Africa. For much of that time I have occupied senior positions in educational institutions, including as faculty at Nigeria's University of Ibadan (1954–1963) and Makerere in Uganda on secondment (1958–1960), as the dean of the Schools of Medicine at Muhimbili Dar es Salaam, Tanzania (1968–69), and as the founding dean of the University Centre for Health Sciences, Yaounde, in the United Republic of Cameroon (1969–1978). I have also been involved in the more political side of health, serving as the World Health Organization's (WHO's) representative in Jamaica, 1980–1985, as director of the Africa Region of WHO (1985–1995), and as minister of public health of Cameroon (1997–2000). During 2008–2010, I served on the advisory board of the Sub-Saharan Medical School Study (SAMSS). I have observed more than half of the years of what might be called the modern era of medical education in Africa. Based on that substantial body of experience, I reflect here on the history of that epoch and share a few thoughts about the future of medical education in Africa.

Dr. Monekosso is professor of medicine emeritus, Faculty of Health Sciences, University of Buea, Buea, Cameroon.

Correspondence should be addressed to Dr. Monekosso, GVT Residential Area–GRA Extension, PO Box 304, Cameroon; telephone: (237) 77-48-06-15; e-mail: globalhealth2202@yahoo.fr.

Acad Med. 2014;89:S11–S15.
doi: 10.1097/ACM.0000000000000355

The Colonial Phase (1900–1960)

During the first half of the 20th century, the Europeans effectively installed medical education in their African colonies. Emphasis was on training African medical assistants, nursing aides, and field assistants who worked under European doctors, to provide health care for European and African civil servants, military personnel, and their families. Benevolent missionaries did their best in the rural areas. Much of the training was done as informal apprenticeships in health centers, clinics, and small hospitals as well as in established health assistants' training schools in a number of locations. Student numbers were small. Medical assistant classes often had no more than 10 or 20 students.

In 1960, only a handful of medical schools existed in Africa. These schools all trained "African physicians"—assistant medical officers (physicians) who worked under the authority of "fully qualified" medical officers (European physicians). Table 1 lists the medical schools existing in 1960 and those founded in the following two decades. In the decade before independence, there was a debate as to whether African countries should continue to train medical assistants and postpone the establishment of medical schools to train African doctors. The deans and professors, who were predominantly foreign, believed that university-level education was indicated for these new countries by raising the standards of entry, teaching, and evaluation to the internationally recognized levels while ensuring that clinical training would also address the health problems of the local populations. In other words, solving local health problems in Africa did not call for a lower level of technology.

During the colonial period, there were few qualified candidates for medical education because secondary education in existing African schools fell short of university entrance requirements. In some colonies, students had to go to Europe to complete secondary education to become candidates for medical school. The number of African places in colonial medical schools was rationed, almost always less than 20. At Makerere, for example, the

Table 1

Formation of Medical Schools in Sub-Saharan Africa, 1896–1980[a]

Country	School name	Founding date
Medical schools founded prior to 1960		
Madagascar	Universite d'Antanarivo	1896
Senegal	Faculté de Médecine, Pharmacie et d'Odontologie	1918
South Africa	Faculty of Health Sciences, University of Cape Town	1919
South Africa	Wits Medical School, University of the Witwatersrand	1919
Uganda	School of Medicine, Makerere University College of Health Sciences	1923
Sudan	Faculty of Medicine, University of Khartoum	1924
Nigeria	Yaba Medical School	1930–1948
South Africa	University of Pretoria	1943
Nigeria	College of Medicine, University of Ibadan	1948
Democratic Republic of Congo	Université de Kinshasa	1954
Democratic Republic of Congo	Université de Lubumbashi	1956
Rhodesia (Salisbury)	College of Health Sciences, University of Zimbabwe	1963
South Africa	Faculty of Health Sciences, Stellenbosch University	1956
Medical schools founded 1961–1980		
Cote d'Ivoire	UFR Sciences Médicales d'Abidjan	1962
Nigeria	University of Lagos	1962
Angola	Faculdade de Medicina, Agostinho Neto	1963
Ethiopia	Faculty of Medicine, Addis Ababa University	1963
Mozambique	Faculty of Medicine, Eduardo Mondlane University	1963
Rwanda	Faculty of Medicine, National University of Rwanda	1963
Congo	Université de Kisangani	1963
Tanzania	School of Medicine, Muhimbili University of Health and Allied Sciences	1968
Madagascar	Tananrive	1963 (Preclinical only)
Ghana	University of Ghana Medical School	1964
Burundi	Bujumbura	1964 (Preclinical only)
Zambia	School of Medicine, University of Zambia	1966
Guinea	Faculté de Médecine Pharmacie et Odontostomatologie, Université de Conakry	1967
Nigeria	Ahmadu Bello University	1967
Nigeria	College of Medicine, University of Nigeria, Enugu Campus	1967
Kenya	University of Nairobi	1967
Benin	Faculté des Sciences de la Santé de Cotonou	1968
Burundi	Faculty of Medicine, University of Burundi	1968
Liberia	A.M. Dogliotti College of Medicine	1968
Cameroon	Faculté de Médecine et des Sciences Biomédicales, Université de Yaoundé	1969
Mali	Faculty of Medicine, Pharmacy and Odontostomatologie	1969
Nigeria	College of Medicine, University of Nigeria, Enugu Campus	1970
Togo	Faculté Mixte de Médecine et de Pharmacie (FMMP), Université de Lome	1970
South Africa	School of Medicine, Faculty of Health Sciences, University of the Free State	1971
Gabon	Faculté de Médecine et des Sciences de la Santé	1972
Nigeria	College of Health Sciences, Obafemi Awolowo University	1972
Nigeria	University of Benin	1973
Niger	Faculte des Sciences de la Sante, Universite Abdou Moumouni	1974
Republic of Congo	Université Marien Ngouabi de Brazzaville	1975
Ghana	School of Medical Sciences, Kwame Nkrumah Univ of Science and Tech	1975
Central African Republic	Faculté de Sciences de la Santé de l'Université de Bangui	1976
Nigeria	College of Health Sciences, University of Ilorin	1977
Nigeria	College of Medical Sciences, University of Maiduguri	1978

(*Table Continues*)

Table 1
(Continued)

Country	School name	Founding date
Nigeria	University of Jos	1978
Nigeria	University of Maiduguri College of Medical Sciences	1978
South Africa	University of Limpopo, Medunsa Campus	1978
Sudan	Faculty of Medicine, University of Gezira	1978
Nigeria	College of Health Sciences, University of Port Harcourt	1979

[a]Sources: Monekosso GL. Report of a Survey on African Medical Schools (July–December 1974). Accra, Ghana: Association of African Universities; 1974; and Mullan F, Frehywot S, Omaswa F, et al. Medical schools in Sub-Saharan Africa. Lancet. 2011;377:1113–1121.

colonial governors of Kenya, Uganda, and Tanganyika would indicate how many African doctors they required per year (typically five to eight per colony), and the faculty board would add five to allow for attrition. Those who passed the final qualifying examinations became "assistant medical officers," supervised by doctors who were serving in the colonial services. Postgraduate courses were not available locally. Young African doctors were required to spend a minimum of five years before being allowed to pursue training for a specialty abroad.

Some well-to-do African families sent their sons to Europe, and many of these individuals returned to open private practices in the capital cities. Although locally trained assistant medical officers often developed high skill levels in managing local health problems, they could not practice independently. There were no brains to drain, no research, no plans for the future. Recruitment of foreign doctors was not actively encouraged, and registration for doctors trained abroad (African or European) was not automatic, which discouraged many non-Africans from remaining for careers in African countries.

The Independence Period (1960–1975)

The years 1950–1980 were characterized by the successful movements for independence in Africa and also by the Cold War. The transition from medical assistants to medical graduates took place during the change from colonial status to independence. The scenario varied according to the colonial regime. The medical assistants of the former Belgian Congo were selectively placed in a special WHO program in Europe that was designed to upgrade their skills. This was an emergency, since on June 30, 1960 (date of independence), there were no qualified Congolese doctors. The assistant medical officers who qualified from the colonial Lagos Medical School were authorized to come to the United Kingdom for additional training and qualifying examinations. The "Médecins Africains" who qualified in Senegal did not have such a smooth ride. Some had to return to medical school to repeat a 5- to 6-year course, as if they had never practiced medicine.

The new governments gave priority to medical education. For example, Cameroon, independent in 1960, requested a WHO mission in 1962 to advise the country on creating a medical school and hosted the first WHO/AFRO conference on medical education in 1966 (Figure 1). In Nigeria, the creation of new states seemed to go hand-in-hand with the opening of state universities, teaching hospitals, and medical schools. Health was an instant priority. Generally, the schools were well planned and -staffed and benefited from high-quality student recruitment and stiff competition. The preindependence schools provided the models and foundation staff for the new institutions. Many new schools benefited from partnerships with Northern institutions (the University of Zimbabwe with the University of Birmingham, for instance, and the University of Nairobi with the University of Glasgow), although these linkages subsequently provided pathways to emigration. By 1980, there were 51 medical schools in Sub-Saharan Africa (Table 1).

A Rockefeller Foundation grant, with support from the Association of American Medical Colleges, enabled an Association of Medical Schools in Africa (AMSA) to convene and meet yearly from 1961 to 1966.[1] AMSA represented Africa at the constituent assembly of the World Federation of Medical Education in 1976.[2] WHO convened meetings of the deans of medical schools and the teachers of public health in 1968, 1972, and 1974.[3] In 1974, the Association of African Universities, with financing from the Canadian Agency for International Development, launched a survey of Sub-Saharan African Medical Schools.[4] The survey aimed to gather information that would generate a picture of medical education in Sub-Saharan Africa, thereby facilitating student and staff exchanges.

Based on my accumulated experience in medical schools in Anglophone and Francophone Africa, I was invited to undertake the survey. Questionnaires were sent to 25 universities in Tropical Africa. I had visited 10 of the schools prior to the study and 10 more during the study in the period of July to September 1974. The study found considerable variation among these tropical African medical schools. Historically, they belonged to four colonial traditions—British, French, Belgian, and Portuguese—but all were university oriented and aimed at producing, as a priority, general duty medical officers. Some were quite large with more than 200 full-time teachers at Ibadan, then 25 years old; others, such as Cotonou (Benin) were quite small, with 11 full-time staff in its third year of activity. The majority still had small classes of 20 to 50 students per class. Student intake was increasing rapidly at many of the schools in a determined effort to make up for lost time.

The report dealt with the way medical schools were organized, the objectives of medical education, the organization of teaching programs, and methods of student evaluation. It concluded:

Figure 1 In September 1975, the University of Yaoundé in Cameroon graduated its first medical school class. The group of academicians in this photo was gathered to examine the students and celebrate the milestone. Dr. Hafdan Mahler, director general of the World Health Organization (first row, fourth from the left), was present for the occasion as was Professor G. L. Monekosso, the founding dean of the school (first row, seventh from the left.) Also attending are representatives of seven other African countries, France, and the United States.

> None of the medical schools in the region can be regarded as self-sufficient; there is great variation in the numbers of staff, number of students and available teaching support and equipment. Each school has its special strengths. Determined to resolve these problems in their own way, these various faculties have much to gain in exchange of staff, students, and teaching materials.[4]

The Fall-Back Period (1975–1990)

The period from 1975 to 1990 was a problematic political and economic time for Sub-Saharan Africa, and medical schools did not escape the general difficulties. War, corruption, mounting national debts, political instability, and "structural adjustment programs" (severe salary caps affecting health workers) imposed by the International Monetary Fund all contributed to a negative environment in many countries that was in marked distinction to the optimism and expansiveness that characterized the "Independence" years. Only 6 new medical schools were founded during the 1980s, compared with the opening of 38 schools in the previous 20 years.[5] Emigration became the goal of many health professionals as national economies and national aspirations spiraled downward. In many countries, the maintenance of medical school assets—faculty members, buildings, laboratories, libraries—became difficult.

The Cold War contributed a particular chapter to African medical education. The Soviet Union launched a special program to train doctors for the newly independent African countries. Young African students were admitted to a special medical program in the USSR, many without having completed a full secondary education program. After a preparatory language course, they studied medicine and returned as graduates to their respective countries. It was soon observed that many of these graduates were deficient in basic medical capabilities. Some were employed as interns; Cameroon simply classified them as nurses. In Tanzania, the government designed a remedial program for these graduates that was tailored for their particular clinical weaknesses.

The Scale-up Period (1990–Present)

The past 20 years have seen rapid growth in the number of medical schools in Sub-Saharan Africa. The Sub-Saharan African Medical School Study (SAMSS) of 2009 documented the presence of 168 medical schools, the majority of which opened in the period 1990–2009.[5] Many countries now have more than one medical school, and even the smallest states have opened schools. Faith-based and private not-for-profit organizations as well as proprietary medical schools have arrived on the scene. For many, the gestation period has been short—as little as several months or a year. Some have been opened "illegally"—that is, without government sanction. Hard pressed to meet rising demand, some governments have expanded publicly owned medical schools, often mandating class-size expansion without providing additional resources.

Postgraduate training in medical and surgical specialties has grown slowly, with many countries adopting the master of medicine (MMed) as the university designation. Professional (external) certification started as early as 1973 with the inauguration of the West African Postgraduate Medical College. A number of certifying bodies have since been developed, including the regionally important College of Surgeons of East & Central Africa.

SAMSS also found that the leading challenges to medical education scale-up are weak infrastructure and faculty

shortages. The study documented broad-based insufficiencies in libraries, laboratories, classrooms, computer accessibility, available bandwidth, and student hostels. Faculty problems included insufficient candidates, poor compensation, high teaching and patient loads, external migration, and internal relocation to nongovernmental organizations. Coordination between ministries of education and health, the challenges of graduate retention, and the relevance of the curricula to national needs were also common problems documented by the study. SAMSS also documented many positive attributes of medical education in the region. These included the adaptation of many new curricular innovations such as problem-based and community-engaged learning, the growth of postgraduate medical education in many schools, growing research experience and funding, and a robust set of international partnerships.

The past decade has seen international commitment to funding for medical education increase considerably. When the international donor community concluded that the battle against AIDS, malaria, and TB could not succeed without a sufficient medical workforce, global investment in Sub-Saharan African medical education increased appreciably. The U.S.-funded Medical Education Partnership Initiative (MEPI) is a prime example of this important development, but aid agencies in the United Kingdom, Norway, and Japan, among others, also have supported medical education scale-up. This is a welcome development and provides hope for a better medical future.

Observations

This brief review of developments in medical education in Sub-Saharan Africa over the past 100 years is a positive one. Although the countries of the region lag behind the developed world in the size of their medical education enterprises, the durability and accomplishments of many of the early schools, combined with the current rate of expansion and creativity, give reason for pride and hope. There are, nonetheless, major areas of challenge derived from our history that warrant consideration.

Private versus public medical schools

Although most medical schools in the region are public, SAMSS found that 22% of schools are private. (This does not mean that 22% of students attend private medical schools, since the private schools are smaller than their public counterparts.) The private schools are for-profit and not-for-profit, while most of the latter belong to faith-based organizations, which, like the older public institutions, deliver services to the community. The existing private schools in Africa are mostly small and hurriedly set up institutions. Although publicly owned medical schools cannot at present satisfy the numbers required for African populations, additional private efforts should be based on substantial partnerships with major endowments as we have seen in Europe and the Americas.

Sustainability of innovations

MEPI, like many other educational support initiatives, has provided external funding for largely internal innovations. Different from colonial-era educational initiatives, most of the externally supported medical education investments of today emphasize African leadership and are aware of local/national needs. Nonetheless, sustainability will be an issue in all of these projects, and we must be careful to build programs that address the African reality now and in the future. We will hope for continued international support, but institutional commitment and, most important, increased support from national governments will be key.

Slowing the brain drain

The educating of more doctors with greater competencies in Africa, only to have them depart at a continued high rate, would be an enormous loss for Africa. We must slow the brain drain. This should begin with admitting candidates to medical school who are interested in community service. However, many students in schools whose curricula are designed with an eye toward the epidemiology and technology of industrial countries will have decided to migrate even before they graduate. Expanding locally based postgraduate training programs and addressing medical practice issues might do a lot to keep graduates at home. Graduates who see only limited opportunity, bad management, and poor terms of service in practice will want to emigrate. To combat this, national authorities have the responsibility of providing support for medical doctors that will make local practice a reasonable option for them.

Conclusions

Sub-Saharan Africa is a rich region with a growing and ambitious population. The 20th century was a time of colonialism and struggle for independence during which medical education did not advance as quickly or broadly as it did in other regions of the world. The 21st century promises a different history, one of rapid growth in medical education that will lead to better care and better health for the people of Africa. One hopes that an understanding of our history can help guide us toward that end.

Acknowledgments: The author thanks Fitzhugh Mullan for his assistance in drafting this article and Sinit Mehtsun for editorial help.

Funding/Support: None reported.

Other disclosures: None reported.

Ethical approval: Reported as not applicable.

References

1. Khogali A. Association of Medical Schools in Africa. J Med Educ. 1996;40:999–1000.
2. Karle H, Walton H, Lindgren S. History of the First Forty Years, 1972–2012. World Federation for Medical Education Web site. http://www.wfme.org/standards/bme/doc_details/79-wfme-history-of-the-first- forty-years-1972–2012. Accessed April 18, 2014.
3. Gunn SWA. The third ten years of the World Health Organization: 1968–1977. Bull World Health Organ. 2010;88:876.
4. Monekosso GL. Report of a Survey on African Medical Schools (July–December 1974). Accra, Ghana: Association of African Universities; 1974.
5. Mullan F, Frehywot S, Omaswa F, et al. Medical schools in Sub-Saharan Africa. Lancet. 2011;377:1113–1121.