

# The Sub-Saharan African Medical Schools Study: Data, Observation, and Opportunity Report Brief

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## Introduction and Background

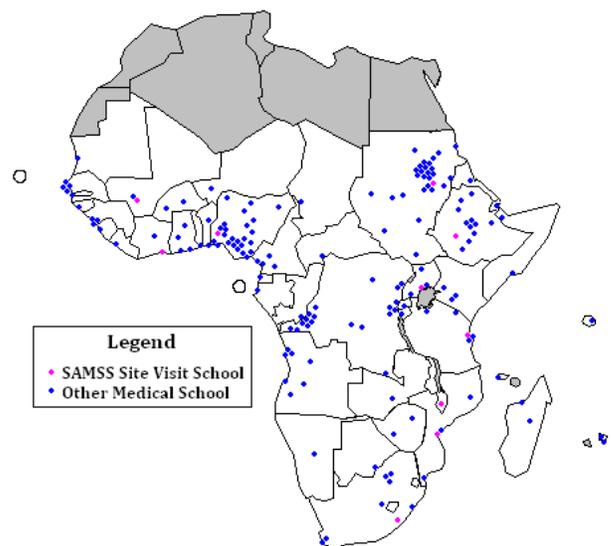
Africa suffers 24% of the world's total burden of disease but has only 3% of the world's health workforce[[endnote 2](#)]. Many types of health workers are required to maintain a working health system, but no health system will function well without an adequate corps of doctors to serve as clinicians, managers, teachers, and policymakers. This realization has garnered global attention in recent years. Sub-Saharan Africa (SSA) has an estimated 145,000 physicians to serve a population of 821 million. As a whole, SSA has a physician to population ratio of 18/100,000, as compared to other countries, such as India (60/100,000), Brazil (170/100,000), and the United States (270/100,000). Africa's poorest countries face even greater physician workforce shortages.

The very low physician to population ratios in Sub-Saharan African countries are a result of a number of factors including small numbers of medical schools with modest outputs of students. There are 169 medical schools in the 48 countries of Sub-Saharan Africa. These schools are estimated to graduate 10,000 physicians per year. The challenges of medical workforce development are compounded by the subsequent emigration of many graduates to North American, European and Persian Gulf countries. Any continental effort intended to stabilize and improve health system functioning in Sub-Saharan Africa must consider the options for increasing the productivity of medical education in the region and improving the retention of the graduates of all schools.

In order to make significant gains in the size of the physician workforce in the countries of SSA, attention must be focused on the role and the results of medical education as an essential element of broader health workforce strategy. Interest has been building in strategic investment in African medical education, but little is known about the status of this education or the trends within it on a continental level. This lack of pan-African data and perspective has been a problem for organizations intent on following evidence-informed policies to address physician workforce shortages.

## Sub-Saharan African Medical School Study

The Sub-Saharan African Medical School Study (SAMSS) is an examination of the state of medical education in Sub-Saharan Africa including all countries, all identified and recognized schools, and all languages of instruction. The study was undertaken to help provide a platform of understanding regarding the status, trends and present and future capacity building efforts for educators, policy makers, and international organizations. While the results of the Study provide valuable and actionable information about Sub-Saharan African medical education, the study is "landscaping" in nature. It provides detailed insight into certain schools and general information about others. The Findings and Recommendations of the Study address general themes and promising innovations. It is intended that they will increase practical knowledge about medical education in SSA in order to better inform educators, national policy makers and potential funders about the challenges and opportunities in the field. These stakeholders can leverage the information from this study to increase the capacity of African medical schools and encourage the retention of doctors, which in turn would improve the health of their countries' populations.



## SAMSS Research Plan

The work of SAMSS began with a comprehensive literature review and a series of key informant interviews to gain a complete, overall picture of medical education in SSA. Primary data was gathered using two techniques; site visits of selected schools and a survey of all identified schools. Site visits were made to ten medical schools gathering onsite and largely qualitative information about each school in its national context. The selected schools represent a mix of geography, language of instruction, age of school, ownership type, and curriculum types, chosen as a group to reflect the continental variability of these institutions. The participating schools are:

SAMSS Participating Schools	
College of Medicine, University of Ibadan (Nigeria)	The Catholic University of Mozambique Faculty of Medicine
College of Medicine, University of Malawi	Walter Sisulu University School of Medicine (South Africa)
Hubert Kairuki Memorial University (Tanzania)	University of Cocody School of Medicine (Cote d'Ivoire)
Jimma University School of Medicine (Ethiopia)	University of Gezira Faculty of Medicine (Sudan)
Makerere University School of Medicine (Uganda)	University of Mali Faculty of Medicine

Site visit teams included two members of the Secretariat and two members of the Advisory Committee. Site visits followed a semi-structured interview protocol, and included meetings with the medical school administrative leadership, faculty members, students, and clinical instructors, as well as public officials at the ministries of health and education and the national medical council or equivalent. Capacity development, innovation, and retention were constant themes in all visits. The site visits took place between May, 2009 and February, 2010. Each site visit concluded with the visitors delineating a series of findings concerning the school, its challenges and successes.

The second data gathering instrument was a descriptive survey including quantitative and qualitative questions sent to all identified SSA medical schools. The requested information included institutional characteristics, funding, students, faculty, curriculum, school infrastructure, and barriers to scaling up the numbers and quality of medical doctors trained. Questionnaires also provided space for qualitative inputs from respondents. A response rate of 72% (105 responses to 148 surveys) was achieved. The survey study was coordinated and the questionnaires reviewed by a research team at the University of Pretoria in conjunction with the Secretariat at GWU.

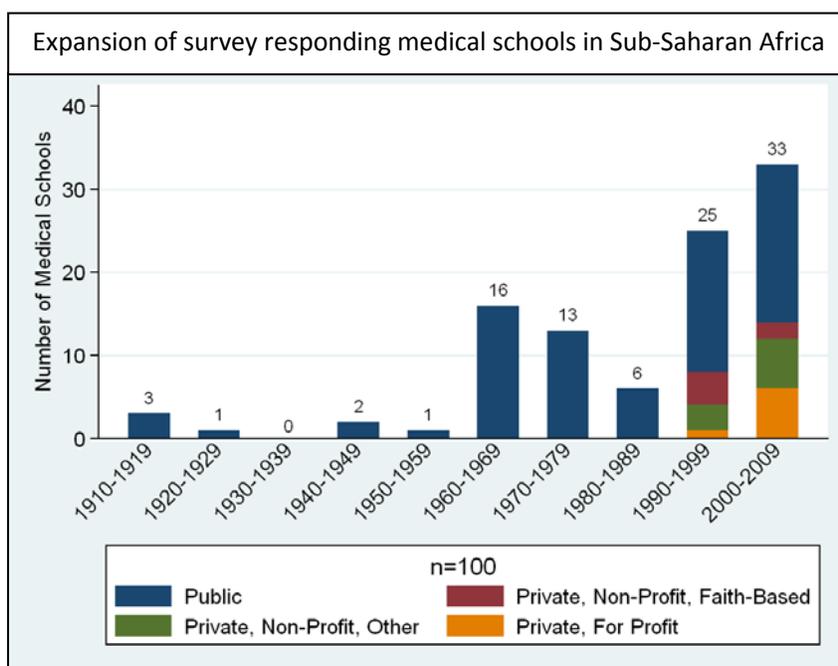
Following the final site visit and the close of the survey study, the Secretariat grouped, organized and prioritized all of the site visit findings and performed a descriptive analysis of the survey results. After extensive consultation with the advisory committee, 14 issues were endorsed as the final SAMSS Findings. These are divided into three groups: general findings, challenges, and innovations.

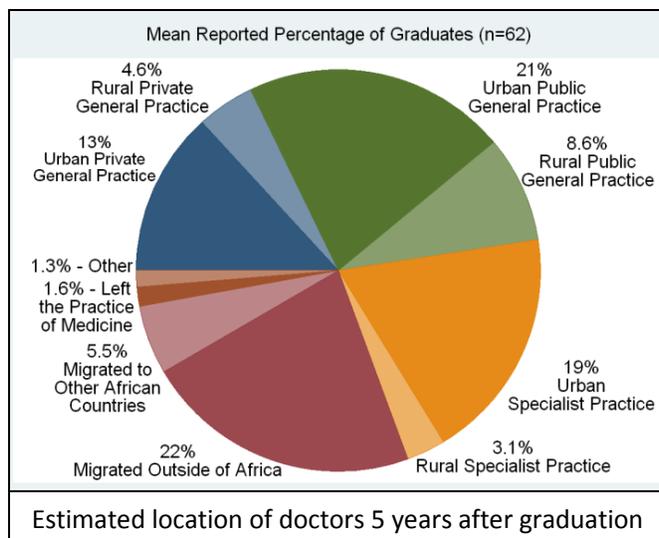
## SAMSS Findings

### General Findings

#### 1) Many countries are prioritizing the scale up of medical education as part of overall health sector strengthening.

There is a high level of interest in expanding and improving medical education in Sub-Saharan Africa. In many cases, expansion is being advanced by national, regional and local governments – drafting long term plans, making major financial commitments, and focusing on the retention and distribution of medical graduates. This has resulted in substantial positive energy in many medical schools. In countries where governments have national plans for the scale up of human resources for health, medical education and physician capacity are benefitting.





## 2) Physician “brain drain” is a special problem for medical education.

The emigration (external brain drain) of faculty members and specialized doctors poses a particular problem for the stability and growth of medical education. Internal brain drain, or loss of physicians and medical school faculty to non-governmental organizations (NGOs), is an additional challenge to medical education and public health care systems. Medical schools have difficulty competing with NGO salaries and benefits.

## 3) Accreditation and quality measurement are important developments for standardizing medical education and physician capabilities.

Many countries have instituted accreditation policies for medical schools and some have developed certification standards for doctors. While these are not uniform, they represent significant benchmarks for medical education

and important efforts to standardize the quality of medical training and physician practice. There are also some efforts to create regional standards which would provide economies of scale in testing and the ability to share evaluation resources.

## Challenges

### 4) The status of the country’s health system affects medical education and physician retention.

In some countries there is a mismatch between the number of medical students trained and the number of doctors the government can employ, creating a failure of absorption and contributing to physician emigration. In many countries a private sector is developing which may increase physician absorption, but the preponderance of jobs for medical graduates remains in the public sector. Therefore, positions available, reasonable compensation, good management, opportunities for advancement and further training, and personal security all are critical to the retention of medical graduates. Further, lack of infrastructure (clinical supplies, IT, basic utilities) can discourage physicians from practicing in rural areas.

### 5) Coordination among ministries of education and ministries of health improves medical schools’ ability to increase health workforce capacity.

Ministries of education fund medical schools, effectively determining the number of doctors available for practice. Ministries of health hire medical graduates and are responsible for national staffing of health care systems. Coordination between the ministries of education and health for the purposes of planning, budgeting, and managing educational outcomes is essential and often not as effective as it might be.

### 6) Shortages of medical school faculty are endemic and problematic.

Despite innovations at many schools to improve faculty recruitment and retention through financial and nonfinancial incentives (such as salary top ups, research support, housing, educational support for families), substantial and long term faculty scarcities remains a major barrier to medical school expansion. Areas that are particularly problematic are the basic sciences, where few scientists are trained, and specialty physicians, whose numbers are few and for whom emigration is a constant threat. Some schools rely heavily on expatriate faculty from Europe or North America but this is seen by all as a temporary solution.

### 7) Problems with infrastructure for medical education are ubiquitous and limiting.

Medical schools are demanding institutions. They require basic services such as an adequate physical plant and a dependable source of power as well as laboratories, classrooms, hostels, teaching aids, books, libraries, journals, computers, connectivity, and clinical teaching sites. Some schools have been innovative in developing their own income generating activities in order to support education activities. However, infrastructure continues to pose a major educational challenge in many settings and warrants strategic attention and investment.

### 8) Variability in secondary school quality creates challenges in medical school admissions.

The variability of secondary education in many settings presents a problem for medical educators, particularly in increasing the number of students from rural and underserved areas. Some schools have implemented pre-university preparatory programs to ready students for the medical school curriculum. However, preparatory programs are an additional cost burden for medical schools and students.

## Innovations

### 9) Educational planning that focuses on national health needs is improving the ability of medical graduates to meet those needs.

At government and individual school levels, increasing emphasis is being placed on educational curriculums focusing on priority health needs of the country. Context-focused approaches to medical education are improving the ability of graduates to address national health problems. Many countries now require national service from physicians after graduation, effectively providing physicians to rural and underserved communities in return for the educational and vocational benefit of a medical education.

### 10) International partnerships are an important asset for many medical schools.

Many medical schools have developed partnerships with medical schools, universities, and funding organizations in other countries. These partnerships support teaching, service and research activities, through visiting faculty, program development, and research collaborations.

### 11) Impressive curricular innovations are occurring in many schools.

There are significant areas of curricular and teaching innovation taking place at many schools designed to meet local and regional health care needs. Innovations often involve critical thinking skills and community-based education (CBE), both of which reflect innovations taking place globally in medical education. These innovations address regional needs by teaching problem-solving skills for work in any setting and by taking learning to communities where health needs are greatest. Other advances include the teaching of family medicine and public health and plans for the use of telehealth and distance learning when bandwidth problems can be solved.

### 12) Beyond the creation of new knowledge, research is an important instrument for medical school faculty development, retention, and infrastructure strengthening.

While research remains limited at most medical schools due to limited funds and lack of experienced faculty, schools that have succeeded in establishing funded research enterprises, benefit from a significant positive effect on faculty development and retention. Some schools have also demonstrated that research revenues can be used to further strengthen the school's educational infrastructure.

### 13) Private medical schools hold promise for adding to physician capacity development.

Secular and faith-based, not-for-profit medical schools are open and graduating physicians and contributing to national workforce development. Private schools have special challenges including reliance on tuition, optimizing government and international linkages, sustainability and growth over time.

### 14) Post-graduate medical education is an important element of a national health system development strategy.

The presence of post-graduate training programs is an important aspect of a country's medical education system and prospects for physician retention. The principle reason cited by ambitious medical graduates for emigrating is the pursuit of post-graduate training. Local residency programs focused on priority national health needs are both a mechanism for developing national capacity and a way of retaining medical graduates.

## SAMSS Recommendations

Strong health systems are central to the attainment of health equity, and lack of human resources is a key obstacle to the attainment of strong health systems. Physicians are a core component of the human resource pool, and Sub-Saharan Africa needs more physicians while ensuring the quality and relevance of medical school graduates. It also needs strong medical schools in Africa which are accredited to assure quality, well-resourced, and relevant to national health needs. Therefore the SAMSS team proposes the following set of recommendations to medical schools, professional associations, governments, regional bodies, international partners, and donors:

<b>1. Launch Campaigns to Develop Medical School Faculty Capacity Including Recruitment, Training, and Retention</b>
<b>2. Ramp up investment in Medical Education Infrastructure</b>
<b>3. Institute Structures to Promote Inter-Ministerial Collaboration for Medical Education</b>
<b>4. Fund Research and Research Training at Medical Schools</b>
<b>5. Promote Community Oriented Education Based on Principles of Primary Health Care</b>
<b>6. Establish National and Regional Post-Graduate Medical Education Programs to Promote Excellence and Retention</b>
<b>7. Establish National or Regional Bodies Responsible for Accreditation and Quality Assurance of Medical Education</b>
<b>8. Increase Donor Investment in Medical Education Aligned with National Health Needs</b>
<b>9. Recognize and Review the Growing Role of Private Institutions in Medical Education</b>
<b>10. Revitalize the Association of Medical Schools in Africa</b>