

VIEWPOINT

New Medical Schools in Africa: Challenges and Opportunities. CONSAMS and Value of Working in Consortia

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Q1 Africa bears 24% of the world's burden of disease but harbors only 3% of its health care workers. To cope with this disproportionate burden of disease, the continent's health workforce requires adequate capacitation. To achieve such capacitation, governments and global funding agencies like the President's Emergency Plan for AIDS Relief have decided to support medical school development, both established and new medical schools. By some estimates more than 100 new medical schools will be established in Africa over the next decade. These new medical schools face daunting challenges yet are also presented with some unique opportunities. This article explores some of these challenges and opportunities and suggests how medical schools may function most effectively toward this end by working together in consortia (like the Consortium of New Southern African Medical Schools [CONSAMS]).

A seminal report in *The Lancet* in 2010¹ recommended that medical schools could most effectively achieve health care strengthening and capacitation by working, not in isolation, but together in "networks, alliances, and consortia." CONSAMS was created initially among a group of 5 new medical schools in southern Africa (in Namibia, Zambia, Botswana, Lesotho and Mozambique) together with 2 facilitating northern partners (at Vanderbilt

University in the United States and Oulu University in Finland) that sought to support each other through south-to-south and north-to-south collaborations, and the sharing of faculty, resources, and innovations.

The *Lancet* report presents a compelling argument for new medical schools, suggesting that they can be more agile in adapting to "rapidly changing local conditions (by) drawing on global resources" compared with established schools that may be "encumbered by curricular rigidities, professional silos, static pedagogy (and) insufficient adaptation to local contexts." Traditional models of medical education are also generally built on the foundation of a "curriculum" instead of "competencies" that arise directly from the specific health systems and needs of the local contexts. Many established medical schools in Africa have derived their curricula and pedagogies from European colonial era models. These curricula were imposed on the African schools without taking into account the local population's needs and environmental contexts. In their insightful book *Medical Education for the Future; Identity, Power and Location*, Bleakley et al (2011) cautioned that, "medical educational strategies cannot be cooked up in [Western] Universities and then exported. They must be context specific and fit the purpose, formulated in the heat of practice."²

The authors declare they have no conflicts of interest.

For more, see documentary, *A Doctor of My Own*, with preview at <http://adoctorofmyown.wordpress.com>.

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MEDICAL EDUCATION FOR THE AFRICAN CONTEXT

The approach of CONSAMS has been to develop medical competencies for new African medical schools that arise from this “heat of practice.” Deriving such competencies from the health systems and needs requires an intimate understanding of local contexts. Instead of compiling medical curricula based on educational theories and pedagogies, educators should consider the local health care settings in which they are educating students for practice. An example of this approach occurs at the University of Namibia School of Medicine (UNAMSoM), where students in their third year translocate for some months to the rural impoverished areas in the north of the country to live among the indigenous families and learn about their lifestyles, diets, and medical issues. Working in this “heat of practice,” students come away with an enhanced understanding of the country’s health care challenges, and the kinds of competencies required to work in rural contexts.* Although some medical schools in high-income countries (HICs) do have rural health programs, they are a rarity and often are offered as elective rather than required courses as they are at the CONSAMS school.³

LEADING CHANGE THROUGH “INTERDEPENDENCE” AND “TRANSFORMATIVE LEARNING”

The report in *The Lancet* proposed that health care strengthening and capacity-building in resource-limited settings should be guided by 2 desirable outcomes: “interdependence” and “transformative learning.”

Interdependence is inherent in the structure of consortium schools like CONSAMS as they are in frequent contact with each other, sharing resources, faculty, and innovative programs and ideas. Interdependence also serves to facilitate change and innovation—the CONSAMS schools, instead of struggling in isolation, draw strength from one another and are spurred to change through the change they see occurring at partner schools.

Transformative learning, *The Lancet* suggests, is also achieved as an outcome of the improvements in education and is thus linked to the “interdependence” that is achieved through networks, alliances, and consortia. The report advocates “transformative learning” to produce the “enlightened change agents” necessary for health care strengthening. An example of such a

transformative learning program that produces change agents is the One-Student-One-Family program created by the CONSAMS partner, Universidade Lurio in Mozambique. Students in this program are each paired for the duration of their medical degree with a particular family in a rural community so that the student gains a deeper understanding of the family’s medical issues, and can serve as their health advocate and thus as a change agent. The mutual learning and relationship of trust that develops between the student and the family is transformative, leading to change and strengthening in the delivery of health care.

INTER- AND TRANSPROFESSIONAL PROGRAMS

Another route toward improving health worker capacitation is through the promotion of inter- (and trans-) professional programs. *The Lancet* document calls for “transprofessional education” that includes workers outside of the traditional health professions such as community workers, traditional healers as well as professionals and other volunteers. The Lurio University medical school program includes community health workers in the delivery of health care. Such inclusion into the health care system of workers from other health sectors and professions is aimed at health care strengthening that can be effective particularly in resource-limited settings.

The University of Oulu in Finland, a northern partner of CONSAMS, has developed several inter-professional programs (I-NEXT STEP) with UNAMSoM, Copperbelt University Medical School in Zambia, and Lurio University Medical School. These programs involve innovative pedagogies between students in medicine, nursing, pharmacy, and optometry that aim ultimately to improve the quality and accessibility to health care within communities. The collaborative networks of CONSAMS therefore make health workers feel more interconnected and this may ultimately promote health worker retention in Africa.⁴

RETHINKING ADMISSIONS POLICIES

Traditional admissions policies in medical schools have generally been based on *academic merit*—a term that in itself is not always easy to quantify and qualify. This has placed applicants from rural settings with less access to education at a competitive disadvantage. Ultimately, these policies also

have resulted in deficiencies of health workers in rural areas because students from urban areas are less likely to practice in such rural settings. Of central relevance to health worker capacity-building are medical school student admissions policies. Questions have long been asked as to whether admissions policies are equitable or whether they favor applicants from affluent families. In the United States, for example, it is known that 75% of medical students derive from the upper wage-earning quintile of the population.⁵ An associated question is whether, and how, admission policies affect health worker capacitation and retention by serving in the long run to retain health workers in the country, or whether they aggravate the “brain drain.”

UNAMSoM has taken an innovative approach toward solving this problem by introducing a quota system of admissions in which each region of the country is allocated a quota of student admission slots. A quota system that fixes the number of applicants from each geographic area levels the playing field and may arguably be less susceptible to interference by those in power. Students coming from rural areas also generally have a greater tendency to return to practice in those areas.^{4,6} There is strong evidence from various countries that “rural origin” among medical students is associated with subsequent rural practice.^{7–10} With regard to rural medicine in Australia, Strasser wrote: “evidence shows that the three factors most strongly associated with entering rural practice after completing education and training are a rural upbringing, positive clinical experiences at the prevocational level, and specific post-vocational training for rural practice.”¹¹ UNAMSoM’s innovative quota-based admissions policy that targets students living in rural areas is thus designed to promote physician retention in rural areas.

Admitting students outside of the traditional parameters of academic merit inevitably raises the question whether it will lead to graduation of less competent physicians and thereby compromise medical care. This remains an unproven assumption.^{4,12} Effective medical practice in rural settings does not demand a medical specialist with more than a decade of education and training. Recent investigations have demonstrated that nurse practitioners working in primary care settings can provide care at a level equivalent to that provided by trained physicians—but at half the length of time and cost associated with training a physician.¹³ In rural contexts in countries like Namibia and Mozambique,

nurses and “medical officers” (similar to physician assistants in the United States) reportedly provide appropriate (and often excellent) care to patients at a level virtually equivalent to that given by physicians.

CONTEXT APPROPRIATE ACCREDITATION STANDARDS

A major debate in global health professional education revolves around medical school accreditation standards. The complex accreditation standards developed over decades in the United States and Europe may not be feasible, or even appropriate, in the African context. As Bleakley et al. (2008) stated with regard to the globalization of standards for accreditation: “At its extreme, this emphasis on standardizing risks echoing the homogenizing process of Western-inspired ‘McDonaldisation.’ In this case, however, what is being traded in the global marketplace is knowledge rather than hamburgers.”¹⁴ We believe that African medical schools may need to develop their own context-appropriate standards of accreditation. Bleakley et al. (2011) draw attention to the “nervousness about not being seen to conform to Western educational imperatives” that permeates medical institutes in some developing countries and drives them to seek US and European standards of accreditation.² Although the exportation of US medical education and accreditation systems to Middle Eastern and South Asian countries has reportedly become a source of revenue for some American medical organizations (e.g., the sale of standardized examinations to these countries; the fee-based acceptance of residents and “observerships” at a growing number of medical schools), this is not the model favored by CONSAMS. Instead, CONSAMS has established a network of external examiners tasked with developing feasible accreditation standards appropriate to the regional contexts of medical practice. The CONSAMS schools are intent on developing high context-specific accreditation standards rather than the wholesale importation of Western accreditation systems, or conforming to the drive toward an international accreditation system and medical curriculum.

DEVELOPING SUSTAINABLE CONTEXT- LINKED RESEARCH PROGRAMS

The need for context-specific education extends also to scientific and medical research. Physicians and

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319 research workers in African countries may experi- 372
 320 ence a greater sense of connectedness to their 373
 321 work if solutions to health challenges are discovered 374
 322 through relevant context-linked research. Currently, 375
 323 most global biomedical research is not conducted in 376
 324 regions with the highest global burden of disease. 377
 325 Resnick (2004) refers to the “90/10 divide” where 378
 326 “less than 10% of the world’s biomedical research 379
 327 funds are dedicated to addressing problems that 380
 328 are responsible for 90% of the world’s burden of 381
 329 disease.”¹⁵ 382

330 A major goal of CONSAMS is to facilitate 383
 331 research capacitation among its partners. Develop- 384
 332 ing research capacity in African medical schools 385
 333 we believe will lead to health worker retention since 386
 334 health workers interested in research may otherwise 387
 335 leave for countries with more sophisticated facilities. 388
 336 For this reason, both the Wellcome Trust and the 389
 337 National Institutes of Health (NIH) have recently 390
 338 provided competitive but generous research grant 391
 339 awards to African countries (Wellcome DELTAS 392
 340 grants; NIH 2015 research awards to Medical Edu- 393
 341 cation Partnership members). All the CONSAMS 394
 342 schools have stressed the importance of developing 395
 343 relevant research. Such research includes the major 396
 344 infectious diseases in the region (HIV, tuberculosis, 397
 345 malaria) for which global grant funding may be 398
 346 available and for which collaborations with US 399
 347 and European institutions can be developed. How- 400
 348 ever, also of research interest are the emerging non- 401
 349 communicable diseases, diseases affecting local 402
 350 resources of livestock and wildlife, and the study 403
 351 of indigenous plants as medicinal sources. Providing 404
 352 such ongoing career support for research beyond 405
 353 graduate school is also part of continuing profes- 406
 354 sional development (CPD). Providing efficient CPD 407
 355 has been shown not only to increase job satisfaction 408
 356 but also to support rural recruitment and to promote 409
 357 physician and health worker retention.^{16,17} The 410
 358 CONSAMS schools have therefore set as a primary 411
 359 goal the development of long-term and sustainable 412
 360 research agendas not only as inherently essential to 413
 361 their educational mission but also as part of their 414
 362 CPD programs. 415

363 Although some new medical schools, like 416
 364 UNAMSoM, have fairly well-developed research 417
 365 facilities, others lack research infrastructures. This 418
 366 deficiency applies not only to laboratory space and 419
 367 equipment but also to administrative infrastructures 420
 368 such as research review committees and research 421
 369 grant offices that could manage the complexities 422
 370 of submitting grants. All the schools require 423
 371 research training and capacitation. The 424

372 CONSAMS research committee considers most 373
 373 critical the lack of research funding, grant-writing 374
 374 expertise, and collaborative partners. Research 375
 375 requires costly equipment and reagents that requires 376
 376 substantial funding. Expertise in grant writing is 377
 377 essential to obtain such competitive awards. The 378
 378 northern partners of CONSAMS with their institu- 379
 379 tional research experience are playing an important 380
 380 role insofar as they can assist with grant writing 381
 381 and facilitate collaborations. A challenge with sparse 382
 382 resources is that research faculty often are overbur- 383
 383 dened with administrative and teaching duties, 384
 384 which leaves little time for research. 385

385 Unsettling for long-term research capacitation is 386
 386 the lack of postgraduate research programs. Few 387
 387 students choose research as a career given the 388
 388 limited local research opportunities. Unlike estab- 389
 389 lished research institutions in medical schools like 390
 390 those in South Africa and Makerere University in 391
 391 Uganda, new medical schools face a challenge in 392
 392 attracting research students even when they have 393
 393 appealing facilities like UNAMSoM’s. Thus 394
 394 although CONSAMS has a clear focus on research 395
 395 capacitation, numerous challenges remain in achiev- 396
 396 ing this goal. 397

398 CONCLUSIONS 399

400 We see that new medical schools in Africa face 401
 401 daunting challenges but are also presented with 402
 402 unique opportunities. The challenges and associated 403
 403 opportunities include: the development of context- 404
 404 appropriate undergraduate medical curricula; the 405
 405 establishment of postgraduate medical training pro- 406
 406 grams with appropriate contextualized accreditation 407
 407 standards; the development of equitable admissions 408
 408 policies and transformative education programs that 409
 409 result in health worker retention; and the develop- 410
 410 ment of rigorous sustainable research programs. 411
 411 Working together in consortia like CONSAMS, 412
 412 new medical schools are demonstrating that they 413
 413 possess the agility to actuate the multifarious oppor- 414
 414 tunities emerging in global health technology and 415
 415 education. Collaborating in this consortium has 416
 416 reduced isolation of the schools and facilitated 417
 417 change and innovation. Innovations that arise 418
 418 from resource-limited settings tend to have a 419
 419 built-in robustness as they arise from the genuine 420
 420 health needs of specific contexts. The implementa- 421
 421 tion of quota-based student admissions policies, 422
 422 community medicine programs where students serve 423
 423 as family advocates, and the effective networks of 424
 424 external examiners from CONSAMS schools are

examples of emerging successes. By sharing ideas, innovations, and resources while working in “networks, alliances, and consortia” the 100 new medical schools projected to emerge in Africa over the next decade could exert a lasting impact not only on the continent, but also globally. To fully achieve their goals and remain sustainable, the new medical schools in Africa will require ongoing support from their governments and international educational and funding agencies. The need to provide such funding and structural support is essential if not pressing.

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