The Public Health Workforce in Sub-Saharan Africa: Challenges and Opportunities

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The health crisis in sub-Saharan Africa (SSA) presents enormous challenges to the public health workforce, which is ill equipped to respond. Since the fate of SSA is central to the health and well-being of all regions, a long-term effort is now required to strengthen the public health workforce in SSA. This will require major support from national governments and a wide variety of international agencies. Several global initiatives present an opportunity for SSA to mount a response to the health crisis. However, unless these resources contribute to the development of infrastructure, human capacity, and management processes, the response is likely to have only a short-term impact on the most pressing health problems. (*Ethn Dis*. 2003;13[suppl2]:S2-24–S2-30)

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Introduction

The health crisis in sub-Saharan Africa (SSA) presents enormous challenges to the public health workforce, which is ill-equipped to respond. Since the fate of SSA is central to the health and well-being of all regions, an effective response will require coordinated and sustained global action. This paper begins with some definitions, reviews the health situation of SSA, assesses several recent global health initiatives, and considers the state of the public health workforce. The final section highlights the opportunities for an effective public health response to the challenges, with a focus on the training of the workforce.

Definitions: Public Health and the Workforce

Despite its simplicity, the term 'public health' is a source of confusion. A succinct definition of public health, which is broad in scope and of wide appeal, is 'collaborative action for population-wide health improvement.' This definition emphasizes the hallmark of the public health community, collaborative (or collective or organized) action, along with the goals of public health: population-wide health improvement.[1]

The public health workforce is defined by its primary responsibility for collaborative action for population-wide health improvement. This definition excludes many primary care and other health professionals, whose major concern is individual patient care, even though they may be providing important disease prevention services, such as immunization or screening programs. Another recent and related definition is that a 'public health professional is a person educated in public health or a related discipline who is employed to improve health through a population focus.'[2]

At the heart of the public health workforce is the relatively small group of professionally trained practitioners from a range of disciplines, both medical and non-medical, who work predominantly for government public health agencies, at least until recently. This core group provides public health leadership, and works in close association with a much larger workforce from a wide range of public and private organizations who provide public health services, whether directly or indirectly.

The competencies required by the public health workforce include an ability to identify, monitor, and manage population health problems, and to inform, evaluate, and advocate for appropriate health and inter-sectoral policies.[3] These competencies can be acquired through a variety of in-country or regionally based training programs that should include formal postgraduate training, with a large measure of practical experience, and a variety of continuing and on-the-job training to ensure ongoing professional learning.[4]

Health Status and Health Services in Sub-Saharan Africa (SSA)

Sub-Saharan Africa (SSA) comprises 48 African countries; it excludes Egypt, Libya, Tunisia, Algeria, and Morocco. Despite improvements in health status in SSA over the last 50 years, the situation now is serious enough to threaten the very survival of some nations.[5] In 1999, 7 of the 48 SSA countries had a lower life expectancy (LE) than in 1970, while 8 countries experienced an increase in infant mortality rates between

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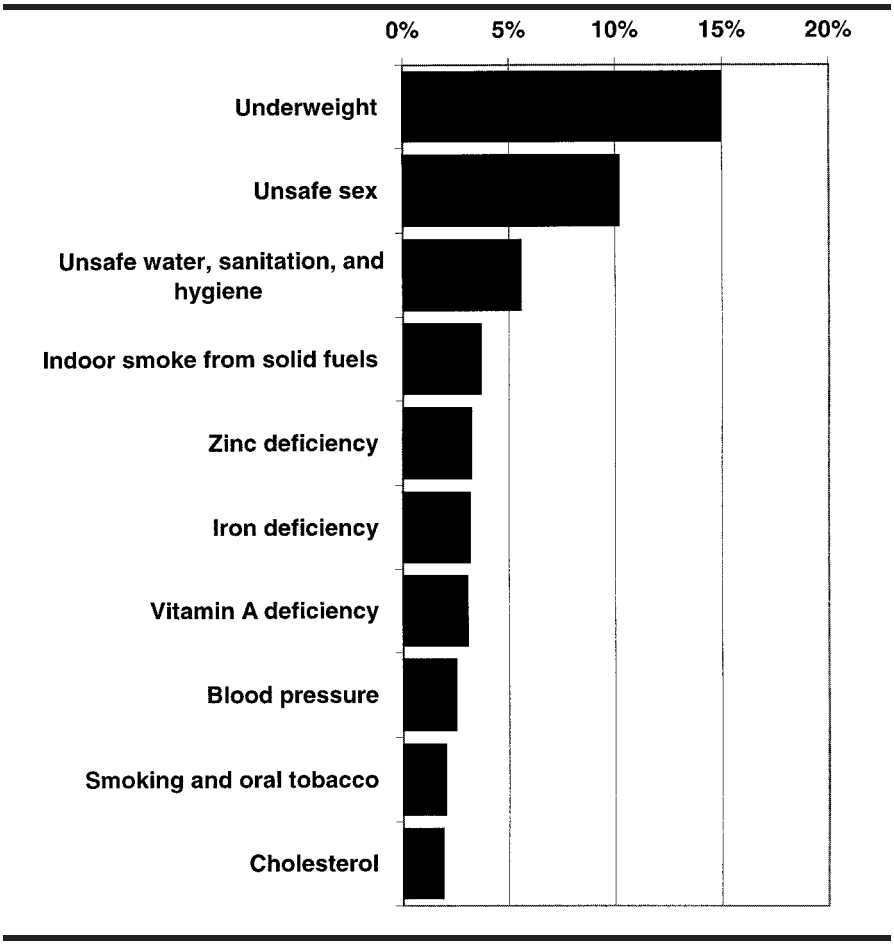

Fig 1. Burden of disease attributable to selected leading risk factors in high-mortality, developing countries, 2000. Attributable DALYs (% of total)

1981 and 1999. LE in 17 of 48 countries declined between 1981 and 1999.

The 2002 World Health Report quantified the contribution of selected risk factors to the global burden of disease.[6] The major risk factors for the burden of disease in high-mortality developing countries (mostly SSA countries) are in marked contrast to those in low-mortality developing countries (Figures 1 and 2). The importance of malnutrition and environmental factors is particularly apparent in the high-mortality countries.

The poor health status of SSA can be attributed to a combination of poverty, HIV/AIDS, the decline of health services, conflict, and global marginalization. The national average per capita income in 28 of 48 SSA countries is less than US $1 per day, and within-country income inequities are increasing.[5] The HIV/AIDS epidemic has had a devastating impact on SSA, with the highest adult HIV prevalence rates of approximately 40% in Botswana and South Africa.[7] This epidemic threatens the foundations of society, since there are no resources or infrastructures for effective and sustained treatment services, and weak political leadership has often blunted the effects of prevention programs.

Recent and ongoing conflict in over a quarter of SSA countries has compounded the difficulties in developing an effective response to the health problems, also exacerbating the declines in health service provision. One notable example of the reduced effectiveness of health services is the recent declines in coverage of routine immunization programs.[5] The fundamental causes of the poor state of health services in most of SSA can be traced to reforms of the public sector, such as privatization, downsizing of the state, rapid decentralization of services, and introduction of user charges, as a result of structural adjustment programs imposed on national governments by international financial institutions as a condition for providing further loans.[8]

The ongoing processes of globalization are of critical importance to the future development of SSA. Despite the positive potential of global economics and other forms of interconnectedness, the impact of globalization on SSA has been mostly negative. The terms of trade for most primary products have not been liberalized to the advantage of SSA countries; indeed, the region must compete against heavily subsidized primary products from both Europe and North America. Furthermore, several of the World Trade Organization (WTO) Multilateral Trade Agreements have further restricted health policy options, and the Agreement on Trade-Related Intellectual Property Rights has limited affordable access to essential pharmaceuticals.[9]

The Global Response to the Health Crisis in SSA

The global response to the health crisis in SSA can be characterized as being strong on good intentions and promises but, as yet, weak on imple-

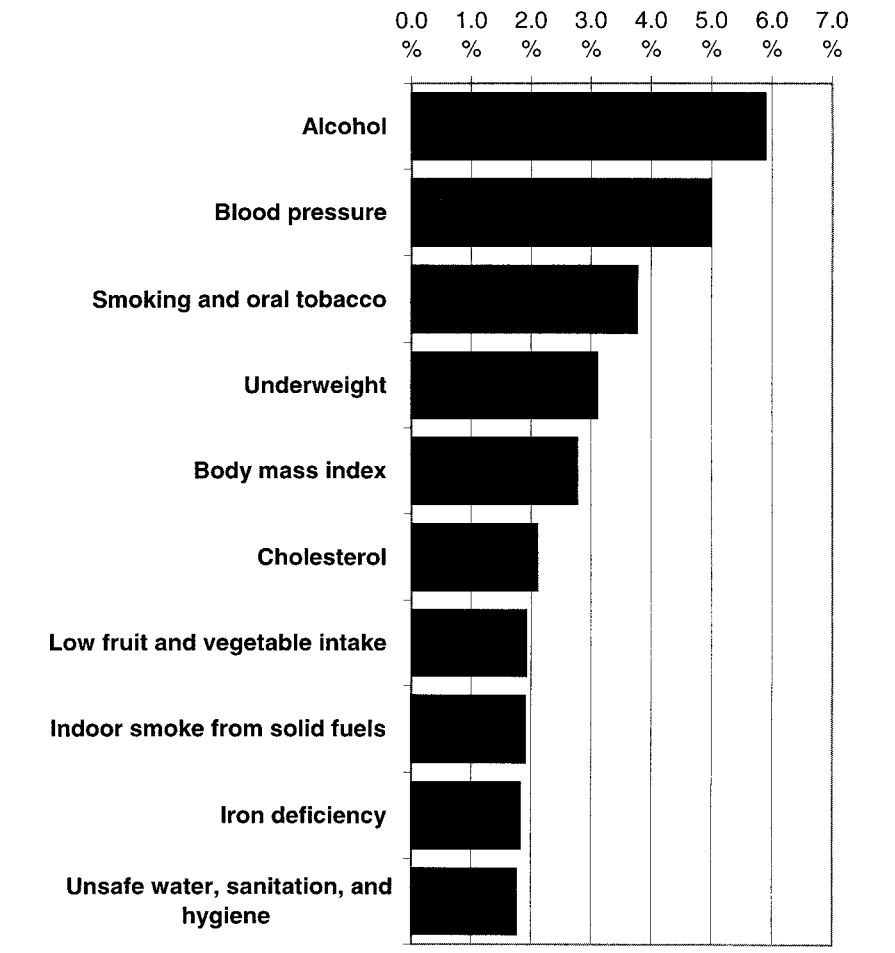

Fig 2. Burden of disease attributable to selected leading risk factors in low-mortality, developing countries, 2000. Attributable DALYs (% of total)

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mentation. The response has taken 2 forms. Of the greatest importance have been promises to ease the debt burden on SSA, stimulated by the Jubilee 2000 campaign.[10] Conditional debt reduction has occurred, and a few countries are now putting some of the interest saved into priority health and educational programs. However, the best outcome for population-wide health improvement would be complete and unconditional debt relief, but this is not likely to be achieved in the near future. Related to this response is the need to improve the terms of trade for SSA. This issue received attention at the 2001 WTO Ministerial meeting in Doha, that launched a 'development round' of negotiations.[11] However, not only has there been no reduction in the subsidies for farmers in either Europe or North America, subsidies in the United States have increased greatly. The European Union has postponed until 2006 reform of its Common Agricultural Policy, the instrument for support and subsidies to European farmers.[12] This will undoubtedly have a negative impact on SSA farmers, as cheap North American and European food exports flood their markets.

The second aspect of the global response to the health crisis has been the launch over the last 5 years of a series of initiatives and programs with a prime focus on the health problems of SSA: Roll Back Malaria; STOP TB; Global Alliance for Vaccination and Immunization; the Commission on Macroeconomics and Health (CMH); the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM); and a renewed commitment to the Millennium Development Goals (MDGs).

As the largest of these programs, the GFATM was established by the Secretary General of the United Nations in 2001, as a response to the promises made by successive G8 meetings to establish a funding mechanism for priority health problems in developing counties. The GFATM has a target of $10 billion, though pledges are currently only $2 billion, with only $700 million actually being received[13]; the United States has been the major donor; however, along with Japan, it has donated in proportionate terms below expectations. Recent experience with disbursements from the GFATM has not been encouraging, due, in part, to the complexity of establishing new funding mechanisms. Uganda received a major grant from the GFATM for HIV/AIDS, but the Ministry of Finance insisted it be channeled into general revenues and will not allow additional funding on health because of the dangers of distorting the economy. This decision seems odd considering that Uganda spends only $9 per capita on health, far below the suggested min-

imum amount.[14] The first GFATM grant to Kenya for insecticide-treated bed nets has not been finalized, due to unresolved political differences within the country.[13]

The WHO CMH reaffirmed the negative effect of the disease burden on economic growth, estimating that by 2015, approximately $38 billion per year would be required to respond effectively to the priority health problems of developing countries. Although this would appear to be an exorbitant amount, and is far higher than the target figure for the GFATM, the recent annual increase in the US military budget to respond to presumed new security threats has been significantly greater.[15] The CMH has called for national macroeconomic commissions on health; however, judging from the GFATM experience, these may also be difficult to establish effectively.

At the Millennium Summit in September 2000, the states of the United Nations reaffirmed their commitment to working toward sustaining development and eliminating poverty. The MDGs are commonly accepted as a framework for measuring development progress.[16] Three of the 8 goals are specific health goals (reducing child mortality, improving maternal health, and combating HIV/AIDS, malaria, and other diseases), and 4 others concern underlying determinants of population health (eradicating poverty and hunger, promoting gender equality and empowering women, ensuring environmental sustainability, and developing a global partnership for development). Many of the indicators to measure progress toward the goals are closely related to population health measures. The benchmark for the MDGs was 1990, with 2015 being the achievement date. By 2000, it was apparent that most of SSA was unlikely to achieve the health MDGs by 2015, and some of the indicators are deteriorating (eg, under-five child mortality rates and the proportion of births attended by skilled personnel). There is also a danger that the MDGs may limit the public health response to other pressing health issues.

The Public Health Workforce in SSA

The global response to the SSA health crisis is important; equally important are the national health system responses. The public health workforce with its population-wide perspective is central to improving the performance of all health systems. However, there has been a general neglect of both the public health workforce and the related infrastructure, even in the wealthiest countries.[17] Despite the importance of the public health workforce, surprisingly little is known about its strength, disposition, or performance. These gaps are particularly severe in SSA. For example, the recent National Health Manpower Plan for Botswana, 1997–2003, does not consider the public health workforce.[18] The proportion of national health budgets allocated to public health activities is less than 5%, usually hovering at 1%–2%. Even in wealthy countries such as the United States, the public health workforce and infrastructure have been seriously under-funded for more than 30 years.[19]

Few of the core public health activities[20] are carried out to a high standard, even in most wealthy countries.[21] There are several reasons for the universally poor state of public health practice. The "public good" nature of many aspects of public health practice[22] presents a difficulty when the focus of public health has narrowed and government attention and resources are concentrated on the healthcare needs of individuals.[23] Responsibility for health is increasingly located at the personal level, as national authorities attempt to reduce their costs and the private sector is increasingly involved in the delivery of public health services. However, the major determinants of health, and the most powerful means for health improvement, are increasingly located at the national and global levels.[24] The WHO is promoting government stewardship of the health system; governments have a duty to their citizens to provide overall leadership for the health system in terms of vision, priorities, and regulatory framework, irrespective of whether the funding for the system derives completely or partially from government sources.[25]

Several attempts have been made to characterize the public health workforce in developed countries.[26] AfriHealth, funded by the Rockefeller Foundation, is undertaking a systematic study of public health training in and for Africa, and the results will provide a baseline from which to assess the adequacy and quality of public health training for the public health needs of Africa.[27] A similar, though less systematic, survey has been completed in Asia. The current WHO World Health Survey will provide considerable information on the health workforce and some information on the public health workforce, as will country case studies underway in 4 African countries.

Challenges and Opportunities for the Public Health Workforce in SSA

The deteriorating economic environment and unstable organizational context have had a significant negative impact on the health workforce, leading, in turn, to deterioration in the quality of health care. Key problems in SSA include[5]:

- Inherited professional cadres and healthcare structures designed for Western health systems, which are inappropriate for African health needs.
- Inability to build adequate capacity within ministries of health and health services to manage new strategies and systems in a constantly changing policy environment.
- Increasing workloads of health workers caused by fiscal constraints, the restructuring of services, and the impact of the HIV/AIDS epidemic, including its toll on the health workforce.

• Low productivity and motivation of health workers due to the above factors, leading to poor service delivery and high rates of absenteeism and migration out of the system.

There is a serious lack of appropriate public health training opportunities in most of the developing world. For example, South East Asia has approximately 12 schools of public health for a population of well over 1.5 billion people.[28] From a developing country perspective, traditional approaches to public health training, whether based in the north or the south, have limitations,[29] including:

• The overwhelming emphasis on epidemiology, biostatistics, communicable diseases, health protection, the relative neglect of other, more applied, public health sciences, such as health management, health promotion and program evaluation, and the lack of attention to emerging public health problems;

• The tendency to offer the same array of learning experiences to all categories and levels of public health students, with little differentiation made between learning requirements of practitioners at the policy level and those at the implementation level;

• The isolation from ministries of health (especially since training institutions are usually under the control of ministries of education), other health providers, local communities, and other scientific disciplines;

• The emphasis on institution-based didactic teaching and the lack of direct field experience;

• The lack of experienced field-based senior public health practitioners as role models and the absence of apprenticeship experience; and

• The high cost of training programs in North America and Europe, and the lack of incentives for graduates trained overseas to return home and work in government service.

Most of these criticisms of training for developing countries also apply to public health training programs for developed countries. It is imperative that out-of-country training be restricted to where it is absolutely necessary, and that affordable, flexible, in-country and regional training programs be further developed. One such innovative project began in 1992 when the Rockefeller Foundation launched the Public Health Schools Without Walls (PHSWOW) initiative in Africa (Ghana, Uganda, and Zimbabwe), later expanding to Asia. The goal of the PHSWOW program is to train graduates competent to respond to practical health problems and to manage health services, especially at the district level. In all countries, ministries of health play a significant role in the PHSWOW programs. A feature of the PHSWOW curricula is the substantial period of supervised field training, up to 75% of the course, during which the trainees are expected to acquire and demonstrate competence in key areas, including the ability to: investigate important local health problems; design, manage, and evaluate health programs; assess and control environmental hazards; and communicate effectively with individuals, communities, colleagues, and policymakers.

A recent evaluation of the program concluded that, despite the lack of preformulated milestones, the PHSWOW provides one foundation on which to build public health capacity in developing countries.[4] The key lesson from the PHSWOW programs is that while it is possible to undertake quality public health training in diverse settings in developing countries, this requires substantial external resources.

There are other models of public health training not based in schools of public health; for example, the Field Epidemiology Training Programs (FETPs) have concentrated on training field epidemiologists to respond to infectious disease epidemics and are based in ministries of health.[30] Since not every student in public health is either willing or able to attend and complete a full time academic program, it is desirable to increase the flexibility of public health training courses in terms of content, form, and outcome. The outcomes include certificates, diplomas, MPH degrees, and doctoral degrees. This flexible approach to training is in operation at the University of Western Cape in South Africa, and improves equity in access to postgraduate public health education since it incorporates the teaching of academic skills for disadvantaged students.[31]

Programs have been established to meet the needs for health management, eg, the new MPH program at Muhimbili University College, Dar Es Salaam, Tanzania, which is supported by the University of Heidelberg and Deutsche Gesellschaft fur Technische Zusammenarbeit. A Swedish initiative based on the International School of Public Health, Umea, combines course work in Sweden with field work in the home countries of the MPH candidates.[32] There is scope for further development of 'twinning' relationships between institutions in the north and those in the south, and for south-to-south arrangements.

Public Health Workforce Development in SSA

Many policy questions can be raised about challenges facing the public health workforce in SSA (Table 1). An important question is: should governments invest more in building the public health workforce to ensure the more effective functioning of health systems? The answer is usually assumed to be affirmative, given the broad mandate of a modern public health workforce, its unique population-wide perspective, and its longstanding contributions to health improvement. Other policy questions concern: the nature of the public health workforce, including its size, composition, skills, training needs, current functions and performance; the appropriate roles of the workforce; and how the workforce can be strengthened

Table 1. Summary of public health challenges and opportunities in SSA

Challenges	Opportunities
Uncontrolled burden of disease	Availability of effective health interventions
Major public health challenges	Widespread acceptance of the MDGs
Entrenched poverty	New global funds
Unfair terms of trade	Recognition of poor health as a security threat
National debt servicing	Recent public health training initiatives
Complex emergencies	Positive disease control experiences from Africa and other regions
Health system weaknesses	
Human resource limitations	
Weak governance	

to support new approaches to priority health problems.

Limited evidence is available to shed light on these policy issues. An initial problem is the lack of data on the extent and composition of the public health workforce. Another major gap is the limited evidence of the effectiveness of public health training and practice. Priorities are to build an evidence base on the size and structure of the public health workforce and to complete the mapping of the current public health postgraduate training programs in SSA. The next steps include developing a consensus on the desired functions and activities of the public health workforce, and developing a framework and methods for assisting SSA countries assess and enhance the performance of both public health training institutions, and the public health workforce. The WHO Regional Office for Africa (AFRO) has developed a Regional Strategy for Development of Human Resources for Health.[33] Progress made toward implementing this strategy includes forming, and developing an action plan for, a Multi-Disciplinary Advisory Group on Human Resources for Health[34]; countries have been assisted in developing human resource plans and policies, and a number of tools, advocacy packs and guidelines are under development. One important and neglected workforce issue concerns the long-term support of existing public health practitioners. The recent formation of the East African Public Health Association is an example of a regional development with the potential to support continuing educational activities, and to form the basis of a variety of regional networks to support public health practice.[35] The recent Latin American experience in building a consensus on public health strategies provides useful lessons for SSA.[36]

CONCLUSION

A long-term effort is now required to strengthen the public health workforce in SSA. This will require major support from national governments and a wide variety of international agencies. A pressing need exists for integrated, sustainable, and comprehensive health systems, which include curative and rehabilitative components designed to address the effects of health problems, a preventive component to address the immediate and underlying causative factors that operate at an individual level, and a promotive component that addresses the basic causes.[37] Since public health is concerned with prevention and promotion, strengthening the public health workforce is a key primary step in developing such comprehensive health systems.

The GFATM and other initiatives present an opportunity for SSA to mount a response to the current health crises. However, unless these resources contribute to the development of infrastructure, human capacity, and management processes, the response is likely to have only a short-term impact on the priority health problems. It is hoped that a stronger public health workforce will be better able to apply the evidence of the effectiveness of health interventions, and to ensure that the new resources coming into the health sector lead to the improvement of the health of all populations, not just the most advantaged, and not just for the priority health problems.

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