Health Personnel Development in Sub-Saharan Africa

J. Patrick Vaughan

Sub-Saharan Africa needs regional training facilities in public health and management, in-depth studies on the cost implications of different training and staffing options, guidelines for spending on health personnel, and new methods for monitoring and projecting personnel needs.
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Despite a significant growth in the total number of trained health workers, the Africa region is still poorly staffed. It was the only World Health Organization region that showed a decline in the doctor-to-population ratio from 1980 to 1986.

Emigration of trained health workers — particularly physicians — exacerbates the problem. Basic training for health workers is reasonably well established, but advanced and in-service training have been widely neglected. There remains a serious shortage of senior staff with training in public health and management.

Sub-Saharan Africa has not a single school of public health, and it also lacks adequate regional training centers in public health and management. Planning for health workers has been based largely on simple projections of the number of workers required — without much regard for the economic costs or the availability of financial resources.

Most countries in Sub-Saharan Africa have undertaken structural adjustment programs that, together with world economic conditions, have led to declining financial allocations to ministries of health. As spending cuts have been made for such items as drugs, maintenance, and transport, the proportion spent on health personnel has risen. There are now strong pressures on ministries to reduce the number of health workers they employ and to encourage more private health services. Vaughan concludes that:

- Health personnel policies must become truly national, taking into account all personnel in the country, not just those employed by the ministry of health.

- Some countries need support to develop policies that will help them make the best use of regional training facilities (in public health and management) in non-oil countries. More support should be given to regional centers that offer management training for health workers and to initiatives for improving in-service and on-the-job training in management skills.

- Guidelines are urgently needed on how to rationalize spending on health personnel.

- There is an urgent need to update methods for monitoring health workers and for providing the basic numerical projections needed for planning.

- In-depth studies are needed on the cost implications of training and employing various types and numbers of health workers, to give more insight into the options in national health personnel policies.
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by

J. Patrick Vaughan*

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I. Issues and Changing Concepts

1. The importance of health personnel development is widely recognized, but it continues to receive insufficient attention. Most of the published literature is general in scope, with little of it specific to Africa (WHO 1985; Simmonds and Bennett-Jones 1989). Sector reviews and reports by international agencies contain useful information, but many of the details are descriptive rather than analytical.

This paper reviews the health personnel situation in sub-Saharan Africa and attempts to answer two questions:

- What are the main health personnel issues facing ministries of health?

- What policies might national governments and international agencies adopt for the period up to the year 2000 A.D.?

2. Although it is possible to generalize about health personnel issues, successful policies need to be grounded in the specific conditions in each country and to take account of historical developments. While the challenge is to find the most suitable policies for individual countries, it is also the case that the problems of countries in sub-Saharan Africa are similar and that their health priorities, policies, and strategies have been influenced and endorsed by various international organizations, particularly the World Health Organization (WHO). From a policy perspective, the need in these countries is to establish a hierarchy of health workers with different levels of sophistication and a mix of professional and managerial skills, supported by an effective network of referral services.

3. Health personnel development used to be thought of as a discrete "input" to the health sector, concerned with recruiting, selecting, and training different categories of health personnel. This process was, at best, only tenuously linked to the development of national health policies, and plans, and personnel planners were not usually concerned with the subsequent employment of the health workers by the health services. By the early 1970s, however, the term "health personnel development" had come to be widely used to emphasize the need for better integration of personnel development with national development (Fulop 1986).

Planning, Production, and Management

4. Health personnel development is frequently divided into planning, production (training), and management phases (Fulop and Roemer 1987). Few sub-Saharan African countries have engaged in comprehensive planning for health personnel development. Since the 1950s, most countries in the region have focused on the production of trained workers, and planning has consisted mainly of projections of the numbers of professional health workers needed for the expansion of the health services in urban and rural areas. During most of that time, expansion in infrastructure and facilities outpaced the availability of newly trained health workers, although recently signs of "overproduction" or underemployment among senior health workers have emerged in some developing countries (Abel-Smith 1986; Bankowski and Mejia 1987).

5. This "service-led" personnel development took various forms over the decades. In the 1950s and early 1960s, the main personnel concern was to train a cadre of senior professionals to staff the new "centers of excellence" that were being established to train doctors, nurses and other senior professionals. The medical and nursing schools established in Ibadan and Makerere are good examples of this approach. Auxiliary health workers were viewed largely as a colonial legacy, and their training was frequently neglected.
6. By the late 1960s and early 1970s, concern had shifted to preventive health care and access to rural health services. The expansion in the number of health centers and subcenters created a need for more auxiliary health workers, such as medical assistants, nurses, and health and sanitation inspectors. In the 1970s and 1980s, the increased emphasis on primary health care meant that health personnel development became concerned primarily with community health workers and traditional birth attendants working in village-based services. Associated issues were community participation, intersectoral coordination, and local-level management.

7. Although the emphasis from the 1950s to the 1980s shifted in turn from hospitals to health centers and health posts, hospitals and physicians retained their central and dominant roles in sub-Saharan Africa, as is evident in the allocation of financial resources. Despite a decade of policies in support of primary health care, most hospitals have maintained or even expanded their share of national health budgets, and their favored status is promoted by the medical profession and the urban establishment. The main supporters of changes in health personnel policies have often been public health physicians in ministries of health, despite considerable opposition from their clinical colleagues.

8. The production phase of health personnel development has received by far the greatest attention. During the 1950s and 1960s, all countries in sub-Saharan Africa were critically short of health workers, and their health worker to population ratios were much lower than those in other parts of the world (WHO 1988a). Since then, many African countries have successfully expanded the availability of health workers and have tried to achieve a good balance or mix between different cadres of health personnel. Women make up more than half of the health workforce in many countries. Despite these efforts, sub-Saharan Africa is still very short of health workers of all grades (WHO 1988a: Roemer 1988; see Table 1).

Table 1: Number of physicians per 10,000 inhabitants, by WHO Region

<table>
<thead>
<tr>
<th>WHO REGION</th>
<th>PHYSICIANS</th>
<th>DENTISTS</th>
<th>PHARMACISTS</th>
<th>MEDICAL ASSISTANTS</th>
<th>NURSES MIDWIVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1.0</td>
<td>0.1</td>
<td>0.2</td>
<td>0.4</td>
<td>11.9</td>
</tr>
<tr>
<td>Americas</td>
<td>15.5</td>
<td>4.5</td>
<td>5.1</td>
<td>0.0</td>
<td>42.0</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>5.1</td>
<td>0.6</td>
<td>1.0</td>
<td>1.4</td>
<td>12.5</td>
</tr>
<tr>
<td>Europe</td>
<td>24.4</td>
<td>2.2</td>
<td>4.0</td>
<td>0.2</td>
<td>54.5</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>3.3</td>
<td>0.1</td>
<td>1.5</td>
<td>2.9</td>
<td>8.2</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>6.3</td>
<td>0.5</td>
<td>2.4</td>
<td>3.7</td>
<td>27.0</td>
</tr>
<tr>
<td>All Regions</td>
<td>9.4</td>
<td>1.1</td>
<td>2.5</td>
<td>2.1</td>
<td>26.7</td>
</tr>
</tbody>
</table>


9. Of the six World Health Organization regions, Africa was the only one that showed a deterioration in the doctor to population ratio from 1980 to 1986 (Table 2). This trend has been exacerbated by the lack of training centers in many African countries, the emigration of senior professionals, and high rates of population growth.
Table 2. Number of physicians per 10,000 inhabitants by WHO Regions.

<table>
<thead>
<tr>
<th>WHO REGION</th>
<th>1980</th>
<th>1986</th>
<th>CHANGE PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>1.1</td>
<td>1.0</td>
<td>-9.1</td>
</tr>
<tr>
<td>Americas</td>
<td>11.6</td>
<td>15.5</td>
<td>+33.6</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>3.6</td>
<td>5.1</td>
<td>+41.7</td>
</tr>
<tr>
<td>Europe</td>
<td>22.0</td>
<td>24.4</td>
<td>+10.9</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>2.2</td>
<td>3.3</td>
<td>+50.0</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>4.6</td>
<td>6.3</td>
<td>+37.0</td>
</tr>
<tr>
<td>All Regions</td>
<td>8.1</td>
<td>9.4</td>
<td>+16.1</td>
</tr>
</tbody>
</table>


10. Management has received the least attention of the three phases of health personnel development. Workers have been trained largely to fill staff positions. Little attention has been given to their supervision, motivation, or career development. The need for better management, including better integration of public and private health workers, has been recognized. This change in perception recognizes three important facts about health personnel: they are an expensive resource to train and employ; they require well managed services to be effective; and they are an integral part of the health sector development process.

Conclusion

11. Several aspects of the development of health personnel in sub-Saharan Africa emerge from this discussion:

- The main concern has been with the production of health workers, and there are few good examples of comprehensive personnel reviews or plans that integrate health personnel development into the overall planning and development process.

- The medical profession has retained a dominant role in this process and has greatly influenced the choice of priorities and the allocation of resources.

- Half or more of health workers are women, but they have had only a minor role in health personnel planning and management, particularly at the national level.

- The continuing development of health workers as a valuable human resource has been neglected, particularly once they have undergone their basic training and are employed in the public sector.

- The major concern in health personnel development has been the production and training of health care providers, whereas the training of administrative personnel and support staff has been widely neglected.

- As a consequence of the recent decline in economic conditions, ministries of health are now recognizing the full cost of employing the large number of health workers envisaged in most government health plans.
II. The Current Situation for Health Workers

12. Despite large increases in the number of health workers, sub-Saharan Africa is still seriously understaffed. In 1986, Africa had 1 physician for every 10,000 people, compared to 24.4 in Europe, 15.5 in the Americas, 6.3 in the Western Pacific, 5.1 in the Eastern Mediterranean, and 3.3 in Southeast Asia (Table 1). The distribution of health personnel between rural and urban areas remains uneven, as well. Variations between countries in sub-Saharan Africa are equally marked. For instance, Gabon had 3 physicians per 10,000 people in 1984 compared to Ethiopia's 0.1 (WHO 1986a).

13. Most countries have considerably more nurses than physicians—three to five times more in many cases. Variation in the distribution of professional and auxiliary staff (e.g., state-registered, enrolled, mother and child health, midwives) is quite marked as well. For example, both Nigeria and Congo have low ratios for doctors, but Congo has a high ratio for nurses (15 per 10,000) and Nigeria for midwives (4 per 10,000) (WHO 1988a).

14. Unlike the case in most other regions, many countries in sub-Saharan Africa still employ a large number of expatriate doctors in their public health services at national, regional, and district levels. For example, only 300 of the 821 doctors in Zambia in 1983-84 were Zambians, and none of the 53 district medical officers were nationals (Sector Report 1984). Several countries, notably those in the Sahel and in southern Africa, still rely heavily on expatriate recruitment. Many expatriate medical personnel are supported through agreements with bilateral aid agencies, which may represent a form of subsidy of recurrent costs. These expatriates are employed on short-term contracts, so there is a high turnover in senior management posts. Many of the people in those positions are untrained in public health and lack local experience, yet they are commonly involved in long-term decisionmaking. To avoid undermining national capabilities and confidence and creating a dependency on personnel from outside the country, aid agencies need to reconsider these types of agreements.

15. Most sub-Saharan African countries have an even greater shortage of other professional health workers, such as dentists, physiotherapists, laboratory technicians, and X-ray technicians staff (WHO 1988a). Similarly, the numbers of health inspectors, environmental health officers and sanitarians are inadequate, although these health workers continue to be trained in nearly all sub-Saharan Africa countries. As more immunization, diarrheal diseases, and other special health programs are established, many of these health workers are transferred to management positions for which they have no training, often leaving their original functions unfulfilled.

16. Given these shortages and problems, many countries in sub-Saharan Africa have trained large numbers of medical auxiliaries to perform a range of preventive and clinical tasks, and these auxiliaries frequently became the mainstay of rural health services (Vaughan 1971; Storms 1979). For instance, Kenya has trained clinical officers to work in hospitals, and Tanzania has trained assistant medical officers, medical assistants, and rural medical aides to take responsibility for health districts, health centers, and dispensaries (Gish 1973). Medical auxiliaries can be posted to smaller facilities in rural areas, and the overall costs of employing them are considerably less than for physicians. Although the use of such medical and nursing auxiliaries seems to have declined in many developing countries outside Africa, they are still regarded as essential in most countries in sub-Saharan Africa.

17. Large numbers of community health workers have also been trained in sub-Saharan Africa over the last two decades. Evaluations have demonstrated their acceptability, particularly by people in rural areas, but the assessments also suggest a need to scale back expectations about what community health workers can achieve (Vaughan 1980; Heggenhougen et al. 1987; Walt 1988: WHO 1989a). When community health workers have been jointly supervised by their community and the local health center and well supported and supervised, they have been well accepted and effective in many village-based activities (Lamboray and Laing 1984). But most community health worker programs have, in effect, been "added on" as another layer to the health services, with little regard for the financial
implications for ministries of health (Berman et al. 1986). Although community health workers are likely to be used more selectively in the future, they are unlikely to be entirely abandoned, especially in rural areas where population density is low and health facilities are scarce.

18. Another group of professional health workers that is conspicuously scarce in nearly all countries in sub-Saharan Africa is that of health service administrators and managers. There are few formal training programs or career paths for such critical staff, and managerial responsibility has largely been assumed by administrative and clerical staff or by doctors and nurses untrained in health program management. These positions also call for leadership and associated skills that depend on an understanding of the local culture. The need for more management training is well recognized, particularly for regional and district level staff.

19. Various other support workers - clerks, drivers, cooks, cleaners, informally trained assistants - constitute another group of health workers, one that accounts for a significant portion of the total health budget expenditure. In Ghana, support personnel accounted for approximately 53 percent of the total staffing expenditures for the ministry of health (Sector Report 1984). This varied group of workers - many of them local patronage appointees - requires considerable supervision at the district level. Their numbers sometimes rise well above the number of established positions and since their employment may be "hidden", the health ministry may lack information on the total number actually employed. Thus the true situation in the districts may often be revealed only through local investigation.

20. Brain drain among health professionals is another serious concern. Doctors and nurses with internationally recognized qualifications find it easy to emigrate and to find jobs elsewhere. Some move to other countries in Africa, but large numbers of Africans are also working in Europe and the Middle East. Ghana and Sudan have experienced especially severe losses of health professionals to other countries. Some of this migration is temporary, such as for postgraduate specialization, but much of it appears to be long term, if not permanent, and represents a considerable loss of both health workers and the investment in their training. Some health workers leave for professional, economic, or political reasons, and some of the best public health specialists employed by ministries of health are recruited by international and other agencies. This recruitment of public health specialists can have a critical effect on their home countries and highlights the scarcity of good public health skills in sub-Saharan Africa. The problem requires some imaginative, long-term solutions, including attention to regional plans for strengthening undergraduate and postgraduate training centers for public health in sub-Saharan Africa.

21. Thus despite great advances in the numbers of health personnel and a wealth of experience experimenting with different cadres, most countries in sub-Saharan Africa are still in a critical state with regard to the availability of health workers. There is a scarcity of health personnel, both professional and managerial, at all levels, and available personnel are not effectively used, managed, or developed. In particular, there is a serious shortage of senior professionals who combine both public health and managerial skills. Cutsbacks in ministry of health budget allocations in recent years make it even more critical that countries explore ways to apply new developments in skill mix and distribution and improved management of these scarce human resources to increase their efficiency.

III. Planning

22. Even though health personnel planning has been based mostly on simple projections of numbers of staff, the basic information needed for these calculations is frequently absent, incorrect, or difficult to obtain. For many countries, numbers of health personnel in various categories and their current status are often not available in any consistent or useful format. The most reliable national data probably exist for doctors and nurses, because they are usually legally required to be registered. But registry data such as home address, working location, employment status, and professional qualifications are rarely up to date, and some registries even retain the names of physicians and nurses
who have died. Registries for other health workers are even more loosely kept, or nonexistent, leading to serious questions about the value and comparability of the data over time.

23. What ministries of health typically report are the number of health workers officially known to be employed by the ministry. What the ministries frequently do not know, and so do not report, are the number of workers employed by multinationals, the armed forces, nongovernment organizations, industry, and other private providers. Even information on the number of doctors in full-time private practice is frequently unavailable, despite estimates that private physicians provide as much as 80 percent (Kenya) of health care services (Stuart 1987). Similarly, while it is widely known that the attrition rate for nurses is high before and soon after graduation, it is not as widely recognized that the total number of trained and qualified nurses represents a potential human resources pool that is being neglected.

24. Planning for human personnel development is seen largely as a national-level responsibility, since the process commonly involves projecting future requirements for health workers (Hornby et al. 1980). These projections are frequently based on accepted norms, such as one doctor per 5,000 people or one community health worker per 1,000 people, or on staffing patterns of standard facilities or programs—both existing and planned—such as one hospital per district or one health center per 30,000 people. The difference, usually a shortfall, between existing and required personnel can then be directly translated into training requirements and the implications for training institutes, trainee recruitment, and curriculum development.

25. Several factors are not taken into account in this process, however, such as the financial implication or the ability of the ministry of health to employ the projected number of workers required. Many assumptions go unchallenged, such as the accepted recruitment qualifications and attrition rates among trainees. Rarely is the possibility considered that many tasks carried out by senior professionals might be carried out equally well by auxiliaries or that a different skill mix might imply different norms and facility staffing patterns—and probably lower overall costs.

26. Alternative staffing patterns might receive much greater consideration if more financial information were available on the costs of training and employing different types of health workers. Personnel shortfalls are frequently interpreted directly as a need to recruit more trainees, rather than serving as a spur to recruit people who have already been trained, but who are not currently employed in the health sector. The high attrition rates that occur during training and soon after graduation, particularly with nurses, also receives inadequate attention. Re-employment and redeployment are other options that need to be considered more widely than they usually are.

27. Several measures are needed to improve planning for health personnel development. One is the development of a simple, standardized system (possibly microcomputer-based) for providing basic information on the numbers and distribution of a nation’s trained health workforce. The system would need to be updated annually for all major categories of health workers so that it could be used to generate annual updates of planning projections needed to inform decisions on health personnel development. A second measure would be to introduce some reasonable financial estimates of the total costs of training and employing each category of health worker, so that the resource implications of various staffing patterns can be examined. This would enable more realistic cost projections to be estimated and incorporated into all planning activities. A third measure would be to base personnel requirements on the tasks that need to be achieved rather than on the need to train and employ a certain number of people in particular professional categories. Simplified planning guidelines would be needed for allocating various tasks to each cadre. These same guidelines might also be useful to health managers, particularly those in charge of district services and programs.

28. Since implementing these three measures would require a national perspective, the responsibility for doing so should rest largely with the central ministry of health. The ministry is the most appropriate organization to examine the generic issues and practical problems involved in implementing such information systems. The ministry is also in the best position to review guidelines on staffing norms and patterns and to conduct an analysis of the professional and managerial tasks
undertaken in the health services. Health ministries will need to work closely with the ministries responsible for finance and development if their priorities are to receive sympathetic attention. If expertise in the ministry of health is weak in these areas, the ministry could contract for outside help in preparing the groundwork for these measures.

IV. Training

29. In sub-Saharan Africa the major effort has gone into establishing institutes and training centers to provide the basic training needed to turn out various categories of health workers. More specialized training for upgrading and career development, such as in-service training, has been widely neglected. Observations suggest that standards in primary and secondary schools have recently fallen in many parts of sub-Saharan Africa, and there is strong concern that the quality of the health training institutes has deteriorated as well.

30. Most health training programs in sub-Saharan Africa are traditional in approach, and few have adopted curricula that support community-based learning or the team approach (WHO 1987, 1988b). Most medical schools and some nursing schools were established within universities and came under the direction of the ministry of education, rather than the ministry of health, which was responsible for training institutes for other professional health workers. However, some non-governmental organizations, particularly religious missions, are involved in training nurses and auxiliaries. Health training is widely regarded as a responsibility of national governments in sub-Saharan Africa, so there are virtually no private (for-profit) training institutes for senior health workers. Training institutes have been directed by doctors, whose views have usually dominated in medical, nursing, and auxiliary schools.

31. Medical schools have commonly followed European models, making their curriculum and training ill-suited to conditions in sub-Saharan Africa. There are just over 60 medical schools in sub-Saharan Africa or about 5 percent of the world total, although more than a dozen countries have no medical schools (WHO Africa Region 1987). Training has a curative orientation, and there is the usual desire for graduates to attain international professional standards and for the staff to be internationally recognized. Some schools have introduced innovative changes in their curriculum, but few medical schools in sub-Saharan Africa are recognized as leaders in this area. Experience worldwide has shown how difficult it is to incorporate community and public health perspectives into undergraduate medical training, and the experience in sub-Saharan Africa has been no different. Even where innovative curricula have been adopted, the pull of traditional "Western standards" has been strong. Postgraduate medical training is available only in a few of the major specialties. (For a more detailed discussion of these issues in medical education, see WHO Africa Region 1987; Stuart 1987.)

32. For institutes funded and under the direct control of ministries of health, efforts to modify and adapt the curricula and training of health workers have frequently been more successful. However, there is considerable disagreement between professionals in the training schools and those in the ministries of health over objectives and curriculum. For instance, few medical schools consider that their prime purpose is to turn out graduates with both the professional and managerial skills needed to lead district health teams. Among those that do are the medical schools in Tanzania and Cameroon, which have adopted this approach and have set explicit education objectives to this effect. However, there has been a tendency for such training programs to revert to more conventional approaches (Joseph 1979). A good example of a new approach to the training of district medical officers is the Thies Project in Senegal. Through a three-month training course for doctors already in positions of responsibility, the project aims to improve the quality of health care delivery and to motivate doctors in their public health activities, including management and supervision (Unger 1989). The Ethiopian ministry of health recently set up its own course to train district medical officers to lead and manage district health teams.
33. Many of the same concerns arise in the training of nurses and auxiliary personnel, although their training institutes and curricula are generally better adapted to national circumstances and requirements. However, two problems affect nurse and auxiliary training more severely than they do the medical schools: the shortage of trainers and of books and other training materials. The African Medical and Research Foundation (AMREF), based in Kenya, has worked hard on both of these problems in East Africa, producing a series of health manuals and supporting the training of trainers. However, for most countries in Africa there are still critical problems that are receiving little attention.

34. Except for a few postgraduate training programs in some countries of West and East Africa, higher-level postgraduate training or specialization programs are still unavailable in sub-Saharan Africa. Many doctors go abroad for further training for three or more years at a time. This overseas training may be paid for by the ministry of health or education or through a fellowship from the World Health Organization or another international organization. Higher-level training for nurses is often better developed locally, but little such training is available for most other health workers. In-service or on-the-job training and distance learning are still underdeveloped, although they appear to be quite promising approaches. Countries and aid agencies frequently rely heavily on ad hoc workshops and special training initiatives, which are easy to organize and do not require long-term commitments. But these programs frequently use traditional training methods, and their long-term impact has been questioned.

35. There is a critical need in sub-Saharan Africa for health workers with public health skills, particularly in health planning, management, and evaluation. Several factors contribute to the great scarcity of these skills in sub-Saharan Africa including: the unpopularity of careers in public health; the lack of postgraduate training opportunities; and the international recruitment of some of the most experienced public health practitioners. Public health is generally inadequately represented in training institutes, although the undergraduate medical schools in anglophone and lusophone countries probably have relatively stronger programs than other countries. Another major problem is that nurses and other senior health workers rarely receive public health specialty training. Sub-Saharan Africa has not a single autonomous institute or school of public health, although steps are being taken in that direction, particularly by the francophone countries. A training program for surrounding French-speaking countries is being organized in Kinshasa, Zaire, and a new school of public health is being established in Brazzaville, Congo (Centre Inter-Etats d'Enseignement en Sante Publique pour l'Afrique Centrale). The oldest francophone school of public health, based in Cotonou, has just been renamed the Institut Regional de Sante Publique. Most postgraduate training in public health, therefore, still takes place outside Africa. The scarcity of public health skills in sub-Saharan Africa is an important subject that deserves wide regional attention rather than a piecemeal approach by each country.

36. In summary, there are three important conclusions that can be drawn about health training in sub-Saharan Africa. First, basic training is reasonably well established, although there are still critical issues concerning educational objectives, curricula, and training methods that deserve attention. Although the quality of the basic training might be improved, it is often better than subsequent in-service training. Second, policies and strategies for specialized and postgraduate training covering all cadres of health workers and personnel are urgently needed. Third, the scarcity of public health skills is severe, particularly among senior health workers and team leaders at national, regional, and district levels, and needs to be addressed regionally rather than country by country.

V. Management

37. Better management is frequently identified as a major requirement for improving the efficiency and effectiveness of health services. At higher levels management is usually concerned with the macro-issues of health policy, strategic planning, and organization. Another set of management issues is concerned with obtaining the best results from existing resources, including health personnel - who are, arguably, the most critical resource. This is an especially important concern given the cutbacks in funding in recent years. (A recent World Health Organization technical report covers the
scope, definitions, components, and principles of human resources management; WHO 1989b.) Some widely reported personnel management problems are:

- Confusion over roles and responsibilities, particularly between different categories of health workers (Heggenhougen et al. 1987).
- Inadequate continuing education (Fulop 1986; Keralliede et al. 1987).
- Out-of-date policies and regulations, particularly legal regulations for clinical procedures (Morrow 1986; Cumper 1986).
- Infrequent and inadequate supervision and poor professional support (Bermawi et al. 1986; Walt 1988).
- Feelings of professional isolation, and lack of housing and amenities, particularly in rural areas (Fulop 1986).
- Lack of career possibilities and mobility in postings (Brearley 1984).
- Low status, particularly for women (Jeffrey 1988, Morrow 1986).
- Low levels and irregular payment of salaries (Heggenhougen et al. 1987).
- Unattractive terms of employment (Maru 1985).

Other types of management problems include inadequate teamwork, leadership, administrative procedures, and program activities. Management of logistics and supplies, such as drugs, transport, and maintenance of equipment, is also an important issue.

Management issues post a tremendous challenge to the health sector. All categories of health workers are expected to have both professional and managerial skills, but they receive little if any management training in their basic training programs. Doctors and nurses are also expected to show "leadership", a difficult quality to inculcate, develop, and reward (Flahault and Roemer 1985). More effort and new management initiatives are needed, particularly at the peripheral and district levels.

A common solution has been to set up short, in-service management training courses or workshops, but these often fail to meet expectations. They are criticized for being too theoretical and culturally inappropriate, or for using management training materials that were developed elsewhere and are unsuited to local circumstances. Another approach is to put greater efforts into upgrading supervision activities and to provide on-the-job and informal training for workers who have responsibility for first-line management and supervision.

While such training and related efforts have their place, more basic issues may need to be resolved first. To begin with, it may be appropriate to ask whether all or any health workers ought to be expected to be managers as well, and to carry such large management responsibilities. More initiatives may be needed to train professional health managers for a major role in large institutions and in district and regional health organizations, a policy that is followed in many developed countries and in some Asian and Latin American countries. This would allow doctors to doctor, nurses to nurse, and managers to manage. In Lesotho and Zimbabwe, a new cadre of health service administrators is being trained to assume responsibility for coordinating activities, particularly at the district level. Higher-level managers are being trained at the Eastern and Southern Management Institute (EASMI) in Arusha, Tanzania, a regional organization that provides general management training as well as specialist courses for the health sector and also organizes training programs in individual countries. More regional initiatives of this kind are needed in sub-Saharan Africa.
42. It is clear that there are many issues and problems involved in attaining better management and that there are a number of different approaches. Two large reviews of management training strategies for developing countries have documented the lack of adequate training approaches, facilities, and trainers, particularly for the public sector (Paul 1983; Kerrigan and Luke 1987). One study (Kerrigan and Luke 1987) also found that too little emphasis was placed on informal problem-solving approaches, and too much was placed on sending a few people on fellowships to formal courses in industrial countries. A much greater effort needs to be given to experimenting with integrating in-service and on-the-job training and supervision. Also, attention ought to be given to a review of lessons from experience with similar management issues in other sectors, such as agriculture or education, that might apply to the health sector as well.

VI. The Policy Questions

43. Countries in sub-Saharan Africa have achieved substantial increases in the number of health workers. The most important policy issues now concern how to use those health workers, both those in government and those in private employment, to greatest advantage. For instance, what are the most efficient staffing levels and skill mixes for various health facilities and programs? Can improved management and training make existing health workers more effective? Do current categories of health workers represent all the necessary skills? Can personnel expenditures in the ministry of health be reduced by reallocating existing staff? How can greater use be made of private health services and providers?

44. These issues are of more than academic concern at a time when most ministries of health in sub-Saharan Africa are attempting to maintain services with reduced financial resources per capita. Most countries allocate 6 percent or less of government expenditure to health, with personnel costs accounting for as much as 60 to 80 percent of that amount - for example, 73 percent in Cameroon in 1985-86, 70 percent in Madagascar in 1985, and 80 percent in Burkina Faso in 1982 (Bank Sector Reviews). There is also evidence that the proportion of government funds spent on salaries has been gradually rising (Lindauer, Meesok, and Suebsaeng 1988). As financial resources shrink, expenditures on such items as drugs, equipment, maintenance, and transport are being cut, while expenditures on personnel are not. If long-term improvements in efficiency and effectiveness are to be achieved in the health services, either the total allocation to health has to rise or the expenditure balance between personnel and other inputs has to change. Since total allocations are unlikely to rise in the current economic climate, personnel expenditures will have to drop to achieve a more efficient mix of inputs.

45. The public-private balance in the health sector also needs attention. For sub-Saharan Africa, particularly in rural areas, a strong and effective public health service will remain essential if a new balance is to be achieved between public and private. A significant increase in private involvement is likely to be possible only in urban areas and in rural areas with a high population density.

46. Implementing new personnel policies can be politically difficult, particularly when they challenge established professional groups, or when new policies call for redeployment or relocation of staff or for major changes in training, curriculum, or conditions of service. In many developing countries, public sector employees are well organized and capable of mounting strong opposition to such changes. Politically difficult decisions stand a better chance of being adopted when more rational and well designed policies for health personnel development have first been put in place.

VII. The Future of Health Personnel Development

47. Although the recent decline in government health expenditure has not resulted in any substantial drop in the total number of health staff in most countries, the decline in indicators of the
quality of services, such as facility utilization, suggests that efficiency has probably fallen. Even under 
the political constraints that may apply, the potential exists for a more rational use of human resources 
in the health sector. What is needed is a thorough reexamination of future health personnel needs in 
terms of numbers, skills, and category mix, followed by the formulation of clear policies for achieving 
a gradual shift in the way health resources are allocated. The potential for achieving savings appears to 
be far larger from changes in health personnel policies than from rationalizing essential drug programs. 
So why the apparent lack of urgency in tackling personnel issues?

48. The main driving force behind health personnel development in sub-Saharan Africa has 
been the conviction that a continuous expansion in personnel was needed, and to some extent this 
remains the case today. But this conviction now has to be reconciled with ever-tightening economic 
constraints. Reductions in government health expenditures mean that there can be little expansion in 
public health infrastructure and so in the numbers of public health workers that can be employed, at 
least for the near future. For instance, the Mali government was unable to employ more than 15 
percent of its 53 new medical graduates in 1985 because of funding constraints. While such problems 
of health personnel imbalance are likely to become much more widespread throughout sub-Saharan 
Africa in the near future, personnel must be viewed as only one part, albeit a critical one, of the whole 
health system. Without other essential inputs, health personnel become increasingly expensive and 
ineffective (Fulop and Roemer 1987).

49. Until recently, governments in the poorer countries in sub-Saharan Africa have assumed 
responsibility for developing the country’s health infrastructure, particularly in rural areas. Today, 
however, many countries are adopting policies that assume a larger role for nongovernment and private 
health services. These changes could mean a considerable growth in the private-for-profit sector and 
underfunding of public health services, leading to competition for professional staff and further 
deterioration in public services (Ozgediz 1983). Any further drop in the quality of public health 
services is likely to undermine schemes for cost recovery, such as those foreseen in the Bamako 
Initiative, because poorer quality services will probably lead to lower utilization. To prevent a 
worsening of inequality in the distribution and quality of services, the issue of health personnel 
development will have to be considered in broad terms.

50. For the near future, three important areas need to be considered in the formulation of new 
policies for health personnel:

- For health planning, a review is needed of the number and employment costs of all health 
  personnel, both professional and administrative. This review should be linked to 
  improvements in the information system that will permit more accurate forecasting of 
  personnel needs in each category and a realistic assessment of what the government can 
  afford.

- For training, an analysis of the roles and tasks of all health workers would provide the 
  basis for reviewing training institutes and their programs and for identifying the most 
  appropriate ways of organizing postgraduate and in-service training.

- For management, a reassessment is needed of the staffing mix and norms of facilities and 
  programs, linked to an analysis of the investment and recurrent costs of different staffing 
  patterns.

VIII. The Long-Term Challenge in Human Resources Development

51. The longer-term challenge is less clear, but the health personnel situation in sub-Saharan 
Africa is obviously at a critical crossroads. Planning can no longer be based on optimistic assumptions 
about the number of health workers that will be needed, and consequently all training programs will 
have to be critically reviewed. Management will continue to ask what are the best ways to use existing
personnel, making the management dimension of health personnel development the most prominent.

Need for a Broader Perspective

52. Emigration and internal migration of senior health workers, particularly doctors and nurses, is a growing problem, as many of them seek employment outside of government services and even outside their own country (Ozgediz 1983). This means that health personnel development needs to be considered within a national perspective. For instance, how can a nation make the best use of its total pool of trained health workers, including those who have taken posts outside the public health service. What are the implications for training at all levels? How can governments manage total expenditures on health personnel, both professional and support staff, in a way that maximizes benefits? What part -an government regulation of the private services play in the distribution of professional workers?

53. Achieving a broad and more integrated view of health personnel development within the larger context of human resource development (WHO 1989) requires taking a more holistic approach. Thus, the division of health personnel development into planning, production, and management components seems artificial, while the focus almost exclusively on employees in the government services has surely been too narrow.

54. New policies are needed, based on careful research into the present situation in sub-Saharan Africa. All the human resources potentially available within a country, now and in the future, need to be considered. Without such fundamental efforts, we are in danger of proposing solutions that are not well grounded in experience. This experience can be derived only from within sub-Saharan Africa itself. The World Health Organization and the World Bank, by combining their strengths and experience in the health sector and in management issues, are in a good position to initiate and promote such an approach. New health policies in sub-Saharan Africa will depend on well-trained and motivated people.

Conclusions

55. Several conclusions from this review of health personnel development in sub-Saharan Africa have important implications for strategic planning:

- National governments will need to retain a substantial role in the training of health personnel, particularly in regulating and funding basic training programs. However, since ministries of health are unlikely to be able to maintain high levels of employment in the public health sector, health personnel policies must become truly national in scope, taking into account the total personnel available in the country, not just those employed by the ministry of health.

- The shortage of doctors in sub-Saharan Africa remains acute, and the situation may deteriorate even further as economic conditions affect employment opportunities in both public and private sectors. Doctors are expensive to train and employ, but they are critical to the development of health services. Some countries, particularly smaller ones, need support to develop policies that will help them make the best use of regional training facilities in nearby countries. Similar regional initiatives are necessary for the training of other health workers, especially those that are required in relatively small numbers or in fields where skilled workers are scarce, such as public health and management.

- Ministries of health need to rationalize their expenditure on health personnel, but yet there is little experience in the health sector on how this might be done. Guidelines are urgently
needed, and experience from education, agriculture, and other sectors should be reviewed to see what lessons might be applicable to health.

The shortage of management skills at all levels is preventing countries from making the best use of scarce resources by improving efficiency and effectiveness. Greater support needs to be given to regional centers that offer management training designed specifically for health workers and to initiatives for improving in-service and on-the-job training for management skills.

The lack of accurate information on health personnel is a great impediment to the formulation of sound national policies. There is an urgent need to update the methods used to monitor health workers and to provide the basic numerical projections required for planning. Countries that are undertaking initiatives to improve personnel information systems should be supported and their experience used for the benefit of others.

Surprisingly little information exists on the cost implications of training and employing various types and number of health workers. In-depth studies are required to provide more insights into the choices that might be made in national health personnel policies. Only in this way will the full financial implications of different policies be appreciated.
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