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Training and utilization of auxiliary personnel for rural health teams in developing countries

Report of a
WHO Expert Committee

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Geneva, 12–16 December 1977

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THE TRAINING AND UTILIZATION OF AUXILIARY PERSONNEL FOR RURAL HEALTH TEAMS IN DEVELOPING COUNTRIES

Report of a WHO Expert Committee

The WHO Expert Committee on the Training and Utilization of Auxiliary Personnel for Rural Health Teams in Developing Countries met in Geneva from 12 to 16 December 1977. Mr W. W. Furth, Assistant Director-General of the World Health Organization, opened the meeting on behalf of the Director-General.

INTRODUCTION

Recent increases in health expenditure and spectacular advances in medicine and other sciences have had a very limited impact on people in the developing countries. If this situation persists, the attainment of better health will remain as elusive as ever for the world's rural poor and the depressed peripheral urban populations.

The vast majority of the rural poor in developing countries have hitherto been without an extensive organized system of health services, although attempts have been made to provide health auxiliary manpower. The development of this category of workers has undergone continual change over the years, reflecting the evolution of thought on how health care should be provided.

With increasing interest in improving health services, training programmes for multipurpose workers were initiated. Dispensary auxiliaries (also called "attendants" or "dressers") were the first to appear, and in spite of minimum training, limited equipment and supplies, and little supervision, they performed their duties well, mostly in bush dispensaries. Later, corresponding to various medical professionals, intermediate-level personnel were developed in nursing, midwifery, and environmental health. In the beginning most trainees were illiterate, but, as schooling became more widespread, trainees with primary education were recruited.

The years after the Second World War saw the development of the health-centre concept, based on teams of health personnel, and importance began to be attached to the relevance of the training of auxiliaries to the overall health needs of the rural population. The training of auxiliaries as multipurpose health workers for rural health services is an important factor in providing adequate health care.

An extensive application of the concept of primary health care (PHC), as accepted by the World Health Assembly in 1975 (*1*) and 1976 (*2*), could help to bring a substantial improvement in the health of rural people in developing countries.

The training and utilization of front-line and intermediate health personnel [1] required to meet the basic health needs of rural populations in developing countries are critical if the goal "Health for all by the year 2000" (*3*) is to be achieved. Improvement in health will be insufficient without improvement in the underlying social and economic conditions. Therefore a PHC worker's duties should not be confined to health work, but should relate as much as possible to the many aspects of social and community life that affect a person's well-being. A basic responsibility of the front-line worker should be to promote healthier living conditions. A nation's willingness to implement and develop PHC is essential. Once a country makes a formal commitment regarding the improvement of rural health services, the vast storehouse of experience, knowledge, and skill that has accumulated in the world can be used to help achieve improved health for all.

The Committee hopes that the recommendations made throughout this report will be useful in helping national authorities to formulate plans of action to develop and improve their PHC services in rural areas through the training and utilization of front-line and intermediate workers for health teams.

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[1] In the context of both horizontal and vertical activities of the health delivery system, the Committee considered only the front-line and intermediate-level rural health personnel. For the purpose of this report, front-line health personnel are those who make the first contact with the population at the peripheral delivery point; they are the first to see the sick and wounded, the first to bring care to pregnant women. They provide primary health care consisting of first aid, basic curative care (simple diagnosis and treatment, referral of complex cases to a higher level), preventive care and essential educational measures. Such workers are members of (and live in) the community they serve. Their task is to help the local people find their own solution to problems and organize themselves in such ways as to become the most active agents in their own development.

1. RURAL HEALTH DEVELOPMENT

The rural development process[2] requires an integrated and balanced approach taking note of such factors as health conditions, population distribution, crop production, education, and economic capacity.

Health development may be taken as an entry point to general development, in which rural health teams have a role to play. Planning for better health care must involve other aspects of socioeconomic life such as education, welfare, and agriculture, with maximum community participation in the decision-making process.

If the WHO target "health for all by the year 2000" is to be reached, the following elements must be included in the development process:

adequate food and housing, with protection of houses against insects and rodents; water adequate to permit cleanliness and safe drinking; suitable waste disposal; services for the provision of ante-natal, natal and post-natal care, including family planning; infant and childhood care, including nutritional support; immunization against the major infectious diseases of childhood; prevention and control of locally endemic diseases; elementary care of all age groups for injury and diseases; and easy access to sound and useful information on prevailing health problems and the methods of preventing and controlling them (*5*).

1.1 Primary health care and staffing patterns

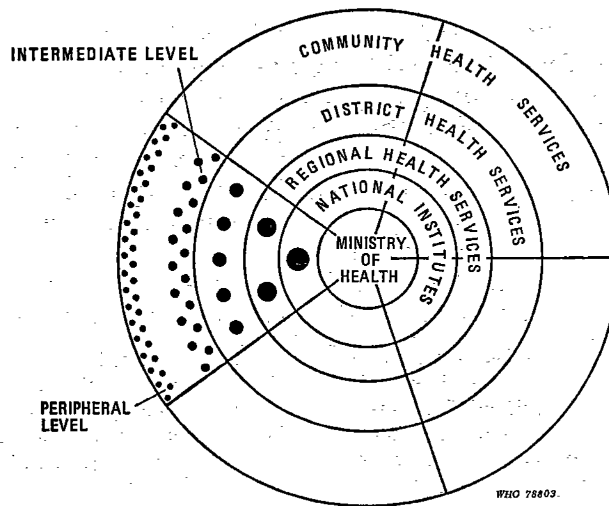
Health services must benefit the entire population (Fig. 1). Primary health care is defined as essential health care made universally accessible to all individuals in a community through full participation of its members, by means that are acceptable to them and at a cost the community and the country can afford. It forms an integral part both of the country's health system, of which it is a vital component, and of the overall social and economic development of the community.

The formulation of policies for the planning and implementation of PHC requires intersectoral coordination at the national level because PHC should be integrated with all other sectors of the local community.

PHC should reflect the sociocultural values, economic conditions, and health needs of the society in which it functions. Therefore each country must determine its own specific problems and priorities before launching a PHC programme.

[2] "Rural development is a strategy designed to improve the economic and social life of a specific group of people—the rural poor. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas. The group includes small-scale farmers, tenants and the landless" (*4*).

Fig. 1. Coverage of health services



The figure shows the organization and coverage of health care institutions in a country on the basis of the PHC concept. The dots in a section of the circle represent health care institutions in one region of the country.

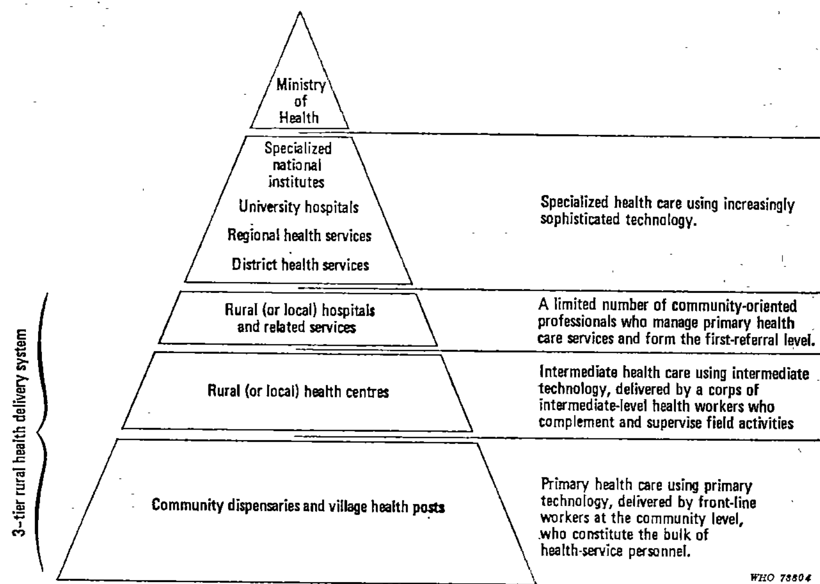
PHC should use technologies that are appropriate,[3] effective, and acceptable to the community. It should preferably be staffed by people recruited from the local community, who, when adequately trained, can respond more effectively to the community's health expectations, needs, and priorities.

There was general agreement in the Committee on the value of a three-tiered delivery system for rural health services. This system is illustrated by the classical pyramid of health services (Fig. 2). Once adapted to each country's specific circumstances, this system is a rational way of organizing PHC.

Primary health care begins at the local community or village level, at which health personnel initiate basic preventive, curative, and rehabilitative services. Staff at this delivery point may be primary health (or

[3] In this report, "appropriate" technology means technology that is not only scientifically sound but also acceptable to users, providers, and decision-makers alike. It is technology that is simple in design and execution, fits within local cultures, and can be adapted and further developed locally at low cost. Examples of appropriate technology for PHC are (1) the household treatment of diarrhoea by oral rehydration; (2) the use of a cheap and effective two-way communication system among health workers; (3) the use of bamboo for crutches; and (4) the use of coconut fibre for water filtration.

Fig. 2. Pyramid of health services



community) workers, intermediate health personnel (medical assistants, nurse practitioners, sanitarians), or physicians, depending on the availability of resources.

The second, or intermediate, intervention point offers additional preventive, curative, and rehabilitative services. The health personnel at this level should have the responsibility of maintaining and improving health by using more specialized skills. They provide additional care to people referred to them by health workers at the village or community level. They should also provide the appropriate support to the primary health workers, including continuing education, supervision, assistance, and guidance. The level of personnel at this delivery point may vary from one country to another—i.e., they may be physicians, medical assistants, or nurse practitioners.

The third level of rural health care is provided by professionals, both generalists and specialists (i.e., nurses, nurse-midwives, physicians, environmental engineers and pharmacists) who treat more complex diseases and solve health problems that cannot be solved at first and second tier levels.

Each tier of the health delivery system should function in a working relationship with the others. Therefore health personnel should also be

familiar with good management practices (see section 3.7). Although the three-tiered system is an accepted system in a number of countries, it should certainly not be considered the only model; other organizational arrangements may be suitable.

Primary health care "... is no second-rate substitute for something better, to be applied only in developing countries. Even highly industrialized and medically affluent societies have come to recognize the need to reinforce their primary health care services if they are to provide their total population with effective health care ..." (*5*).

In some developing countries, the ordinary citizens, the doctors, and the politicians alike often give highest priority to the type of medical care given in sophisticated medical centres. Even when the concept of PHC is accepted, it is often considered only a temporary measure. These pressures frequently lead governments to follow the pattern existing in the industrialized countries. People in many developing countries have not yet been convinced of the importance of PHC. Public relations resources should therefore be employed to propagate the concept. The critical role of the country's health authorities in the development of rural health teams should also be highlighted.

1.2 Government commitment

The health authorities of a country must identify the priority health needs and prepare effective programmes to provide for them. To achieve a firm national commitment to PHC objectives, the government should give preference in allocating national resources to the rural population, while not ignoring the urban and suburban poor. In practice this might mean drastic reforms in the existing health services and health manpower infrastructure. The balance of allocation of resources of both public and private sectors should be shifted towards the development of PHC. A more equitable *per capita* distribution of health expenditure is desirable between rural and urban areas and between referral care and primary care.

Improved PHC could be made a persuasive political issue. The support of the community, its leaders, and its influential citizens—including schoolteachers, civic clubs, women's groups, and local government officials—should be sought. For example, the support of teachers could more easily be enlisted if a PHC programme were presented to them in terms of reduction in school absenteeism and in the spread of infectious diseases, improvement in nutrition, and healthier and more alert pupils.

Once the government has formulated a policy regarding PHC, priority should be given to the training and utilization of personnel for rural health teams.[4]

Recommendation No. 1. The Committee, recognizing that political commitment at the national level is a prerequisite for a successful PHC policy, recommends that WHO continue to promote such a commitment in all Member States. This commitment should be expressed through a continuous allocation of adequate resources, priority being given to the training and utilization of front-line and intermediate-level personnel for rural health teams in developing countries.

1.3 Community involvement and participation

Socioeconomic and health care development should start at the village level, and it is important that rural communities in developing countries participate closely in development programmes. With some guidance, communities utilizing their own resources can organize themselves to achieve objectives that they have set. During the past decade the success or failure of different "grass roots" schemes for PHC has shown that lasting results can be achieved only through active community participation.

Forming a village health committee is one way of achieving community participation, enabling rural people to understand, through actual experience, the problems that can be solved with their own resources. A village health committee could be an important first step in the whole developmental process. By working together with health personnel, its members can identify and analyse problems, set priorities, and draw up plans of action and implement them. With the support of such a committee, the primary health workers and intermediate health personnel will have an opportunity to create, operate, and utilize the rural health care facilities in ways that are most acceptable to the community as a whole, and which meet their health needs.

A community's awareness of health matters should be continuously improved, and health personnel in rural health teams should therefore be educators, initiating and stimulating the participation of community members in individual and community health care. This will increase self-reliance at the local level. Catalytic support from outside the com-

[4] In this report a health team is considered to be a group of persons with a common health goal, determined by community needs, to the achievement of which each member of the team contributes according to his or her competence and skill and in coordination with the functions of the others.

munity may be necessary, but the community should not wait passively for help to be given.

There must be a continuing exchange of views between community representatives and the central health administration so that the community's needs and goals can be assessed realistically. People are capable of doing much more for themselves to improve the quality of life if they are aware of their own potential for bringing about a better future.

Rural communities should have easy access to information concerning health technologies that will help them solve some of their health problems.

If the local people at least partly control their health services, they will consider the health programme as their own and will feel encouraged to make a greater contribution to its development and endeavour to overcome economic, cultural, and political obstacles.

Recommendation No. 2. The Committee, recognizing that the success of any PHC programme depends on the full involvement and participation of the community, recommends that Member governments encourage communities to take an active part in decisions on manpower needed to staff rural health teams, particularly at the village and intermediate levels.

Recommendation No. 3. The Committee recommends that WHO encourage research into local community needs for an information system that will enable the community to participate in the PHC programme from an informed base.

2. HEALTH SERVICES AND MANPOWER DEVELOPMENT

Health services and manpower development can be defined as the functional integration of various elements of the health services and the health manpower development systems into an integrated system. Health manpower development and the development of rural health services are mutually complementary activities that should be coordinated at the outset. Health manpower and health delivery systems must be relevant to health needs. The ultimate objective is to strengthen health services, thereby improving the health status and quality of life of the entire population.

The Committee strongly supported the application of such a comprehensive and rational approach at the rural level. The integration of the planning, "production" and management of health manpower and health services improves the relevance of health services and manpower

policies to the priority health needs of the people. The establishment of a process of decision-making would be manifested in an expression of common health policy, of common planning of health services, and common use of agencies, institutions, facilities, manpower, and other resources. The effectiveness and efficiency of the process of development of health services and manpower could be measured by assessing how far and with what results it has contributed to the development of health services and how it has subsequently improved the health status and living standards of the population.

The introduction of the health services and manpower development concept in rural PHC is an important area where more knowledge and expertise are required.

3. DEVELOPMENT OF RURAL HEALTH TEAMS

In considering how rural health care can be developed in the coming decades, the Committee noted the world-wide trend towards team-work. It is clear that a health worker will be able to carry out his numerous tasks and responsibilities more efficiently if he is a member of a carefully composed team of persons with various types and degrees of skill and knowledge. The team as a whole has an impact greater than the sum of the contributions of its members. The concept of team-work implies a coordinated delivery of health care in the form of preventive, promotive, curative, and rehabilitative services including nutrition programmes, environmental control, fertility programmes, and communicable disease control.

3.1 Job titles and classification of front-line health personnel

Front-line and intermediate-level health personnel who work at the peripheral delivery points of PHC obviously have a significant role to play in the delivery of health services. It is unfortunate that the term "auxiliary" has been so often misunderstood and misused when referring to these workers.[5] (Some members of the Expert Committee were not satisfied with the word, maintaining that it has a pejorative connotation; they felt that in the search for a new term the description of functions

[5] An auxiliary worker has been defined as "a paid worker in a particular technical field, with less than full professional qualifications in that field, who assists and is supervised by a professional worker". — UNITED NATIONS ADMINISTRATIVE COMMITTEE ON COORDINATION. *Report of the Ad-Hoc Inter-Agency Meeting on the Training of Auxiliary and Community Workers, 19th Session, September 1954.* United Nations, document COORDINATION/R.170/Rev.1, p. 2 of Annex.

and not status should take precedence.) The Committee was aware of the difficulty of establishing a suitable and generally acceptable substitute. Various national terminologies might be explored for a solution.

The Iranian experience could be taken as an example. In the Selseleh Integrated Development Project, the name *mardom yar* or "friend of the people" applies to development workers classified in the three categories of health, education, and agriculture. Those whose responsibilities lie in the health care sector are called *behvarz* or health practitioners. This terminology is now being used at the national level for all the front-line health workers trained by the Ministry of Health of Iran.

Medical assistants are called *officier de santé* in France and *feldsher* in the USSR. More recently, *medex* has been employed in the USA and adopted also in Guyana and Micronesia. The term *perawat kesehatan* (primary health nurse) is used in Indonesia, *health extension officer* in Papua New Guinea, and *whetakorn* in Thailand.

Recommendation No. 4. A new attempt should be made by WHO to revise existing definitions of the word "auxiliary". A definition should be based on the competence attained through educational programmes which are themselves based on activities that such personnel are intended to perform. The definition should mention team-work, in which such personnel play an important role.

Many categories of health personnel have emerged in response to specific health needs. Front-line health personnel and both specialized and multipurpose workers differ in numbers and qualifications in different health-care programmes such as environmental health, maternal and child health, and family planning. Many variations exist in recruitment qualifications, type and duration of training, job functions, and work conditions from one programme to another, even within a given country.

Recommendation No. 5. The Committee, recognizing that PHC workers are not always classified and accepted as essential members of the health team, recommends that WHO promote the development of approaches that may be adopted by countries to reinforce the health worker's status (or "image") in society by ensuring:

- *training relevant to the job functions to be performed;*
- *quality of service through effective management of personnel;*
- *job security with career possibilities;*
- *job satisfaction, including adequate financial remuneration; and*
- *working conditions that ensure continuity of service.*

3.2 Composition of rural health teams

Health services require sufficient numbers of trained personnel. When recruiting health personnel, traditional health practitioners in the community should be considered as an additional potential manpower source. They should be suitably trained [6] for working in teams at the most peripheral level (see Fig. 1).

In developing a rural health team, the first step is to define the scope of activities of the health services at each delivery point in a rural region. The next step is to define the overall functions and tasks to be performed by the front-line and intermediate-level health workers. These tasks should then be allocated among members of the health team so that job descriptions can be drawn up for each one. These job descriptions would : (1) facilitate understanding between the training and the service sectors and facilitate cooperation between various levels, thereby avoiding unnecessary conflicts, (2) help identify the role and position of each health worker and increase self-confidence and self-reliance of front-line and intermediate personnel, (3) determine the proper position of each member of the team in the delivery system, (4) give a basis for the evaluation of performance of each team member ; and (5) facilitate training and student selection procedures.

The Committee felt that a thorough analysis should be undertaken of what new tasks will need to be performed, how a community can participate in performing some of these tasks, and what the existing categories of health personnel are doing and how they might be retrained for new or additional duties. Accordingly, all tasks that could be performed with equal effectiveness by less intensively trained personnel should be allocated to them.

The health team should preferably include people from various sectors of the community, such as agricultural workers, schoolteachers, and members of women's associations. Such health team members can discharge health tasks that are related to their day-to-day work. For example, prevention of occupational accidents in agriculture would be a task for agricultural workers, school hygiene and health would be a responsibility for schoolteachers, and health education in weaning or family health would be an activity undertaken by women's associations.

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[6] It should be noted that "suitably trained" is emphasized rather than "highly trained" because a worker with suitable training may be more useful in a given situation than one with more advanced and costly training.

Recommendation No. 6. The Committee recommends that countries take into account various historical, psychological, sociological and scientific factors when developing a rural health team in order to ensure that the composition of the health team (particularly in so far as front-line and intermediate-level personnel are concerned) is appropriate to overall rural development objectives.

3.3 Student selection

Trainees for a health team should preferably be selected from their own community and in the area where they will be expected to work. This procedure not only helps to ensure the return of candidates after training to their place of origin but also ensures that the candidates selected are familiar with the local culture and are acceptable to the community. Criteria for selecting students in all categories of health personnel should be developed. A practical method of selecting students is the evaluation of their potential for training and service after a short probationary period. The whole problem of student selection should be further investigated, and special importance should be assigned to the testing of attitudes and motivation.

3.4 Educational programme development and teaching/learning methods

Front-line rural health workers are not temporary substitutes for physicians and nurses, and they should be trained to meet the rural community's basic health needs at the primary level within a system of comprehensive health care. If these workers are mistakenly trained to become second-rate technicians and if their function in the health-care system is not planned as part of a total approach in health services, they will become unacceptable "mini-doctors" and subprofessionals whose activities would not ultimately fulfil health needs.

There is no single model for a training programme for auxiliary health workers in the rural areas of developing countries. The approach to the problem should be patiently explored by each country and worked out in detail in accordance with local characteristics, needs, culture, history, and resources.

The key word to educational programme development is *relevance*—relevance to the health requirements of the community, as determined by epidemiological surveys of diseases and sociological studies of the knowledge, attitudes, expectations, and demands of the community with

regard to health. The education of each category of health personnel should have as its fundamental purpose the preparation of the trainee for effective service within the constraints of available resources and facilities.

Education programmes should lay stress on team functions that facilitate team-work. The purpose of such training is to enable health team members to learn how to work efficiently together and to understand : (1) the responsibility of the team as a group ; (2) the role of each member in carrying out the team's responsibilities ; (3) the extent to which roles of team members overlap ; (4) the processes needed for working together ; and (5) the part played by the team in the overall delivery system. Changes in the expectations and needs of the community should lead to parallel changes in the health delivery system itself and in the training of health team members.

Competence based on formulation of job specifications and critical task analysis (analysis of those tasks essential for a health worker in a particular setting) should be the immediate objective of the education and training process. Once the competence required to accomplish a specific task has been identified, it is necessary to determine the precise knowledge and specific skills needed to achieve this competence. The essential logic of this systematic approach needs to be more universally adopted when preparing educational programmes for health personnel, including front-line and intermediate-level personnel (*6*, *7*).

Educational objectives [7] should be stated in relation to expected job functions, and training should emphasize functional competence. The objectives should be geared to predetermined standards and be directed to problem-solving related to community needs. The quality and relevance of educational objectives could be efficiently assessed by using the guidelines suggested by WHO (*8*) or other suitable guidelines.

Greater coordination between educational planning, teaching, and health service delivery would result if planners and administrators were acquainted with educational planning techniques and if teachers were familiar with the basic principles of health planning and management.

Teaching/learning methods should not only result in effective learning (i.e., the achievement of the objectives) but also be culturally acceptable. The selection of methods will depend on a variety of factors such as their suitability in given circumstances and their appropriateness with respect to trainees, teachers, and sociocultural conditions. In principle, teaching/

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[7] An educational objective is "a statement describing the expected results of learning experiences as they manifest themselves in the performance or behaviour of the learner" (*8*, p. 6).

learning methods should be as simple as possible so that front-line personnel can later on apply them in their own educational activities.

Effective teaching methods are those that take into account the interest and ability of the learner and his future functions and that offer him an opportunity to participate in the learning process. Problem-solving exercises in both the classroom and the field have been found to be effective in improving skills and changing attitudes. Care should be exercised to use methods most appropriate to the situation and based on the previous learning experiences of the students. Programmed self-instructional manuals are particularly useful in continuing education and in teacher training programmes, especially those that place emphasis on self-reliance in learning and on prior knowledge and experience.

Recent experience has shown that techniques such as flow charts [8] and learning modules [9] can enhance the competence of health personnel, and studies should be carried out on other new techniques of making health workers aware of the need to improve their judgement, initiative, and decision-making ability as well as their capacity to respond in a specific way to different situations.

There is a need for more learning material for students and resource material for teachers. The learning material should be designed to promote active student participation in the educational process. Whenever possible, both learning and resource materials should be prepared to meet local requirements. Prototype model material that can be adapted to a variety of situations would be of great value. The Committee commended the efforts made by institutions and organizations, including WHO, to prepare manuals and other resource material for the training of rural health personnel (*9–12*).

Criteria for the preparation of learning and resource materials should take account of time, energy, financial and material resources, and maintenance. WHO should continue to devise, introduce, promote, and publicize such educational methods and materials, which would be in a form suitable for both general and local use.

Recommendation No. 7. The Committee recommends the development of educational programmes for front-line and intermediate-level health personnel that are relevant to the priority health needs of the community

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[8] A flow chart is a diagrammatic representation of steps to be taken in the process of problem-solving, from the identification of the problem to its solution by the progressive elimination of alternatives.

[9] A learning module is a planned set of activities that will help the student (primary health worker) develop a specified competence (*9*).

and adaptable to local conditions, resources, and facilities. The type of technology used in these training programmes of front-line and intermediate-level health personnel should aim at relevance, competence, and greater self-reliance (i.e., it should be "appropriate" technology).

3.5 Teacher-training

The purpose of teacher-training is to prepare teachers who can facilitate the acquisition by primary health workers of the competence needed to perform the required tasks.

The problems of teacher-training for front-line and intermediate health personnel have only recently been identified. Furthermore, the magnitude of the task will demand unorthodox and dynamic approaches.

Training programmes for such personnel are handicapped by an inadequate supply of informed, knowledgeable, and trained teachers who are able to plan, implement, and evaluate teaching/learning processes. Although this situation may also be true for other categories of health personnel, some special constraints exist with regard to teachers for front-line and intermediate personnel for rural health teams.

The teaching of primary health care personnel has too long been underrated and neglected and the teachers themselves deprived of opportunities to increase their knowledge of PHC, appropriate technology, and educational principles and processes. Such teachers have suffered from inadequate recognition, a lack of career opportunities, and a serious lack of status professionally and in society at large. WHO should actively and energetically promote awareness of the value of these teachers.

When the students have limited general education, the teachers must be particularly well prepared and must have considerable skill in planning, organizing, implementing, and evaluating the teaching/learning process. Potential teachers should be selected with great care, consideration being given to their knowledge of health sciences, pedagogy, and social and behavioural sciences, as well as to their interest in teaching. Above all, they must have knowledge of the concept of PHC and experience in its implementation.

Countries should make serious efforts—perhaps in collaboration with WHO and other interested agencies—to expand their supply of technically and educationally qualified and community-oriented teachers. Potential teachers may be sought from a variety of sources outside the health professions. Schoolteachers, for example, could become PHC teachers if given supplementary training in health care sciences. This would permit the training of front-line and other categories of health

personnel to be effected as a special vocational programme in the general school system. Another way would be to develop educational approaches whereby PHC workers with broad experience and competence would be trained to become demonstrators, tutors and teachers.

Recommendation No. 8. Training courses should be organized for teachers of PHC personnel at national, regional, and international centres to increase their numbers and to improve their competence. National and WHO regional teacher-training centres could provide suitable bases for initiating such action. Selected universities might also have a great potential for developing courses for the training of teachers.

3.6 Continuing education

The main purpose of continuing education is to maintain motivation among health workers and to improve their competence in carrying out daily tasks. The arguments for continuing education apply to all categories of health workers, and plans for continuing education for front-line and intermediate workers should be incorporated into every educational and health service programme from the outset.

In principle, the content of continuing education programmes should be based primarily on identified errors, shortcomings, and faults occurring in everyday practice and caused by a lack of knowledge or skill or by the wrong attitude. It should also be based on the results of current social surveys, epidemiological studies, operational research, and evaluation of the services rendered. Continuing education should have three aspects: (1) training personnel to undertake new or revised tasks; (2) training personnel to perform daily tasks more efficiently; and (3) reorienting personnel towards changing concepts, priorities, and techniques.

3.7 Management of rural health teams

For the purpose of this report, management is considered to be the administrative process of mobilizing, deploying, supervising, and evaluating human and other resources (e.g., financial and material resources) to achieve health programme objectives.

Managers should always aim at achieving high personal efficiency rather than at constructing a bureaucratic framework.

The optimum effectiveness of health personnel depends on whether they are utilized specifically for the tasks for which they were trained; whether they are ready and able to cope with these tasks; the level of

job satisfaction; and their standard of living and working conditions. For these reasons, feedback from the health personnel is essential to manpower planning and training.

The following five management components were identified as being necessary if the health care provided by rural health personnel is to be effective.

(1) *Receptive framework (working and social environment)*. Experience has demonstrated the need for political, legal, professional, institutional, and community support for health teams working at the village level. Such support should be provided at the national level (see section 1.2). Support for rural health personnel by the health professions is considered essential. The development of a favourable attitude towards these workers depends ultimately on their performance, which depends in turn on professional support and community appreciation of their efforts.

(2) *Organizational framework*. Mention has already been made in section 1.1 of the advantages of a three-tiered organization in enabling rural health workers to achieve maximum effectiveness and efficiency and thereby extend more economical health coverage to the population. Management can improve efficiency: (*a*) by introducing appropriate technology; (*b*) by improving the competence of front-line health workers through continuing education and supervision; (*c*) by entrusting such workers with adequate responsibility; and (*d*) by using intermediate health personnel as technical supervisors, thus ensuring linkage with the next echelon of the health services.

(3) *Coordination of health manpower development and health services.* Close coordination is essential between those responsible for operations management and manpower planning and those involved in training programmes. The relevance of training to community needs can be determined by the continuous feedback of information on the performance of health team members, manpower attrition, and the capabilities of staff to adapt rapidly to ever changing circumstances.

(4) *Supervision*. Supervision should be viewed as an educational process in which the supervisor helps and guides the health worker to become more competent, to the ultimate benefit of patients and the community. Experience shows that a front-line health worker is not always capable of identifying his place in the health service structure and may feel abandoned if left without central support. Front-line workers should understand that supervision is intended as a supportive relation-

ship aimed at facilitating the flow of work and improving human relations. Whenever possible, supervisors should participate in both the selection and the training of their health team members. Close working relationships between management and training staff are vital because supervision is a tool of both management and education and is thus a shared responsibility.

Management style should be characterized by liberal communication, both horizontally and vertically, among team members. The supervisors should take interest in the health worker's job satisfaction and personal and professional growth. It has been recognized that cultural factors have a major influence on management style, some of which may even become constraints in the supervisory process. In some societies men may not examine women, and work schedules may have to be adapted to religious observances. Such factors should be taken into account by managers and supervisors.

(5) *Communication*. An adequate communication system should be established between the first level of health care and the next referral echelon and it should be maintained throughout the development and operation of PHC programmes. The communication system is particularly important for rural front-line workers in isolated or remote areas. Therefore the use of appropriate means of communication (including two-way radio where feasible and necessary) should be encouraged to facilitate consultation, referral, supervision, management, and continuing education.

In addition to these five management components, there are certain other management issues relevant to the training and utilization of rural health teams. Feedback techniques provide the information needed for adjusting the programme. The setting of performance objectives provides the basis for performance evaluation (including self-evaluation) and leads to a higher level of motivation, productivity, and satisfaction. The use of performance standards and indicators facilitates the task of intermediate and higher-level supervisors.

Managers should show sensitivity to external political, social, economic, and physical influences. They should be capable of anticipating needs by making the required adjustments in a flexible programme design. Moreover, managers must be continually aware of the quality and quantity of available resources, particularly human, and attentive to waste control and work simplification.

Front-line and intermediate personnel after training have too often found that their deployment has been inhibited by deficiencies in man-

agement support: shortage of drugs and material supplies; lack of equipment; unreliable communications and transport; unattractive working and living conditions in rural areas; and even (sometimes) failure to ensure regular and prompt payment of salaries. Funds are often available for sophisticated facilities and equipment but insufficient for essential supplies, maintenance, and repairs. An adequate continuous flow of resources to support rural health programmes is a fundamental requirement in PHC.

There should also be an adequate allocation of resources to support training in management skills. This includes initial and continuing training of supervisory-level personnel in operational management, as well as training for managers who need to develop the skills and knowledge necessary to operate the health delivery system.

Recommendation No. 9. Recognizing that management is a key factor in the optimum utilization of available resources, the Committee recommends that, in order to make the management of rural health teams more effective, intermediate-level personnel be used by the health service system to facilitate communication, as well as for educational and supervisory purposes.

3.8 Evaluation

Evaluation is a continuous process aimed mainly at correcting and improving actions and thereby increasing the relevance of health and training programmes to the social and health needs of a country's population. It is a systematic way of learning from experience and should not be regarded merely as a stereotyped procedure. Evaluation includes the assessment of a programme's relevance, progress, efficiency, effectiveness, and impact.

Since the aim of PHC is to ensure for the community an improvement in the quality of life, it is difficult to determine useful indicators by which to make the necessary judgements. Yet it is important that these be developed and that evaluation be carried out.

Evaluation is an essential element in the planning, implementation, and management of services and in education. In planning a training programme for front-line health personnel, provision should always be made for the evaluation of all components of the programme. This will be facilitated if the assigned responsibilities are clearly defined, if performance objectives are set and understood, and if standard performance indicators are used whenever possible. Information should be

available on inputs (resources), outputs (services rendered), and impact (changes in the health status of a community). This ensures that those responsible for planning the programme will receive a feedback of data on the extent to which the desired objectives are being attained.

One particular component of the programme that needs constant monitoring to ensure optimum effectiveness is the teaching/learning process, and indicators should be developed relevant to the efficiency, effectiveness, and impact of the process. Such indicators might, for example, include measures of competence acquired, population served, quality of services rendered, and improvement in access to care. The evaluation of educational programmes is part of a broader process to improve health care, and it applies also to continuing education for front-line personnel.

Evaluation requires sound judgement based on relevant and reliable information. Both indicators and criteria are used to facilitate judgement. When indicators are used, change may be measured directly or indirectly. If the objective of a programme is to train a certain number of health workers annually, the number actually trained would be a direct indicator for evaluation. However, it may be necessary to use several indicators when measuring qualitative changes. Indicators must be selected carefully to make sure that they are responsive to development trends and that they can be used for the analysis of current activities. Criteria are standards against which changes can be measured. Criteria may be social (e.g., availability of safe drinking-water) or technical (e.g., a certain standard for the purity of water) or administrative (e.g., a guarantee of continuous water supply to a community by an organization).

3.9 National reference centres for primary health care and rural health personnel

To monitor the effectiveness of PHC, as well as of PHC personnel, national reference centres should be established, using existing facilities wherever feasible. Such centres should possess the required expertise and facilities to carry out a range of functions, the four main ones being:

(1) operational research studies in PHC and in training and utilization of PHC workers;

(2) participation in the planning, implementation, and evaluation of training programmes for both PHC personnel and their teachers ;

(3) the pooling and dissemination of information and reference material relating to PHC and to the training and utilization of PHC workers ; and

(4) continuous monitoring and evaluation of the impact of PHC services on the health status of a community.

A national reference centre could participate in the implementation and continuous monitoring of PHC programmes and rural health teams. At the same time, all those concerned with PHC and the development of rural health teams could refer to such centres for guidance and the exchange of information and reference material. Some of these centres could be considered as WHO collaborating centres and entrusted with such tasks as promoting operational research on rural health teams, studying the composition and training of these teams, studying educational methods, and devising programmes for teacher training.

A reference centre should be a place where PHC, one of the vital aspects of rural development within a country's overall socioeconomic development, could be studied as a multidisciplinary problem. The organization and functioning of such a centre need to be explored in selected countries by the national authorities, perhaps in cooperation with WHO and other international bodies.

These centres could also organize workshops, seminars, and other meetings for the further rational development of rural health programmes. In this way a pool of experienced personnel might emerge that would include members of the health professions and professional people from other sectors such as agriculture, education, and welfare, in addition to representatives of the community. The experience gathered through these activities is an essential prerequisite for convening similar meetings on the reorientation and implementation of PHC programmes.

Recommendation No. 10. Countries should be encouraged to undertake a historical review of their experiences in all aspects of primary health care and to assess the current situation in order that evaluation and research may be directed specifically to solving problems and providing guidance for forward planning. The Committee therefore recommends that countries establish national reference centres to undertake research, planning, training, implementation and evaluation, and the collection and dissemination of information relevant to PHC and rural health personnel.

4. NATIONAL STRATEGY FOR DEVELOPING RURAL HEALTH TEAMS

National strategy in this respect should be considered with reference to the target "health for all by the year 2000" and within the framework of the health services and manpower development concept (see section 2). Countries should determine their objectives in their own way, taking into account the priorities in rural development defined in country health programming.[10]

Activities involved in this strategy are described below. While some of these steps will logically precede others, some will develop concurrently with others.

(1) Health development for the rural population to be accepted as one of the possible entry points for overall rural development within a country's socioeconomic development plans.

(2) The government to make a firm commitment to the development of PHC and rural health teams.

(3) The training and utilization of rural health teams to be made a priority objective within the health services at both peripheral and intermediate delivery points.

(4) Priority to be accorded to resource allocation for the development of rural health teams in order to encourage self-sufficiency and self-reliance at the community level.

(5) All available channels of information and communication to be used to create awareness of and support for PHC at community and national levels.

(6) Provision to be made for the planning, creation, and management of rural health teams, within the country's health programming and in accordance with the planning activities of the health services.

(7) Encouragement to be given to integrated rural development programmes that aim at being as fully self-financing as possible.

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[10] For the purpose of this report, country health programming is a set of methods for planning national health development so that it can be integrated into the plans for total socioeconomic development. The procedure for the development of a country health programme comprises: the systematic identification of priorities and health-related problems in a country; the specification of objectives for the reduction of these problems, including the establishment of specific targets; the identification of strategies that will lead to the attainment of the objectives; and the translation of the strategies into health development programmes.

(8) National reference centres for PHC and rural health personnel to be established with the aim of undertaking research, participating in the development of training programmes, pooling and disseminating information, and carrying out monitoring.

(9) Meetings to be organized with intersectoral participation of representatives of various professions, rural community leaders, and politicians, for the purpose of identifying and solving important problems concerning PHC and rural health team development.

After the preceding preparatory steps have been taken, a detailed work schedule should be outlined.

There has to be a balance between the delegation of powers to the community to encourage local interest and participation and the reservation of powers within the government to ensure the centralized formulation of national policy and its consistent application. The interaction between the community and the health services is the mechanism through which a successful PHC programme can be achieved.

Implementation of the plan may be facilitated by the use of management tools such as the Programme Evaluation and Review Technique (PERT), which is a graphical form of work scheduling. It is, in fact, useful to prepare a diagram that will: (1) give a visual presentation of all the activities planned for developing a programme from beginning to end, (2) show the succession of activities with specific time periods, and (3) allow for their monitoring and control so that they can be implemented in a logical sequence. Responsibility for implementation must be vested in a single individual who has at his disposal all the necessary means, in both funds and manpower.

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