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Learning together to work together for health

Report of a WHO Study Group
on Multiprofessional
Education of Health Personnel:
the Team Approach

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OF HEALTH PERSONNEL: THE TEAM APPROACH**

Geneva, 12-16 October 1987

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LEARNING TOGETHER TO WORK TOGETHER FOR HEALTH

Report of a WHO Study Group on Multiprofessional Education of Health Personnel: the Team Approach

A WHO Study Group on Multiprofessional Education of Health Personnel: the Team Approach met in Geneva from 12 to 16 October 1987. The meeting was opened on behalf of the Director-General by Dr Farouk Partow, Assistant Director-General.

INTRODUCTION

It is a policy of the World Health Organization to foster a type of educational programme for health personnel that will enable them to respond to the needs of the populations they serve as part of efforts to achieve the goal of health for all through primary health care.

Multiprofessional education oriented to the priority health needs of populations is one such type of programme. During certain periods of their education students of different health professions learn together the skills necessary for solving the priority health problems of individuals and communities that are known to be particularly amenable to team-work. The emphasis is on learning how to interact with one another. Multiprofessional education does not replace but complements the part of a curriculum concerned essentially with one particular profession. It is based on ascertained priority health problems of communities; learning takes place in direct contact with the people and in different kinds of health service setting.

1. DEFINITIONS

In the present report, the educational experience shared by members or students of different health professions is called "multiprofessional education". Somewhat similar approaches are

variously described in the literature as multidisciplinary or interdisciplinary education. Since these words may mean something different (e.g., "discipline" in medical and nursing education corresponds to subjects such as anatomy, physiology, immunology), the Study Group recommended the use of the term "multiprofessional". The term "interprofessional" is also found in the literature and has the same meaning as "multiprofessional".

For the purposes of this report the Study Group accepted the following definitions:

Health personnel: All persons who carry out health care tasks (promotive, preventive, curative, and rehabilitative) within the health system (whether they are community health workers, heart surgeons, dentists, nurses, chiropodists, sanitary engineers, social workers or any other manpower category).

Health team: A group of people who share a common health goal and common objectives, determined by community needs, to the achievement of which each member of the team contributes, in accordance with his or her competence and skill, and in coordination with the functions of others (*1*). The manner and degree of such cooperation will vary and has to be determined by each society according to its own needs and resources. There can be no universally applicable composition of the health team.

Team approach: Preference for the use of teams to solve health problems. In this paper "team-work" and "multiprofessional education" are treated as two manifestations of the team approach.

Team-work: Coordinated action, carried out by two or more individuals jointly, concurrently or sequentially. It implies commonly agreed goals; a clear awareness of, and respect for, others' roles and functions on the part of each member of the team; adequate human and material resources; supportive cooperative relationships and mutual trust; effective leadership; open, honest and sensitive communications; and provision for evaluation.

Team-work is a process rather than an end in itself and occurs whenever two or more workers interact to solve problems, whether in a formally constituted team or informally. It entails the ability to work as colleagues rather than in a superior-subordinate relationship.

Multiprofessional education: The process by which a group of students (or workers) from the health-related occupations with different educational backgrounds learn together during certain periods of their education, with interaction as an important goal, to

collaborate in providing promotive, preventive, curative, rehabilitative and other health-related services.

Other terms used in this report are discussed in Annex 1.

2. RELEVANCE OF MULTIPROFESSIONAL EDUCATION TO COMMUNITY NEEDS

Multiprofessional education is not an end in itself but a means of ensuring that different types of health personnel can work together to meet the health needs of the people. It must never be forgotten that the concept of community orientation must underlie the design of any curriculum: community orientation is designed to ensure that the competencies of health personnel are relevant to the health needs of the people. Multiprofessional education for primary health care should be a part of a community-oriented curriculum.

While multiprofessional education is clearly needed during all phases of the education of health personnel, the Study Group focused on multiprofessional education in undergraduate or basic education. The aims of the Study Group were to clarify the meaning of multiprofessional education, to describe its rationale and purposes, to determine its implications, to suggest how it can be put into practice, and to recommend ways of promoting and implementing it.

In considering how health care might be developed in subsequent decades, a WHO Expert Committee in 1977 noted a worldwide trend towards team-work. It recognized that health workers could carry out their numerous tasks and responsibilities more efficiently if they were members of carefully composed teams of people with various types and degrees of skill and knowledge. A team as a whole had an impact greater than the sum of the contributions of its members. The concept of team-work implied 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 (2).

Education programmes should stress ways of enabling 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 (2).

The specific team competencies (Annex 1) needed to ensure effective team functioning are the objectives of multiprofessional education. Team effectiveness is not ensured merely by training its members individually in the techniques of community health care (the doctor for medical tasks, the nurse for nursing tasks, the sanitarian for environmental health tasks, the social worker for social-work tasks) but rather in the processes through which the team as a whole is led and supervised and approaches problems. Those processes are characterized by: (1) adaptability—the ability of the team as a whole to solve problems, to react flexibly to changing environmental demands and to incorporate different professions, community representatives and patients, all of whom have essential contributions to make to the restoration of individual or community health; (2) a sense of identity, based on knowledge and insight of what the team is and what it is to do, and on a personal commitment by each member to the common goals; and (3) the ability to discover, perceive accurately and interpret correctly those properties of the environment that are relevant to the purposeful functioning of the team. Those characteristics have implications for team leadership and for the evaluation of team performance and effectiveness, and hence for education (3).

Some health care problems other than those commonly regarded as community health problems are also usually managed by teams, e.g., child psychiatric or behavioural disorders, managed by child guidance teams; and acute life-threatening conditions, dealt with by intensive care teams or specialized surgical teams. This report, however, is concerned with team-work in primary health care. Examples of problems in this category are malnutrition, infectious diseases of infancy and childhood, and disorders of pregnancy and childbirth. To deal with such problems a coordinated, collaborative effort is needed, involving team-work, often with an intersectoral component; different kinds of teams are needed in different circumstances and their training will also differ. The following could serve as examples for educational purposes:

- In Egypt a network of collaborative programmes was established throughout the country in 1960–1964. Each network programme involves a primary and preparatory school, a health unit, a veterinary unit, a social security unit and an agricultural development unit, under the direction of a physician or

schoolmaster, and is designed to coordinate activities geared to the social and economic development of its service area (about 10 000 inhabitants). Most rural health programmes employ an agricultural engineer, a sanitary engineer, a social worker, an environmental health specialist, a chemist and a media representative. Teams are responsible for vector control (eradication of rats, mosquitos and flies), provision of clean water supply, and sewage disposal. Family planning teams consist of a physician, social workers, a pharmacist, a religious leader and media representatives (E. Ezzat, personal communication, 1987).

- In many counties of Sweden, at district health centres, primary health care teams have now been successfully established. They consist of two nurses, a physician, two auxiliary nurses, an occupational therapist and a physical therapist. In some new health centres social workers and representatives of health insurance organizations and public employment authorities can be coopted for specific purposes. Thus, the team functions intersectorally (N.-H. Areskog, personal communication, 1987).
- In certain parts of Scotland a coordinated effort by teams of general practitioners, midwives and health visitors has been directed at reducing an above-average rate of perinatal mortality (W.W. Thomson, personal communication, 1987).

Membership of student teams should depend primarily on a student's ability to contribute to solving priority community problems while acquiring team-work skills. Every effort should be made to use for learning purposes the tasks normally performed in the community, and the membership of the team ought to be determined by appropriateness to the tasks and community needs. It is essential to use for training purposes the typical priority health problems that need a multiprofessional approach for their solution; this will also help to promote team-work and the team approach to health development in the health services. Priority health problems are not always the problems most commonly found in a community: they will include uncommon but serious conditions that can be successfully treated or relieved.

- In Adelaide, South Australia, second-year undergraduate students from various health-related professional educational institutions come together for a short multiprofessional programme, in nearly all cases as a compulsory part of their curriculum. The courses from which they are drawn are: Aboriginal health care, chiropody, health administration, health surveying, home economics, medicine, nursing, occupational therapy, physiotherapy, psychology (applied and clinical), social administration, social work, speech pathology (phoniatriy) and

sports science. They study the health problems in their community and their likely causes; analyse the objectives, structure and functions of the national health system; explore health worker roles; and learn the basic skills of working together. They return in their final undergraduate year to refine this learning as preparation for practice. Later, some may undertake postgraduate study in public health in a multiprofessional setting (J. Moss, personal communication, 1987).

- In Israel, students at Ben Gurion University (medicine, nursing and physiotherapy) launched a health education programme which is now in its fourth year. Each student who joins the programme is assigned to two groups and meets with each for an hour a week. The groups may be junior high school classes, groups of adults in community clubs, inmates in the local prison, etc. The weekly meetings are devoted to issues of general hygiene, nutrition, smoking, drugs, sex education, dental hygiene, etc. In addition, the students attend a weekly session devoted to developing the skills of independent learning (self-learning and group-learning). They are joined by specialists, such as educationalists, dentists, nutritionists, psychologists, who, together with teachers and school psychologists, make up powerful multiprofessional teams for practising independent and group learning techniques (D. Benor, personal communication, 1987).
- In Sweden, the University of Linköping has for many years had experience of practical multiprofessional education organized with nursing and medical students together, and with physical therapists and medical students together, in wards or outpatient departments, where patient problems and programmes for care and therapy are discussed in small groups. The experience has so far been in hospital care only, but it is intended that a similar type of education will be arranged in primary health care centres (N.-H. Areskog, personal communication, 1987).
- At the Aga Khan University in Karachi, Pakistan, there is close interaction between the medical and nursing schools in regard to community-based education and health services development. This interaction occurs at several levels (J. Bryant, personal communication, 1987).
- At a London dental school, a third-year elective scheme attaches students for over one month to several day nurseries in an inner-city area. These settings are for children at risk in various ways and exemplify the problems of urban deprivation, including health problems. Working in groups, students assist and complement the daily work of the staff (nurses, teachers, helpers) and provide support and back-up with a programme of oral health education designed specially for this target group. Students participate in training, learn to work alongside the staff

and carry out their own evaluation exercises (M. Craft, personal communication, 1987).

Despite the various *a priori* reasons for advocating multiprofessional education, more evidence is needed from all parts of the world of the extent to which it forms part of the undergraduate or basic education of health workers. It is particularly necessary to determine the specific ways in which multiprofessional education increases students' ability to solve health problems both individually and as members of teams, and results in a significant improvement in the quality of health care (4). Reliable evidence and documentation of its strengths and weaknesses are also needed.

3. THE RATIONALE OF MULTIPROFESSIONAL EDUCATION

Community-oriented, multiprofessional education of health personnel has an important place in strategies for achieving health for all. The following quotations from WHO publications refer to the role of health manpower in these strategies:

"Ministries of health, in collaboration with other ministries and educational bodies concerned, will take steps at the highest government level to introduce the policy of educating and training health manpower to perform functions that are highly relevant to the country's priority health problems, in contrast to accepted practice in many countries.

"... They will make all efforts to introduce the necessary reforms in faculties of medicine, health sciences and other relevant training institutions so that in addition to their technical training health personnel will become imbued with the philosophy of health development as defined in the Declaration and Report of Alma-Ata and in this Strategy" (5).

"Primary health care ... relies, at local and referral levels, on health workers, including physicians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community" (6).

This statement refers to the membership of the typical primary health care team, which is the central concern of this document. For many primary health care purposes, however, teams will need to

include various representatives of sectors other than health as well as representatives of the communities concerned.

- In the United Kingdom, teams providing primary oral health care to young children and young teenagers combine community dental health staff with schoolteachers, nursery nurses, assistant nurses, parents and other lay helpers. Also a health authority, to promote healthy snack-food eating among 5-9-year-olds, has formed a team combining dieticians, health educators, schoolteachers, catering staff, local authority officials and community dental health specialists (M. Craft, personal communication, 1987).
- Primary care units in Egypt consist of physicians, public health specialists, a sanitarian, nurses, midwives, experts in family planning, dentists, a laboratory technician, a clerk, a record-keeper, a pharmacist and two representatives of the community, chosen by the Governor. Egypt also uses the health-team approach in diarrhoea control and the Expanded Programme on Immunization. Diarrhoea control and oral rehydration therapy are carried out by a team consisting of a physician, nurses, a laboratory technician, a bacteriologist, biochemists, pharmacists, a social worker and a media expert. For the immunization programme, the team consists of physicians, laboratory technologists, pharmacists, a media expert and public representatives (E. Ezzat, personal communication, 1987).
- After the 1985 earthquakes in Mexico City, many community organizations came into being in the poor areas of the city. They were concerned mainly with reconstruction and problems of land ownership, but also with health issues. In a cooperative effort by independent community groups and the Autonomous Metropolitan University of Mexico-Xochimilco outpatient clinics were established, as well as programmes for health education and epidemiological surveillance. The heads of all the programmes were from the community, and the university staff and students were regarded as technical advisers to the committees. This type of cooperation ensured efficient integration of health programmes in the communities, and, in some respects, better results for certain specific problems (F. Mora, personal communication, 1987).
- In each municipality of the Philippines, a primary health care team, with special responsibility for the implementation of the Expanded Programme on Immunization, includes the municipal health officer (physician), public health nurse, sanitary inspector and midwife of the particular community where the activity is being implemented. Public elementary schoolteachers, community health workers and one or more socio-civic organizations provide additional help and support for the team's activities (A.E. Lim, personal communication, 1987).

The priority health problems of communities are usually not amenable to medical care alone or even to conventional forms of health care alone. Particularly in developing countries, health promotion and maintenance cannot be separated from general socioeconomic development. The health problems are often complex: the health of individuals and groups, and the principal preventable problems of morbidity and mortality, are mostly determined and influenced by economic, social and cultural factors as well as by the physical environment. Health development, therefore, requires an approach that influences all these factors within the broad framework of family, community, work, and leisure (7). Observation and experience of the influence of environment, culture, value systems, and socioeconomic conditions on the lives of individuals, families and groups can be used to promote student awareness of human needs and of means by which different professions and sectors can cooperate to meet those needs.

- At the Aga Khan University in Karachi, medical and nursing students participate together in community assessment activities. First-year medical students and second-year nursing students plan together how they will approach a selected community, and then go on to meet community leaders and develop a relationship of understanding and trust. This serves as a basis for a sociodemographic and health survey which they carry out jointly with the community. They then analyse the data together, consider the implications of the findings, and report their conclusions to the community and to the collaborating health services (J. Bryant, personal communication, 1987).

Multiprofessional education is one of the means whereby an educational institution or a health authority or voluntary organization can introduce primary health care into a country's health care system, or reorient a functioning health care system towards primary health care. It is also a means by which functioning primary health care teams acquire and improve the skills needed for working with communities.

- Multiprofessional education for functioning primary health care teams has been one of the main tasks of the Foundation for Multi-Disciplinary Education in Community Health, which recently moved to the Department of Community Medicine of the University of Adelaide, Australia. The approach has been to work with one agency (e.g., a community health centre) at a time in its actual work setting. Having been invited by the agency, the Foundation's teaching staff first work with a small group of

agency staff to define and understand the issues as they see them and to set educational goals. Then periods of time are set aside to spend with all the staff, no matter how senior or junior, and preferably including community representatives. The needs vary depending on the agency, with varying requirements for organizational change, staff development and information sharing. The members of the teaching staff attempt to meet these needs as they are expressed without imposing their own solutions, but providing resources within a model of adult learning. They then maintain contact during the implementation phase of new initiatives. The experience gained from working with established teams is particularly useful in the planning of undergraduate multiprofessional education (J. Moss, personal communication, 1987).

- The Aga Khan University, Karachi, is attempting to develop primary health care prototypes that could contribute to the improvement of the Government's health services. The roles of physicians and nurses in these prototypes are vital factors in the ability of the system to provide effective primary health care. Accordingly, the critical nature of these roles and their interaction with one another are a focal point of concern to the medical and the nursing schools, and are emphasized to students as they learn to work together (J. Bryant, personal communication, 1987).

During their basic education and training in their chosen profession the different types of health worker acquire different views on the nature of health and health care. These views come to occupy a fundamental place in the way they think and are usually strongly reinforced by the work environment. Some professions tend to lay more emphasis on the physical causation of health and disease, while others stress mental or social factors. The point is not that practitioners are unaware of the full implications of the WHO definition of health, but that they actually practise as though their beliefs were narrower, and their professional associations tend to adopt a similar viewpoint. In order to work together effectively and efficiently, the different types of health worker will need to learn and understand how the others think on health issues, and to recognize and appreciate one another's skills and contributions.

Different types of health worker have different patterns of thinking (8). Even though nurses, for instance, must learn a great many facts that apply to their practice, their profession is usually regulated in such a way that they are not given the authority to take responsibility for certain decisions, which are reserved to the medical profession. Social workers are also very much concerned with the

application of principles; yet, unlike doctors, social workers may often be hesitant to make judgements or take decisions for their clients. Environmental health personnel exercise different kinds of authority, usually through organized community agencies. Medical ideas have in the past shaped the thinking and education of such professions as nursing and physiotherapy and even social work. These professions have had to come to terms with an understanding of health and health care that is independent of medicine.

Although the different professions usually represented in primary health care teams think in these different ways, and most health personnel now employed did not have multiprofessional education during their basic training, if health care is to be effective they must be able to work together in groups, to adapt to a common time-scale, and to recognize the unique role and potential contribution of each member of the team. Training in their own profession only does not adequately prepare the members of the different health care professions to apply their different disciplines and competencies; it needs to be supplemented with multiprofessional training so that the different professions become aware of their different ways of thinking and acting and gain experience of coordinated team-work, in which each has an essential role to play. It should also enable them to devise ways of preventing or solving the conflicts that can arise in the course of team-work.

- A pilot programme in multiprofessional geriatric training for medical and nursing students was carried out at the Albert Einstein College of Medicine in New York City. Its objectives were to provide opportunities for collaboration and to increase appreciation of the role of each profession in caring for the aged. It aimed also at fostering a holistic approach to the aged and recognition of the psychosocial influences on their lives. Teams of one medical and two nursing students conducted investigations of patients and presented cases to a multiprofessional group of health care professionals.

Analysis of opinions of ten medical students and ten nursing students showed that the programme significantly enhanced medical students' perceptions of the nurse's role in geriatric care. All the students found that working together with students of other health professions was a valuable learning experience. On the whole the nursing students reacted more positively to the programme than the medical students (9).

- The medical and nursing schools of the Aga Khan University, Karachi, are promoting the development of a new nursing cadre, the community health nurse. The Department of Community Health Sciences of the medical school has recruited

several nurses to serve as community health nurses in the university's primary health care field sites; there they function as members of the primary health care team providing preventive and curative services for deprived urban or rural populations. In these settings, they work with both nursing and medical students, and provide a model showing how the community health nurse functions in a leadership role alongside the physician in a primary health care system (J. Bryant, personal communication, 1987).

Basic education programmes in nursing, medicine, medicosocial work and other health professions should aim at producing generalist practitioners who are able to see each patient or client both as a whole person and as part of society. The division, even atomization, of the human body, which is characteristic of the typical single-profession health care curriculum, orients students towards specialization and away from general and multiprofessional practice. The typical undergraduate curriculum also neglects the contribution which other health professions or non-health sectors could make. Multiprofessional education is a means of remedying these defects.

However, it is not sufficient for students (who will most likely become leaders in their communities) merely to have experience in working in a health team. They must also accept and adopt the values that underlie team-work. Hence they should have an opportunity to take part in joint analysis of the structure and functions of the health system. They should also be encouraged to explore the process of professional socialization which they are undergoing and how they are developing a particular set of values and selective ways of interpreting their observations (e.g., from a biological standpoint for medical students, a social structure standpoint for social work students).

3.1 Advantages of multiprofessional education¹

Teachers who have experimented with multiprofessional education have reported the following advantages:

- (1) It develops the ability of students to share knowledge and skills collaboratively, and thereby provide individuals and the community with health care more efficiently.

¹ This section draws partly on the Proceedings of a consultation of the WHO Regional Office for Europe (10).

- (2) It enables students to become competent in the team-work needed for the solution of priority health problems. It helps to develop mutual respect and understanding between health team members. It helps different categories of health worker assess one another's strengths, limitations and work patterns, and the different ways in which they can contribute to the solution of individual and community health problems.
- (3) It helps to "decompartmentalize" curricula and to prevent the development of a corporate mentality, which is a factor in resistance to interprofessional collaboration.
- (4) It permits the integration of new skills and areas of knowledge that have a role to play in health care, e.g., health economics, sociology, communications science, information sciences, education etc.
- (5) It helps teachers, learners and service staff of different disciplines to communicate more easily among themselves.
- (6) It generates, establishes and promotes new roles, competencies, responsibilities and areas of interest; especially when introduced early it extends the range of careers for students to choose from or in which to advance.
- (7) It promotes multiprofessional research, often in new or previously neglected areas, to ensure that all the pertinent aspects of a problem are considered.
- (8) It requires and promotes interdepartmental and interdisciplinary understanding and cooperation within institutions responsible for training and research.
- (9) It permits collective consideration of the allocation, utilization and assessment of educational and service resources according to ascertained needs.
- (10) It helps to ensure consistency and avoid contradiction or conflict in curriculum design.

3.2 Need for research into multiprofessional education

The justification for multiprofessional education has sprung from recognition of the limitations of existing professional practice in the health system, combined with a realization that there is a set of hitherto neglected competencies that need to be mastered. However, research into multiprofessional education and evaluation of its effects on later professional practice and quality of care are hampered, for two reasons. One is the marginal status of multi-

professional education, and the other is the inherent difficulty in distinguishing its effects from those of other curricular components and of the social environment.

Much information, which would have to be obtained mainly from decision-linked research,¹ is still needed to determine the value of multiprofessional education and the extent to which it is practicable (3). Information is also needed in order to decide upon the best and most cost-effective methods of implementing it in a critical, discriminating way where its advantages over the less complex education in a single profession are demonstrated in different cultures and environments. It is also important to ensure that multiprofessional education is not wasted because of failure or inability to employ effective team-work in primary health care, where it is obviously called for. Hence, research is essential in order to provide a basis for informed decision-making in regard to the concomitant development of multiprofessional education and team-work in primary health care. Obviously, education and practice would be mutually beneficial and strengthening. The field settings in which multiprofessional education takes place will normally be suitable for research into team practice and training in team-work.

4. QUALITATIVE ASPECTS OF MULTIPROFESSIONAL EDUCATION

To decide whether an educational programme is adequately promoting the team approach in primary health care, consideration must be given to such qualitative matters as the degree to which educational planning is coordinated with the health services, the way in which intersectoral linkages function in both education and health care, the means by which the education and health sectors are

¹ Decision-linked research in health manpower development is designed to increase the degree to which research findings are used as a basis for decision-making in planning, training and utilizing health manpower. The assumption is that in most instances an informed decision is likely to be better than an uninformed one, even if its ultimate determinants are political or intuitive. The primary goal of health manpower research and related types of information-gathering, then, is to enable informed decisions to be made in health manpower development. The starting point in decision-linked research is to determine the information needs of decision-makers and researchers. Research is then designed to respond directly to those needs. A collaborative effort from the outset should enhance the potential impact of research on decision-making. (*Improving health care through decision-linked research*, unpublished WHO document, HMD/86.4).

promoting and supporting community involvement, the degree to which sound educational principles are respected, the extent to which students are encouraged to carry out research projects, the importance accorded in the curriculum to the ethics of health care, to competency-based and problem-based learning, to providing a balanced variety of educational settings, and to the valid measurement of the performance of graduates (11, pp. 35–37).

4.1 Coordination and cooperation between the health and education systems

An essential condition for successful multiprofessional education is effective coordination, or at least cooperation, between the health and the educational systems, to help to ensure that health personnel respond to the needs of the health system. The organizational patterns of the health and education ministries, their respective shares of responsibility for the education of health personnel and the degree of centralization of health and educational planning will determine whether coordination will prove difficult or easy (12).

A useful form of coordination is for teachers to undertake service responsibilities in primary health care teams while health service staff accept certain educational, supervisory and research tasks. This can help teachers to acquire skills in team-work for health and development, in direct contact with the population; service staff can improve and extend their health care skills and become competent in educating and supervising student teams in the community and in the educational institution. It would also make it easier to prepare learning materials based on actual health problems and conditions of practice, and to focus research on finding the information needed for dealing with actual problems and reaching sound decisions.

- The University of Linköping, in Sweden, has been using primary health care physicians as tutors during the first ten weeks of instruction for the different health professions in an integrated course (nurses, physicians, occupational and physical therapists, laboratory technicians and social care assistants for the handicapped and elderly). The physicians were selected because of their own personal interest. Most had had limited teaching experience, but all were trained for their tutorial roles (N.-H. Areskog, personal communication, 1987).
- In Egypt, members of the Suez Canal University Faculty of Medicine provide services in primary care units both as general practitioners and as subject experts; in this way they provide training for Ministry of Health physicians, nurses, laboratory

technologists and midwives together with medical students. Senior physicians and nurses in the units supervise and assess the learning activities of medical students. It is planned to involve the Ministry of Health in detailed curriculum activities, planning and evaluation. The attitude of faculty members and Ministry physicians changed considerably towards service and education when they jointly implemented well-defined programmes. Included in the service team are social workers and representatives of the community (E. Ezzat, personal communication, 1987).

- At the Center for Health Sciences and Services of the Ben Gurion University of the Negev, Israel, the staff employed by the health services and the educational system are becoming accustomed to the collaborative nature of their functions. Academic titles are granted to primary care physicians and community nurses. Thus real partnership has evolved through appointing staff with joint academic and service responsibilities and introducing a suitable reward system. Commitment to the precept that health care should respond to community needs is being encouraged as a means of cultivating professional pride in community health work (M. Prywes, personal communication, 1986).

Priority areas for coordination should be defined. Very often, there is a discrepancy between the criteria used for assessing the quality of health care in the health sector and those used in the education sector and agreement must be sought, even though the health sector may not always be in a position to meet the joint criteria straight away. In the case of multiprofessional education, educational institutions are often in a position to set high but realistic standards which they can help practitioners and health services to meet.

Close links will be needed between the health services and the university and other tertiary education institutions, as these are essentially multisectoral (11, p. 19; 13). Similarly, medical, nursing and sanitary engineering schools or faculties can benefit by drawing on the resources of the other university faculties for purposes of multiprofessional education.

4.2 The intersectoral approach

Intersectoral cooperation is one of the principal components of primary health care and is especially relevant to multiprofessional education, since in many instances health teams must enlist the support or participation of non-health sectors and at the same time

collaborate with other development sectors in activities related to health. Such sectors include agriculture, animal husbandry, food, industry, education, housing, public works, water supply and communications.

Obviously community development in general, and its health component in particular, are heavily dependent on sustained intersectoral cooperation. A consistent effort is needed to counter the tendency of development activities to be sectorally segregated and thus to impede team-work involving intersectoral elements. Intersectoral coordination will be more effective when there is a strong community organization to which the different sectors can relate and which can ensure follow-up. Where the intersectoral component of team-work in primary health care is concerned, educational planning will need to involve not only the health and education sectors but also the other developmental sectors that have a part to play in protecting and promoting health, e.g., those concerned with literacy and adult education programmes, with food production or with social welfare.

Health development teams may evolve in the course of promoting intersectoral action for health, or health care teams may enlist the support or participation of other sectors to deal with a particular problem. Problems calling for intersectoral action may arise in countries at all levels of development. Examples that may be cited are the health and other problems of migrants in large cities, chronic disability associated with aging, the adverse physical and sociopsychological impact of development projects, the health consequences of unemployment, or occupational health problems.

Hitherto in the education of health personnel, insufficient attention has been paid to intersectoral cooperation for health promotion. Very few of the innovative institutions launched in the last decade or so have included the intersectoral dimension of health promotion and health care in their educational programmes. Graduates who have followed conventional single-profession curricula are not trained to recognize or analyse the multiple determinants of many of the diseases and health problems with which they may have to deal—various problems resulting from malnutrition, neonatal tetanus, occupational health problems, disabilities of old age, etc.

The intersectoral component of primary health care team-work could be covered in multiprofessional education by assigning students to variously composed teams with members from different

sectors. They could be given selected health problems to solve and selected tasks to carry out under supervision (ranging from the recognition to the solution of the problem set) as appropriate to their different professions and at gradually higher levels of difficulty. A complementary method of incorporating the intersectoral element is to employ members of health teams, under the guidance of supervisors, as tutors or instructors of student teams. For all kinds of team, however, the emphasis in basic curricula should be on education in generally applicable skills and attitudes of team-work.

- The Faculty of Medicine of Bobigny, University of Paris North, France, has engaged teachers in anthropology, health economics, sociology, psychology and ecology to help the students to understand better the intersectoral approach to health during the first two years of the curriculum (J.-F. D'Ivernois, personal communication, 1987).

- At the University of Sherbrooke, Canada, three departments of professional training created an academic project which required the setting-up of a multiprofessional team. The project was carried out with second-year undergraduate students in three programmes of professional training: nursing, psychology and social work. The students volunteered for the experiment with an actual multiprofessional team. The objectives included the development of the person as an individual, as a professional and as a member of a multiprofessional team. The project was carried out over 15 weeks, on two days a week, and consisted of reading, individual work, team meetings and interventions. Two teams were formed. One arranged an information session for parents of mentally handicapped children and the other defined and helped to resolve difficulties experienced by a physically handicapped student. The groups were supervised by a psychologist in human relations, and professors in each discipline supervised the individuals' professional practice.

The project confirmed the need to assign team tasks that require the professional contributions of all the members, as otherwise they cannot function as a multiprofessional team.

It also showed the importance of a coordinator within the team to be responsible for liaison between the team and its clients.

The project was also most useful for the teachers involved and gave them a valuable lesson in multiprofessional education. It permitted them to compare their own perceptions of their professions with those of the others, not only as teachers but also as nurses, social workers and psychologists (14).

Team-work in primary health care will often require sequential rather than concurrent contributions from individual team-members.

- The sequential nature of team-work is illustrated by the training of nutrition, medical, veterinary and agronomy students at the Autonomous Metropolitan University of Mexico-Xochimilco. In their third year of training the nutrition students make a nutritional assessment of rural communities. They look for evidence of undernourishment in infants and preschool children, as measured by height, weight and other somatic indices. If malnutrition is detected, the family is classed as high-risk and followed up by a programme on nutritional education (performed by the nutrition students), detection of other health problems (performed by the medical students) and alternative ways of obtaining food (performed by the agronomy and veterinary students). This example of sequential team-work is noteworthy in that it includes "food-producing" students, who are not always regarded as members of health teams. This point deserves further analysis, since "health" can be very easily categorized according to health-service models and systems, rather than to real health problem-solving activities, such as those that could be performed by agronomy or veterinary students or professionals (F. Mora, personal communication, 1987).

It is vitally important for ministries of health to ensure a high level of coordination within the health sector if they are to justify their efforts to promote and coordinate intersectoral action with the other sectors that have contributions to make to health care. They will need also to familiarize themselves with the relevant policies and programmes of all the sectors closely related to health, and be prepared to indicate specific problems to be tackled in cooperation with each of those sectors.

- In Ireland the Minister of Health has formed an intersectoral committee, under his own chairmanship, to coordinate policy on health promotion. The other members are the Ministers of the Environment, Agriculture, Education, Labour, and Energy (J. Gallagher, personal communication, 1987).

4.3 Community involvement

Community involvement is another key component of primary health care that needs to be reflected in the membership and tasks of health teams and the educational objectives of multiprofessional education. Close collaboration with community representatives, and as much as possible with the community in general, will be necessary; one of the main aims of multiprofessional education must be to train student teams to encourage families and whole communities to accept responsibility for the control of their health problems and for their own health care and to support them in their efforts. Such

education should therefore take place, as far as possible, in settings where community involvement in primary health care is already established and is being encouraged. Underprivileged and deprived communities can benefit particularly from being used as settings for multiprofessional education, since it should develop in the people a sense of self-awareness and responsibility for their own health. There must, of course, be genuine partnership with the community and due respect for its values and aspirations.¹

- In the Philippines, the Divine Word University in Tacloban City, Leyte Province, drew up an Integrated Community-Based Programme primarily to provide its medical, nursing, laboratory technology and social work students with learning experiences in the community while working in multiprofessional teams, to prepare them for their future roles as community workers. It also provides the communities with multiprofessional services to foster community involvement in primary health care and help them achieve self-reliance. The programme generates research data with implications for service and education.

This programme was launched in 1984 in two rural communities selected because the people were poor, the local government had approved the programme, the people had committed themselves to its support, and the area was readily accessible. The University ensured administrative support and drew up a memorandum of agreement with the regional government offices (see section 5.2).

Senior students from the four courses are trained in team-work. They live in the communities in accommodation owned or rented by the University. They share common educational objectives. Their activities are spread over the whole school year. The senior students act as preceptors to junior students.

In multiprofessional teams they work with community leaders in assessing problems and needs, in planning, implementing and evaluating community-based activities, in tapping human and material resources, and in conducting research. They share cooperatively the task of conducting leadership training courses for community health workers.

Each member of a team also works as an individual health worker. The medical student attends to women in labour and carries out physical examinations of patients. The nursing student does home nursing and first aid. The laboratory technology student examines stools for intestinal parasites and determines haemoglobin levels. The social work student helps a

¹ Community involvement in community-based education has been dealt with in detail by a WHO Study Group (15).

4.4 Educational principles

Multiprofessional education depends on the same basic educational principles and processes as apply to any health personnel curriculum, and particularly on 'learning by doing'. Thus, its learning activities should:

- (a) be based on an explicit statement of the professional knowledge and skills expected from the different team members (intellectual, practical and communication skills), from which learning objectives would be derived;
- (b) educate students together in the diagnosis and solution of priority health problems, concentrating on those that affect the community and whose solution depends on interprofessional and intersectoral action;
- (c) relate to the needs of the whole person, as seen by each team member from the standpoint of his own profession;
- (d) result in competence in effective methods of health education of the public to enable communities to exercise responsibility for protecting their own health;
- (e) foster collaborative problem-solving abilities (determination of problems, including the structural barriers to primary health care, and proposal of solutions);
- (f) promote "learning how to learn" during and after basic education, as well as the ability to deal with uncertainties, leading to educational self-reliance and also the willingness and ability to use peer support;
- (g) be based from the beginning and throughout the curriculum on a balanced variety of learning sites, in a diversity of health care settings and in the community itself;
- (h) be closely adapted to the ascertained needs of student teams;
- (i) provide for valid assessment of the special competencies that students should acquire from multiprofessional education.

Multiprofessional education must include as learning objectives of both undergraduate and postgraduate health teams the psychosocial skills individual health workers are expected to exercise; these include perception, valuing, empathy, communication and creativity for adequate decision-making (I. Durana, personal communication, 1985).

4.5 The concept of competency-based education

An explicit description of all the tasks of a health care team will help in defining the professional profile of each category of health worker. A profile will describe the general functions as well as the specific activities and tasks expected of each type of health worker. The general functions are more or less the same for most health workers. Thus, as members of health teams, and as individuals, graduates should be competent to:

- respond to the health needs and expressed demands of the community, and work with it in encouraging healthy life-styles and self-care;
- educate the community and those who work with them;
- solve and encourage the solving of both individual and community health problems;
- orient their own and community efforts towards health promotion and the prevention of diseases, unnecessary suffering, disability and avoidable death; and
- continue learning throughout their lives so as to keep their professional knowledge and skills up to date and even improve them so far as possible (16).

It is by segmenting the general functions into more specific components, or professional tasks, that the different types of health manpower may be differentiated (17). Such a listing of tasks serves to determine the team-learning activities whereby students may acquire the necessary team-work competencies.

Different members of teams will sometimes need to perform the same primary health care functions in different circumstances: medical members will sometimes perform tasks that nurses usually perform and vice versa. A female doctor may need to perform a nursing task if the nurse is a male and not acceptable for certain purposes to certain patients. All team members will share health education tasks, for instance, directed at promoting and supporting community involvement in health care.

- An interprofessional experiment in the University of Illinois at Chicago brought together 28 students from two professions, nursing and dietetics, early in their academic programmes with a view to strengthening their interviewing and planning skills and orienting them towards interprofessional collaboration. The goals were that students would clarify role functions, collaborate in the development of a care plan, and establish a foundation for the development of relationships as colleagues.

Observing a student from another profession conduct an interview was felt to be a very effective learning experience. Seeing the similarities and differences in the approach to data collection and the questions asked by each profession was consistently considered helpful. In addition, the opportunity to observe the type of feedback students from another discipline receive from their teachers suggested other ways of looking at things. Students pointed out that expectations in regard to the development of interview skills, attention to the psychological needs of the patients, and the mastery of subject content are basically the same for students in both professions.

More than 50% of the students observed that while there were many similarities among the interview questions, the focus differed. For example, when interviewing a client with iron-deficiency anaemia, the nursing student placed equal emphasis on the client's intake of iron-rich foods, job and family responsibilities, menstrual pattern, activity tolerance, the effects of signs and symptoms on daily activities, and methods of coping with fatigue. While the dietetics student touched on all of these areas, the interview time was spent primarily in discussing client eating patterns, factors affecting eating habits, and in helping the client explore dietary alternatives.

Several nursing students remarked that the dietitian demonstrated a greater depth of knowledge about nutrition and they could clearly see the advantage of having a dietitian as a consultant. Dietetics students expressed surprise at how concerned the nurse was about the client's nutritional status. One dietetics student commented that she felt angry when she observed the nursing student asking the client so many questions about her diet: "Why is she asking the same questions that I ask? That's what I do." Such a reaction illustrates the point that during interprofessional experiences issues of role definition and role negotiation emerge very quickly because territorial concerns arise and must be addressed. In this case, the nursing student attempted to defend and clarify her role. The intervention of the teaching staff was called for. A lengthy discussion ensued as teachers from both professions provided information regarding role functions, overlap, and role limitations.

Following the feedback session the students were instructed to develop a care plan. They were to establish one priority diagnosis and set of treatment goals, determine the appropriate dietetic and nursing interventions, and record the information on either the dietetics or the nursing care plan form.

Students from both professions said that sharing information and collaboration is an extremely efficient way of ensuring a holistic care plan. Input from both professions is helpful since the client has many different problems. Working together helped students to gain more insight into the client's overall situation, formulate more comprehensive diagnoses, and clarify the

objectives and goals for care. Students also stated that collaboration results in greater communication, which in turn benefits the client since it facilitates implementation of the plan (18).

Relatively few schools for health personnel have successfully defined professional profiles as a prerequisite for curriculum design (19). It requires the consensus not only of the teaching staff but also of administrators of health services, educators, former graduates, the consumers of health care, trade unions, and students, based on analysis of epidemiological data, health manpower projections, sociological surveys, work studies (20) and other sources of relevant data. In the case of multiprofessional education particular attention must be given to team profiles, and to different components of the ability to work constructively in a team.

The drawing-up of professional profiles as a basis for curriculum planning is an illuminating but time-consuming exercise and most schools have not yet been sufficiently convinced of its value to invest the necessary time and manpower in it. Experience over the last 30 years has helped in understanding what should be done to ensure a learner-centred curriculum (21). One approach is to ask the teachers to define, as a basis for planning the educational programme, the professional profile of the future graduates. Another is to ask the learners themselves to determine, through the problem-solving approach, their future tasks, which are the components of their own professional profiles. The combination of these two approaches, the second of which ensures a learner-centred curriculum, enables teachers to introduce and supervise such a curriculum and assess its implementation more efficiently.

4.6 The problem-solving approach

Problem-solving learning is a process whereby students learn by using a problem as a basis for determining what information they need in order to understand and solve the problem (22).

Since communities' priority health problems can be solved only by the combined efforts of different health care disciplines and professions and related non-health sectors, problem-based learning is most appropriate for multiprofessional education.

In the case of multiprofessional education the problems on which team learning and teaching are to be based should be selected from among individual and community priority health problems that

require or would benefit from team action and that affect most of the community, particularly its vulnerable, underserved and at-risk groups. They should also be problems that can be solved or greatly reduced by team-work.

In order to deal with their assigned health problems the students will first need a grounding in the nature of health and its determinants, the analytical skills required for understanding the health system and ascertaining community needs, and specific team-work skills.

The problem-solving approach has the very significant advantage that, while adhering strictly to its basic rules, students and teachers alike learn by experience the range and variety of the problems that are prevalent in a community. By systematically applying the problem-solving method, valuable experience can be accumulated in ways of promoting community health, supporting community involvement in primary health care, organizing training programmes and learning exercises and developing the potential of team-work in community health.

Students should themselves be helped to discover or diagnose problems. In a team approach to finding a solution to a problem, one step will invariably be for each member of the student team to determine what actions the members of the team should perform together or in coordination to solve it. These actions are components of the professional profile. The curriculum planner must ensure that the sum of these professional actions, derived from such a problem-solving approach, covers all the tasks a given type of health professional should be able to perform. It is for that purpose that the drawing-up of professional profiles is essential.

- In the United States of America, at the University of Illinois Hospital, Chicago, the interdisciplinary geriatrics course—one of the programme's most popular courses—offers pairs of students of medicine, pharmacy, social work, and nursing the opportunity to come together to evaluate geriatric cases. The teaching staff for the course comprise attending physicians from the Geriatrics Medicare Programme, social workers, clinical pharmacists and a member of the nursing faculty.

Cases are chosen for the course that involve multiple and overlapping problems affecting care and in solving which a consensus between several professions may be useful.

For each case, the students work in pairs, examining or interviewing the patient according to the norms of their profession. At this point students are not allowed to discuss the case with others on the course. Within several days the students

meet, with teaching staff in attendance, to discuss the case together. Each student serves in turn as convener of a multiprofessional student team to try to achieve agreement on a health care plan. The teaching staff present observe but do not take part in the discussion. Following the discussion, students and teachers criticize the content of the previous hour (23).

- It is planned to use problem-based learning as the educational method in the new nursing school at Suez Canal University. Student nurses and medical students will work as teams in groups trained together on the same health phenomena and problems.

The community-oriented educational programme of the Suez Canal University Faculty of Medicine is community-based and problem-based. Students join the health team in the unit and are assigned certain functions over a period of time. A family health programme is being implemented and students, supported by physicians and teachers, share responsibility for family health (E. Ezzat, personal communication, 1987).

4.7 The concept of community-based education

For educational planning purposes, the problem-solving approach permits the school and the health administration to derive and establish criteria of team effectiveness, which educational programmes can then utilize in multiprofessional education at basic, postgraduate and continuing education levels. With a view to using this approach in ways relevant to community health needs, the concept of community-based education (15) has been put forward and is now being used in practice in some innovative institutions (24).

Primary health care teams, and consequently student teams, or students attached to teams, will encounter various types of problem, from those predominantly to do with medicine or nursing to those that are mainly social and environmental. The community-based curriculum will ensure that student teams learn to deal with the same range of problems as those that affect the communities in which they will later practise, progressing gradually from relatively simple problems to increasingly complex problems typical of most communities. The problems should also include those that affect team performance—problems of leadership and supervision, coordination and integration, communication, motivation, etc.

- In Kathmandu, Nepal, the Institute of Medicine, which is responsible for the training of different categories of primary health care workers, initiated multiprofessional education with

trainee auxiliary nurse midwives and community medical assistants. These workers jointly staff the village posts and work in very difficult conditions. Their survival and success as health workers depend on team-work.

Community-based training included small-group assignments such as family case studies, household surveys, running maternal and child health clinics and educating the community. Student teams collected and analysed data, clarified roles, discovered problems and worked together to solve them. Team-work competence was included in the final evaluation of both categories (M. Thapa & S. Anderson, personal communication, 1987).

One way that has been suggested for ensuring a balanced range of problems in the curriculum is based on the epidemiological characteristics of a typical community, described as the "natural history of health problems" (25). The community-based multiprofessional education programme would give teams of students responsibility, under supervision, for groups of patients and families from a given community. The teams would aim gradually to help the groups and the communities to determine what their health problems are and how to manage them. Teams of students supervised by their teachers would base their learning activities in due proportion firstly on the general community (which might comprise 10 000 people), then on patients who attend an outpatient health care service and those who are admitted at least once to a hospital (say 1000 people), and finally on those who are admitted to a university tertiary-care hospital (say 100 people).¹

In this way student teams would engage in learning activities, each student in her or his own role, and the training would encompass, in their true proportions, the typical range of a community's health problems, requiring primary-level, secondary-level and tertiary-level care. This would be an instance of the primary health care concept in practice. The different team members would acquire the team skills corresponding to their respective roles. This kind of organization would make it easy for students to learn in an integrated way the basic principles of team-work, a scientific approach and positive attitudes. The whole process could be

¹ The figures given here are based on a study by White, which showed that out of a total of 1000 people at risk, an average of 720 visited a physician as outpatients at least once, 100 people were admitted to a hospital at least once and only 10 were admitted to a university hospital at least once in a period of one year (1970) (25).

managed by teachers from different health professions, ensuring intellectual discipline, supervision and assessment.

4.8 Students' research projects

Multiprofessional research may be used as a learning tool.

- At the Medical Faculty of Bobigny, University of Paris North, France, students in medicine, nursing, health administration, clinical psychology and biology follow a common core curriculum in the first term of the first year, during which they perform a situational analysis in the community through an epidemiological research project. This has the advantage of not only having students from different future professions learning to work together but also providing them with an opportunity to be in close contact with the population outside the usual context of disease treatment. The tutoring is done by a multiprofessional team made up of epidemiologists, statisticians, public health nurses and physicians (Y. Zomer, personal communication, 1983).

The advantages of using multiprofessional research as a learning tool are that (a) it makes students aware of the community's needs; (b) it helps them acquire the ability to establish a working relationship with other health professionals and a positive attitude to interpersonal relationships and team-work; (c) it helps students gain greater self-awareness as part of their personal development, as well as an adequate perception and understanding of their particular roles; and (d) it systematically builds up a body of knowledge on which to base individual professional practice. Research in this context can be a means of community diagnosis, and of obtaining information that will enable communities and their health workers to solve problems.

- An educational experiment was carried out from 1981 to 1985 in a basic health unit in Algiers. It was designed and developed as part of a community health-action project in a working-class district. As part of the project, students of various professions were associated in research surveys. Sociology and economics students, together with medical students, worked together in a small project team.

Training took place in an urban district and was based on an actual situation, which had a particularly stimulating effect. The students devoted a great deal of time to the project (between 9 weeks and 6 months, full-time). Specific evaluation criteria were applied (social relevance, quality of contacts, capacity for group work, etc.).

An educational contract was negotiated with each group of students. Each group was expected to draw up in writing a research protocol specifying objectives, strategies, methods, planning and evaluation procedures.

Examples of the research carried out were:

- a series of evaluations of immunization coverage rates;
- calculations of local infant mortality rates;
- a survey of the prevalence of arterial hypertension at district level and introduction of a patient management programme;
- evaluation and improvement of local systems of health information and epidemiological surveillance;
- a study of the reasons for consultation and of the routes of access to care.

Evaluation showed that the project produced a definite but variable degree of awareness of the size of health problems and of the community approach. Three-quarters of the participants proved receptive, but did not change their subsequent professional practice which was influenced by the clinical model. The remaining quarter introduced projects of this kind in their subsequent professional work.

This experiment stimulated a similar experiment in the Department of Preventive and Social Medicine of the Saint Antoine Faculty (Paris, France). The Department uses educational practices based on the same principles, particularly with multiprofessional teams, as part of training in projects. This approach has been found to be especially effective; participants see it as an opportunity to develop their practical skills, with university support, focused on community realities (O. Daoud-Bixi & B. Pissaro, personal communication, 1987).

- Close cooperation and coordinated programmes based on temporary or permanent links have started in Egypt between the Ministry of Health and schools of science, arts, education, and veterinary medicine. The links help in the training of health teams and in research into the solution of many health problems. Six medical students from the Suez Canal University worked in a team with students from the Schools of Science and Agriculture to study the prevalence of schistosomiasis in a new community on reclaimed land on the east bank of the Suez Canal. The group studied the prevalence of the disease, the characteristics of snails (the host reservoir), water dynamics, water plants that affected snail prevalence, types of irrigation system and hydrodynamic mechanisms that influenced snail survival, and farm-workers' habits of cultivation and lifestyle. Various practical measures for treatment and biochemical control resulted (E. Ezzat, personal communication, 1987).

4.9 The ethics of health care

Health teams will need to uphold the same ethical values as team members do when they are working as individuals. The problems selected for learning purposes will need to include some in which the student teams will be expected to exercise their ethical responsibility for protecting the community from harmful actions, ensuring equitable access to health care for all and respecting human and cultural values. Since in many cultures organized religion is concerned with certain aspects of medical ethics, it may be useful to invite representatives of different religions to take part in the education of student teams with regard to ethical values and principles.

As in other kinds of field training and in clinical training, the educational institution concerned must ensure that student teams asked to play a very active role in communities do not cause harm because of lack of competence. To enable student teams to cope with serious illnesses and emergencies they should have direct access to supervisors and to emergency services. This will give them reassurance and may help to save lives. It is important that team members be trained to use emergency life-saving techniques and also to refer patients for further care (at primary/secondary/tertiary levels).

4.10 Performance assessment

Students usually attach little importance to a subject for which there is no certifying assessment. If students are to take primary health care team-work seriously, and if the educational institution is to justify the effort put into multiprofessional education, teachers must make sure that the team-work skills of the students are assessed and that the instruments used for assessing them are valid, i.e. that they test the competencies for which multiprofessional education is designed. There are clear advantages in assessing the performance of teams in actual practice conditions, but there are also practical difficulties in doing so.

Since students may work in teams at different periods of their undergraduate training, it will be necessary to use different kinds of assessment for each level. As growing competence is accompanied by growing responsibility—a basic principle in the education of health personnel—the complexity and variety of assessment instruments

(including self-assessment) should increase accordingly, while always ensuring a high degree of validity.

Assessment of the required competencies for multiprofessional team-work is a priority issue in educational planning because what students learn is strongly influenced by the types of instrument used for examinations. This principle applies just as much to acquiring team-work competencies as to other kinds of learning. Quality control is essential and must be defined in relation to the purposes of a team-centred education. The pressing problem is that there are still not enough adequate measuring instruments and criteria of optimal performance as a member of a team (26), and many questions remain to be answered.

Multiprofessional education will include learning/teaching with teachers of different health and development disciplines. The same group of teachers should devise the instruments for measuring the students' competence but not all the teachers need to take part in the assessment. The assessment team should include some of the field health workers and community members participating in the learning/teaching activities. The assessment should take place in conditions that are the same as or similar to those in which the students have done their learning. Once it is clear which professional tasks require team activities, performance assessment and the evaluation instruments can be based on the performance of those tasks.

A multiprofessional team of teachers will need to be trained to use a variety of performance assessment instruments. Experience in schools that are members of the Network of Community-Oriented Educational Institutions for Health Sciences indicates that the best evaluators will be those who have themselves been educated through a multiprofessional education programme (H. Schmidt, personal communication, 1987). Peer review, often neglected, should also be one of the required means of assessment (27).

4.11 Multiprofessional education at different phases in the education of health personnel

Multiprofessional education can be introduced and used with advantage at all phases of the education of health personnel—basic or undergraduate, postbasic or postgraduate, and continuing (in-service) education.

At a very early stage it can be used as a means of selecting and orienting students for different professions.

- In 1984 the Faculty of Medicine of Bobigny, University of Paris North, introduced a new course, unique in France, concerned with the orientation of students towards the various health professions and their final selection of courses. The course, which lasts two years, offers students who are interested in a career in health sciences an opportunity to discover the fields that suit them best.

The programme, which is partly theoretical and partly practical, is organized in units, of which some are core units taken by all students, and others are specific to the different categories of student. Students have several opportunities to change their choices.

1. The core units, which continue throughout the two years, are concerned mainly with various aspects of community health (epidemiology, psychosociology, economics, ecology, health education, etc.). The theoretical part (about 52% of the total of 250 hours) consists mainly of lectures and small-group teaching. The practical part (about 48% of the total) consists of:

- (a) An epidemiological survey, done by the students in pairs on two days a week for five weeks during the first term of the first year. It covers an urban community and each year deals with priority problems selected for that year by a group of community representatives (from the local authority), epidemiological researchers and university teachers (e.g. immunization coverage, local awareness of health structures, smoking, etc.).
- (b) A survey, carried out by each student individually for a total of five days over a period of three weeks in a health unit related to the student's professional interests. The student has to meet health personnel, analyse their functions, and learn about the structure in which they work, their relations with other health personnel, and the problems they encounter. This survey has an important role in helping the students make their first choice of professional career; it also takes place during the first term of the first year.
- (c) Study of a personal reading-list suggested by the teachers, covering topics in the core units and survey subjects, and followed by group discussions (30-40 students per instructor).

2. The specific units cover a total of 795 hours spread over two years. They are intended to guide the students towards a particular health care profession: medicine, dentistry, nursing, midwifery, psychology, biology, management of health establishments, etc. Lectures take up 62% of the time. The rest (305 hours) consists of practical work, most of it (285 hours)

during the second year, including problem-solving exercises (two hours each week for a total of 80 hours) in groups (30–40 students), presented by an instructor and leading to open discussions. After two years students obtain a diploma in health care (for those who chose medicine, nursing, midwifery or dentistry), psychology, biology or health management.

The training activities in each of the specific units are both theoretical and practical. The “health care” unit provides training in care procedures in simulation laboratories; the school itself is used as an observation area for studying the quality of communication in the institution, including group, institutional and personal communication (role-playing, video-simulation).

3. Supplementary units, to a total of 470 hours (lectures), enable the students to prepare for a competitive examination for entry to the health profession that interests them. Here, training is not multiprofessional. It follows on from the earlier part of the course, which was intended for orientation and selection of students. This guidance/selection process includes at least three steps (interviews) at which each student works out his or her syllabus with the teachers and they agree on a contract. During the interviews (one each in the first and second terms of the first year, and one in the first term of the second year) the students’ marks in various tests and their personal studies and motivation are taken into account. This system gives all students the chance to obtain a degree in a field of health based on an informed choice and their own achievements. It also provides them with experience of multiprofessional education centred on the needs of the community (J.-F. D’Ivernois, personal communication, 1987).

According to some educators, students in the different health professions need time to learn the basic elements of their own fields and acquire their separate professional identities before they have something to share (R.H. Elling, personal communication, 1986). However, others claim that, to influence attitudes, multiprofessional education must start early, even from the first days of the curriculum, to ensure that students do not become entrenched in a conventional professional role.

- In the Algerian experience (p. 32) the opinion expressed by the students proved a good informal indicator for evaluation purposes. Among the participants who expressed their views the most common definition of the training experiment went as follows: “one works hard, one discovers social realities that one was unaware of and a different approach: *it’s a pity it comes so late in our training*” (O. Daoud-Brixi & B. Pissaro, personal communication, 1987).

- Pre-service nursing programmes in Colleges of Advanced Education in Australia ensure that from year 1 students under supervision provide health services in communities as well as in institutions. Teachers can arrange placements in community facilities where nursing students, medical students and social workers work together on assigned problems (P. Pilkington, personal communication, 1987).

The use of the multiprofessional education approach throughout a curriculum ensures continuity and a gradual progression from simple to more complex and difficult problems and skills. It also helps learners and teachers to acquire the habit of using the multiprofessional teaching/learning approach and to appreciate its value.

- Since August 1986, the Linköping Health University in Sweden has had six new programmes for laboratory technologists, nurses, occupational therapists, physicians, physiotherapists and supervisors of social services and community care. All start the first year with a common 10 weeks' multiprofessional study period ("Man and Society"). Its aims are to provide a common basis for team-work and to make students aware of different perspectives on health, as well as of the influences on health of environmental factors and the interplay between man, society and health care.

Problem-based education is carried out in small groups with a tutor and 6 or 7 students from all six programmes in each group. During the 10 weeks four themes are highlighted: children, adolescents, adults and old people. Teaching takes place in group sessions, seminars, a few lectures and field studies in the primary health care setting. The problems are chosen from primary health care. After solving the problems connected with each of the four themes, a seminar is held with three groups together, where they report and exchange experiences.

The University employs teachers in science theory and philosophy, health economics, theology and anthropology to broaden the students' health perspectives.

The tutors, who are members of the teaching staff of the different programmes, have passed a compulsory tutor course. They are usually not specialists in the different theme problems but they may sometimes act as resource persons.

Student and tutor evaluation is performed after the study period. After three such periods, involving a total of over 500 students, the experience is considered to have been, on the whole, very successful.

After the initial study period, the different curricula contain multiprofessional education sessions and a seminar series, throughout the programmes; they end with three weeks' team training in a primary health care setting for medical, nursing, physiotherapy and occupational therapy students.

The rationale of this final part of the studies is that the students have accumulated sufficient theoretical knowledge and practical experience to be able to determine their own occupational roles and test them within the framework of the primary health care team; they will thus be able to make the transition from student to professional occupation (N.-H. Areskog, L. Lundh, personal communication, 1987).

To sum up, experience indicates that, for best effect, formal multiprofessional education needs to be introduced early in basic or undergraduate educational programmes, continued throughout a curriculum, and then continued in postbasic, postgraduate, and continuing education programmes.

In principle, the time and resources devoted to multiprofessional education in a curriculum should be commensurate with the amount of multiprofessional team-work needed in a country's primary health care programmes and with the educational needs of the students. Many genuine multiprofessional education programmes may have to settle for less. However, there is a level below which an educational programme cannot claim to be using the multiprofessional education approach. A three-year or six-year programme that includes visits to the community by students from two health professions over a period of only two or three weeks cannot be considered a multiprofessional education programme. Moreover, it is essential that students should have sufficient opportunity to interact with one another in problem-solving, as distinct from merely joining together as passive recipients of the same lecture or tutorial. Some minimum quantitative criteria are necessary, even though it is clear that the qualitative aspects—not only the competencies that students acquire but also the extent to which the programme fits in with the concepts described earlier—are the more important.

5. CONDITIONS FOR SUCCESSFUL MULTIPROFESSIONAL EDUCATION

5.1 General conditions

The conditions in which multiprofessional education is most likely to succeed have been determined by experience. There is no need, however, to wait until all the desirable conditions are met before initiating multiprofessional education.

If multiprofessional education is to achieve its aims, its students must learn to regard the use of primary health care teams as the normal way of providing community health services rather than the exception. During their education (including continuing and in-service education) team members must be given adequate opportunities for acquiring skills in understanding the nature of health, in determining the health problems of their community and their probable causes, and in analysing and evaluating the role of the health service in dealing with these problems. The educational institution and the health authorities should try to ensure that:

- students and teachers fully understand the value of team-work;
- the team approach is an established part of government policy and administrative practice;
- there is an established mechanism for community involvement in determining needs and problems and taking the action required;
- teams have means of keeping themselves informed of the health situation in their communities and of health and development needs;
- the teams' health care objectives, functions and tasks are clearly defined;
- team-work is part of the job description of each team member, is allowed for in the anticipated work-load and is allotted sufficient time;
- all team members are on an equal footing—no member is more important than another;
- teams have authority to implement their decisions, under supervision;
- teams are supported by a simple organizational structure with clearly defined levels of decision-making and tasks in support of primary health care;
- team-work in primary health care and multiprofessional education have long-term support in the form of policies, resources and feedback mechanisms;
- team-work in primary health care receives funds proportional to its importance;
- valid experience and proven competence in team-work for primary health care are adequately rewarded;
- teams have the support of a continuing education service;
- teams have access to means, such as counselling and supportive supervision, for resolving or mitigating interpersonal difficulties that could interfere with their harmonious functioning;

- teams are systematically supervised on the job as an aid to professional development;
- each member of a team feels that the special skills and unique contribution he or she brings to the team are valued highly;
- the team itself has an agreed organizational structure for conducting meetings, sharing the work-load and making decisions.

By introducing multiprofessional education, educational institutions can help governments and communities to understand the team approach and the concept underlying it, and impel them to organize or reorganize work settings and support accordingly. Similarly, they can involve health-related nongovernmental and voluntary organizations in multiprofessional education through field work. Such organizations are usually not hampered by bureaucratic and structural constraints and are usually in close contact with communities.

Reorganization of the work setting to permit the practice of genuine team-work in community health services is educationally extremely important. The influence on medical graduates, for instance, of the early postgraduate work setting, such as a hospital internship, may be so powerful as to mask earlier influences, perhaps until such time as the definitive career choice has been made. In other words, junior health professionals are likely to conform to the requirements of their superiors in traditional health care settings and to find few opportunities for putting into practice the innovative approaches they may have learned, unless the structure and organization of the service encourage it.

- In Scotland there has been an extensive building programme to develop health centres throughout the country. They vary in size according to the population served. The staff, in addition to doctors and community nurses, includes health visitors, clinic nurses and midwives, and may also include dieticians, physiotherapists and chiropodists. There is also clerical and support staff, and all members of the team cooperate in the development of health policies and priorities for the groups served (W.W. Thomson, personal communication, 1987).

The educational institution should provide the educational support that primary health care teams need. Similarly, the health authority should ensure that the management and supervision of the primary health care teams create conditions under which the teams can work efficiently towards their goals, satisfying the human needs

of team members and the professional demands of team-work, and encouraging team members to use their knowledge and skills to the full.

The educational institution should seek to ensure that with growing experience the primary health care teams that serve as models meet agreed criteria of model team functioning, so that these criteria can become the objectives of multiprofessional education. Multiprofessional education should aim at ensuring that student teams acquire certain basic skills essential to team functioning; team members should thus be able to:

- define common goals;
- demonstrate a common understanding of the team approach;
- define their separate and joint roles and responsibilities in solving problems;
- undertake overlapping roles and functions when necessary;
- determine which professions or disciplines or sectors need to be included in a team in order to deal with each particular problem;
- ensure democratic leadership and functioning of the team;
- communicate effectively with other members of the team and with other community development or health care teams;
- adapt to different cultural and social groups, and different linguistic or dialectal groups and communicate clearly with them;
- define and accept criteria of responsible behaviour so that all members can make their particular contributions;
- evaluate their separate and joint activities and mode of work and adapt them accordingly;
- function effectively in the framework of community involvement in primary health care, educating, encouraging and supporting communities in exercising responsibility for their own health, without usurping their rights to make their own decisions about it;
- share the tasks of planning and decision-making;
- reach clear decisions, acceptable to the community and the health administration;
- tolerate a degree of frustration which may be caused by having to share tasks with, and defer to, representatives of other disciplines and other sectors when their contributions are the more appropriate to the community's health needs;
- use imagination and sound judgement in recognizing the worth of the intellectual background of other team members;

—build upon the contributions of other team members in order to find imaginative solutions to problems.

These, however, cannot be regarded as required conditions for attaching student teams or individual students to functioning teams; it would be unrealistic to expect primary health care teams in the community to be models in all respects, at least until they have had considerable experience. What is essential in establishing and developing multiprofessional education is to make a start, to take advantage of opportunities that arise or can be devised, and to fit each new feature into the programme as it progresses.

The main kinds of support that community health teams need include health policies, long-term financial, material and manpower resources and effective supervision, monitoring and evaluation. The tasks for which the team is responsible and the authority to which it is accountable must be clearly stated, but enough latitude must be left for flexibility in finding the best possible responses to the diverse needs of the community. A primary health care team will then be able to secure and maintain in the health care system a position consistent with its usefulness in solving health and health-related problems. Education in team-work presupposes support of this kind when the students become members of practising health care teams. As far as possible multiprofessional education should be based on primary health care teams enjoying such support.

- The South Australian Health Commission has established a Social Health Office to provide this kind of support at the state level. For Australia as a whole, the Health Advancement Division of the Commonwealth Department of Community Services and Health is responsible for setting national goals and targets pertinent to the WHO HFA/2000 Global Strategy. This entails two-way interaction with primary health care: the involvement of primary health care in policymaking, and the strengthening by the Division of the ability of the organizations concerned with health promotion and education to meet the goals and targets. The Department has also established the Community Health Forum, enabling representatives of the major health consumer and primary health care organizations to have regular consultations with Departmental decision-makers over policy (J. Moss, personal communication, 1987).
- In Egypt, provision is made for regular training courses for functioning health teams in central government programmes, e.g. immunization and communicable disease control; learning materials and experts are supplied. A health director is responsible for regularly monitoring and evaluating teams'

achievements, strengths and weaknesses. Evaluation reports are considered when team members are in line for promotion. Occasionally prizes are awarded to teams that perform very well (E. Ezzat, personal communication, 1987).

The budgets of teaching institutions may have to be re-arranged to make sufficient resources available for the complex administrative structure inherent in multiprofessional education. Similar reallocations may be necessary in the health service system to ensure that the necessary personnel are available for supervision.

Representative national student associations can provide decisive support, since they are usually well disposed towards team-work and strongly supportive of attempts to foster multiprofessional education. In Australia, for example, Student Initiatives in Community Health has campaigned for more than a decade for more widespread access to education about health teams, and has lobbied both government and educational institutions. The International Federation of Medical Students' Associations is supporting peer learning, which is a basic component of multiprofessional education (27).

- The International Federation of Medical Students' Associations (IFMSA) has planned an alternative educational programme in which students are placed in community settings as members of intersectoral primary health care teams.

A development project called the "Village Concept" is to be implemented in different parts of the world as a model for other similar projects. It is proposed as an elective course for which participating medical schools would grant academic credits. A succession of three-month projects are to run for two years in underserved areas, with two weeks' overlap between them. The participating students will come from various sectors such as medicine, veterinary medicine, agriculture, economics and nursing. Teams will work with the communities to improve their health and socioeconomic conditions and thus promote villagers' self-reliance and responsibility for their own health.

The short-term aims include drawing up a manual for national student organizations belonging to IFMSA to help them launch similar projects in their own countries. While doing so students must apply the skills necessary for setting up a multiprofessional education programme, i.e. select a community that approves the project, assess its needs, learn about the government's health policies, establish contacts with local authorities, involve other sectors, obtain the support of different institutions for professional supervision, etc. (K. Ormos, personal communication, 1987).

5.2 Educational planning and appropriate use of resources

The quality of multiprofessional education will depend on the existence of an educational planning body with the expert knowledge needed to use the available learning resources and develop the potential resources of communities and health-related sectors with a view to achieving educational objectives and designing multiprofessional education programmes and learning activities.

Educational planning must be adapted to the level of socioeconomic and health development of the country or areas in which the educational programmes are to be implemented and in which students will later serve in primary health care teams. It must take into account the organizational structure of the health care delivery system. The local circumstances and resources and national health for all strategies will largely determine the tasks and educational objectives, the criteria for evaluating the performance of student teams and the design and management of educational programmes. Hence a variety of models are possible.

Educational planners and course designers will be able to draw on the resources (facilities, staff and programmes) of the health and other sectors. Primary health care teams will have to concern themselves with development as a whole, if major health problems such as maternal and infant mortality, malnutrition, parasitic diseases, polluted environments and the damage to health caused by certain development projects are to be controlled or reduced; conventional health care alone will not suffice.

Where intersectoral cooperation and community involvement are established and functioning at central and local levels, the educational planner will need to arrange for student teams to be attached to existing primary health care teams containing representatives from other sectors.

Elsewhere educational planners may need to take the initiative by approaching the health authority or the community or a voluntary organization with a view to establishing primary health care teams, and to training them so that they can serve as models for primary health care in action and incorporate or supervise student teams in training (11, pp. 22–23).

Training in team-work may involve attaching students of various professions to model teams.

- At Gezira University in Sudan, the Faculty of Medicine is conducting a multiprofessional village primary health care

programme as an integral part of the curriculum. Its purpose is to give students practical field experience and to help bring staff members of various professions closer and thus enhance teamwork. Students acquire problem-solving skills, research abilities and positive attitudes towards community service, and help to foster community participation in health care.

Over a period of six weeks students from the schools of medicine, agriculture, economics and health science work in groups of four in a remote village. They study the health and economic status of the village, determine and analyse the factors that should be eliminated or modified, and plan means of intervention. They help the health service staff in implementing the intervention procedures decided upon. They are supervised by staff members from the four schools. The outcome is promising in spite of financial and logistic difficulties (B. Hamad, personal communication, 1981).

- At the Suez Canal University's School of Medicine, a group of students in their field activities are assigned to teams of health workers undergoing refresher training as part of continuing professional education. This training, coordinated by the School of Medicine and the Ministry of Health, covers immunization, family planning, health records, maternal and child health and mental health in schools. Groups include both health workers and medical students. The students take an active part in the activities of the team during the training period. Their performance in the programme is taken into account during periodic evaluation. Their reports include the description of the objectives of the training, the activities performed, the interaction of group members, and outcome evaluation, with analysis of the factors contributing to success or failure and suggestions for improvement (E. Ezzat, personal communication, 1987).

Government support for intersectoral training, from local and central levels, may be essential. Planners of multiprofessional education must include not only administrators at central level (who are usually not concerned with local problems) but also experienced teachers, field supervisors and heads of programmes with experience at the local level, who can give concrete suggestions on cooperation and coordination with sectoral teams and local administrations.

- In the Philippines, the integrated community-based health programme (ICBP) of the Divine Word University (DWU), which advocates the total development of communities, drew up a memorandum of agreement with the Departments of Social Services and Development, Local Government, Agriculture and Food, and the Population Commission (Regional Offices) with the following provisions:

A. *Management aspects.*

1. The DWU-ICBP shall set up an *ad hoc* committee to plan, organize, implement, monitor, and evaluate the ICBP in the pilot communities.
2. Any programme of the respective agencies that is to be introduced in the communities shall be channelled through DWU-ICBP to ensure coordination and to avoid duplication.

B. *Services.*

1. DWU-ICBP shall make available any resources, either in manpower or in materials, that can be used in the communities.
 2. The programme shall operate for a period of three years or until such time as the community proves self-reliant.
 3. The fielding and supervision of students shall be the sole responsibility of the DWU-ICBP.
 4. The different departments shall make available their expertise and services as needed in the communities.
 5. The different departments shall take over the supervision and ongoing training of community workers and community leaders when the DWU-ICBP is no longer responsible for the area (A.E. Lim, personal communication, 1987).
- At the Division of Nursing Studies of the Catholic College of Education, Sydney, Australia, psychologists, sociologists and anthropologists, as well as educationalists, take part in designing the curriculum for multiprofessional education. In this way members of primary health care teams can be expected to have a better understanding of the cultural and behavioural needs of clients (P. Pilkington, personal communication, 1987).
 - In the United Kingdom, in 1987, a new step was taken in multiprofessional education, for a specific group requiring health services—those with a mental handicap. The central regulatory authorities for mental handicap nurses and social workers have agreed that the two groups should have some combined training. Exploration of how this will be accomplished is being carried out through a series of meetings of both regulatory boards with the Health Department, employer organizations, voluntary agencies, and professional associations and unions (28).

Another component of training in team-work can be the formation of multiprofessional student teams to practise supervised problem-solving in the community.

- The Comprehensive Health Care Project at Dalhousie University, Nova Scotia, Canada, arranges for students to work

as a team providing direct care for a chosen family in the community. The basic student health care team consists of a medical student and a nursing student supplemented when needed by students in social work, dental hygiene or dietetics. They are expected to work together under supervision in assessing and managing family problems and in promoting the health and well-being of the family (29).

Other learning methods, resources and materials will be needed or useful, such as role-playing, video films and tutorial teaching. Informal opportunities may be used to permit students to take part in a team process.

- Some primary health care teams in the United Kingdom, as in many other countries, have regular meetings, usually at lunchtime, to which workers from other sectors are invited. During such meetings, care of specific patients is normally discussed. A great deal of information is pooled and shared, and participants obtain a great deal of support from one another. The informality of such meetings also gives an opportunity for health care personnel to express any feelings of anger, frustration, sadness or anxiety. Members of the group exchange information about other resources, updating from journals, further information about a patient or a patient's family, information about similar problems, and feedback from other meetings (M. Davies, personal communication, 1987).

Teachers and tutors, including leaders and members of community health teams who supervise students, will serve as role models as well as supervisors of student teams. In the future, it should be possible to select teachers of student health teams, including senior students, from among those who have themselves been trained in a multiprofessional education programme; they are likely to make the best role models. Meanwhile, it will be essential to arrange suitable training for teachers, tutors and supervisors who have not had multiprofessional education as students.

A most important learning tool for multiprofessional education, as in the case of all educational programmes, is a library providing relevant literature and other learning aids for all the health programmes concerned together with literature from other sectors represented in primary health care teams. A modern library designed as a functional learning-resources area can also be a suitable venue for informal group discussions.

5.3 The education of teachers

The quality of teaching and supervision is of crucial importance. The concept of multiprofessional education is usually included in structured teacher-training programmes concerned with basic educational principles and their application.¹ However, such programmes are still relatively rare. Training for multiprofessional education will be needed by teachers from different disciplines and professions, and sometimes from sectors other than education and health. The training will need to be particularly concerned with achieving changes in attitudes, as some teachers are likely to be unwilling to accept the multiprofessional approach. Multiprofessional education inculcates skills additional to those taught in education for a single profession. The mix of intellectual and value frameworks is such that the student has to learn to recognize different terms and concepts, to handle differences in power and status, and to appreciate and recognize the different learning needs of the various professions if they are to respect and understand one another.

- The Aga Khan University, Karachi, has a programme for the development of teaching staff which emphasizes responsibilities for research, teaching and the development of primary health care field sites. It involves medical and nursing teachers together in a number of joint activities, including long-term career development. The goal is to improve the ability of medical and nursing teachers to function together in strengthening the university's programmes in community-based health sciences education and health services development (J. Bryant, personal communication, 1987).
- During the second phase (Reproduction/Growth and Development) medical students of the Autonomous Metropolitan University of Xochimilco, Mexico attend twice a week a primary care clinic belonging to the Health Ministry Programmes. The relevant part of this activity is carried out outside the clinic, in the community itself. Physicians, however, seldom if ever leave the primary care clinic, and the field work is supervised by either a social worker or a field nurse, who is much more aware of the real health problems of communities and better able to help students recognize and interpret those problems. The social workers and field nurses are also more aware of difficulties in solving the health problems than physicians, who usually focus on the biological dysfunctions of patients, neglecting the human or social context. However, positive action by nonmedical field

¹ Examples are described in *Educational handbook for health personnel* (17) and WHO Technical Report Series, No. 746, pp. 20–21 (15).

personnel is not always adequately recognized, owing to the emphasis given to "damage repair". Participation of field personnel in teaching needs to be preceded by training in teaching and supervising actual problem-solving, so that they may not only detect problems and difficulties better but also offer solutions (F. Mora, personal communication, 1987).

A profile of a good teacher is given in Annex 3.

6. DIFFICULTIES AND CONSTRAINTS

The following are some of the difficulties that have been experienced in the introduction of multiprofessional education:

- (1) Uneasiness or resentment on the part of teachers, caused by the presence of students or health workers with different levels of education and with different educational and occupational backgrounds.
- (2) Unwillingness of students or teachers to experiment with different methods of learning and teaching or with the use of different learning/teaching resources.
- (3) The inability of many health professionals to manage group learning, which is essential to multiprofessional education.
- (4) Lack of skilled or experienced teachers for multiprofessional education systems and also for evaluating students' competencies, and a lack of resources for teacher education and training.
- (5) Lack of suitable or adequate methods of assessing the specific competencies needed to function as a member of a team.
- (6) Shortage of learning and teaching materials and other resources for learning team-work skills.
- (7) A feeling among teachers that planning, consultation and evaluation make undue demands on their time.
- (8) Insufficient opportunities for on-the-job training because of lack of role models for team-work in health services.
- (9) Inadequate intersectoral training in support of multiprofessional education objectives.
- (10) Overwork of service personnel, resulting in inability to cope with the field training needs of student teams.
- (11) Differences in the objectives and priorities of student teams and of health service staff in the community, which may cause difficulties in implementing planned activities.

- (12) Poor educational facilities, inadequate determination of training needs and inadequate procedures for continuous evaluation of programmes.
- (13) Variations in the duration of courses and in the educational backgrounds of students, which make it difficult to prepare common-core curricula.
- (14) Fear among some teachers and other members of health professions that multiprofessional education will lead to their own professions losing their identity and specificity.

The almost universal practice of educating health professionals in different settings and different types of educational institution is the most common obstacle to multiprofessional education. Nurses, for instance, are educated in specific single-purpose schools, usually hospital-based, and in technical institutes, colleges and universities. The educational setting varies not only from country to country but also inside particular countries. These barriers within the education sector, as well as between the health and education sectors, will have to be overcome if multiprofessional education is to be successful.

The difficulties and problems vary widely according to circumstances and place. Some are primarily due to the conditions in health care services and others to the traditional orientation of health professionals.

- In the United Kingdom, health, education and social services have separate structures and funding; this leads to difficulties in creating team mixes for primary care purposes and is consequently an obstacle to multiprofessional education (W.W. Thomson, personal communication, 1987).

Unfortunately, the history of quite a number of initiatives in multiprofessional education shows that initial enthusiasm may fail to achieve a permanent change in the curriculum, especially when seed money stops. After a few years of growing disillusionment due to lack of resources and an absence of genuine commitment at the highest levels of academic decision-making, the project may simply fade away.

Despite the obvious need for education in intersectoral team-work, educational planning must take into account its complexity and its implications for the organization and support of training activities. In the difficult circumstances of many developing countries, despite the need for multisectoral cooperation and community involvement, actual team-work in primary health care

may often be restricted to health care in its conventional sense, with teams consisting of a core of health care personnel with only occasional representation of other sectors. In view of this, planners must develop contacts with teams in other sectors concerned with community development, such as agricultural extension teams, environmental health teams, adult education teams, religious leaders, etc.

One difficulty in planning and implementing programmes that is likely to reduce considerably the scope of multiprofessional education is how to adjust and coordinate the curricula of the different professional categories so that the demands of common multiprofessional learning can be met, whether in the field or in educational institutions. The more professions and sectors represented in student teams, the more difficult such coordination will be.

Because multiprofessional education cuts across traditional boundaries and may involve several establishments of professional education, while at the same time requiring cooperation from communities and their health services, liaison and coordination of a high order of competence and sensitivity are imperative, if the willing participation of all involved is to be obtained. This coordination cannot be left to chance and teachers in multiprofessional education will have to devote a great deal of time to it.

- One of the main reasons for the continuing success of the activities of the Foundation for Multi-Disciplinary Education in Community Health (a joint project of three tertiary educational institutions and the health authority in the state of South Australia) has been the achievement of such coordination. One of the first steps taken, prior even to the employment of teaching staff, was to obtain agreement between the schools initially involved (nursing, physiotherapy, occupational therapy, social work and medicine) on common time-slots for the joint programme (J. Moss, personal communication, 1987).
- One reason for the continued existence of the integrated community-based programme of the Divine Word University, in the Philippines, is the commitment by each school (medicine, nursing, laboratory technology, social work) to coordinating its activities with the others with regard to timing of learning experiences, sharing of resources, and the provision of the services needed by the communities, and the community's own health-related activities (A.E. Lim, personal communication, 1987).

Because of the difficulty of arranging common education for different categories of health care students and of associating other developmental sectors with the health sector, educational planners must be careful to set realistic objectives for multiprofessional education. It must be assumed that undergraduate or basic education cannot be expected to result in fully competent primary health care teams, and that in-service training and continuing education (as well as administrative and other forms of support) will be necessary. Undergraduate and basic education will concentrate on fundamental principles, permitting students—as team members or as individuals—to observe and be attached to variously constituted primary health care teams in action as a normal, not an exceptional, part of health care.

7. DESIGNING AND LAUNCHING A PROGRAMME OF MULTIPROFESSIONAL EDUCATION

The following recommendations for action are addressed to any group of teachers (and student representatives from different health care professions) responsible for the design and launching of a multiprofessional education programme. Students should be actively involved in implementing the recommendations marked by an asterisk using the problem-solving approach. The sequence is not fixed and some steps may be taken concurrently. The implementation of these recommendations should take into account the overall goals and budgetary limits of the school concerned.

1. Justify the decision to carry out multiprofessional education in a given institution.

Prepare a short rationale and a statement of general goals. Point out that multiprofessional education is not an end in itself but a means of improving the health of the community by educating students of the different health professions together so that they may practise more efficiently. It is important that data to justify the decision are collected and analysed.

2. Collect information on how to carry out multiprofessional education and adapt it to local conditions.

Such information exists, for instance, in the present report or in the articles cited in the references. It may also be obtained from people with experience in multiprofessional education. It will have to be analysed and assessed for its applicability in specific circumstances. Without this its application might end in failure, as multiprofessional education based on a community-oriented curriculum will be considerably influenced by sociocultural characteristics. The establishment of a network of knowledgeable persons who could be consulted during the implementation of the programme should be considered. (Such a network has already been established in Europe: the European Network for Multiprofessional Education in Health Sciences (EMPE).)

3. Form a nucleus of colleagues to launch a programme.

As soon as it has been decided to introduce multiprofessional education, it is advisable to form a nucleus of staff members and students from the institutions or faculties from which the students of the different professions to be trained together will be drawn. This core group should be committed to the concept of the health team. It will have a catalytic effect, encouraging the teaching staff of the participating institutions or faculties to set in train a multiprofessional education programme. Its members must be prepared to depart from routine teaching activities in order to design multiprofessional education learning activities, in the context of service and research in communities, for the students of their different institutions or faculties. The presence of such a core group and the way it acts as a driving force in the institutions concerned should communicate a sense of commitment to the concept of multiprofessional education to the rest of the faculties and students.

4. Promote political support for multiprofessional education and obtain clearance from the supervisory level(s).

In some cases it may be essential to obtain the support of the top administrative or political decision-makers at central, regional and local governmental levels for curricular changes and the removal of obstacles to multiprofessional education. Decision-makers from schools that train different types of health personnel should be

brought together to determine educational policies and the management or administrative changes that may prove necessary. The support and cooperation of professional associations should always be sought.

5. Obtain consent from participating schools.

Implementation of multiprofessional education will require the cooperation of decision-makers from several institutions, or from several schools within an institution. It is vital to ensure the goodwill of all the key decision-makers early in the planning process. The learning objectives should be acceptable to them as teachers and evaluators of student performance. Each participating school should be prepared to make multiprofessional education a core part of the curriculum for each category of health personnel, and to assess students' attainments in multiprofessional education on the basis of standards no less rigorous than those for other parts of the curriculum. Since the prime characteristic of multiprofessional education is interaction between different categories of student, agreement on a common timetable is essential.

6. Set up a continuous teacher-training programme.

Teachers will not spontaneously become committed to such a curriculum. Efforts will be needed to familiarize the teaching staff with the general educational principles involved and the specific features of the health team concept. If teachers are not given an opportunity to learn the necessary educational skills they will feel insecure and go back to the conventional teaching methods familiar to them.

It is essential for the teaching staff to understand the processes of multiprofessional education and to be aware of the difficulties and new responsibilities it entails, such as the selection of joint learning activities and the settings in which students will learn, and the training of the health service staff who will supervise the different categories of student.

7. Improve the administration of the institution.

In all educational institutions, the administrative functions (financial, public relations, planning, evaluation, etc.) assigned to

deans, directors and teaching staff are additional to their teaching, service and research responsibilities. The success of any attempt at change, such as the introduction of a multiprofessional education programme, may be jeopardized if no effort is made to improve all administrative processes and render them more cost-effective. It is therefore essential to involve the administrative staff in the organization of the programme from the beginning, so that they too feel fully committed. One of their tasks, for which they may need some preparation, will be to cooperate with the administrations of other institutions.

8. **Select priority health problems in the communities to be served.*

Combinations of the following criteria, which are already being used in various institutions (24, 30, 31), may be applied in selecting priority problems:

- (a) How common is the problem in the community, how often are practitioners faced by it, and what is the level of demand from the public for its solution?
- (b) How serious is the problem (in terms of threat to life, economic and social consequences, etc.)?
- (c) How amenable is it to health education of the public, preventive measures, community action, intersectoral action, medical and nursing care, and rehabilitation?
- (d) To what extent does it affect vulnerable groups?

In addition, the extent to which the problem serves as a vehicle for the application of knowledge should be considered.

Examples of possible priority problems are:

disorders of pregnancy and childbirth;
malnutrition;
increase in sexually transmitted diseases;
alcoholism and drug dependence;
deficiencies in home care facilities for the aged.

The selection should be made by teachers, unless it has already been done by the educational institution in the preparation of the curriculum.

9. **Determine health service activities that require a team approach for solving priority community health problems.*

Some examples might be:

- Preparation of nutrition education materials based on an analysis of the nutritional habits of pregnant teenagers in low-income groups.
- The conduct of epidemiological surveys for AIDS case-finding.
- The organization and supervision of domiciliary care and assistance for handicapped aged persons.

10. **Determine the professional categories needed for the selected service activities.*

For example, laboratory technician, sociologist, epidemiologist, microbiologist, general medical practitioner, public health nurse, psychologist, health educator, nutritionist, etc.

11. **Draw up the professional profiles of the types of health personnel that the institution expects to educate together.*

The construction of a valid professional profile demands very close and direct cooperation with the health sector and related non-health sectors. Educational objectives must be defined, or revised, to correspond to the professional profiles. From the profiles it will be possible to determine the professional (service) activities and tasks for which the skills required can be more efficiently learnt from multiprofessional education than from other kinds of training.

For example, such activities might include the following:

- drawing up a set of work objectives for the multiprofessional team;
- determining the objectives of each team member;
- selecting methods of assessing the quality of team-work and productivity;
- communicating efficiently with other team members;
- sharing responsibilities within the team and possibly leading it.

12. **Select learning activities for student teams.*

For example, learning activities for the first service activity mentioned under 9 above (preparation of nutrition education materials) might include:

- a one-day workshop to prepare the team's plan of work:
 - to select a representative sample of pregnant teenagers;
 - to prepare a questionnaire on nutritional habits;
 - to interview selected teenagers;
 - to visit markets and shopping centres to find out what food products are available and their average cost;
 - to perform physical examinations;
 - to analyse the data collected;
 - to prepare nutritional advice, etc.
- a one-day workshop to decide upon the role of each member of the team in relation to the team's objectives.
- role-playing sessions to practise communication skills and decide what skills the team leader will require.
- a one-day workshop to permit the various teams to share and learn from their experiences.

13. **Organize the resources needed.*

Collect and make available to students books, documents, periodicals, and selected articles related to the learning activities. Arrange logistic support.

14. **Determine the other categories of student health personnel that might benefit from joint training.*

If the learning experiences of health science students are to include team-work in the health system for the benefit of community development, plans must be made in advance. The categories of student to be educated in teams will need to be determined, and suitable health problems selected. The composition of student groups will determine the kinds of problem to be selected, and, conversely, the nature of certain problems will indicate how the student teams that are to learn from solving them should be made up. Community priority health problems that are particularly amenable to team-work and intersectoral cooperation should be selected, so that multiprofessional teams of students will be obliged to work together in attempting to solve them.

Ideally, these student teams, made up of future physicians, sanitary engineers, nurses, dentists, social workers and other health personnel, should be given opportunities to establish relationships with a variety of other health science students as well as students

preparing for careers in such disciplines as architecture, economics, sociology, religion, demography, agronomy, etc.

Contacts should be made with the educational institutions where such students are being trained to determine to what extent joint activities could be arranged. It would be helpful if collaborative, intersectoral decision-linked research could be launched at the same time.

15. Approach the communities selected as settings for multi-professional education activities.

There is no simple or single best way to approach a community and involve it in a training programme. This is a complex issue and what is done will be strongly influenced by the sociocultural environment. Experience in other countries, therefore, must be thoroughly assessed to decide whether and how it may be applied in the local context. 'Adapt, do not adopt' must be the motto. It is essential to obtain a high level of community participation to encourage communities to accept responsibility for promoting and protecting their own health.

The safety of the students sent to communities as teams must be assured, both by their educational institutions and by the communities concerned. The students must be briefed on the layout of the district, including the important landmarks and official buildings such as the school, the town hall, the health centre and the police station, and the homes of the community officials.

*16. *Select settings for multiprofessional learning activities.*

The following should be the criteria for the selection of settings:

- (a) It should be possible to demonstrate in practice the principles of primary health care—community involvement, intersectoral action for health, extension of care to unserved, underserved and vulnerable groups, appropriate technology, health promotion, prevention, treatment, and rehabilitation.
- (b) It should be possible to show in practice that effective health care can be provided more efficiently by teams than by individuals.
- (c) The setting should permit the integration of theory with practice (basic sciences – clinical care – community health care).

- (d) Reliable documentation and information on health status and health care should be available for use in learning and teaching.
- (e) The staff of health services and other developmental services should be able to take part in teaching and supervision; there should be enough space for meetings; board and lodging and adequate transport should be available.
- (f) It should be or should become possible to demonstrate the impact of a system of continuing education on the personal and career development of each member of the team.

17. **Prepare the students to make the best use of multiprofessional education.*

First-year students of health science are generally not fully prepared for the unusual demands of a multiprofessional education programme. To give them some familiarity with team-work and a sense of professional satisfaction as a basis for a positive attitude to multiprofessional education, 'learning by doing' is likely to be the most efficient educational method. However, some gradual preparation, including reading, group discussions, role-playing and simulations, should be planned, with the collaboration of senior students who have already had experience in team-work.

18. **Plan the sequence of multiprofessional learning activities.*

Once settings have been selected in which students can acquire certain professional skills, the sequence, duration and rotation of their assignments must be planned. This is necessary in order to provide for the logistic back-up (transport, assignment of supervisors, information of the community, etc.) and a gradual increase in the level of difficulty of the learning activities.

If the 'natural history of health problems' is the approach used, the sequence of the learning activities will correspond to the sequence of events in the communities to which the teams of students are assigned. Actual events are the main influences on both the community and the functioning of its health care system. The process of determining the priority health care problems of communities will help teachers and supervisors prepare themselves for planning students' learning activities. This means that they must involve the health service staff in planning those learning activities that will help the students to find collectively solutions to the health

problems they encounter. This collaboration will provide an opportunity to train, retrain or upgrade the health service staff who are invited to help with the supervision of student teams.

*19. *Devise instruments for assessing student performance.*

The evaluation of student performance must be planned early because it influences the rest of the programme. Certifying evaluation of the skills needed for carrying out joint multiprofessional activities must be assured, not only to protect citizens from incompetent health personnel but also because otherwise students may accord a low value to this aspect of the curriculum. It is essential, therefore, with the active participation of the students, to devise instruments for measuring performance in each of the tasks for which the students are trained, with due emphasis on the skills governing interaction between team members. These instruments should be made available to students for formative evaluation purposes and to tutors for certifying evaluation, and might typically assess:

- the quality of team objectives;
- the quality of the objectives of individual team members in relation to team-work;
- the degree to which planned team output has been attained;
- the extent to which student team members have acquired adequate interaction skills. (The instrument recommended for measuring such skills is the attitude rating scale (17, pp. 4.23–4.24).)

20. Incorporate a means of programme evaluation.

To ensure the success of a multiprofessional education programme there must be from the very beginning some means of collecting the data needed to assess whether implementation is progressing according to plan and whether, if unforeseen events are occurring, they are benefiting or impeding the programme. To provide a basis for measuring progress, the situation before the programme is launched must be assessed. Decision-linked research is an efficient means of obtaining and analysing the data required.

21. Review the planning steps presented here and single out obstacles to their implementation, with due regard for local circumstances.

The core group should determine obstacles, perhaps by means of a brainstorming session or by asking for individually prepared lists which can then be compared. The list will serve later as a reminder that ways must be found of overcoming each obstacle listed.

22. Use an efficient strategy to introduce change.

Experiences reported recently support what is called the “experimental innovative track strategy” for introducing changes (such as multiprofessional education) in established institutions. Instead of training the numbers needed to form a “critical mass” of educationally skilled teachers, the separate-track strategy consists of introducing an innovative curriculum for a small number of volunteer students helped by a (small) group of committed teachers, running in parallel with the school’s normal curriculum (32). Its experimental character permits comparison, offers alternative approaches to learning, bypasses departmental control and reduces threat to the teaching staff by not forcing them either to change what and how they teach or to participate in the innovative curriculum.

8. PROMOTING THE CONCEPT OF MULTIPROFESSIONAL EDUCATION

These draft recommendations refer to action at different levels and on the part of various bodies: institutional (universities and other schools for health personnel, other educational institutions, organizations of health professionals, etc.), inter-institutional (joint action by different educational institutions), and national (ministries of health and education).

8.1 Institutional level

1. Formal and informal links should be established between neighbouring institutions responsible for the education of different members of the health team, and between these and the non-health sectors that may have a substantial impact on health and are already involved in community development activities.

2. The roles and responsibilities of each member of the health team should be redefined (service, training, administration, community relations, etc.).
3. Communication between health professionals at all levels should be encouraged and improved.
4. Continuous joint in-service training should be provided for all members of the health team with a view to strengthening the team approach in the field.
5. Ways of reducing any staff overload should be investigated, in order to allow better team functioning.
6. Groups should be formed in educational institutions to review:
 - (a) systems for selecting students and staff;
 - (b) curricula and learning resources, laboratories, etc.;
 - (c) systems for evaluating performance of students and teachers;
 - (d) physical arrangements, office needs and use, field facilities, transport, etc.;
 - (e) integration of programmes;
 - (f) individual staff roles and responsibilities.
7. Workshops on the team approach should be organized for all teaching and administrative staff in educational institutions.
8. It is important to recognize the particular organizational and logistic difficulties that arise in establishing and maintaining cooperative educational activities between different faculties or departments and to make allowance for them in funding arrangements.
9. Integration of the community development services with the education sector should be strengthened.
10. An incentive system to encourage the team approach should be introduced.
11. The involvement of the community should be promoted.
12. Research on the health team approach by educational institutions and health services should be launched or strengthened.
13. Multiprofessional committees should be set up to follow up the utilization of the team approach.
14. An international directory of multiprofessional education programmes would be useful for promoting the dissemination of information about multiprofessional education.

8.2 National (or provincial) level

1. It is important to have a strong and enduring commitment to the team concept on the part of the ministries and educational institutions concerned.
2. The resources of the ministries concerned should be developed and strengthened to enable them to put the health team concept into effect.
3. The organizational structure of the health system should be reviewed with the object of making wider use of the primary health care approach and applying the health team concept.
4. Health manpower needs should be determined and the role of the educational institutions for health sciences in meeting those needs should be defined.
5. The system for evaluation and supervision of all categories of health workers should be reviewed in the light of its suitability for a team approach.
6. Job descriptions for all team members should be distributed to all health centres, and efforts made to develop a scheme for modifying job descriptions as necessary.
7. It would be useful to publish descriptions of the role of each of the occupations represented in the health team. The descriptions should indicate how the skills and knowledge pertaining to each discipline can enhance team functioning. They should be made widely available throughout the health sector and the educational institutions.

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¹ A limited number of copies of this document are available from: Division of Health Manpower Development, World Health Organization, 1211 Geneva 27, Switzerland.

TERMINOLOGY USED IN THIS REPORT

Community. Various definitions of what is meant by a community are given in dictionaries and other publications. Some imply homogeneity. For example: "the people living in a particular place or region and usually linked by common interests" (*Webster's Third New International Dictionary*); "the people living in one place, district or country, considered as a whole; the general body to which all alike belong; the public" (*The Oxford English Dictionary*); or "a group of individuals and families living together in a defined geographic area, usually comprising a village, town or city".¹ The Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6–12 September 1978 defined a community as "people living together in some form of social organization and cohesion".

Other definitions imply heterogeneity: "Many communities are geographical only and have serious conflicts along class or other lines (religious, racial, etc.)" (M. Roemer, personal communication, 1985). In some countries, each social class, while living in close proximity with others, has its own health priorities. In some descriptions the heterogeneity of a community is recognized: "The term should not refer to a cohesive, homoeostatic association of people, some of them having more power and status than others. Considerable competition and even conflict is likely to be present in any given community and some change in the internal structure of communities may occur over time".²

Primary health care. Primary health care as an approach to health development involves the total reorientation of the health system. It is characterized by: (a) reorientation of the health services to enable secondary and tertiary care to support care at the primary level, the first level of contact, thus involving the entire health system; (b) a more even distribution of health resources, with more than at present

¹ DEUSCHLE, K.W. & FULMER, H.S. Community medicine: a 'new' department at the University of Kentucky College of Medicine. *Journal of medical education*, 37: 434–445 (1962).

² *Team work for primary health care*. Report of a WHO (SEARO) Expert Group. New Delhi, WHO Regional Office for South-East Asia, 1981 (Unpublished document, SEA/HSD/20).

allocated to primary care and its supervisory level, and to promotive, preventive, and rehabilitative care; (c) intersectoral coordination; and (d) the participation of the community.¹

Primary care level. The first level of access to the health service.

Community-oriented education. Education that focuses on population groups and individuals and takes into account the health needs of the community concerned.

Community-based educational programme.² An educational programme, or curriculum, can be called community-based if, for its entire duration, it consists of an appropriate number of learning activities in a balanced variety of educational settings, i.e. in both the community and a diversity of health care services at all levels, including tertiary-care hospitals. The distribution of community-based learning activities throughout the curriculum is an essential characteristic of a community-based educational programme.

Competence. The ability to carry out a certain professional function (e.g. a medical function, a nursing function), which is made up of a repertoire of professional practices. Competence requires knowledge, appropriate attitudes and observable mechanical or intellectual skills, which together account for the ability to deliver a specified professional service.

Formative evaluation. Evaluation based on measurement of learner performance in order to *inform* each one about the amount still to be learned before the educational objectives are achieved; it is also a measurement of progress. (It should not be used by teachers to make a certifying decision.)

Certifying evaluation. Evaluation based on measurement of learner performance, in order to justify *decisions* regarding advancement to the next class or the award of an academic qualification or other certification of competence.

In both the above forms of evaluation, the instruments used for measuring performance should be identical as regards level of difficulty and power of discrimination and their ability to measure the performance they are intended to measure (validity).

¹ Fülöp, T. International needs: educating for primary health care. In: McGuire, C.H. et al., ed. *Handbook on health professions education*, San Francisco, Jossey-Bass, 1983, pp. 463-480.

² For more details on the concept of community-based education, see WHO Technical Report Series, No. 746, 1987 (*Community-based education of health personnel*: report of a WHO Study Group).

Intersectoral action. Action in which the health sector and other sectors collaborate for the achievement of a common goal, the contributions of the different sectors being closely coordinated.¹

¹ *Glossary of terms used in the "Health for All" Series, No. 1–8.* Geneva, World Health Organization, 1984 (Health for All Series, No. 9).

Annex 2

INSTITUTIONS REFERRED TO IN THE REPORT

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THE PROFILE OF A GOOD TEACHER¹

An important factor in the success or failure of a multiprofessional curriculum is the teachers' ability to undertake the particular responsibilities entailed. The teachers' changing role should be very clear. The desirable qualities of a good teacher are as follows:

1. An *ability* to:

- communicate easily with health workers, community leaders, government representatives and workers in other sectors;
- work efficiently in service delivery in collaboration with other sectors of community development;
- guide small groups of students from different sectors in problem-based tutorial sessions;
- stimulate group dynamics and student interaction;
- encourage students to perform self-assessment and peer assessment and to devise instruments for evaluating group function;
- assess the performance of students and groups, especially in their interaction.

2. A *commitment* to:

- the basic principles and concepts of primary health care and multiprofessional education;
- a continuous development of means of evaluating, modifying, reorienting or restructuring areas of the programme in order to improve its effectiveness through multisectoral action;
- continuing self-education.

3. A *willingness* to:

- share with members of other professions and sectors the design, planning and implementation of multiprofessional education;
- demonstrate its value to authorities in the health and other sectors;
- introduce the concept to newly enrolled students;

¹ Based on a personal communication from E. Ezzat, 1987.

- undertake the tasks of guiding and supervising students during their field activities.

4. *An understanding:*

- of the various educational concepts and the vocabulary involved: community-oriented education, community-based learning activities, problem-based learning, student-centred curriculum, self-directed learning, working in a team, and the components of primary health care;
- of the functional responsibilities of other professional colleagues: personnel of both the health and health-related sectors and the structure through which they interact;
- of the value of multiprofessional team-work and the advantages of multiprofessional education over education in a single profession for acquiring the necessary skills;
- that education for a single profession is not threatened or undermined by the concept of multiprofessional education;
- that multiprofessional education is accepted nationally and internationally by the authorities concerned;
- that multiprofessional education is highly relevant to the future professional needs of graduates if they are to respond to the health needs of the population through primary health care.

The above qualities may be acquired through:

- workshops on educational principles, community-oriented education and community-based and problem-based learning. Workshops should include simulation and practical exercises with students;
- multiprofessional workshops, which would include tasks requiring interaction;
- field visits to other sectors and adaptation to the actual work environment;
- workshops on methods of assessing student performance, the devising of evaluation instruments and the promotion of self-assessment;
- pertinent work over and above direct work with students, for which the institution should provide facilities, especially for research, and incentives;
- regular monitoring and evaluation meetings for continuing remedial action.