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WHO/UNICEF JOINT STUDY ON ALTERNATIVE APPROACHES TO MEETING BASIC HEALTH NEEDS OF POPULATIONS IN DEVELOPING COUNTRIES

The attached document will be considered by the UNICEF/WHO Joint Committee on Health Policy (JCHP) at its twentieth session to be held in Geneva, 4-6 February 1975 and by the UNICEF Executive Board session to be held at Headquarters, 14-30 May 1975. The report of the JCHP containing comments and recommendations on this Study will also be considered by the UNICEF Executive Board.

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UNICEF-WHO JOINT COMMITTEE
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WHO/UNICEF JOINT STUDY ON ALTERNATIVE APPROACHES TO MEETING BASIC HEALTH NEEDS OF POPULATIONS IN DEVELOPING COUNTRIES

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1. INTRODUCTION

The need for all countries, especially developing countries, to have a health service system designed to meet their basic health needs has been, and continues to be, a primary subject of WHO and UNICEF concern. Within this broad context, UNICEF has a specific interest in the improvement of children's health, which is one of its overall goals. Past policies of the two Organizations on basic health services are described in Annex I.

1.1 Present state of the problem of meeting basic health needs of populations in developing countries

Despite the efforts made over the years by many governments and by WHO and UNICEF to elaborate, enlarge and adapt their policies and despite the fact that health services have been greatly strengthened in many developing countries, the basic health needs of populations are not yet met in a satisfactory way. It is estimated that in many countries less than 15% of the rural population and of other underprivileged groups such as slum dwellers, nomads and people in remote regions have access to health services. This situation is made even more serious by the fact that rural and underprivileged people are not only particularly exposed, but also very prone, to disease. A hostile environment, poverty, ignorance of the causes of disease and of protective measures, lack of health services or inability to seek and utilize them are all factors that may combine to produce this sorry situation.

To meet effectively the main health needs of underprivileged populations, which represent about 80% of the people in less developed countries, health services should actively seek out the persons concerned, learn their needs and desiderata, and protect, treat and educate them. Unfortunately, the strategy so far adopted by many developing countries of modelling their health services on those of developed countries has not been conducive to serving needs as described above and has therefore failed. Broadly, it has tended to create relatively sophisticated health services staffed with well qualified personnel, which it was hoped to expand progressively as resources increased until the entire population was covered. This has not occurred. Instead, the services have become predominantly urban-oriented, mostly curative in nature, and accessible mainly to a small and privileged part of the population.

The relative emphasis on special disease programmes may also have hindered the development of basic health services over the past 25 years. The enthusiastic application of new knowledge and technology has not always achieved the expected goals, and some of the consequences have been untoward. In sum, history and experience show that conventional health services, organized and structured as an emanation of "Western-type" or other centralized thinking and mechanisms, are unlikely to expand to meet the basic health needs of all people. The human, physical and financial resources required would be too great; the necessary sensitivity to the specific problems of rural or neglected communities would rarely be attained, and even if it was, in limited populations it might not be in a form found acceptable in many communities. It is therefore essential to take a fresh look at existing priority health problems and at alternative approaches to their solution. This is clearly not just a question of applying a little more technical knowhow. In some situations drastic or revolutionary changes in the approach to health services might be required; in others, at least radical reforms. The approach should be linked to human attitudes and values, which differ in different communities, and should require a clear motivation and commitment on the part of the people who have the knowledge and the political and/or economic power to introduce change.

1.2 Background of the study

In spite of the magnitude and gravity of the problems and the widespread poverty, ignorance and lack of resources, it is believed that much can be done to improve the health of the people in the developing world. Successful or potentially successful programmes meeting basic health needs exist in a number of countries. They range from completely new health systems introduced

in the wake of radical changes in political and social systems, as in China and in Cuba and to a certain extent in Tanzania, to innovative programmes covering limited areas as in Venezuela, in the Maradi district of Niger or in the Jamkhed area in India.

Plans were therefore made by WHO and UNICEF to carry out a study of such innovative approaches, in the hope that an analysis of them and of the shortcomings of conventional systems would enable WHO and UNICEF to develop fresh policies and approaches that could be used to assist countries.

In carrying out this study, WHO and UNICEF were fully aware that they were not breaking new ground. The successful or promising approaches taken into consideration are actual programmes, some of which have already been the subject of studies and critical analysis.

The main purpose of compiling some case studies was to single out and describe their most interesting characteristics and to have them discussed openly and objectively. It was hoped that such discussions would encourage further studies, make the findings known to a wider public, and open up the prospect of some of such new approaches being incorporated within the technical policies of WHO and UNICEF. It was also expected that, as a consequence, the study would influence the manner of WHO/UNICEF assistance to countries in their efforts to devise health services that are readily accessible and acceptable to the total population. The emphasis was not to be on a further elaboration of health services as they are now organized, but rather on new ways of identifying basic health needs and of providing simple health measures, both preventive and curative. The approach was therefore to be multisectoral and outside the realm usually dealt with by ministries of health.

1.3 Objectives and scope of the study

Against the background of the main health problems of developing populations and the recognized shortcomings of conventional health services and approaches:

- To examine successful or promising systems of delivery of primary health care, with a view to identifying the factors that appear to be the key to success of the various systems studied

- To observe the effect of some of those key factors in the development of primary health care within various political, economic and administrative frameworks.

1.3.1 In carrying out the study, to take into particular account those features of particular systems which appear to contribute to:

- better coverage[1] to meet basic health needs, particularly in rural and remote areas

- better mobilization of potential resources for the improvement of health (manpower, funds, materials, and human ingenuity, particularly at the local level)

- better utilization of services

- better understanding of health problems and health services by both consumers and providers

- better quality of health care in the light of the technology, facilities and resources available

- greater satisfaction of consumers and providers with the health care delivered.

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[1] For the purpose of this study, coverage is defined as the percentage of population to which the health services are able to deliver effectively the measures included in their terms of reference.

1.3.2 It was agreed by WHO and UNICEF that a promising approach to meeting basic health needs has the following characteristics:

(a) It provides:

- adequate immunization

- assistance to mothers during pregnancy and at delivery, postnatal and child care, and appropriate advice to countries that accept family planning policy

- safe, sufficient and accessible water, adequate sanitation, and vector control

- health and nutritional education, including the stimulation of methods of providing adequate nutrition

- diagnosis and treatment for simple diseases; first-aid and emergency treatment; facilities for the referral of serious conditions

- other services that may be considered, in the light of local conditions and health attitudes and aspirations, to meet basic health needs.

(It was agreed, however, that all the services listed above need not be provided together, provided that growth is deliberately planned and achieved as a gradual process.)

(b) It provides at least 80% health coverage for such socially or geographically remote populations as villagers, nomads, or peri-urban and slum dwellers.

(c) It is applied, or promises to be applicable within a reasonable span of time, in a country of very limited resources.

1.3.3 In the selection of case studies, emphasis was placed:

(a) on actual programmes that are potentially applicable in different sociopolitical settings;

(b) on programmes explicitly recognizing the influence on health of other social and economic sectors, such as agriculture, and education.

1.4 Methods of study

1.4.1 The basic concept and the methods of the study were established by a steering committee that included representatives of all the divisions in WHO headquarters concerned with the subject. UNICEF provided a representative for the panel and contributed comments and suggestions.

1.4.2 The following sources of information were used to identify and describe examples of promising programmes:

(a) Contributions from members of various WHO advisory panels and other knowledgeable persons. Over 130 members of WHO advisory panels on public health administration, organization of medical care, maternal and child health, health education, nutrition, environmental health, nursing, medical education, health statistics, as well as other experts, were approached for contributions. Over 80 contributions were received, ranging from one-page letters to sizeable documents with annexes, publications or lists of publications. This material was reviewed, classified, assessed, and used for the preparation of the draft report.

(b) Information from WHO studies and from UNICEF, the United Nations and other international agencies, the conclusions and recommendations of ongoing studies and meetings as well as relevant publications and documents.

(c) Reviews of the subject by the WHO regional offices, assisted by WHO country representatives, field staff and other WHO personnel.

(d) Contributions and critical reviews by WHO headquarters units in their respective fields.

1.4.3 Promising programmes were studied by four WHO/UNICEF teams with the full cooperation of the respective governments in Bangladesh, Cuba, India, Niger, Nigeria, Tanzania and Venezuela. Early in December 1973, a team of senior WHO staff visited China and the observations of this team were also used in conjunction with an independent survey of the Chinese health system. The programmes were selected in agreement with UNICEF and on the basis of the recommendations of regional offices and experts and a survey of the available information. On the recommendation of UNICEF, a brief description of a project in Ivanjica, Yugoslavia, was included in the report.

In preparation for field visits, three sets of documents were prepared: Part I, a brief "country profile", prepared by WHO headquarters from available information on countries selected for in-depth study; Part II, a questionnaire sent to WHO representatives in selected countries in order to obtain detailed information on specific programmes; and Part III, also a questionnaire, devised for the use of persons carrying out field visits. Abbreviated reports of the visiting teams are attached as annexes to this study. The main findings relevant to the objectives of the study are described in section 3.

1.4.4 The study report was initially drafted by a WHO working group and a representative of UNICEF. This draft was reviewed and commented upon by a group of WHO and UNICEF consultants at a meeting held in Geneva from 24 June to 5 July 1974. After obtaining UNICEF's comments it was re-drafted and finalized.

1.4.5 All the countries and programmes selected for this study have apparently achieved some success in moving towards better health care, increased coverage and utilization, and reduced costs. However, complete or adequate statistical and other data on the changes occurring in health, morbidity and mortality, and the performance of health services were not yet available from most of them. For this reason their success was measured through observational evidence, statistical data for limited areas and records regarding small population groups.

2. STATEMENT OF THE PROBLEM

2.1 General dimensions of world poverty

The developing world is not a single entity but a great variety of countries or areas at different stages of development. While important differences exist between them, there are factors in common conditioning their development and in certain cases it might therefore be possible to consider them in terms of common solutions.

The problems of populations have very complex political, social, cultural and environmental roots. Extremely limited resources, poor communications, vast distances, individual and community poverty, and lack of education act and react upon one another in such a way as to keep developing countries in a perpetual state of poverty and to create the well-known vicious circle of poverty.

The most important economic characteristics of underdevelopment are low average labour productivity, a low national product, and a low average income per worker or per head of the population.

In developing countries, the standard of living tends to be low for the mass of the people and to manifest specific quantitative and qualitative deficiencies, such as insufficient

or faulty food intake, poor housing conditions, poor health, inadequate public and private provision for hygiene and medical care, insufficient communication, transportation and educational facilities, or failure to adapt the educational and training systems to the needs of the population.

Although, owing to different price systems and to inflation, per capita incomes expressed in monetary terms are imperfect indices of standards of living, it is worth mentioning that in some Asian and African countries the per capita income per day is around 20-24 US cents, and it is less than 6 US cents per person for the poorest 20% of the population in certain African and Asian countries. Low consumption, which directly affects the standard of living, predominates in a number of countries; in these the per capita consumption is under $94 a year.

This situation has also a serious negative impact on the ability of governments - which may in many cases be the only driving force able to introduce change - to provide public and, in particular, social services from national tax revenue for the poorest sector of the population.

This low standard of living, which is mainly caused by a low level of productivity and a low income, leads in turn to low labour productivity and a low income, thus perpetuating the vicious circle.

Among the obstacles to development, mention should be made of the often unfavourable physical environment - poor soil, lack of forest resources, difficult terrain, lack of mineral resources and adverse climatic conditions - periodic excessive rainfall, extremes of temperature and droughts. Compounding these physical obstacles are the insufficient or inappropriate application of modern science and technology and unfavourable international trade terms.

The rapid increase in the world's population and its effect in defeating the efforts of developing countries to raise their standards of living have been emphasized often enough. The population growth in some developing countries has indeed more than cancelled out the growth of the gross domestic product and the per capita output has actually fallen.

According to the population estimates and projections for 1970-1980 of the World Social Situation of the United Nations for 1970, the total population of the less developed regions may increase by 28%, the number of preschool children by 21% and the number of school-age children by 28%. With the present rates of population growth and the heavy growth forecast for the urban population of the developing world by the end of this century, the provision of food, housing, education and employment to meet its needs is already and in the decades to come will be a serious challenge unless the present development strategy is changed radically.

2.2 Underprivileged populations

2.2.1 Rural populations

It has been estimated that in the less developed regions of the world the rural population totalled 1910 million in 1970, or 75% of the total population. By the end of the century it will probably rise to 2906 million despite rapid urban population growth, which is partly due to migration from the rural areas.

At the same time, people in many rural districts are isolated and dispersed; therefore the provision of public services of the conventional type, including health services, is difficult and expensive. Isolation that cuts off the community from the outside world obstructs communication and puts a brake on the improvement of living standards. Dispersal and isolation are also major obstacles to the education, training and employment of qualified manpower.

Some of the characteristics of underdeveloped rural areas are:

- economic stagnation
- cultural patterns that are unfavourable for a developmental drive
- agricultural underemployment and lack of alternative employment opportunities
- poor quality of life because of the scarcity of essential goods, facilities and financial means
- isolation caused by distance and poor communications
- unfavourable environment, with exposure to communicable diseases and malnutrition
- inadequate health facilities and lack of sanitation
- poor educational opportunities
- social injustice, including inequitable land tenure systems and a rigid hierarchy and class structure
- inadequate representation and influence in national decision-making.

2.2.2 Remote areas and nomadic peoples

There are some 50-100 million nomads and semi-nomads in the world. About 90% of them live in Africa or Asia, in the dry belt that circles the earth north of the Equator and includes the arid land from Senegal through the Sahelian region of North Africa and South-West Asia to Pakistan and India. Nomads depend on migration for their livelihood and have no fixed dwelling. Semi-nomads, including transhumants, are periodic migrants with one or more fixed dwellings and often some agricultural activity. Nomads usually keep domesticated animals - cows, camels, sheep, or goats - but some are hunters and collectors, as in Australia, the Kalahari desert, Amazonia and the Arctic.

Nomads have peculiar needs and problems. As is well demonstrated by the present catastrophic drought in the Sahelian region, in nomadic life there is a narrow margin between survival and death. But their constant movement and scattering makes nomads difficult to reach with health services, which therefore tend to neglect them. Even in some development plans nomads are ignored as they are wrongly included with rural populations. In fact, their particular situation should be recognized and given separate attention.

2.2.3 Peri-urban and slum populations

During the last two decades there has been an enormous increase in the number of people living in slums and shanty towns in the poorer countries of the world. This growth is continuing and may be accelerating. Today about one-third of the people living in cities in developing countries live in slums and shanty towns. The proportion is increasing and is a major influence on the total environment of these cities.

The main reason for the growth of slums and peri-urban shanty towns is that large numbers of people are moving to the cities from the rural areas in search of work and a better life. Migrants, industrial workers, farm workers, seasonal workers and displaced persons are a growing population contributing to the swelling of urban slums. This is not to say that work is readily available in the cities. In fact, the urban population of developing countries is increasing much faster than the number of jobs available; even so, the situation is worse in rural areas. Urban poverty is in many cases a result of the overflow of rural poverty.

Almost half of the population now living in slums and shanty towns are children. At the current rates of growth, their number will double by 1980. This is the most tragic aspect of the problem - the conditions existing in slums and shanty towns mortgage the future of children,

especially the very young in their formative period of growth. Child mortality and suffering in those communities are very high and life expectancy is low.

2.3 Major health consequences

Mortality and morbidity

Throughout the world, for lack of even the simplest measures of health care, vast numbers of people are dying of preventable and curable diseases, often associated with malnutrition, or are surviving with physical or intellectual impairment. In the realm of vital statistics, there are striking differences between the underprivileged world and the developed world. According to 1971 data, the life expectancy at birth was 43 years in Africa and 50 years in Asia, compared with 71 in Europe and North America.

There is a continuing downward trend in the infant mortality rate throughout the world, the developing countries included. While this trend is most welcome on the global level, there is still a dramatic difference between infant mortality rates within countries and between a number of developing countries and the rest of the world. The differences are even more marked when we consider deaths occurring in children aged one to four years.

Data on nutritional deficiency as well as on low birth weight and immaturity indicate that the deficient nutritional state of the population is perhaps the most single important factor influencing excessive mortality in developing areas. Mothers who have been handicapped since early life by nutritional deficiency and various adverse environmental factors probably give birth to low-weight infants; many of these infants die from infectious diseases because of their increased vulnerability, while those who survive continue because of nutritional deficiency to be at greater risk from the hazards of the environment.

The principal causes of morbidity in the developing world are malnutrition, vectorborne diseases, communicable diseases, gastroenteric diseases and respiratory diseases - themselves the result of poverty, squalor and ignorance. To them must be added the diseases in mothers related to deprivation, unregulated fertility and exhaustion, with their effects on the newborn child. These conditions are linked with social problems such as overwork among women, unemployment among the young, population growth and urbanization; and their solution calls for an integrated effort in which the health services have a major role to play.

2.4 Major health service problems

As already mentioned in the introduction, it is estimated that in a number of countries not more than 10-20% of the rural population and of other socially or geographically remote groups have reasonable access to or utilize health services. As the rural population represents about 75% of the developing world's total population, the problem is immense.

Remedies for many shortcomings of health services are known and available, but some of them cannot be usefully applied unless the total health care concept is appropriately modified. For a number of problems a new approach cannot in itself be considered as a remedy but rather as a prerequisite to the successful application of largely known remedial action.

The main problem today is the need to develop systems through which effective health care can be made both accessible and acceptable to the people. This problem can be viewed from various aspects.

2.4.1 Problems in the area of broad choices and approaches

(a) Lack of clear national health policies and poor linkage of health service systems with other components of national development

An effective health approach requires a coordinated effort of all those sectors that can contribute directly or indirectly to the promotion of wellbeing. This is so not only at the

central level but also at the intermediate and - above all - the peripheral level where policies should have their roots. Moreover, health should be considered as an integral part of development with clearly defined goals, policies and plans. Unfortunately, in many developing countries this approach is not followed. As a consequence, overall health goals and policies are missing. This largely precludes health planning. The efforts made are fragmentary, not necessarily tied to those of other sectors, and not directed towards supporting national growth on a broad scale, particularly by fostering human wellbeing and resources. Health activities often become stagnant and health development projects collapse for lack of proper budgetary support. Even when policies and goals are established and the principle of multisectoral action is accepted, agencies, either national or international, have difficulty in crossing sectoral lines in order to implement policy.

Interventions have been developed, based on results of biomedical research, that can effectively influence a great number of the health problems existing in developing countries. For some health problems no simple effective technology is available, but many technologies have been standardized and simplified to such a degree that they can be effectively applied at low cost and with inexpensively trained persons on a sufficiently extensive scale to make a substantial impact. However, they are not yet being widely applied.

Much modern health technology is appropriate or irrelevant to the immediate needs of people in developing countries. Moreover, owing to the high cost of sophisticated equipment and other requirements, it tends to absorb, for the benefit of a minority of the population, a substantial share of those limited resources which should instead be used for the benefit of the whole population.

(b) Lack of clear priorities

Clear, concise and logical statements of priority goals within health care systems are rarely made. Realistic criteria for the development of priorities are formulated even more rarely. For example, little is said about the balance between curative, preventive and promotive activities and the specific allocation of resources to these sectors; curative services usually absorb an inequitable share of resources of money, manpower and facilities. Priorities as between primary care services and referral care services are seldom defined in a general plan. Nor are priorities within the three main sectors themselves often clearly delineated. A balance is not always established on objective grounds between personal health services, environmental health services, and community-oriented activities. As a consequence, curative services and, more generally, personal services tend to receive undue emphasis, even when better results might be achieved by an alternative deployment of the same limited resources.

Alternative methods of combating communicable diseases are also not considered in terms of optimal results. The employment of measures that are not directly related to health but have important health implications is often neglected.

(c) Opposition to changes in social aspects of health policy

Established health associations, institutions and organizations, particularly in the professional sphere, tend to resist change such as the introduction of a national health service, compulsory or voluntary health insurance, or the licensing of new categories of health manpower. Their resistance may be an attempt to defend their own interests or to preserve cherished traditions. In any case, it may have serious consequences on the orientation of health programmes, planning and policies, since highly regarded professionals often have great influence on policy and on decision-makers.

(d) Inadequate community involvement in providing health care

The weakness of most health care delivery systems is that government health services have not been able to make health care sufficiently accessible and acceptable to people in need. Primary health care interventions must be available to the people close to where they live. The acceptance of many health measures may involve a change in living habits, hence the community itself must decide on the measures and help in carrying out and evaluating them. Basic health care interventions can be undertaken by ordinary people with adequate education, training and technical advice and supervision.

It follows that there must be a clearly defined relationship between the two components of frontline health care activity - that carried out by the government and that carried out by the people themselves. The relative contribution of each of the two partners to the total health care activity should be determined by the political and socioeconomic situation in a country or in a particular geographical area.

Organizing the delivery of health care in such a way that part of the delivery system "belongs" to those to whom it should serve has enormous advantages. It can result in the tapping of local resources for health care delivery and bring about a different view of its nature. Ideally, this component of health care delivery should be under the control and administration of the consumers themselves, but such a structuring of responsibilities within the health care delivery system need not detract in any way from the primary principle that health care delivery must be thought of and planned as a whole and lead to proper national health care goals.

The obstacles to achieving such systems include:

(1) in some countries a political system that does not encourage local self-government - a prerequisite to local involvement in health and development in general;

(2) the rigid sectoral structure and centralized organization of most conventional government health services;

(3) competition between the traditional system of health care already existing at the local level and the modern system of health care; and

(4) the system of beliefs (religion, caste, etc.) of communities in peasant societies.

(e) Inappropriate training of health personnel

Education and training programmes, both undergraduate and postgraduate, either at home or abroad, are frequently irrelevant to or not commensurate with local health needs, demands, problems and aspirations. It is difficult to find examples of educational systems that had been planned to provide suitable staff for national health needs. Graduates in general have much difficulty in adapting themselves to the activities necessary to meet basic national needs and prefer to perform the type of work for which they were trained. Higher education thus tends to develop a communication gap between professional personnel and primary health workers,[1] as well as between professional personnel and unsophisticated people. Professionals are in the main unwilling to work in the rural areas where health services are most needed and, paradoxically, they also resist the delegation to non-professional health workers of responsibility and functions in the delivery of primary health care. The medical profession often opposes new

[1] For the purpose of this document the term "primary health worker" covers non-professional health personnel, including auxiliaries, who carry out frontline curative, protective and promotive tasks within health care delivery systems. Professional personnel may also carry out primary health care functions but will usually be referred to by their professional designation, for example, physician, nurse, engineer.

types of health personnel on the ground that the provision of medical care is too important and complex (and dangerous) to be left in the hands of less trained or differently trained personnel. This opposition may be disruptive since, in order to function effectively, primary health workers need the active support of physicians or other health service staff.

Not only the training of professionals but also the training of auxiliaries as generally carried out today leaves much to be desired. Seldom is it planned on a priority, task-oriented basis. More often the curricula look like simplifications of professional ones. Furthermore, auxiliaries with limited basic education and a short period of preparation require periodic refresher and more advanced training, not only to strengthen but also to upgrade their professional knowledge and skills systematically according to the national development plan of health services. This is generally not done.

2.4.2 Problems of resources

(a) Inadequacy and maldistribution of resources for health services

The developing world lacks human, material or financial resources with which to meet health needs; indeed, in some countries there is an absolute shortage. In addition, the situation is often complicated by faulty utilization of the resources available.

Scarcity of money affects all parts of the health delivery system. It first shows itself at the national level, both in the routine allocation of yearly budgets to the various sectors and in the distribution of funds to authorities responsible for national development plans. One useful index in this area is per capita health expenditure. Although this index is not strictly comparable among countries, it is low in all developing countries and - what is more serious - lowest in the neediest areas.

While shortage of financial resources may be felt throughout the health system, it affects the larger, needier rural population more than the city dwellers. The pattern of the health sector prevalent in developing countries is mostly responsible for this disparity. Being frequently designed on the model of that of developed countries, it is often hospital-based, relies on relatively sophisticated technology and places emphasis on specialized medicine. As a result, it may serve a comparatively small, privileged clientele and absorb an unduly large share of the health budget. In many developing countries over half of the national health budget is spent on health care in urban areas, which may accommodate a fifth or less of the total population.

Alongside the shortage and maldistribution of funds, supplies and facilities there is a shortage and maldistribution of human resources. The distribution of professional personnel within developing countries is almost inversely proportional to the distribution of the people. This phenomenon is not confined to physicians. Outside the main cities and towns there are very few professional health personnel, and they work in public, voluntary or mission service. It is not uncommon for populations of 50 000 or even more to be served by one physician. Maldistribution of health personnel also exists in most of those countries where a large number of professionals are trained. Most educational systems produce professionals in accordance neither with the country's needs nor with the expectations of the trainees.

(b) Non-utilization of actual and potential resources

Notwithstanding the shortages in all types of resources, the paradoxical phenomenon of underutilization of the available health services exists widely in developing countries. The multiple factors responsible for this phenomenon differ from culture to culture and from situation to situation. In many cases underutilization stems from such factors as the job dissatisfaction of health personnel, their attitudes, disregard of traditional systems and

personnel, inadequate awareness of the need for community knowledge and involvement, unsatisfactory physical and social accessibility, and poor transport. It is also true, however, that people are often not informed about available health services or are not clearly aware of the types of health measures offered or of their indications and usefulness.

Another factor - the "bypassing" phenomenon[1] - leads to underutilization of health units and at the same time overburdens services, such as hospitals, that should more properly be providing secondary and not primary care. Initial studies indicate the importance of this phenomenon and identify such responsible factors as inadequate service quality, failure to meet the expectations of the community, staff arrogance, and discrimination. Job dissatisfaction, exhausting work loads or unrealistic staffing and inappropriate use of staff time are also among the causative factors.

Another important aspect of underutilization or non-utilization of resources is related to the communities themselves. What has traditionally been considered as available resources in fact represents only part of the total resources that can be tapped. The problem is that the resources within communities have not been fully identified; in most cases the operators of current systems for the delivery of health services have been unwilling or unable to seek out these resources and mobilize them. Among them for example, are indigenous systems for providing health care, including traditional birth attendants, midwives, healers, and others, who operate on a fee-for-service basis in many developing countries among large populations and are well established but not fully recognized.

(c) Restricted use of primary health workers

One of the major factors hindering the development of health services in rural areas has been the absence of clear thinking about the kind of health personnel needed to provide the necessary services at the village level. Most preventive measures and a large number of medical procedures are simple and do not require extensive professional training. In recognition of this fact, there is a trend towards establishing a body of primary health workers who can be trained more rapidly, less expensively and in greater numbers than doctors or nurses. It is particularly important to use them for primary care in rural areas.

Primary health workers can be recruited from among the villagers and can be trained in or near the village, so that they truly belong to the people. They can be employed full-time or part-time.

However, the development of a system of primary health workers, while offering the promise of a primary health care alternative, may raise a new set of difficult problems in relation to their selection and administration, their links with other parts of the health services, and their logistic support. For example, their generally limited basic education and short period of preparation require continuing on-the-spot training and the full support of the whole health service system. Unfortunately, existing health establishments have not always met such requirements, nor have they whole-heartedly accepted the concept of utilization of primary health workers.

Again, because primary health workers often work in remote areas that are not served by well developed communication and transportation links, it is difficult to ensure that they are properly equipped and that patients have easy referral to other levels of care. Similarly, because of the remoteness of their posts, it is more difficult to supervise and evaluate their work.

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[1] If the population does not have confidence in the local health institution, patients may ignore that institution, preferring to seek care in urban hospitals or from traditional practitioners.

Some of the problems connected with the use of primary health workers are social or political. The medical profession often opposes new types of health personnel. Unless frontline workers are provided with the support (supervision, training, logistics) and complementary functions (referral) of the rest of the health system, the rural populations may well reject a service that is clearly insufficient by itself. Traditional healers and medicine men may also be antagonistic to primary health workers and consider them a threat to their power and livelihood.

Customs and taboos can militate against primary health workers; there are numerous examples of their not being used or having been bypassed by patients going to indigenous health workers or to more broadly trained but distant medical personnel. Problems arising from the traditional division of activities and prerogatives between the sexes also complicate the establishment of a system of primary health workers.

Although basically willing to stay in the villages, therefore, primary health workers may be discouraged by the problems they face and prefer to move to cities and better-paid jobs.

The technical aspects of the work of primary health workers are of critical importance, as they form the entry point to the health system for the majority of the population. If they offer inappropriate treatment and do not refer patients when they should, the system will not function properly. And yet these individuals, the basic elements in the day-to-day functioning of the system, are the very ones who can receive only brief initial training. Consequently, their tasks must be clearly defined and their training programmes be efficient. The specification of tasks and the development of training programmes place a heavy burden on countries short of skilled manpower.

(d) Impact of rising costs of health services

Rising costs in health care have recently been compounded by the increasing costs of basic commodities, fuel and agricultural produce. The increasing cost of living, and particularly of food, is likely to aggravate health problems for the vulnerable members of society and limit the ability of individuals and governments to pay for health services. The cost of medical programmes heavily based on institutions and professionals is increasing more rapidly than that of simpler programmes. While many economic factors are beyond the control of health decision-makers, a measure well within the powers of national health administrators is to curb the growth of high-cost programmes and services for the few and promote low-cost services which, through the utilization of less expensive primary health care personnel, will cover a much larger proportion of the community; such a measure must be accepted by the health establishments of all countries as a top priority and as an urgently needed change of direction.

2.4.3 Problems of the general structure of health services

(a) Lack of effective machinery for health planning

Although health planning has been increasingly adopted in developing countries, its implementation has not, for various reasons, been truly successful in some cases. The most important weakness of many health planning endeavours is the lack of an overall health policy to guide them, of a political will to provide the necessary resources for implementation, and of an effective executive structure to implement the decisions. But there may be a host of other reasons for failure. Often health plans are not so designed that they can be integrated into the country's socioeconomic development programmes and planning is frequently carried out for health services and not for meeting health needs. Information and effective machinery for national health planning are often lacking. Many health administrations do not have competent planners, especially at regional level, or a planning system. This leads to the formulation of plans that are not realistic or not designed and written in terms attractive enough to appeal

to the cost/benefit and cost/effectiveness-minded economists of national planning bodies. This is a serious shortcoming, since economic development receives the highest attention of planners and decision-makers, while social sectors and health in particular are relatively neglected. Another consequence is that plans are frequently directed towards the realization of intermediate objectives, some of which - e.g., prestige hospitals and training centres - are substantial and tangible but fail to achieve the objective of a change in the community's health status. Although an obvious step, identification of the general population's needs, particularly at the local level, before the commencement of planning is not always followed in practice and frequently the planning is based on statistical evidence that is either faulty or non-representative.

Behavioural scientists are capable of making a considerable contribution to the planning and management of health, but their skills are insufficiently applied. Frequent mention is made of social or psychological factors as being obstacles to solving health problems, but it is rare to find action that goes beyond admission of their importance. In many cases the felt needs of people, and particularly of rural people, are simply neglected, whereas it is recognized that they often reflect actual needs and in any case satisfying them would go far towards obtaining acceptance for measures to meet other equally or more important, but not felt, needs.

(b) Weak development of "total system" concept

Health care delivery systems - public and private, national and international, curative and preventive, peripheral, intermediate and central - must be considered as a whole.

In the field of health services, overcentralization of authority and executive responsibility may prevent effective and adequate delivery at the periphery. It tends to lead to an overconcentration of personnel, institutions and facilities, and therefore to a maldistribution of resources. Furthermore, central authorities become too far removed from and thus out of touch with community needs and expectations. Present systems of reporting seldom convey to the centre the full picture of requirements.

The integration of specialized programmes in the general health services is progressing, but slowly. While full integration has been achieved for some programmes, others remain largely autonomous. The fragmentation of a health service into disparate parts designed to serve a small section of the population or a single purpose militates against the goal of comprehensive and optimal utilization of limited resources. The trend is still to develop separate services, such as those for industrial health, school health, prison health and family planning, whereas in reality these services are more appropriately amalgamated into a single service.

The interaction between the public sector of the health services and the remainder of the health care system has not been fully studied or its importance appreciated. The non-public sector includes persons and institutions with different levels of skill and resources, ranging from the specialized hospital to the private general practitioner, the pharmacist, the village midwife or even the local healer. All these services are part of the health care system, and national health authorities miss real opportunities by not taking advantage of the money, manpower and local organization resources that already exist and can be directed towards national health service goals. If the private sector is dominant, there is a danger that underprivileged sections of society will be deprived of indispensable health care. Essential health care services should not largely depend upon the purchasing ability of the individual. It is therefore a national responsibility to provide health care that is free or is within the means of the individual. Most governments are aware of this responsibility but often fail to propose an approach that could build up progressively the community's capacity to provide such care - modestly at the beginning if limited resources so dictate, but fairly to all their population.

2.4.4 Some main weaknesses of a technical nature

While it is fully realized that there exist a large number of weaknesses of a technical nature in health services, only a few have been selected for discussion, either because to remedy them is a prerequisite for the successful delivery of any health measures or because of their direct impact on the health of people.

(a) Inadequate use of health education

High morbidity and mortality, particularly among infants and children, are not only an index of a community's low health level but also of inadequate health education. A great number of diseases could be prevented with little or no medical intervention if people were adequately informed about them and adequately motivated to take the necessary precautions in time. Prominent among these are most childhood diseases, nutritional diseases, especially during infancy, and diseases preventable by immunization. Health education is particularly needed where the network of services is weak and people must learn to protect themselves from disease and seek help in case of need.

When efforts have been made in health education, they have often been limited to imparting information dogmatically, as if mere information would result in action, inevitably, the outcome has been disappointing. Neglect to pattern health education on the existing resources - economic, human and cultural - has also contributed to its failure.

While a nucleus of health education specialists may be necessary for planning and guiding health education activities in a country, it is surprising how much can be done by using its frequently mentioned, and just as frequently ignored, human resources - teachers, agricultural workers, community development agents and, depending upon the culture, religious leaders, youth groups, traditional healers and a number of other untapped resources. Examples could be given of their effectiveness in educating the public, especially where illiteracy is prevalent in the often simple action it could take in order to prevent dangerous diseases. In this category the problems of environmental health, especially water sanitation and excreta disposal, could be mentioned; many installations have not been properly used or maintained.

The main role of health education is to give people the self-respect derived from the knowledge that they can prevent disease and thus change the course of their life by their own efforts.

(b) Lack of basic sanitation

The quality of basic sanitation in most developing countries is well below the level considered necessary for the prevention and control of communicable diseases and the promotion and maintenance of physical, mental and social wellbeing. Basic sanitation should meet such needs as safe water, a safe environment, uncontaminated food and better housing. In order to meet these needs, good and sufficient safe water supplies, the sanitary collection and disposal of human wastes, the planning and control of urbanization, proper housing, the control of pollution, food hygiene, vector control and health education are required. In such areas the development of sanitation measures should be linked with economic and social development and community action. The philosophy and modern concepts of basic sanitation are fairly new to many developing areas of the world. In addition, much inertia is encountered on the part of both the population and responsible officials, who fail to understand the need to initiate action. A major problem is often the lack of a competent service infrastructure to carry out efficiently a comprehensive range of functions.

A survey carried out by WHO in 91 selected developing countries revealed that only 29% of the total population had access to safe drinking-water at the end of 1970. Within urban communities 50% of the population obtained water through individual house connexions, while 19%

used public standposts. In rural areas, more than 85% of the population did not have safe drinking-water available to them. Furthermore, in many of the piped urban supplies the service was intermittent, a situation that renders a water system potentially hazardous to health.

The immensity of the problem is illustrated by the relatively modest targets proposed for the United Nations Second Development Decade (1971-1980), namely: to provide 60% of all urban populations with a water supply in their house and the remaining 40% with a water supply from public standposts. Furthermore, 27% of all urban populations should have sewer services. As for the rural population, 25% should have reasonable access to safe drinking-water and 10% be provided with sanitary excreta disposal facilities.

The provision of basic sanitation for rural populations is a major and long-term undertaking and it now appears evident that the health authorities alone cannot carry out all the tasks involved. Quality standards and control are traditionally the responsibility of ministries of health. However, other authorities, such as those concerned with agriculture, public works, mining and rural engineering, may be better equipped and more acceptable to economic planners as the executive agencies for water supply and sanitation facilities. This again calls for a multisectoral approach and close cooperation between the responsible agencies.

(c) Deficiencies of communication and transportation

One of the prerequisites for the adequate operation of health service systems is proper communication among the various elements of the health services system, including the primary health workers in the villages. Many of the problems in the delivery of health services to the rural areas of most developing countries are the result of poor transport and communications. They include: insufficient supervision of the staff, lack of consultation and referral facilities, inadequate supplies of drugs and other health requirements, feelings of isolation and neglect among the staff, and insufficient information about needs and possibilities.

Modern transportation is not easily adapted to use in developing countries, having its own inherent problems, which are more acutely felt in the non-technically-oriented developing world. Costs of operation are high in proportion to the countries' limited resources, and there is lack of technical understanding at senior government level, as well as lack of skills for adequate operation of complicated machinery.

UNICEF has, since the late forties, provided large numbers of various types of modern transport to support the delivery of social service programmes. The delivery of these services suffered as a result of failures in the transport component, and it has now been realized that the increasing introduction and use of modern technical equipment in non-technically-oriented societies requires further support services in the shape of guidance and training in the operation and development of maintenance and repair services.

The decade of the seventies has seen a larger increase in the cost of transportation than at any time in history, the price of fuel having increased dramatically in the last 12 months. For obvious reasons, this increase has been proportionately higher in the developing than in the developed countries and is now a major factor contributing to the rising costs of health services.

Developing countries in which flying doctor services have been introduced have also had to cope with many financial and technical difficulties. Moreover, these services are not usually designed to provide primary health care and appear to be effective only as a referral link where primary health care is available separately.

While many communication and transport problems may be solved by the introduction of two-way radio systems and aeroplanes, especially in specific conditions and for limited objectives as a component of some wider health service system, the cost per unit service is often exhorbitant. The cost benefit approach needs to be adopted, the use of financial resources for such services being weighed against alternative methods of improving accessibility, including community involvement in primary health care to the extent of self-sufficiency.

(d) Lack of adequate health information

There is still considerable confusion between "statistical data" and "information", with the result that many statistical services fail to provide public health administrators with the appropriate information for sound decision-making. If national systems are to be geared to solving the real problems of communities, a radical reform of data collection objectives and methods is required. The routine collection of data of doubtful validity or utility serves no beneficial purpose either for the decision-makers or for the community being served; on the contrary, it results in wasteful expenditure of resources that could be more advantageously utilized in direct services to people. The value of routine data collection is open to question because, in many situations, the thoughtful and intelligent employment of periodic sample surveys or reporting by exception may be able to provide more useful information at less cost.

Information services should be restructured on a subsystem basis according to the priorities of the health system and should employ a strictly problem-solving approach.

3. MAIN FEATURES OF THE CASE STUDIES

3.1 Introduction

The case studies presented in this section have been selected on the basis of recommendations received from WHO Expert Advisory Panel members, Regional Offices, and information found in various documents, reports and publications. The study group was aware that the country or area programmes selected are only examples of innovative schemes in various parts of the world. Furthermore, it was realized that many of the cases identified cannot yet be considered as successful; rather, they are promising attempts. However, in view of the limited time available the group had to decide on a certain number of cases. These belonged to three main categories. The first category consists of countries where innovative health care programmes were introduced at the national level. The second category contains examples of promising health care action of limited range. Finally, the third category consists of examples of programmes with a potential for extension or improvement of health services coverage.

The description of the above-mentioned cases is presented along with background information in the annexes. This section focuses attention on the salient issues and philosophy of the innovative approach to providing primary health care.

The full reports, including further details on the country or area and on the programme, are available as separate documents, often with annexes describing particular aspects of the programme. Any interested person wishing to study these programmes in detail is referred to these full-length reports,[1] which will be available on request from the Division of Strengthening of Health Serivces, World Health Organization, 1211 Geneva, Switzerland.

3.2 Bangladesh: an approach to the development of health services[2]

The basic strategy for developing the health services is a shift of emphasis from curative to preventive health care and the development of a delivery system that provides integrated and comprehensive health care to the rural population.

The Government, in order to achieve this strategy, is giving priority to the development of multipurpose health workers.

An auxiliary, based in the village and called a basic health worker, is a key member of the health team. Each basic health worker serves a population of not more than 4000 and has

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[1] Translations of these documents are not yet available at this stage.

[2] A short description of the health services of Bangladesh is given in Annex III.

adequate supervision. Basic health workers make regular home visits according to a planned schedule within a delineated area, each family being visited at least once a month. During home visits they vaccinate against smallpox, cholera, typhoid fever, and tuberculosis and collect blood and sputum samples for laboratory examination. They undertake health education in respect of environmental sanitation, water purification and family health (including family planning) and supply antimalarial, antituberculosis and antileprosy drugs where necessary.

These basic health workers function under the supervision of an assistant health inspector, who is in charge of four basic health workers at union[1] level and is directly supervised by the medical officer or medical assistant in charge of the subcentre.

The medical officer or his assistant functions as the team leader. At thana[1] level the rural health centre is the headquarters; it provides direction and referral services for all the subcentres.

The Government also operates a permanent training system in order to develop the knowledge and skills of the basic health workers and improve the quality of the care they deliver.

The following two projects are described to supplement this description of Government strategy for the development of rural health services.

The Savar project

The emphasis in this project is largely preventive; it concentrates on immunization against communicable diseases and the development of family planning services. Limited curative services are available through clinics at the base and the subcentres. Inpatient facilities and emergency services are provided at the base hospital. Preference in using medical care facilities is given to families who have subscribed to the project's self-insurance scheme, in which each family pays two takas[2] per month.

The policy of the Savar project is to be as nearly self-supporting as possible by relying on insurance subscriptions from the population.

Insured persons receive free outdoor treatment, and where hospital admission is necessary they pay an extra fee of five takas plus one taka per day. No food is provided for inpatients but all medicines are provided free. Persons not covered by insurance pay two takas per visit but receive free medicine, and have to pay for admission to hospital.

The health insurance scheme provides the most direct means of community participation. Such participation has already produced a distinct change in the attitude of the villagers toward the health services, which have come to represent value for money rather than a public dole.

The project emphasizes that health care cannot be viewed in isolation but rather as a part of the overall problem of development. Members of the community are taught handicrafts and improved agricultural methods to enhance their family income. Health education is undertaken in conjunction with the agricultural and nutrition programmes.

A full-time education extension officer is in charge of the centre, with two teaching assistants. All the young women who became family planning counsellors were first brought into contact with the project through the sewing centre.

Students from the university and schools are being organized for medical and social work including adult education, and young girls are being recruited from the villages to function as messengers of health and family planning. All the villages are being surveyed to obtain a better understanding of health problems.

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[1] A thana is a police district usually containing 100 000 - 200 000 people. Each thana is divided into "unions" of about 15-20 villages.

[2] 1 taka = US$ 0.12 (1974).

The Savar project was organized by a group of dedicated health workers. Its apparent success seems to prove that it is possible for medical practitioners to institute a health system different from the conventional ones, provided that the effort is consistent with the national philosophy and health strategy.

The Jurain nutrition project

In 1968 a pilot study was initiated in Jurain (a suburb of Dacca) to help determine ways of improving nutritional status, mainly through self-help. A farming centre was established where modern farming methods were demonstrated. Health education was employed and the community was encouraged to increase its consumption of vegetables, fruit, fish, poultry, eggs, milk and wheat by cultivating hitherto unused arable lands, rearing poultry, and culturing rapidly multiplying fish. A complex of bungalow-type houses was constructed on the site. A women's centre catered for the social needs of the women in the community; here they were taught knitting and sewing, handicrafts (using jute fibre) and cooking (through practical demonstrations of food preparation). A health centre was also established to cater particularly for women and children. A youth centre provided adult education classes and special instructions on modern agricultural practices, and young persons were encouraged to undertake farming.

In the third year a review of activities revealed that the number of households with kitchen gardens had increased from 4% to 84%. Many were also rearing poultry and practising periodic vaccination of poultry and cattle. A total of 46 ponds and ditches had been stocked with young fish. Dietary habits had also been influenced favourably and the consumption of green vegetables and protein foods such as meat, fish and eggs showed a considerable increase. The dietary habits of pregnant women and children had also been favourably influenced, with a considerable improvement in weaning practices. All the pregnant women in the demonstration zone had been encouraged to attend the MCH centre at least once during pregnancy - an unusual occurrence in that community. As a result of the preventive measures taken, there had been no outbreak of cholera or smallpox in the area for three years.

Conclusion

The reorganization of the health services, through reorientation and retraining of health personnel and the integration of health workers' functions, has reduced duplication of health activities and greatly improved health care delivery. More effective coverage of health care, particularly in the rural areas, has been achieved through the introduction of the basic or primary health workers (called family health workers), who make monthly visits to homes to perform simple, well-defined tasks for health protection and promotion. In Bangladesh, where much of the terrain is waterlogged and communication is difficult, a relatively simple system of health care delivery as described above appears to hold the most promise.

The Savar project has been in operation for a relatively short period and has had extensive outside support since its inception. Moreover, the Savar region is probably not so poor as most of the rest of Bangladesh. However, several important inferences can be made. A partial self-insurance scheme will work even in extremely poor areas, and will help to generate active community participation provided there is a reasonable degree of financial security or stability.

The Jurain project demonstrates clearly how the quality of life can be appreciably improved through self-endeavour and through relatively simple procedures for the improvement of environmental sanitation, of nutrition (through more effective agricultural practices), and of MCH and social services for hitherto illiterate and non-productive women in the community. The project also demonstrates that it is possible to support local activities that can improve the health of a community.

3.3 Health care in the People's Republic of China[1]

There is common agreement that prior to 1949 the state of health of large numbers of the Chinese people was extremely poor and that China's health services were grossly inadequate. The people of China in the 1930s and 1940s suffered from the consequences of widespread poverty, poor sanitation, continuing war, and rampant disease. Preventive medicine was almost non-existent in most of China except for areas where special projects were conducted, usually with foreign funding. Therapeutic medicine of the modern scientific type ("Western medicine") was almost completely unavailable in the rural areas - where 80% of China's people live - and for most poor urban dwellers.

Since liberation, Chinese leadership has been much concerned about the health of the people and has clearly pointed out that health services must be directed towards the mass of workers and peasants, thus serving the vast majority of people. As over 80% of the population are in rural areas, to serve the vast majority of people is to serve mainly the rural population.

As from 1949, health care assumed a position of high priority. The following principles, adopted at a National Health Congress in the early 1950s, remain today basic tenets in relation to the delivery of medical care: (1) medicine should serve the people; (2) preventive medicine should be given priority over curative medicine; (3) Chinese traditional medicine should be integrated with Western scientific medicine; and (4) health work should be conducted with mass participation - reliance on the masses is essential.

The health services in rural areas are provided by the commune's health centres. These centres are administrative bodies of the commune's health system as well as an important base for rendering preventive and curative services. They are provided with outpatient and inpatient services, operating rooms and laboratories. They frequently organize mobile medical teams to tour the villages.

There are several production brigades in every commune and in each brigade there is a health unit serving on average a thousand people. In the health unit, there are primary health workers (barefoot doctors) doing health education, family planning and preventive and curative work on most common diseases. In case of more complicated diseases or difficult labours, the patients are referred to the commune's health centres or taken care of by mobile medical teams.

In the brigade there are several production teams and in each team there is one or more health aide. They are trained to give first aid, to treat simple ailments and consult with the barefoot doctors in case of difficulty. They also render preventive services such as vaccination, disinfection of the water supply, disposal of wastes and composting.

The health centres of the people's communes, the health units of the production brigades and the health aides of the production teams form a network of health services in rural areas. The county hospital gives technical advice to the health centres and helps them to solve difficult problems.

There are health workers analogous to the barefoot doctor in the factories and in the urban neighbourhoods. In the factories they are called "worker doctors", are selected by their fellow workers as barefoot doctors are by the villagers, and receive short periods of initial training, usually of one or two months. They provide preventive medicine, health education, occupational health services, first aid, and limited primary care on the factory floor or in the factory health centre. Supervision and continuing education, as well as referral, are provided through the doctors and assistant doctors in the factory or in the neighbourhood clinic. The worker doctor, like the barefoot doctor, performs health work part-time while continuing his or her other duties, and is paid a salary similar to that of other workers in the factory.

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[1] A short description of health services in the People's Republic of China can be found in Annex IV.

The cities of China are divided into districts of several hundred thousand people; districts are divided into "neighbourhoods" or "streets" of about 50 000 people; neighbourhoods are divided into "residents' committees" or "lanes" of about 5000; and residents' committees into "groups" of about 100 people. Services are decentralized to the most local level at which they can be given. Residents' committees usually have health stations in which the personnel are local housewives or retired people trained for short periods and called "Red Medical Workers". They are trained and supervised by doctors and assistant doctors who work in the clinic or hospital at the neighbourhood level; they can refer patients to those facilities or directly to the district general hospital when necessary.

One of the most important tasks of China's health workers and neighbourhood and commune leaders is felt to be a reduction in the birth rate. In the lanes, Red Medical Workers disseminate birth control information by going from door to door talking with the women about the number of children they want and the birth control methods they are using. Abortion, which is viewed as a method to be used when birth control fails, not as a primary method of contraception, is free and easily available but is almost never requested by an unmarried woman; pregnancies among unmarried women are exceedingly rare; illegitimate births are unknown.

People in the community are often mobilized to perform health-related tasks. A large-scale attack was made on illiteracy and on superstition. People were organized in mass campaigns, one of the best known being the campaign to eliminate the "four pests" (originally flies, mosquitos, rats and grain-eating sparrows but, when the elimination of sparrows appeared likely to produce serious ecological problems, bedbugs were substituted). People were encouraged to build sanitation facilities and to keep their neighbourhoods clean, and campaigns were mounted against specific diseases. In all these health campaigns it was repeatedly stressed that health is important not only for the individual's wellbeing but for that of the family, the community, and the country as a whole.

Mobile medical teams were organized on a massive scale. Most urban medical workers were required to play a role in these teams or in other work in the rural areas, and at any given time about one-third of urban health workers were on rotation outside the cities. They were there not only to provide services for those living in the countryside but to be themselves "re-educated" by the experience as well. Part of their responsibility was the training of large numbers of peasants to provide environmental sanitation, health education, preventive medicine, first aid, and primary medical care while continuing their farm work.

During the period 1966-1969, much reorganization was undertaken in medical education. Higher medical schools began to admit students who had had less schooling than previous entrants but who had experience of working in factories and in communes; these students were usually selected by the people with whom they had worked and whom they were to return to serve. The curriculum was restructured to place greater emphasis on the practical than the theoretical, added much more training in Chinese medicine, and was experimentally reduced to about three and a half years instead of the previous six. Medical research in the institutes of the Chinese Academy of Medical Sciences began to place much greater emphasis on the treatment of common illnesses and especially on the role of techniques of Chinese medicine.

In the last few years, over a million barefoot doctors have been trained. This constitutes a task force in rural areas, and the role they play in the health service is becoming more and more evident. The barefoot doctors are young commune members. They are part-time medical workers, taking part also in collective productive labour barefoot just as other peasants do, for this reason being called barefoot doctors. They receive a preliminary course of training for three to six months conducted by commune health centres, county hospitals or mobile medical teams. Some medical colleges also offer short courses for barefoot doctors. In the course of three to six months, they are taught to take care of the diseases prevalent in the local areas. They learn to deal with from 60 to 80 ailments by using acupuncture and other preventive and curative techniques. What has just been mentioned

constitutes the preliminary training; during their service, under organized supervision, they acquire more knowledge and experience. After a period of practice, refresher courses are given from time to time, so that they are able to take on more and more responsibilities. After several years of service, some of them are selected by the communes to receive regular medical education in medical colleges and after graduation they return to their own communes.

Continuous in-service training, refresher courses and support from more developed health institutions are provided for barefoot doctors and other peripheral auxiliary staff.

In rural areas a cooperative medical service system has been adopted. The funds of the cooperative medical service come partly from the peasants themselves and partly from the public welfare fund of the production brigades, and in case of necessity the service receives a subsidy from the Government. With the cooperative medical service free medical care is given. Should a patient be sent to the county hospital or any other hospital, all medical fees are paid from the cooperative funds.

The principle of economy is stressed in rural health work. The medical services of barefoot doctors are paid in terms of working points equivalent to those for productive labour. The payment for medical services in rural areas is based on the local price level.

National statistics are not yet available on the current health status of China's population, but recent visitors report a nation of healthy-looking, vigorous people. Although much of China is still poorly developed technologically and its people - particularly in the rural areas - work very hard for long hours, there is no evidence of the malnutriton, infectious disease, or other manifestations of ill health that often accompany this level of development.

Although changes in health care have certainly played an important role, the improvements in health status are not due to change in health care alone; improvements in nutrition, sanitation, and living standards are at least as important as the changes in health care. The following principles have been of crucial importance in the dramatic improvement in the health of the Chinese people:

(1) The redistribution of health care resources from the service of those who formerly had most to those who had least,

(2) The commitment to encouraging the people to self-reliance and mutual help in meeting health problems. Health service is based upon the needs of the population as perceived by the political leadership,

(3) An emphasis on changing people's feudal and fatalistic ways of thinking through mass participation and a profound belief in learning through doing,

(4) The training of a large number of full-time professional health workers,

(5) The more recent training of large numbers of part-time health workers who continue at the same time to be peasants, workers, or housewives and who work under supervision within a highly structured framework,

(6) An emphasis on preventive medicine and its implementation through mass campaigns and through integration with therapeutic medicine,

(7) The preservation and strengthening of the valuable elements of traditional Chinese medicine and its integration with modern medicine,

(8) An emphasis on deriving gratification through "serving the people" and a commitment to the nation and community rather than to personal advancement.

3.4 The Cuban health care system[1]

The Cuban experience in the health field is based on the results of a revolution that altered the socioeconomic and political structures of the country in the period following the revolution in 1959.

Until 1959 a considerable part of the total population, especially in the rural areas, had no access to any form of health service. The Government had a badly organized and insufficient service, mainly in towns. The private health services were practically unsupervised, varied widely in quality and covered practically only the urban areas. There was no planned development of health services.

The pre-revolutionary situation can be summarized as follows:

(1) Absence of a national health system, of any coordination of existing services, and of vertical programmes to solve priority problems.

(2) Quantitative inadequacy of the services, the population being left to its own resources for medical attention, which for many people was unobtainable under those circumstances.

(3) The low quality of State services compared with private services, which generally were very costly.

(4) The predominance of curative services, there being hardly any preventive medicine.

(5) The divorce between the teaching of medicine and social needs, doctors being trained for private curative practice.

After the revolution the priority given to, and the changes made in, the health services were the result of a political decision based on the needs of the population as perceived by the political leadership, which included a number of physicians. Health, education and means of communication have the highest priority in socioeconomic development and receive a considerable portion of the Government's budget and attention. Health care is considered a human right and an excellent political investment. Health services are free and run by the State. The equal distribution of services is a political dictum and is gradually being achieved. The health services are based on the following four basic principles:

(1) The health of the population is a Government responsibility

(2) Health services should be available to the total population

(3) The community should participate actively in health work

(4) Preventive and curative health services should be integrated.

In the search for a specifically Cuban experience on which to model the development of health services all over the country, a pilot area was established. The pilot area developed an integrated health services system including maternal and child health, medical care, control of communicable diseases, environmental sanitation, food hygiene, occupational health, health education, and dentistry.

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[1] A short description of health services in Cuba can be found in Annex V.

The results of the studies in the pilot area became available within six months and action was taken to spread a system of similar services all over the country, with emphasis on the rural areas where health services did not exist. The further development of health services in urban centres was discontinued for the time being. Immunization schedules and gastroenteritis and tuberculosis programmes were established for the whole population. Special attention was paid to factors influencing maternal and infant mortality. These activities were steadily extended to every corner of the country.

At the local level people's health committees are active. They are presided over by the physician-director of the institution and each of the mass organizations or community organizations is represented, such as the Committees for the Defence of the Revolution, the Federation of Cuban Women, and the labour unions. In the rural areas a member of the National Association of Small Farmers, who belongs to the private sector, is also a participant in the People's Health Commissions. The committee is completed by a representative of the Communist Party. It meets regularly and discusses a wide range of problems (e.g., schoolchildren's vaccinations and the hygiene of local milk production).

The mass organizations take an active part in health work such as mass immunizations, environmental sanitation and health education. The Committees for the Defence of the Revolution, which group three and a half million members, make it possible to immunize one and a half million children with oral poliomyelitis vaccine in a few hours at very small expense.

Health education of the public is a continuous and well-planned process, undertaken to a large extent through the different mass organizations. The complete radio, television and press coverage of the country, the easy access of the health sectors to this communication system and a literate population who can understand the message are all of considerable value in facilitating health activities.

The development of the health services has proceeded pari passu with the intensive development of rural areas, the creation of a widespread communications network, and the development of new villages regrouping scattered rural populations and providing them with sanitary facilities, health and education services, etc. Medical education has been modified to make future health workers at all levels community-oriented. A whole new teaching structure has been established for auxiliary personnel and middle-level technicians. Training schools are set up according to the requirements of the health services at every level. Continued training of health staff is actively pursued.

It was decided not to utilize the existing traditional midwives and witch-doctors (curanderos). The witch-doctors were forbidden to practise. The traditional midwives were gradually absorbed into the health services system, mostly as ancillary staff.

A more structured programming process with more specific objectives and targets has been developed, on the basis of the experience gained. Since 1963 emphasis has also been placed on developing an information system to be used in defining problems and monitoring progress.

From the first years of the new Government specialist task forces have been organized, each consisting of experts and university professors who participate, in close collaboration with Ministry staff members, in health planning affecting their own specialty. There are as many groups as specialties and they produce norms or standards for each specialty; these norms are guidelines for action in each situation and are based on the present state of science and the available resources. They are widely distributed and from time to time reviewed and issued in a revised form. They are used in basic training, in-service training, supervisory work, and the preparation of plans and programmes.

WHO concepts in relation to the organization and development of health services were taken into account in the development of the services and the implementation was gradual and pragmatic. The health system is now fully regionalized and has well defined functions at every level. Health planning is part of overall socioeconomic planning, and health considerations are taken into account in planning in all fields. One of the aims of agricultural planning is, for instance, to provide sufficient animal protein for the whole population. The rational and equitable distribution of food is ensured through a well organized system.

The Ministry of Health is now (1974) setting up a special unit for more long-range planning. Until the beginning of the 1970s yearly plans were developed to deal with immediate problems and priorities, based particularly on the mortality rates. Public health planning is now being undertaken over a longer term and always in coordination with socioeconomic planning. Successful efforts have been made to obtain good-quality statistics for decision-making, health planning, and evaluation purposes; each unit, region, and province now has its own statistical department.

Present position and conclusions

Cuba has a health service system available to practically 100% of its population, with a referral system ensuring the appropriate level of care for each patient. Preventive, curative and rehabilitative services are well planned and integrated and show excellent results in terms of service indicators and mortality and morbidity data.

Certain factors have facilitated the efficiency of the Cuban health services, such as the extremely high motivation of the health services, the complete literacy of the population, the high proportion of doctors and other health professional staff, good transport facilities, mass mobilization, and the participation of the people to a high degree.

3.5 Tanzania: an innovative approach to the development of health services

The Tanzanian approach has to be viewed within the context of the country's comprehensive planning for the overall development of its social, economic and political structures. This policy, which was set forth in the 1967 Arusha Declaration, emphasizes:

- overall rural development
- Government mobilization of all the resources of the country for the elimination of poverty, ignorance and disease
- active Government participation in the formation and maintenance of cooperative organizations
- a local contribution (self-reliance) as an instrument for self-liberation and socio-economic development
- people, land, good policies and good leadership as prerequisites of development.

The underlying goal in the development of an integrated basic health services system, according to Tanzanian policy, is to provide sufficient coverage and utilization of the health services at minimal cost. However, the role of advisory organizations and foreign aid in the country has been substantial. Tanzania's approach to meeting basic health needs should be considered in the light of the basic fact that it is one of the 25 countries with the lowest gross national product in the world.[1]

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[1] A description of the basic characteristics of the country is presented in the report on Tanzania's approach to development of health services in Annex VI.

The recent changes in the health services system reflect the overall national priority given to the development of rural health services, the provision of water in the rural areas, and universal free primary education. Health policy is seen as an integral part of overall rural development policy, since the great majority of the population live in the rural areas. The Tanzanian approach to meeting the basic health needs of its population thus reflects the overall sociopolitical background and rural development policy in the country.

In the strengthening of the health services system, as well as in rural development in general, the principle of self-reliance is stressed. This approach implies that an important role should be played by local contributions to the establishment of the services and the necessary facilities. With this aim in mind, mass mobilization is used as a deliberate political measure to increase the social consciousness of the population, so that the people themselves take the responsibility for meeting their own needs as far as possible. In the health field, this principle has been applied in mass health education activities to emphasize the importance of the prevention of disease, but it is also utilized in solving the problems of curative care.

The integration of health policy with overall rural development necessitates a comprehensive planning machinery with definite priorities. The health services are carefully planned at different levels and the health plans coordinated with overall national development plans in which the promotion and restoration of the health of the population are used as a guiding principle. This is further reflected in the rural development policy, which aims at forming larger rural settlements, mainly Ujamaa-type villages, in which the clustering of the population makes it easier to provide the primary health services, even at the village level. Establishing larger settlements of people in the rural areas tends to minimize the worst problem in rural health services in developing countries, that of distance, which usually greatly restrains any increase in the coverage of health services in sparsely populated areas.

In the Tanzanian approach great emphasis is laid on local contributions to the development of health services at the village level, reflecting the principles of self-reliance and mass mobilization in the country. Accordingly, the construction of the village health post and dispensaries is carried out by the villagers, the Government providing such material, equipment and services as cannot be supplied locally. The villagers also participate in the construction of water supply systems in their respective villages and are encouraged to build their own latrines.

In order to enhance the rural development process, specially trained development workers are used at the village level. As these workers have also received training in the principles of health improvement, especially in preventive medicine, they are able to guide development in the rural areas with appropriate attention to the health aspects. Rural health workers assist communities in improving their health through stimulating them to recognize their main health problems, motivating them to see their needs and to take action towards meeting these needs, and helping them to choose the best measures to cope with their problems.

As has been indicated, Tanzania's rural health units - the rural health centre and the dispensary - are intended to provide comprehensive health services for rural communities. However, the problem of the imbalance between curative and preventive medicine looms large even in the rural areas. Furthermore, the lower his general educational background, the more difficult it is for a person to assimilate knowledge of modern medical science and technology, even in a simplified form. The development of rural health manpower in Tanzania, therefore, is mainly aimed at staffing the rural health services with auxiliary health personnel. Four main categories of primary health worker are involved - medical assistants, rural medical aides, maternal and child health aides, and health auxiliaries - even though it would conceivably be cheaper to have multipurpose workers; indeed, the curricula for both medical assistants and rural medical aides are designed to produce a more or less multipurpose community-oriented health worker. Activities at each rural health centre and dispensary can

be broadly divided into three parts: diagnosis and treatment, maternal and child health work, and environmental health work. To produce various categories of staff to fulfil these functions is one of the achievements of rural health development.

Central Government health expenditure has risen over 400% within the last decade, although most of the increase took place in the 1970s. The absolute volume is still small, amounting to about T.shs 15[1] per head in 1973. As the average private-sector spending amounts to an additional T.shs 3 per head, Tanzania spent, in 1973, about 3% of its gross national product directly on health care (excluding water supply, sanitation, nutrition and other indirect but important determinants of health).

Although in general a shortage of funds is evident, the policy of the Tanzanian Government is to reallocate these funds evenly, with particular emphasis on the underprivileged rural areas.

In spite of the many innovative features in the Tanzanian health services system, the health situation in the country in 1974 is still not adequate to meet the basic health needs of most of the population. It is evident that Tanzania has still to face substantial problems and difficulties, many of which have existed for a long time and are an inheritance from the country's history. Tanzania's resources are modest, but it does not appear that the major constraints on the health system are economic. Rather, they are the lack of sufficient numbers of trained personnel and the insufficient education of the population in nutrition and preventive procedures and in the best way to use the existing system. However, the rapid developments in the health field in recent years owing to a vigorous health policy suggest that basic health needs, as defined for the purposes of the present study, will be met by the majority of the population during this decade.

Although the Tanzanian approach in health policy has to be assessed in the light of the development of the overall sociopolitical situation in the country, it could be adopted in other developing countries with different sociopolitical systems. The replicability of the approach can be deemed great, especially since heavy emphasis is placed on minimization of the costs, so that the approach does not require especially great health resources.

3.6 Venezuela: the simplified medicine programme[2]

Venezuela, like many other developing countries, presents great contrasts between its large urban concentrations of population (with the increasing problems of the marginal areas as the urbanization process continues) and the rural population living in small villages or isolated farms.

This situation and the health condition of the rural population led a group of interested professionals working in the Venezuelan Ministry of Health to undertake an organized effort to establish a programme offering basic care to the scattered population with due regard to the country's resources. The idea was a simple, unsophisticated but, at the same time, practical approach to the problem. In 1961, at the Second Venezuelan Conference on Public Health, it was proposed that certain experiments of other countries should be adapted, particularly those of the USSR and of certain African and Asian countries. It was obviously not feasible to establish a highly educated medical person on a permanent basis in each of the main centres of a few thousand localities in rural areas. There existed already, however, about 1300 or 1400 rural dispensaries, visited once every fortnight or week by a doctor from a town health centre who treated patients. In each dispensary an untrained girl was employed to help the doctor, to do some cleaning and, if she could, to manage some dressings and intramuscular injections.

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[1] 1 T.sh. = approximately US$ 0.14 (1974).

[2] See Annex VII for a short description of health services in Venezuela.

The group studied different alternatives, considering the experience of other countries in the light of local situations, existing facilities, manpower and feasibility of the approach. As a result a system called "simplified medicine" was adopted in Venezuela in 1962 - "medicine" to indicate that the service to be provided is integral or comprehensive, both preventive and curative, and "simplified" to indicate that it must consist of simple procedures of frontline health care but with support in every aspect, particularly in technical advice, supervision, and referral to the higher levels of the organized services. Thus, simplified medicine offers basic health care to the rural population through auxiliary nurses working within the system of health delivery services, with adequate supervision, training and referral. The nurse auxiliaries carry out vaccinations on a routine basis. They look for cases of malaria and tuberculosis. They keep a watch on pregnant women for abnormalities and refer them to the rural doctor if necessary. Institutional deliveries are encouraged, particularly for the first pregnancy. Local midwives meet periodically at the dispensary for discussion and review of their kit. Children are followed up regularly for vaccinations, weight, supervision of feeding, etc. Children with signs of malnutrition receive supplementary feeding. Pregnant women also receive supplementary feeding as well as iron tablets.

Elementary medical care is also one of the major activities of the programme. The auxiliary provides treatment (including penicillin, sulfonamides, and other simple basic drugs) for certain cases (e.g. diarrhoea, dysentery, pneumonia). He is not permitted to go beyond this. There are frequent referrals to the nearest health centre or rural doctor.

Health education is given to waiting patients during home visits, in mothers' classes, in children's clubs and at community meetings.

The nurse auxiliaries are located at dispensaries in rural areas and cover from 500 to a few thousand people depending on the population dispersion.

There are certain criteria for the selection of trainees. They must:

- be national or permanent residents of the locality
- be acceptable to the local leaders
- be aged between 18 and 40 years
- have primary schooling (six years).

The programme for the training course for auxiliary nurses is contained in their working textbook, the Manual of Instructions, which describes in detail the type of preventive and curative medicine to be undertaken and when and how to refer cases.

The teaching is essentially practical, with no theoretical teaching other than that contained in the manual. Treatment is authorized for common ailments (e.g. diarrhoea in infants) recognizable early. The nurses are shown how to administer first aid for accidents. They are not taught about deliveries but they learn how to supervise the midwife in relation to hygiene. The number of students in a training course, which lasts four months, usually does not exceed twelve. They are required to educate midwives and teach families in their community how to protect the child's health from birth to school age and beyond. They learn how to cooperate with auxiliary personnel in other fields such as education, agriculture and social welfare.

The course is held in a district health centre, never in a state capital, which could adversely affect the personality of the auxiliary nurse. The teaching staff consists of graduate nurses specially trained for this type of teaching. The director of the health centre in the distrct exercises technical supervision and, together with other health staff from the district, lectures and arranges patient and group demonstrations.

Most of the expenses of the health services in Venezuela are borne by the national and state governments. Some municipalities do contribute, but in general their proportional contribution is small. One of the objectives of the simplified medicine programme in Venezuela is to enlist the active participation of the local communities in a more active way. Some efforts are being made in this direction, but it is expected that results will not come rapidly.

The programme has been slowly developing and spreading gradually from state to state. Two of the 12 states in which simplified medicine is carried out have achieved a high coverage of the rural population. The slow development of the simplified medicine system can be explained by the opposition or apathy of some doctors who are not yet community-oriented. It is expected that full coverage of the rural population of Venezuela will be attained within ten years.

3.7 The health programme in the district of Ivanjica (Yugoslavia)

Ivanjica, an underdeveloped community in the Socialist Republic of Serbia, used to be connected with other parts of Serbia only by a macadam road via Afilje and Požega. In 1953 there were 13 kilometres of roads in good repair. Although the district is not waterless, no settlement except the townlet of Ivanjica was supplied with pure drinking-water, and only Ivanjica and the surrounding villages had electricity. The only eight-year primary school was in Ivanjica, while the rest of the district had four-year schools.

The terrain is mountainous and intersected by deep streams and riverbeds. Of a total of 109 000 hectares, 16 250 are cultivated and 52 203 covered with forest. In the community there are 40 000 inhabitants, mostly farmers, consisting of 8000 households divided into 48 straggling settlements.

All health services were carried out through a 62-bed hospital and an outpatient clinic in Ivanjica and two smaller outpatient clinics in the district. Owing to the low standard of living as well as to the low level of health and general culture, communicable and parasitic diseases were common, and the inadequate diet of the inhabitants resulted in a great deal of illness.

The House of Health in Ivanjica was founded in 1954 and at that time the most important tasks to be accomplished by the newly organized health services were the initiation of thorough sanitary measures in the field of hygiene and the improvement of health education, the aim of which was the eradication and prevention of a great number of diseases.

The health workers employed in the community were aware that the numerous problems of health protection could not be solved separately from the community's other problems. Multi-sectoral work, with the purpose of improving living conditions, was carried out by physicians who worked predominantly on the spot, thus having direct contact with the village households. In that way the physicians had the opportunity of familiarizing themselves with the conditions of the area as well as with the various duties of health workers in this backward environment. The health workers had to be extremely persevering in their efforts to end superstition and other habits harmful to health that were woven into the lives of the rural and also of the urban inhabitants.

The House of Health comprises the following services: a hygiene and epidemiological service, a maternal and child health clinic, a tuberculosis clinic, a general practitioners' outpatient clinic with health stations in the district, dental services and a laboratory and X-ray department. By working in these various clinics and especially in the health stations, the health workers were able to learn about the health status and hygienic conditions in the villages.

The first task of the health workers was to visit as many households as possible, with the purpose of familiarizing themselves with living and working conditions, diet, health status, and the extent to which disease was prevalent. This long-range study of hygienic conditions

and health status has proved very useful and has stimulated the health workers to conduct a better organized and better documented study. In cooperation with the Institute of Health Education of the Socialist Republic of Serbia, an extensive field research study of health and hygienic conditions was carried out in 1963 on a sample of 5% of households. This provided valuable evidence about the adverse effects on the health status of the population of the lack of education, various harmful habits and beliefs, and the low standard of living.

As a result, health education work is now accepted as an integral part of the health protection of the population. Originally this work consisted of giving information and advice concerning health and disease. Lectures on health and disease were given at the adult education centre, in schools, during organized courses and during health drives. Various audiovisual aids, such as magazines, flannelgraphs, tape-recorders, slide projectors and films were used. During outbreaks of epidemic diseases, such as measles and pertussis, information leaflets on protection as well as on the care of sick children were distributed by the House of Health.

Encouraged by the success of health education, further efforts were made in the field of health protection. Smaller health programmes were launched, involving the community in the improvement of their health standards.

Instruction was by way of example rather than of giving advice. The community was encouraged to construct hygienic houses, toilets, garbage disposal plants, farm buildings, etc. In addition to the supply of plans, each household was offered 600 kilos of free cement.

The highest priority was given to the improvement of the water supply and of hygienic conditions in the village schools. Professional staff from the House of Health assisted local farmers and granted funds for the construction of waterworks and for spring tapping, public fountains, washing facilities, etc. Priority for this work was given to areas subject to epidemics of typhoid fever and other enteric infections and areas remote from natural springs. Apart from the benefit to public health, the project created a greater feeling of social responsibility among the rural communities.

Special attention was paid to the improvement of school buildings. A total of 35 out of 37 buildings were improved with assistance from UNICEF, the Red Cross, and education workers. Dining halls and toilet facilities have been constructed with the help of the pupils' parents. Pupils were encouraged, with the help of parents and agronomists, to grow fruit and vegetables.

A small hydroelectric generating plant was constructed by the House of Health in the village of Kovilje to persuade the inhabitants of the advantages of electricity. It was later replaced by a larger plant supplying more households and a school in the area.

Outpatient clinics have become the focal point of villages and are served by newly constructed roads, so that transport is much easier. Nurses are employed at the health stations on a full-time basis, and physicians visit one or two days a week. In many centres the visits are timed to coincide with village market days, and villagers are shown films on health protection as well as on agriculture and other subjects.

Coordination of the whole programme was carried out by the House of Health through the community authorities, and the programme was financed by the local voluntary tax fund and by special funds provided by the inhabitants.

One hospital building in Ivanjica and many outpatient clinics in the region were constructed by voluntary work.

In addition to the above, the House of Health maintains programmes in maternal and child health, tuberculosis control, health education and environmental health. All the programmes are carried out with the full cooperation of the community.

The successful cooperation of the House of Health with local authorities and communities has resulted in the eradication of some communicable diseases, reduction in the incidence of tuberculosis, disappearance of criminal abortion, and decline in the infant mortality rate.

The health insurance contributions of workers and farmers in the community of Ivanjica did not completely cover all the activities described, but many activities were nevertheless carried out with minimal funds.

Without any significant investment on the part of the Republic or of other communities, much has been done within the 20-year period 1953-1973. Three hundred kilometres of rural roads have been constructed and bus communications have been established with even the remotest villages. Electricity has been supplied to a large number of settlements and many new school buildings have been erected. The intensive new construction has resulted in the improvement of housing conditions.

All these improvements have led to better health for the inhabitants of the district, to generally greater prosperity and to a faster development of the area.

3.8 Comprehensive rural health project, Jamkhed, India[1]

This comprehensive rural health project was designed to serve a population of 40 000 people in a rural area, using local resources. It endeavours to provide primary health care for preschool children and pregnant and lactating mothers, family planning and the control of chronic diseases, particularly tuberculosis and leprosy. This is in line with national priorities. The emphasis is on extensive community involvement at the local level and the use of the community's resources to sustain the programme. Middle-aged illiterate local women are being trained to become health workers.

Since health is considered a part of total development, emphasis is on a multisectoral approach. The felt needs of the community are considered very important and, whenever possible, they are reflected in the various health programmes. Thus the community's priority need for adequate food was met by the establishment of model kitchen gardens and community kitchens that provide nutritious food for needy children. Similarly, the need for water during the drought was met by the construction of tube wells so that waterborne infections were prevented. To achieve this, the project has enlisted the help of agricultural and water development agencies.

The community's participation in decision-making on health programmes is an essential feature of the project. Communities scattered through 30 settlements invited a team of physicians to their villages to give health care. They have provided housing for the project staff, buildings for patient care, land for constructing new buildings, and volunteers to plan and build these structures. They have established community kitchens and provided volunteers for the cooking and distribution of supplementary food to the under-fives. Some communities have made land available for growing most of the food required for these programmes. Community volunteers have participated in mass health education and immunization programmes and promoted family planning. A local youth group helped in organizing blood banks for emergency purposes. Advisory committees formed by the communities assist on a permanent basis in the administration of the entire project.

Another characteristic is the integration of various types of healers, such as Ayurvedic and homeopathic medical practitioners and traditional birth attendants (dais), into the project. A local medical organization has been formed and through it contact has been established with medical practitioners. During the drought this organization acted in a coordinated manner to give medical care to people working on drought relief projects. Constant communication and periodic meetings to discuss the health problems of the area have created a sense of belonging. The practitioners actively help in the follow-up of chronically ill patients and assist in mass immunization programmes and family planning and other activities. Some of them are supplied with simple drugs and vaccines from the project's hospital pharmacy. There is no competition

[1] See Annex VIII for a short description of this project.

for patients between the project physicians and local practitioners; home visits are made by the practitioners and some of them use the centre's facilities for their patients.

Within a period of less than four years the project has been able to reach some 40 000 people in 30 villages. There are 20 villages with community kitchens feeding 1200[1] children daily. The project provides agricultural support by lending tractors and other machines to local farmers to plough and cultivate otherwise fallow land; in return, it receives 50% of the produce with which to support the nutrition programme. Over 75% of children have received two doses each of triple antigen and polio vaccine, and over 400 pregnant mothers have received regular antenatal care, including immunization against tetanus. Currently, 522[1] women are on regular oral contraceptives, and approximately 20 new acceptors are added each month. On the average, one tubectomy operation is performed daily. About 480[1] patients with tuberculosis, about 350 patients with leprosy, and their contacts receive regular treatment in their own villages.

Forty deep tube wells, fitted with hand pumps, supply safe drinking-water to the village communities. Food is grown on 350 acres of land to support the community kitchens.

Local fees from paying patients and a government grant provide 70% of the budget, the balance of 30% being derived from donations. Preventive, including family planning, advisory services absorb 60% of the budget and curative services absorb 30%.

In order to provide effective health services for the population which is scattered in the villages the following methods are used:

1. A health team approach. Ayurvedic doctors, nurses, paramedical workers and social workers are trained to work as a team, at the centre in Jamkhed and they go out to various villages, visiting a village at least once a week. The team has in-service training once a week.

2. The use of the services of illiterate middle-aged women chosen by the community. They are trained for two days a week at the centre, special attention being given to the priorities of the project. In addition, they receive on-the-spot training and support when the health team visits their village.

There is a main centre at Jamkhed equipped with diagnostic aids and staffed by two physicians capable of handling surgical, obstetric and medical emergencies.

Thus a three-tier system is established. The village health worker at the periphery gives health education, follows up sick patients, promotes family planning, supervises feeding programmes, treats minor illnesses among the children, helps the mobile health team in house-to-house surveys and case finding, and acts as a liaison officer between the project and the community.

The mobile health team does house-to-house surveys to identify health problems. It makes field diagnoses of malnutrition, tuberculosis, and leprosy, using its clinical judgement and employing simple laboratory procedures, and it provides primary health care. Difficult problems are referred to the physician or the patients are taken to the main health centre.

The two senior physicians act as team leaders. They spend a considerable amount of time in training the Ayurvedic physicians, mobile health teams, village health workers and other staff and supervise them in the field. The responsibility of screening the patients is delegated to the nurses, but serious cases are seen by the senior physicians.

The project cooperates with the Government, especially in family planning and malaria control programmes. Duplication of activities is avoided by selecting an area well away from the Government's primary health centre. The project receives full Government support for family planning, particularly sterilization operations such as tubectomy and vasectomy. It receives from the Government limited quantities of vaccines such as triple antigen, BCG and smallpox, as well as of vitamin A, oral iron and other vitamin tablets and antimalarial drugs.

[1] March 1974.

Community involvement, a multisectoral approach, the utilization of the services of village health workers, the cooperation of all types of medical practitioners, the health team approach, and cooperation with the Government and other development agencies have helped the project to provide the population and the area with reasonably adequate health services within the very limited period of four years.

3.9 Use of village health workers and trained traditional birth attendants in the Department of Maradi[1] (Niger)

In 1966, on the joint initiative of the departmental health services and the "rural animation" services,[2] an extension of health coverage was started by informing the rural population about and persuading it to tackle its own health problems through village health teams consisting of two voluntary part-time health workers and some traditional birth attendants. After a short training, these workers became the frontline link between the village population and the health services. Simple methods only are applied, adapted to local conditions, supported by team work and given close supervision by the higher level of services. This strategy is implemented exclusively by national personnel (expatriates playing an advisory role only). It is derived from continuous monitoring and analysis during field operations, discussions with the villagers, and much careful thinking and it is based on:

(1) thorough knowledge of the area to be covered;

(2) the organization at arrondissement level of multisectoral or multiprofessional group meetings (political party meetings included) to discuss local health problems and the most suitable way of tackling them; and

(3) the continuous provision of information with a view to motivating the rural population gradually by means of meetings with the villagers themselves.

The village health workers and the village pharmacies

The choice of the village health worker is made by the villagers themselves and is based on certain criteria; he or she must be a volunteer, live in the village, and be willing to undergo training.

Training courses are organized in the nearest dispensary by the nurse in charge, assisted by the chief nurse in charge of the health district (arrondissement). The courses, of 10 days, cover general health concepts, emergencies and referrals, epidemic disease, health education, elementary health care and some record-keeping.

Every year the village health workers already in service attend a retraining course of 10 days, into which it is proposed to introduce gradually new topics related to local health needs, e.g., instruction on malnutrition and on the preparation of weaning foods.

It has been shown that, after practical training, village health workers are capable of treating patients suffering from malaria, diarrhoea, minor injuries, eye and skin infections and pain. For this purpose they receive small quantities of basic drugs: antiseptics, eye drops, chloroquine tablets, aspirin tablets, guanidine tablets, etc. The essential idea is to prevent diseases and injuries from becoming complicated while the patients await referral to better equipped health facilities.

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[1] A short description of the Maradi Area and its existing health services can be found in Annex IX.

[2] "Rural animation" services: administrative, technical and educational structure, usually part of the Ministry of Development (Rural Branch) but sometimes of the Ministry of Education, endeavouring to motivate people to participate in activities for the development of rural areas.

The first allocation of drugs is paid for out of the budget of the district. The renewal of drugs is financed by the villagers, the preparation of the list of medicaments required being the task of the dispensary nurse supervising health activities at the village level. Some of these drugs are sold to the patients at fixed low prices and the money collected goes to restocking the pharmacy. The average sale of drugs in a village amounts to F CFA 500 (US$ 2) per month. It is worth noting the existence of a village "managerial team" of three people which, in support of the village health workers, takes care of the administrative aspects of the scheme (e.g., the stock-keeping of drugs and the keeping of financial records). Since the work of the village health worker is voluntary, no payments are made for it except that the villagers provide him with his daily subsistence (food, etc.). Also, in accordance with tradition, he probably receives some gifts directly from the villagers.

Health authorities continuously receive information from the population and the village health workers through the auxiliary nurse in charge of the nearest dispensary or health centre, who is also responsible for the regular supervision of the village health workers. The next level of health services, which supervises the nurse, similarly provides the village with support and information.

Health information is continuously given to and received from the population and the village health workers through the auxiliary nurse in charge of the nearest dispensary or health centre, who maintains close and regular supervision. In turn, the nurse receives support from the higher supervisory echelons.

At the end of 1973, 109 villages of the Maradi Department were served by 218 village health workers. The resources available for local health services will allow a reasonable and planned extension of the scheme to the extent of 30 villages per year.

During 1973, consultations (i.e., advice and treatment) with the village health workers in 88 villages[1] represented 12.8% of all consultations given by the health organization in the Maradi Department.

An interesting aspect of this action has been the impact on the training, mobilization and motivation of health personnel, mainly the auxiliary dispensary nurses. As they are in charge of the supervision of the village health workers, they have been compelled to improve their knowledge and to become much more involved.

Training of traditional birth attendants

Traditionally, the role of the traditional birth attendant was passive and ritual, strictly limited after delivery to burying the placenta and giving the most elementary care to child and mother. The new training aims at enlarging their role during and even before delivery and at their using more hygienic methods, referring complicated cases and registering the newborn. Selection of traditional birth attendants for training is based on the same principles as those applied to the recruitment of village health workers. The attendants are trained for 15 days in the maternity ward of a health centre or in the district rural hospital. Training is essentially practical and relates to all phases of delivery, including prenatal and postnatal care. At the end of the course the knowledge acquired is tested and only the most capable attendants are selected for appointment. They then receive a basic UNICEF midwifery kit with some drugs and equipment. Supervision of and supplying of drugs to the trained traditional birth attendant generally take place once a month, the nurse in charge of the nearest dispensary being responsible.

In 1973, 28% of all deliveries recorded in the Maradi Department were assisted by the 241 trained traditional birth attendants.

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[1] Reports are not available for 21 villages.

In practice, and for the time being, the work of the attendant commences during delivery. The striking feature has been the improvement of the hygienic conditions in which the delivery takes place. Another feature has been the gradual change in traditional practices during the weaning period.

The training of 91 attendants to cover 32 villages has been planned for 1974, while an effort will be made to train a selection of younger women. This will have the advantage that they will have broader assimilation capacities and it will widen the scope of the activities of the trained traditional birth attendants.

Health education

Again, through the joint efforts of the rural animation, health and education services, a departmental interservices workshop has been set up and provides elementary support to the village health workers and the trained traditional birth attendants (e.g., flannelgraphs and booklets) in relation to their health and nutritional education activities.

Conclusions

The village health workers, village pharmacies and trained traditional birth attendants have been briefly described. The achievements are the result of intersectoral team work leading to the motivation and active participation of the villagers in health protective activities. The extension of the schemes to other departments of the Republic of Niger is being considered along with a national evaluation of their development. The main constraints on their development are the lack of supervisory personnel, the scarcity of financial resources (to cover transport, training, and a regular supply of equipment and drugs) and the shortage of volunteers. Experience has demonstrated that the scheme promises better rural population coverage, provided that it is programmed realistically and rationally and closely related to the local conditions in each village.

3.10 The use of Ayurvedic medicine in India[1]

The Ayurvedic system of medicine has been practised in India and other neighbouring countries for some 3000 years and has been providing medical relief throughout that time despite the many political upheavals in these countries. It originated in India from the efforts of a large number of learned people in ancient times and it continues to be supported and utilized by most of the people living in these regions. In fact, it has become an integral part of the culture of these territories and cannot be ignored.

It is estimated that about 80% of the population living in the rural areas of these countries have confidence in the Ayurvedic system and utilize its services. In spite of this, most of the governments have mainly supported modern medical science and are uncertain how to make adequate use of the services of Ayurvedic practitioners. Certain governments, however, have initiated studies to determine how indigenous systems could best be utilized for more effective or total health coverage.

Ayurvedic practitioners can be broadly grouped into four categories. The first consists of those who have received full integrated training in modern and Ayurvedic systems of medicine and can use both in their practice. There are about 7000 of them in India. The second consists of those who are trained in Ayurvedic institutions, mostly in Ayurvedic medicine, but who also have some elementary knowledge of modern medicine. There are about 43 000 of these and they practise mostly with Ayurvedic medicine, using modern drugs only in emergencies. The third consists of Ayurvedic practitioners who have not received any formal training in any institution but have obtained diplomas in Ayurveda after taking examinations. There are about

[1] See Annex X for a more detailed account.

150 000 of these in India and they practise only Ayurvedic medicine. The fourth consists of those who have neither undergone any institutional training nor acquired any qualifications but who practise Ayurvedic medicine after gaining experience as apprentices working with Ayurvedic physicians. There are about 200 000 in this category and they practise in the rural areas.

The crucial problem is how best to make use of these 400 000 fully trained, semi-trained and untrained Ayurvedic physicians in providing health care services to the people. To incorporate them may completely revolutionize the medical and health care of the people in India, where about 500 million people live in the rural areas. At present the rural areas in India do not have adequate health care. The doctor/population ratio in urban areas is 1:1200, but in rural areas it is 1:11 000 and in some remote areas even more unfavourable.

It should be emphasized that, out of the total of 400 000 Ayurvedic physicians of different types, nearly 90% are serving the population in the rural areas. The remaining 10% serve in urban areas, where most of them have lucrative practices since they mainly treat people who cannot get relief from modern medicine. The rural population is said in general to prefer physicians fully trained in both modern and Ayurvedic medicine.

Ayurvedic physicians effectively treat some of the most common ailments such as upper respiratory tract infections, dyspepsia, jaundice, diarrhoea and urinary tract infections. Their methods are said to give much quicker relief in some chronic ailments such as arthritis, hemiplegia, asthma, anaemia, and psychiatric disorders. Many people prefer Ayurvedic treatment for the above conditions since it is considered to be cheaper and more effective. Whenever Ayurvedic physicians find that they are unable to treat patients with serious illnesses effectively, they refer them to the nearest fully qualified modern physician.

There is a clear need for integration of the two systems in India, and objective research in medical sociology and anthropology can provide practical insights and approaches, particularly in regard to methods of integration.

Educational programmes would have to be developed for the different categories of Ayurvedic practitioners enumerated above, and training programmes should be designed especially to meet village needs.

The greatest obstacle to integration is the attitude of the medical profession, and a major difficulty is the virtual absence of communication between health workers with very different kinds of training. A genuine effort will have to be made to bridge this communication gap. Where cooperation between or even integration of modern (allopathic) medicine with the Ayurvedic medicine has taken place, as in the Jamkhed project, the results seem to be positive and encouraging to future efforts in this direction.

Official recognition of indigenous systems and a political commitment to the maintenance of a role for traditional medicine in government health services are favourable factors that would facilitate research on the Ayurvedic system and encourage the inclusion of principles of indigenous systems in the curricula of medical schools.

The development of services using indigenous systems to provide total health coverage for rural communities in developing countries appears more feasible than once seemed possible.

3.11 Northern Nigeria: a two-way radio scheme in the delivery of health services

The two-way radio system in the North-Western State of the Federal Republic of Nigeria is only one application of two-way radios; similar schemes are in effect in other African

countries as well as in other continents.[1] The history of two-way radios goes back to the mid-1920s, when a scheme was started as a component of a flying doctor service in Australia.

The present study focused on the Nigerian scheme, for two main reasons. First, the Government was interested in it from the beginning and later ran the scheme, whereas most of the other two-way radio schemes are financed from voluntary funds or foreign aid. Second, the Nigerian scheme was operated on scarce resources, a situation common in the health services in most developing countries.

As the area of the North-Western State is large, health institutions may be far from supervisors. Although most of the outlying dispensaries can be reached by a vehicle of the Land Rover type, travel, even by car, to the institutions to be supervised would take days. This situation greatly restricts regular communication with outlying health centres. Dispensaries do not usually have access to a telephone.

A two-way radio communication scheme was established as a component of a flying doctor service in Northern Nigeria in 1963. The base station was at the Gusau Central Hospital, with radio links to 26 stations, including a few district hospitals and a number of outlying dispensaries, which were equipped with pedal-operated transceivers. The network of dispensaries and hospitals covered a relatively large area, mostly in the North-Western State, the distance between the furthest stations being more than 600 kilometres. The dispensaries and hospitals were provided with landing strips for the use of small aircraft.

Two-way radios were used mostly for advising on and supervising the clinical work of the dispensary attendants and for consultation in difficult cases. In the absence of other means of telecommunication, two-way radios were also used to inform headquarters about shortages of supplies in the dispensaries or possible epidemics in the area. In emergencies an aircraft or other means of transport was requested to get the doctor to the spot or to move the patient to the hospital.

The project was, in the beginning, entirely funded from foreign donations, which also made it possible to purchase two small aircraft for the flying component of the service. The latter component had to be discontinued later owing to technical and financial difficulties, after which the service functioned only as a two-way radio system. After a few years the scheme was handed over to the Government and was continued through public financing.

During the first years the two-way radio system worked relatively well, but gradually the transceivers aged and became outdated and their maintenance was a great problem. By March 1974 only the base station and a few other transceivers were in working condition, but they were not in operation. Because of the satisfactory performance in the past, the Government of the North-Western State of Nigeria is considering the establishment in the State of a radio network with new, modern transceivers.

Although the network covered only a small proportion of the dispensaries in the region, including some of the most outlying ones, the two-way radio scheme had the following specific effects, which indicate the potential of such a network in developing countries generally:

1. It provided a means for the further training of the dispensary staff through regular consultations with the doctor. The professional competence, skills, and efficiency of the dispensary staff were thereby increased.

2. It made it possible to supervise the work of the dispensary staff by instructing them to devote more of their time to preventive activities, particularly when curative supplies ran short.

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[1] For more detailed information about the characteristics of the North-Western State of Nigeria and about the two-way radio scheme, see the report in Annex XI.

3. It enabled the supply of drugs and dressings to be improved and the available supplies to be utilized more efficiently.

4. It enabled many patients, in the dispensaries as well as in the district hospitals, to receive better treatment than they would have had if the system had not existed.

5. It made available better professional advice in emergencies, and often transport to hospital as well.

6. The possibility of direct consultation with a doctor improved the morale of the dispensary staff, who felt less isolated and neglected.

7. Epidemiological surveillance of larger areas was made possible, and in outbreaks of epidemic disease messages reached headquarters rapidly, so that mobile teams could be instructed and dispatched quickly.

A two-way radio network is particularly applicable in the following conditions:

(1) in sparsely populated areas where distances between health posts may be great;

(2) in areas where transport conditions are particularly difficult, e.g. through lack of roads or of vehicles;

(3) in the absence of other adequate telecommunication systems - a situation that may render the use of a radio network feasible even in more densely populated areas with a road network.

Experience of the use of two-way radios in Northern Nigeria suggests that certain constraints have to be taken into account in planning and managing a radio network for health services. The most important are as follows:

1. The costs of establishing and maintaining a two-way radio network increase in proportion to the number of radio sets, i.e. in proportion to the number of health institutions to be covered by the radio network.

2. As with any technical device, the training of the staff using the radios needs to include an adequate knowledge of the operation of the sets.

3. The training of staff needs also to include standard instructions and a special terminology to simplify verbal communication by radio.

4. Both the regular servicing and the emergency repair of the radio sets must be well organized.

5. There must be regular supervision of the radio network, with a built-in evaluation scheme.

4. CONCLUSIONS

4.1 General remarks

In the section "Statement of the problem" some aspects of what may be called conventional health services have been singled out as factors in the failure of the present systems to meet the basic health needs in developing countries. The section "Case studies" examines ways of dealing with those factors in the context of some different and apparently successful approaches. An analysis of the differences found in this comparison would seem to provide a basis for reaching a number of conclusions about them.

A preliminary question should be asked, however: have the approaches described been really successful or are they at least really promising? In the case of Cuba and Jamkhed, an answer is possible, largely on the basis of statistical and other factual information. In the other cases, as already said in paragraph 1.4.5, observational evidence has been the main basis, since health and vital statistics were either unavailable or not significant owing to the short lives of the programmes. However, the inevitable subjectivity of the observational method has been supplemented as far as possible by field visits, interviews with health providers and consumers, discussions with responsible administrators, and a study of the documentation available. Observations by single individuals have been avoided. All observations have been made by panels (whenever possible, multidisciplinary) of experts of varied experience and background. For the broad purposes of this study, the answer to the preliminary question may therefore be considered as sufficiently sensitive and adequate to serve as a basis for general conclusions.

It is that, despite the immense problems and the daunting economic situation, it is possible, using the resources available, to meet certain basic health needs of populations in developing countries, achieve better health care coverage, and improve the levels of health.

4.2 The driving force for change

The cases observed belong to two major categories. On the one hand there are programmes adopted nationally: Cuba, China, Tanzania and, to a certain extent, Venezuela; on the other, there are endeavours covering limited areas in Bangladesh, India and Niger. What characterizes successful national programmes is a strong political will that has transformed a practicable methodology into a national endeavour. In all the countries where this has happened (e.g., in Cuba and Tanzania) health has been given a high priority in the general development programme of the government. In most cases there has been a fundamental decision to accept substantial changes instead of seeking solutions within the limits of the existing system.

Enterprise and leadership are also found in the second group of more limited schemes. Valuable lessons, both technical and operational, can be derived from this type of effort, in spite of its being confined to a limited area. In all cases - Jamkhed, Savar, the Maradi district in Niger, Ivanjica - the leading role of a dedicated person can be clearly identified. There is also evidence that community leaders and organizations have given considerable support to these projects. External aid has played a part and has apparently been well utilized. Although this is perhaps the most difficult aspect for an international body to influence, every effort should be made to identify the driving forces behind promising programmes and to help harness them to national plans.

4.3 Clear national health policies

In the majority of cases changes have led to major shifts in emphasis by the health services - from a curative to a curative-preventive health care approach, from the urban to the rural populations, from the privileged to the underprivileged, and from vertical mass campaigns to a system of integrated health services forming a component of overall social and economic development.

The implementation of policies concerned with primary health care for the total population has in all cases involved the adoption of a standardized, simplified medical health technology that primary health care workers can utilize to the maximum possible extent. The use of special textbooks for the training of primary health workers and of manuals for their daily work has proved successful in several countries, e.g., Cuba, Niger and Venezuela.

In most cases this "deprofessionalization" of technology has been associated with the utilization of primary health workers with limited, task-oriented training. This frontline health care has been shown to be satisfactory for the priority health interventions designated, but it is of necessity limited to a restricted range of actions. For the primary health care provided to continue to be effective and serve its purpose, the health workers need continued

refresher training, supportive supervision and technical advice, and a higher level to which to refer patients. In other words, in order to assure coverage to the entire population, the whole health system has to be reoriented and adjusted so to serve as support to the primary health care level.

Such reorientation of the health structure has been adopted, although to different degrees, as a basic policy in all the cases studied. The variations depend on local circumstances or the modalities of programme implementation. As an example, in Cuba, where trained personnel is more available, the range of actions in primary care is wider than, say, in the Maradi programme in Niger. In both, however, the technology was modified as much as proved necessary. Both approaches involved reorientation of other levels of the system to support primary health care.

4.4 Proper identification of the population's needs and priorities

Although obvious, the principle of identifying the population's needs and priorities is not often followed in practice. The failure to act on them is often a result of lack of information or sensitivity at the central and local level. In all of the specific cases studies, for example in China and Cuba, a conscious effort was made to identify the health needs and the underlying causes of poor health, and consideration given to the needs of the deprived populations who usually constituted a majority. Particular emphasis was placed on malnutrition and lack of water supply, e.g. in Jamkhed, India. The systems based on identified needs have a completely different orientation from those copied from developed countries, which often serve privileged minorities only. In all the cases studied, a proper system has been created that enables the people to express their health needs.

4.5 Health and development

Although this study is focused on the health services, it is clear that these are only one factor contributing to the health of a population. It is generally recognized that certain actions initiated for the sake of economic or social development often have a positive influence on the health status of a community. Sanitation, housing, nutrition, education and communications, among others, must be considered as important factors contributing to good health by improving the quality of life. In fact, in their absence, the gains obtainable with the "disease-oriented machinery" of health services cannot go beyond a certain point.

The essence of a successful development programme is that it should be properly balanced. Health services should neither be too sophisticated nor lag behind other sectors in development. Good health can be considered a basic component of economic development; in turn, social and economic development contributes to good health. These two-way cause-and-effect relationships are not completely understood, but even partial knowledge can prevent the institution of grossly inappropriate sectoral programmes.

In some of the cases studied, the health programme has been integrated into a general development programme, as in China, Cuba and Tanzania. In others, it has been associated with more limited action aiming at improving the quality of life, as was the case in Jurain, Jamkhed, and Ivanjica.

However, a complete change in the social and economic structure of the country is not the only path to follow. Regional programmes, as in Niger and Venezuela, have demonstrated that less ambitious endeavours can meet basic health needs.

4.6 Community involvement

Adequate coverage and utilization of preventive and curative health services at the village level have been achieved by the population taking major responsibility for primary health care in collaboration with the health services. The principle of local self-reliance

implies that local contributions play an important role in providing the necessary manpower and facilities and in bringing the health services closely into line with the needs, wants, and priorities of the population they serve. Community involvement also means participation of the population in decision-making about their health services. Participation usually ensures and increases the motivation of the community towards accepting and utilizing the health services and, as a feedback, provides health decision-makers with information on the felt needs and aspirations of the people.

Particularly important are the untapped resources within the communities themselves. On the one hand there are all the contributions that any community can provide in terms of facilities, manpower, logistic support and, possibly, funds. On the other hand there is the more subtle, but equally important, contribution that people can make by participating in and properly utilizing the health services, particularly in relation to preventive and protective measures. This second aspect is essential if the people are to derive the greatest benefit from the limited resources available and if the need for costly curative care and unnecessary human loss are to be reduced as much as possible.

The need to utilize all the available resources has been grasped in all the cases considered in the study. It has been translated into a common basic policy, that of involvement of the community in the responsibility for organizing, orienting, carrying out and, in some cases, financing primary health care. In the People's Republic of China, Tanzania, the Jamkhed area in India, Savar in Bangladesh, and the Maradi Department in Niger, local involvement ranged from the selection of the primary health workers from among the population to the construction and maintenance of health facilities and help in the financing of the services through population-based payments and other support to the health workers. So that they should participate in the decision-making process concerning their health services, local bodies were in many cases established to help to set priorities and choose between alternative programmes, for example in Jamkhed.

All the successful approaches studied employed one or more methods of gaining the understanding, cooperation, and support of the population. Political methods relying on party organizations were the most common, but other techniques - for example, the use of development workers or educators - were also shown to be possible. Mass mobilization of the people has proved very effective, especially to achieve readily identifiable goals, such as the campaign against the five pests in China or the mass health education programmes in Tanzania or Ivanjica. In Cuba this method is being used to identify overall health needs and to implement health programmes at the community level.

4.7 Reallocation of funds and other resources: a more equitable distribution of funds

In many countries a large proportion of the health resources is expended in a few cities for the benefit of a small proportion of the population. In successful approaches such as China's or Tanzania's, this disproportion has been, or is being, corrected by giving priority to allocation of funds and personnel to rural areas. In Cuba, which has a large urban population, funds have been allocated for preference to clinics serving a large population and to preventive endeavours.

Forms of funding range from almost complete central national financing to considerable financing by the community itself. Several factors seem to have influenced the system adopted. The capability of the national government to fund primary health care directly is certainly important in Venezuela or in planned economies like Cuba's. In all other cases, however, irrespective of the political and economic system, the community has shared this responsibility to a varying degree. Observation of the cases studied shows that community sharing of primary health care financing or community inputs of other kinds should, together with community participation in the decision-making process be considered very favourably in designing primary health care systems. Financing and decision-making are complementary functions and reinforce each other, as they place the community in the position of authority where it shoulders responsibilities for its own services. In countries where this has been

adopted as a national approach, community leaders are well aware of local health problems and of the role, scope and potential of their primary health care service, in whose management they are actively interested. Moreover, the health institution nearest to primary health care is clearly more alert to the community's aspirations and actual and felt needs.

It was not possible in all the cases studied to examine systematically the amount, distribution and utilization of resources within the health structure, but further research in the financing of the delivery of primary health care would clearly be justified.

4.8 Manpower development for national health needs

Since the shortage of health personnel is one of the main factors preventing the health services from increasing their coverage of the rural areas, a fresh look should be taken at the need for health manpower trained in a different way. To use health manpower appropriately at minimal cost, the tasks in the various health installations of the country should be defined and the training of personnel geared to them. The case studies under review clearly demonstrate certain common and innovative features in regard to health personnel.

Primary health workers, locally recruited and supported by their communities, form the frontline of and the entry points into the health services system. They are effective, acceptable and inexpensive and require only a brief initial training. In many of the countries reported on, primary health workers have been assigned to such priority areas as communicable diseases, maternal and child health (including family planning), nutrition, sanitation, and curative services for minor illness.

Although it is easier in any situation to train health workers to perform specific tasks rather than multiple tasks, primary health workers of different levels and training were effective in most cases under review. Medical assistants, public health nurses and their auxiliaries, barefoot doctors, rural medical aides, family welfare workers and village health workers were found working in rural areas and assumed diverse functions. At the village level, only some of the above-mentioned health workers were available on a permanent basis. In some cases traditional birth attendants were taught elementary skills and given enough basic knowledge to become part of the government health system.

Indigenous healers may be trained and integrated in the general health system, as in China. Indigenous systems of health care function among large populations in developing countries, and in some countries, as India, the system is well established but not fully recognized. There are, however, different types of indigenous practitioners - professionals, non-professionals, faith-healers and magic healers. Further integration of these indigenous practitioners into the government health system calls for further research and knowledge.

In a multisectoral approach to health, workers from other sectors such as community development workers or teachers can be associated with a health programme, as in Tanzania and in Jamkhed.

Supervision of the primary health workers, including in-service training, is provided by district-level personnel. Such supervisors require special understanding, knowledge and skills in collaborating with and training primary health workers and indigenous practitioners.

To obtain first-hand knowledge of local conditions and problems, the supervisory staff of the referral centres in China work at regular intervals in rural areas.

A system for the continuous training of primary health workers has been established in China, Cuba, Venezuela and the Jamkhed project in India.

4.9 Decentralization of the planning and administrative processes

A centralized authority that merely hands decisions down to lower levels does not stimulate sufficient local participation. Consequently, the planning process has been changed in situations where the local population is involved in decision-making.

There is a nearly endless number of ways of restructuring the planning and administrative machinery; several examples are provided by the case studies. However, all the national alternatives exhibit the general characteristic of a national body that sets policy and decides on completing requests and a mechanism for channelling information on needs and wants to it from the periphery.

The development of a decentralized system is undoubtedly one of the most difficult tasks that face a country attempting to improve the health of its population. It can be reasonably argued that such a development is not worth the effort and that a completely centralized system is more efficient. The best, though a limited, answer to the argument is to be found in the case studies, which show that the most impressive gains have been made in countries where a strong central policy has been implemented by a decentralized executive organization. The degree of decentralization differs from one case to another, varying from complete managerial decentralization to the community (China) to a redistribution of responsibilities within the health system accompanied by consultation with communities (Venezuela).

Examples of community participation are found in different political settings. Participation appears to facilitate the mobilization and the health awareness of the community and also provides central health authorities with the information on felt needs required for a better and more sensitive administration.

4.10 Integration and coordination

Two kinds of integration are evident in the case studies. The first is the integration of the different aspects of health policy into economic and social development. Joint action takes place with such sectors as education, agriculture, public works, housing and communications, particularly at the local level and with the participation of the community; examples are Ivanjica, Jamkhed, and applied nutrition projects in Bangladesh and the Philippines. Integration is well shown in the rural development policy of Tanzania, which aims at forming larger rural settlements in which the clustering of the population makes it easier to provide primary health and other services. The establishment of larger settlements of people in the rural areas minimizes one of the worst problems for rural health services in many developing countries, that of distance.

The second kind of integration is that of the different parts of the health services into a national whole (maternal and child health, family planning, prevention of communicable diseases, nutrition, health education, etc.). This has been done, for example, in Bangladesh. The main practical feature of this second kind of integration is the retraining of field workers from mass campaigns for more general health purposes.

4.11 Health and nutrition education

In all the approaches studied, without exception, health education is one of the main activities of primary health care. This understanding of the importance of health education has been responsible for a large share of the success achieved by China and promises success in other cases. Since health education has been a deplorable failure in conventional health services, the approach taken in these successful instances is of great importance.

In Savar and Jurain, Bangladesh, health education is utilized on a vast scale and it also forms part of agricultural and other non-health training activities. Together with community participation, it has already produced a distinct change in the attitude of the people towards health and the health services. Family planning has also benefited substantially. In Jurain, most of the improvements observed in nutrition practices can be related in one way or another to the important educational drive that was launched.

In Jamkhed, villagers themselves are trained in the delivery of simple care and in health education.

Success in applying health education seems to be based on several factors. The association of development programmes with mobilization and participation of the people constitutes per se a most important means of stimulating health awareness in a community. Participation by the community in decision-making, if assisted by trained personnel aware of the actual and felt needs of the people, can also be a powerful vehicle of knowledge. Important also is the fact that, in the most successful cases, the educational message was carried by persons who belonged to the community itself and therefore enjoyed the confidence of the people and shared their views, aspirations and "language". The message transmitted was in general simple and concerned problems of high priority.

4.12 Sanitation

In all case studies the importance of providing basic sanitation for rural areas, particularly a supply of safe water, has been emphasized. In Tanzania the development of a rural water supply system has been given high priority by both the Government and the local authorities. Similarly, priority has been given in Jamkhed to an irrigation well drilling scheme.

The potential of ministries of health for direct action in the field of sanitation is limited, it being within the capacity of several other government agencies to take action. Many of the projects undertaken in particular by water resource, housing and town planning agencies and ministries of agriculture and education have important health potentials that can often be realized at little additional cost if the health component is integrated into the projects at the planning stage.

While major water, sewage and other sanitary engineering schemes are clearly a government responsibility, many rural needs can be met by local authorities and planned and carried out by local community organizations, as in the case of China, Cuba, Tanzania, and Jamkhed.

4.13 Communication and transport

Serious consideration should be given to ways in which health services can be delivered with less dependency on mechanical transport (i.e. powered by gasoline or diesel fuel) than at present. Motor vehicles assigned exclusively to health services are expensive to operate and maintain. In many situations, public transportation is available to support programme transport needs. In view of the constantly rising operational costs, greater use of bicycles, small motorcycles and other more economical traditional forms of transport could be considered. The "share the ride" approach must be made to ensure better utilization of existing transport and reduce the need for additional transport with its drain on financial resources. However, in the supervision of the primary health services there is a need for a quick and reliable means of transportation in order to foster supportive supervision and technical advice.

Modern technology provides many new ways to improve communications. Although there has been some experimentation in the application of new means of communication to rural health services, it is evident that these new techniques have not been fully explored. It seems that there has been a tendency to focus on some of the more expensive ways of physical transport along with a relative neglect of many other means of communication.

For example, two-way radios, establishing communication links between primary health workers in remote areas and consultant and supervisory personnel in medical centres permitting two-way communication appear to be promising, but their use may be limited by the initial investment and the operational costs as well as by the lack of regular maintenance and repair facilities. Factors like these need to be taken into account when schemes for their introduction are considered.

Greater use may also be made for health purposes of other communication and transport schemes developed for the police, national broadcasting or other government purposes.

Summary of the conclusions

A firm national policy of primary health care for the underprivileged will involve a virtual revolution in most health service systems. It will bring about changes in the distribution of power, in the pattern of political decision-making, in the attitude and commitment of the health professionals and administrators in ministries of health and universities, and in people's awareness of what they are entitled to. To achieve such far-reaching changes, political leaders will have to shoulder the responsibility of overcoming the inertia or opposition of the health profession and other well-entrenched vested interests.

Fundamental changes in health care of this kind in the developing countries will require correspondingly far-reaching changes in the organizational structure and management practices of the health services. Three different types of health delivery systems, appropriate to the differing stages of a country's development and relying heavily on primary health workers, are outlined in Annex II. Such services need to be manned by a new brand of health professional with a wider social outlook, trained to respond to the actual requirements of the population. The basis and the strength of such services lie in a cadre of suitably trained primary health workers chosen by the people from among themselves and controlled by them, rather than in a reluctant, alienated, frustrated group of bureaucrats parachuted into the community. The entire health service system will need to be mobilized to strengthen and support these primary health workers by providing them with training, supervision, referral facilities and logistic support, including a simplified national health technology appropriate to their needs. Primary health services of this kind will also function in close coordination with other segments of the health services and with other services that have a bearing on the health status of the masses, such as education, agriculture, public works and social welfare.

The innovations and successes shown in this study are sufficiently promising to warrant a major change in policy and direction enabling such programmes to be fostered, extended, adapted and used as examples for a large-scale global programme.

5. RECOMMENDATIONS

The health care delivery systems taken as examples for this study show characteristics that appear to have been instrumental in leading to wider and more evenly distributed primary health care, greater satisfaction for the consumers, and more effective and more economical delivery of services. Duly adapted, these systems appear to be applicable in many political, socioeconomic and environmental situations.

The following recommendations are accordingly made:

1. WHO and UNICEF should adopt an action programme aiming at extending primary health care to populations in developing countries based upon the principles given in 2 below, particularly those which are now inadequately provided with such care, such as rural and remote populations, slum dwellers and nomads. Since the development of primary health care services is a national undertaking that requires action at all levels and since it is hardly feasible for all countries to introduce radical reforms, the proposed action programme should initially be implemented by governments willing to undertake this effort with, if necessary, the assistance of other countries and of international, bilateral and voluntary organizations.

2. The following principles should be adopted in the reorientation and development of health services to achieve extensive primary health care:

(a) because of the interaction between development and health programmes primary health care services should be recognized as forming part of overall rural development;

(b) firm policies, priorities and plans should be established for the proposed primary health services;

(c) all other levels of the health system should be reoriented to provide support, (referral, training, advisory, and supervisory and logistic) to the primary health care level;

(d) communities should be involved in the design, staffing, functioning and other forms of support for their local primary health care centres;

(e) primary health care workers who have undergone simple training should be utilized;

(f) the primary health care workers should be selected by the community itself;

(g) there should be: (i) stress on preventive measures; (ii) emphasis on health and nutrition education; (iii) utilization of a simplified and standardized medical and health technology; and (iv) association with traditional forms of health care and respect for the cultural patterns and felt needs of the consumers. These aspects should all be incorporated in the design of primary health care.

3. WHO and UNICEF staff should be informed about and oriented towards the new approaches so as to be able to sponsor them and reshape their assistance accordingly.

4. WHO and UNICEF should study in detail not only the innovations described in this study but also those which are occurring continuously in different parts of the world under different sponsorship; record and monitor them; learn from them; make their results widely available; assist them when necessary; adapt them; build upon them; and encourage similar endeavours, even though some may appear to be at high risk in the sense that their favourable outcome is not clearly predictable.

5. WHO and UNICEF should pursue research on the effects of rural development on the health of people and on the role that other sectors can play in the delivery of primary health care, develop methodology for application of the findings, and assist in its implementation.

6. WHO and UNICEF should encourage and support:

(a) the adaptation of manpower planning and educational methods and techniques to situations in developing countries;

(b) the introduction of changes into the curricula and training of doctors, nurses and midwives to enable them to discharge their duties as envisaged in a health service system oriented towards primary health care;

(c) the introduction of changes into the training programmes of other health personnel to provide community orientation and inculcate the health team concept, so that such personnel become integral members of the community capable of putting the local resources available to the best use.

7. Within the context of national resources and plans, WHO and UNICEF should seek the standardization and simplication of medical and health technology so that primary health workers can use as much of it as possible.

8. WHO and UNICEF should study promising existing or potential approaches in health education with a view to disseminating knowledge about them and sponsoring their application, so as to create health awareness in the people and encourage them to become partners in the delivery of primary health care.

9. WHO and UNICEF should carry out a full study of the role of transport and communications in the success or failure of efforts to deliver primary health services.

10. This report should be widely circulated among international organizations and in developing countries, particularly among those responsible for the formulation of national policies, plans and programmes affecting the health of populations in rural and other underprivileged areas.

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ANNEX I

WHO AND UNICEF POLICIES

(a) WHO policy on basic health services

Whereas in many developing countries efforts were concentrated on specialized mass campaigns, the annual report of the Director-General stated as early as 1951 that they will have only temporary results if they are not followed by the establishment of permanent health services to deal with the day-to-day work of control and prevention of disease and promotion and maintenance of health.

In 1953, the Executive Board, and later the Health Assembly, stated that "assistance in the health field by WHO and the Expanded Programme of Technical Assistance for Economic Development should be designed primarily to strengthen the basic health services of the country and to meet the most urgent problems affecting large sections of the population, with due regard to the stage of social or economic development of the country concerned".[1]

While providing support for the malaria and smallpox eradication programmes as well as campaigns to control various communicable diseases, the Executive Board and the Health Assembly have since then repeatedly reaffirmed the importance of improving and extending the basic health services. A number of expert committees, in particular those in public health administration made statements to the same effect between 1952 and 1960.[2] Nevertheless, achievements in this field have remained modest and have been insufficient in nature and amount to cope with the needs of the existing populations.

During the sixties the policy of promoting basic health services, now more firmly defined, began to influence some developing countries. In 1962, the Fifteenth World Health Assembly recognized that "while it is normally necessary for a malaria eradication programme to be implemented by a specialized service, the active participation of the health service assumes considerable importance as the programme progresses towards its goal, becoming fundamental in the maintenance phase when vigilance against the re-establishment of the infection becomes the responsibility of health services".[3]

During the next few years, awareness developed of the desirability of integrating special programmes with basic health services. The meeting of the UNICEF/WHO Joint Committee on Health Policy in 1965 confirmed this approach.

This trend in the Organization's policy has been strengthened and increasingly implemented in the various programmes of work for a specific period. In the first (1951), it was stated that projects in specialized fields should be a stage towards the ultimate goal of a balanced and integrated health programme. In the second (1955), the concept of the importance of developing the rural health services appeared. This concept was clarified and developed in the third general programme, adopted in 1960: "WHO has sponsored campaigns against specific diseases and has promoted specialized services. It is probable that within the next five years governments will seek the assistance of WHO in converting these campaigns and services into more integrated programmes and the Organization should be ready to provide this assistance". The fourth programme (1965) went further, stating that "experience has shown that for the success of mass campaigns it has been frequently necessary to assimilate their machinery, with its limited objectives, into the more comprehensive general health services, which at

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[1] Handbook of Resolutions and Decisions, Vol. I, 1948-1972, p. 245-246, resolutions EB11.R57.6 and WHA6.27.

[2] Wld Hlth Org. techn. Rep. Ser., No. 428 (The Organization and Administration of Maternal and Child Health Services).

[3] Handbook of Resolutions and Decisions, Vol. I, 1948-1972, p. 75, WHA15.19.

times had to be developed for the purpose. This integration of the mass campaign organization within the general health services facilitates the extension of those services to the peripheral areas of a country, and avoids the centralization which tends to prevent progress in territories with rural characteristics and a scattered distribution of population". In the fifth programme adopted in 1971, it was stated that the concepts of integration and development of basic health services should pervade the entire programme. Over the years the basic health services have come to be accorded considerable importance and assigned priority in country health programmes. Concepts for the establishment and development of national health systems were established by the Twenty-third World Health Assembly in 1970 (resolution WHA23.61).

The Twenty-fourth World Health Assembly requested the Executive Board to carry out a study on "Methods of Promoting the Development of Basic Health Services". In 1973 the World Health Assembly, on the basis of this study, reiterated its conviction that each Member State should develop a health service that is both accessible and acceptable to the total population, suited to its needs, and relevant to the socio-economic conditions of the country, and at a level of health technology adequate to meet the problems of that country at a given time (resolution WHA26.35).

In implementation of the above policies, the number of WHO projects in all regions directly related to basic health services increased from 85 in 1965 to 156 in 1971. Over and above these projects, a considerable number of courses, seminars, symposia and technical discussions related to basic health services development were organized in all continents and research studies upon the organization of community health services were carried out.

Despite these statements of policy and programme adaptation, the 20 years between 1951 and 1971 have not demonstrated convincingly that the present course of action by WHO or by most countries will lead to a result that will solve the problems within a finite period of time. The Executive Board study referred to above considered that the present position was unsatisfactory. This present study provides a further opportunity to take stock and to propose amended approaches, policies and actions.

(b) UNICEF assistance policy

For nearly 25 years a major proportion of UNICEF resources has been channelled through the organized health services in developing countries. From 1970 to 1974, UNICEF assistance to child health represented 51% of all programme aid. At present, UNICEF is assisting health services for children in 99 countries. From the beginning, it was realized that neither the countries nor UNICEF had the means to provide medical care and treatment to every child in these countries so that, while support for national maternal and child health services was the focus for UNICEF aid, at the same time UNICEF gave considerable attention to various indirect or protective measures. In all of these endeavours, UNICEF has worked in close partnership with WHO.

Through maternal and child health services, concern was first focused on pre-natal, obstetrical and post-natal care. More recently, in the past 10 years or so, UNICEF has become increasingly concerned with the young child after weaning up to the age of five years and has sought to reinforce services to this age group through maternal and child health centres. Since 1967, UNICEF has also assisted family planning.

From the beginning also, UNICEF threw its weight behind mass campaigns designed to control various diseases seriously affecting children, including tuberculosis, leprosy, yaws and malaria. Substantial aid was also provided by UNICEF for the production of vaccines and sera in many countries. Assistance was also provided to environmental sanitation programmes emphasizing water supply on a pilot or demonstration scale in rural areas.

Annex I

In all of these activities, UNICEF gave high priority to assisting the training of local personnel in their own countries. UNICEF devotes about one-third of its aid to help establish and strengthen training institutions and schemes at all levels: planning, directing, teaching, supervisory, auxiliary and volunteer. Major emphasis is given to the training of middle-level and primary health personnel. UNICEF believes that, in training, more attention needs to be given to local conditions, to the preparation of trainers, to supervision and to the local production of suitable teaching aids.

Although urban maternal and child health services were not excluded, UNICEF directed most of its assistance to rural areas.

In the course of time, it became evident that maternal and child health services could function best in the context of and with the support of broad national health services, so that UNICEF assistance was extended to those aspects of broad national health services which support and supplement maternal and child health services. It was recognized that child health must be seen as a part of the health of the community as a whole.

At the same time, as mass campaigns progressed toward their goal of bringing specific diseases under control, it became evident that some sort of permanent establishment was necessary to maintain the benefits of these campaigns. Vertical mass campaigns should not be continued indefinitely but should be integrated into the ongoing health services. Although UNICEF supported the integration of mass campaigns into basic health services and substantial progress has been made in achieving this integration, the limited coverage of health networks has posed a serious problem.

UNICEF aid for child nutrition, which first took the form of supplementary child feeding and aid to local dairies, began to take on new aspects in the mid-1950s with the development of low-cost protein-rich food mixtures. UNICEF also began aiding "applied nutrition" programmes through such channels as community development, agricultural extension, schools and health services so as to stimulate and help the rural population to grow and eat foods required for better child nutrition. More recently, FAO, UNICEF and WHO have been encouraging the development of national food and nutrition policies that make provision for child nutrition.

Programmes developed later with UNICEF in primary education, social welfare and applied nutrition demonstrated the necessity of combining the activities of health services with others such as education, social welfare and agricultural extension.

This led to a major change in basic UNICEF policy orientation, confirmed by UNICEF's Executive Board in 1964. At that time, UNICEF realized that a sectoral approach to needs of and services for children was not satisfactory. Two main recommendations were made, inviting governments to undertake national interdisciplinary surveys in order to: (1) identify the basic needs of children; and (2) elaborate national policies for children and youth so as to harmonize and coordinate all sectoral activities for the young. Child health should not be seen in isolation from the total needs of children. Rather, the needs and the development of children must be seen in their entirety and as a continuing process. In addition, it was essential to see children not simply as the recipients of services but rather as valuable assets in national growth and development. Policies and programmes for children, therefore, should be worked out in the context of national development plans. UNICEF then realized that maternal and child health services should find their place in this broad national perspective.

Within this multisectoral approach, the role of basic health services has been re-emphasized together with improvement in water supplies, alleviation of the work of women, and emphasis on the young child and the deprived groups of populations.

ANNEX II

DIFFERENT TYPES OF HEALTH SERVICES ADAPTED TO DIFFERENT DEGREES OF DEVELOPMENT

The simplest type - at the peripheral level

Village health posts

(a) Selected tasks

(i) Elementary services for mother and children - deliveries by traditional birth attendants. Promotive measures in relation to nutrition and immunizations

(ii) Elementary sanitation - such as protection of wells, waste disposal, food protection, vector control

(iii) Simple health education

(iv) Rule-of-thumb procedures for managing easily recognizable diseases and symptom complexes; about 10-15 drugs

(v) Participation in immunization programmes

(vi) Simplest family planning and health education

(b) Manpower

Local persons selected by the villagers with, wherever possible, primary education and trained as far as possible in an in-service situation

Traditional birth attendants given a short basic training and refresher instruction at twice-yearly seminars

(c) Community participation

Provision of a room or small health post

Maintenance of the room or building

Payment of part of the salary of the health worker

Transport of patients referred elsewhere

Simple sanitation such as protection of wells, waste disposal, food protection and vector/vermin control, if possible in combined action with the teacher or the extension worker for sanitation, health education or food production and the community development organizer

Food storage and protection from vermin, fungi, damp or other spoilage

(d) Supervision (educative role)

One primary health worker with one-year training, or less if compensated by experience of at least two years

(e) Transport

None; or ox-cart, simple bicycle, or public transport

Annex II

(f) Equipment

Very simple - table, chairs; 10-15 selected drugs

UNICEF midwife kits (with contents periodically reviewed)

Labour-saving devices (pumps, wheelbarrows, bicycle, trailers and grain mills; also simple tools)

(g) Referral centres

Simple - staffed by primary health workers or medical assistants

(h) Particular cases

Ambulatory services for scattered population with one auxiliary or one medical assistant coming once a week to the local village centres

Nomadic - one member of the tribe trained (who could be provided with an identification card to be accepted by the health services)

II. Intermediate type

(a) Selected tasks

Same as in No. I(a), plus

Family planning

Nutrition education (with distribution of vitamins and protective foods and weaning foods); special attention should be paid to local sources of vitamins

Immunizations

Detection of cases (surveillance activities following mass eradication campaigns)

Food production, food conservation, food storage

Cooperation with other sectors (agriculture, education, general development)

(b) Manpower

One primary health worker with primary school background

+ local recruitment of volunteers

+ traditional practitioners (including traditional birth attendants)

(c) Participation of the community

Same as in I(c), plus

Community involvement through cooperation of the village community and local government services, namely

- local chiefs
- teachers and agricultural extension workers
- promoters (if any)
- social leaders, such as youth or women's associations or local organizations

(d) Supervision

One medical assistant or an experienced primary health worker - if possible a team

(e) Communication/transport

Transport from the referral centre for emergency cases, for supervision - the cheapest effective use of telephone or two-way radio system, if possible

(f) Equipment

A little more elaborate (see equipment of subcentre of the classical scheme)

(g) Referral centre

Health centre with four beds, transport - staffed by a medical assistant; oriented towards public health

III. More advanced type

(a) Selected tasks

Same as I(a), plus

Family planning with paramedical supervision

Curative work + tuberculosis ambulatory treatment

Dehydration for young children

Nutritional supplementation: locally produced food, or processed food or mixture

Rehabilitation nutrition centres

Sanitation, including water, wastes, home improvement

School health, etc.

Health education

Consumer education

Insurance schemes

(b) Manpower

A team with:

one medical assistant or traditional doctor and/or primary health worker

one or two locally recruited staff, including an auxiliary midwife with a minimum training of 6-12 months

Annex II

(c) Participation of the community

Same as II(c)

Cooperative for purchasing and distributing fertilizers

Cooperatives for purchasing and distributing selected grains

(d) Supervision

Teams, including public health doctor or medical assistant, experienced midwife and sanitarian

(e) Communications/transport

Telephone or radio

Transport from the referral centre (car or ambulance)

(f) Equipment

More elaborate - for diagnosis, treatment, drugs, etc.

(g) Referral centres

Rural hospital with certain specialties, including surgery

Reference health centres with technicians (laboratory).

In the case of No. III, decentralized planning at the regional, district or subdistrict level will produce the possibility of surveys and research, particularly nutritional surveys.

ANNEX III

BANGLADESH

APPROACH TO THE DEVELOPMENT OF HEALTH SERVICES

1. General characteristics

The country is divided into 19 districts and over 400 thanas. The estimated population is over 75 million, occupying an area of 55 000 square miles. Eighty-five per cent. of the people live in the rural areas, and there are 68 towns and cities.

The per capita income is US$ 58 per annum, that for the poorest 20% of the population US$ 20.

The supply of safe water and environmental sanitation are poor throughout the whole country.

2. Basic health conditions and health care policies

(a) Pattern of diseases

Infectious diseases are the most important causes of morbidity and mortality. Malaria, tuberculosis, smallpox, cholera and other diarrhoeal diseases and children's diseases such as diphtheria, neonatal tetanus, whooping cough and measles are still major problems. The malaria eradication programme has effectively reduced the problem except in the border areas. There are about 100 000 deaths annually from pulmonary tuberculosis and 300 000 tuberculosis patients require hospital treatment. The prevalence of tuberculosis in industrial workers ranges from 2.6% to 4.5%. The smallpox epidemic after liberation took a toll - 2510 cases were reported in the first four months. About 6% of the population bear pockmarks on the face, denoting previous smallpox infection. Cholera is endemic in the country and there is an urgent need for safe water supplies and hygienic disposal of human excreta.

(b) General orientation of health services system

In the past there had been a tendency to launch single-purpose programmes to solve individual public health problems. All such programmes have been found to have the following drawbacks:

(1) They are self-limiting in the sense that as soon as the goal is achieved the programme is stopped or maintained only in a skeleton form. Hence it is difficult to attract good-quality dedicated workers, since the programmes lack secure career prospects.

(2) There is duplication of effort, of expenditure and of trained personnel in the various programmes.

(3) Some of the projects in their present form have an inadequate personnel structure, with a concentration of technical and supervisory personnel at the centre.

(4) The financial allocations in the single-purpose projects are sometimes grossly disproportionate to the actual needs. While there are liberal allocations to some programmes, leading to non-utilization of funds or even wastage, other programmes cannot be made operational because of the shortage of funds.

Annex III

(c) Strategy for development of health services before independence

The basic strategy in Bangladesh is to shift the emphasis from curative to preventive health care so as to bring a balance between the two, and to develop a delivery system that provides integrated and comprehensive health care to the rural population. In order to achieve this, a rural health complex comprising rural health centres and 25-bed hospitals with satellite subcentres is established at each thana. Referral services are provided to the rural health complex through the subdivisional and district hospitals and other teaching and specialized institutions.

The emphasis on the health care delivery system has accordingly been shifted from the individual to the community, whose basic unit is the family. Following this shift from the individual to the community, it has become imperative to understand the ecology of the community and the development process as it affects education, agriculture and economic progress, priorities and planning. The Government's policy requires a multisectoral project and planning not just of the health services but for the health of the people. The services for health care delivery are therefore based on integrated and comprehensive community health care covering all social and economic activities.

The objectives of the health policy are as follows:

(1) To create a health infrastructure in the rural areas providing integrated and comprehensive health services through thana health complexes and union subcentres.

(2) To ensure integration between the family planning and the health programmes at the grassroot level under the leadership of the thana health administrator so as to attain the maximum possible prevention of unwanted pregnancies and births.

(3) To provide a well-organized health care programme for infants, children and mothers by strengthening maternal and child health services, with a view to reducing infant mortality and maternal mortality rates.

(4) To ensure effective control or eradication of communicable diseases and to organize epidemiological services supported by well-equipped public health laboratories.

(5) To establish well-organized industrial health services for industrial workers, to provide protection against industrial health hazards, to create a healthy environment at places of work and to provide workers and their families with medical care.

(6) To improve the quality of existing hospital facilities, to provide new hospital facilities (with a major emphasis on the establishment of at least one 25-bed hospital in each rural thana) and to reach the target of one hospital bed per 3500 population by the end of the plan period.

(7) To create adequate undergraduate and postgraduate teaching and training facilities for medical, paramedical, nursing and midwifery personnel and to ensure proper service conditions enabling such personnel to be used to the optimum extent.

(8) To ensure the availability of life-saving drugs for the treatment of the sick and of immunizing agents for the prevention or control of communicable diseases.

(9) To ensure intersectoral cooperation and coordination in achieving the improvement of environmental sanitation, housing facilities, the potable water supply, etc., in the home and at work places for every citizen.

Annex III

(d) General health organization structure

The rural health complex is the means employed for providing integrated and comprehensive health and family planning services to the rural population. Each rural health complex will have two components:

(i) rural health centres at the thana level and subcentres at the union level;

(ii) a 25-bed hospital at the thana level.

The intention is to provide one rural health centre in each of the 356 rural thanas and one subcentre in each of 3698 rural unions. Each union subcentre will cover a population of approximately 12 000-15 000. The establishment of these health centres and subcentres is to be spread over a period of several years, depending on the resources and manpower available.

An auxiliary, called a basic health worker, is a key member of the health team. Basic health workers are educated to the level of matriculation and given special training. Each basic health worker is in charge of a population of not more than 4000 and has adequate supervision. Basic health workers make regular home visits according to a planned schedule within a delineated area and each family is visited at least once a month.

During their home visits, they perform the following functions:

(1) Immunization - primary vaccination and revaccination against smallpox, cholera and typhoid; BCG vaccination.

(2) Health education - in respect of environmental sanitation, water purification and family health, including family planning.

(3) Collection and transmission to the rural health centre laboratory of blood samples of suspected malaria cases and sputum samples of suspected tuberculosis.

(4) Supply of antimalarial, antituberculosis and antileprosy drugs to confirmed cases.

(5) Participation in antimalaria and other antiepidemic programmes.

(6) Maintenance of family health and family planning cards (through which vital statistics and other health and family planning data will be collected).

These basic health workers work under the supervision of an assistant health inspector, who is in charge of four basic health workers at union level and is directly supervised by the medical officer or medical assistant in charge of the subcentre. In addition, every subcentre at union level has a maternal and child health clinic with family planning services under a lady health visitor.

The medical officer or his assistant functions as the team leader and is responsible for integrated health care for the entire union. Wherever necessary, he refers cases to and seeks help and guidance from the thana health administrator, who is his supervisor. At thana level the rural health centre is the headquarters for the integrated health services provided in the entire thana through its union subcentres. In addition to serving the union in which the thana health centre is situated, it provides leadership and referral services to all subcentres, through its 25-bed hospital.

At present, some 12 500 basic health (or family welfare) workers have been retrained and are functioning effectively. The present health strategy in Bangladesh is to achieve full coverage of the population by basic health workers by the end of 1974. The Government also

intends to have a permanent system of training in order to improve the knowledge and the skills of and the quality of the care delivered by their basic health workers.

Conclusion

The reorganization of the health services, through reorientation and retraining of health personnel and the integration of health workers' functions, has reduced duplication of health activities and greatly improved health care delivery. More effective coverage of health care, particularly in the rural areas, has been achieved through the introduction of the basic or primary health workers (called family health workers), who make monthly visits to homes to perform simple, well-defined tasks for health protection and promotion. In Bangladesh, where much of the terrain is waterlogged and communication is difficult, a relatively simple system of health care delivery as described above appears to hold the most promise.

3. The Savar project

(a) General orientation

A group of Bangladesh health workers organized the Savar project during the struggle for independence in line with the general strategy for the development of health services. The approach fits into the present Government plan for a base unit (primary health centre) serving a network of subcentres.

The emphasis of the programme is largely preventive; it concentrates on immunization against communicable diseases and the development of family planning services. Limited curative services are available through clinics at the base and the subcentres. Inpatient facilities and emergency services are provided at the base hospital.

One of the project's basic principles is that health care cannot be viewed in isolation but rather as a part of the overall problem of development. Members of the community are taught handicrafts and improved agricultural methods to enhance their family income. Health education is undertaken in conjunction with the agricultural and nutrition programmes. A full-time education extension officer is in charge of the centre, with two teaching assistants.

The intention is that the Savar project should be as nearly self-supporting as possible by relying on insurance subscriptions from the population. For a monthly fee of 2 takas[1] per family, insured persons receive free outdoor treatment, and where hospital admission is necessary they pay an extra fee of five takas only and one taka per day. No food is provided for inpatients but all medicines are free. Persons not covered by insurance pay two takas per visit but receive free medicine, and admission to hospital has to be paid for.

(b) Description of the project

Started in 1972, the project seeks to provide comprehensive health care to a population in excess of 200 000 in Savar Thana, a rural area of 133 square miles. With a small hospital as its referral base, the project seeks to establish a network of 11 subcentres, through which primary health care is to be delivered by locally trained village health workers whose work is supplemented by weekly visits from a doctor at the hospital. The headquarters are located in Savar and a daily clinic and emergency services are provided.

[1] 1 taka = US$ 0.12 (1974).

Annex III

The Savar project is a service/training programme. In certain areas doctors visited the schools and selected volunteers from students. The aim was to recruit two students from each village and train them to provide preventive services in the village, mainly vaccination. This training programme is currently being implemented. When they have completed their six months' training, they are expected to provide curative treatment for minor ailments, health education and family planning advice. Village women are also trained and utilized for disseminating the message of family planning. They advise and provide family planning material. Trainees are given some remuneration for their services.

Students from the university and schools are being organized for medical social work, including adult education. All the villages are being surveyed and the necessary documentation, prepared by trainees or voluntary workers from schools and colleges, is checked by the doctors during visits.

A unique aspect of the programme is a self-insurance scheme through which outpatient treatment on three days of the week, emergency care at any time, drugs, immunizations and family planning services are provided to subscribers in return for a very modest monthly contribution. Although the amount thus paid directly by the consumer for these health services is small and poses no financial hardship, the originators of the scheme point out that it is more than double the amount which the Government now spends per family on all health services in Bangladesh. It is worthy of particular note that the project began with virtually no funds, in spite of which it functioned with remarkable effectiveness.

(c) Economic support for health services

The Savar project intends to be as nearly self-supporting as possible, by relying on insurance subscriptions. Four out of the 11 unions in Savar are initially to be covered by the insurance programme. The total population of these four unions is 60 000. Fifty per cent. have accepted insurance.

The chief criticism of the Savar project is that it is receiving a great deal of outside aid and there is doubt whether or not it will be self-sufficient in the near future.

(d) Project administration

Control of the Bangladesh hospital and rehabilitation centre is vested in an autonomous board of trustees, comprising two permanent representatives of the Bangladesh Medical Association and three eminent social workers. The management of the hospital is the responsibility of a board of governors, who elect the project director and administer the hospital under the plans and budget approved by the trustees. The board of governors comprises representatives from each of the major categories of hospital staff (physicians, nurses, administrators, etc.), together with a representative of the Bangladesh Medical Association, the Red Cross, and the faculty and students of the thana's one university.

(e) Community participation

Although only a fraction of the cost of the services is met by the insurance subscriptions, direct participation in the provision of their own health care has already produced a distinct change in the attitude of the villagers toward the health services, which have come to represent value for money rather than a public dole.

Since the overall programme is described by its founders as a "health and welfare scheme", an effort has also been made to provide employment for the consumers of the health services. One of the more successful activities of the project has been the establishment of a sewing centre, where women are taught the use of sewing machines for the production of simple articles of children's clothing, for which they are paid on a piecework basis. The garments are then

sold at a nominal price to the poorest families in the insurance scheme. A more important aspect of the sewing centre, however, is the opportunity it affords to offer the women a basic education and to encourage their participation in the health and family planning programme. As already mentioned, a full-time education extension officer is in charge of the centre, with two teaching assistants. It is of interest to note that all of the young women who had (as of mid-1973) become family planning counsellors were first brought into contact with the project through the sewing centre.

Conclusion

Care must be exercised when drawing conclusions from the Savar project, because it has been in operation for a relatively short period and has had extensive outside support from its inception. Moreover, the Savar region is probably not as poor as most of Bangladesh. However, several important inferences can be made.

1. It is possible and desirable for medical practitioners to be leaders in the institution of a radically different health system provided the effort is consistent with the national philosophy.

2. At least a partial self-insurance scheme will work even in extremely poor areas, provided there is a reasonable degree of financial security or stability. A proven way of creating a financial security for farmers has been the institution of a crop insurance scheme. However, this requires a huge financial involvement from the Government, particularly in a country such as Bangladesh where floods and cyclones are common.

3. Contributions from individuals for health care remove the stigma of charity and create an awareness of the value of health in the mind of the contributors. This is an important achievement. The creation of health awareness is a keystone in the development and planning of community health care programmes.

Savar provides a good example of a training programme for school and college student volunteers for the provision of preventive and curative services to rural populations in their own villages. It has been shown that adult education and vocational training programmes can be incorporated in a project both improving health education and helping to increase the per capita income.

4. Jurain nutrition project

The Jurain project is in many ways similar to the Savar project, but it is based on local self-help without any external aid. The project was conceived by the President of the Diabetic Association of Bangladesh, who recognized the fact that a nutrition project offers a good opportunity for field study of the community's socioeconomic and health status.

In a baseline nutrition survey conducted in 1964, 50% of the population were stated to be malnourished, and 75% of the children had protein-calorie insufficiency with clinical manifestations of vitamin A and vitamin B deficiency. In 1968 a pilot study was therefore initiated in Jurain, a suburb of Dacca, to help determine ways of improving the nutritional status of the population, mainly through self help. Health education efforts were made and the community was encouraged to increase its consumption of vegetables, fruit, fish, poultry, eggs, milk and wheat by cultivating hitherto unused arable lands, rearing poultry and culturing rapidly multiplying fish.

Baseline data were collected during the first year and a census was organized in the demonstration zone, which consisted of some 900 houses and 4000 inhabitants. The family status, nutrition and dietary habits and educational levels were recorded. The amount of land available for farming and the number of livestock were also noted. Eighty to ninety per cent. of the inhabitants were stated to have helminthic infections - mainly hookworm and roundworm.

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A complex of bungalow-type houses were constructed on the site and the following action programme was instituted:

(1) A farming centre was established where modern farming methods are demonstrated. Vegetables are grown and poultry and cows are reared under the supervision of an agricultural officer.

(2) A women's centre was established to cater for the social needs of the women in the community. Here they are taught to knit and sew dresses, to turn out handicrafts using jute fibre, and to cook (through practical demonstrations of food preparation).

(3) A health centre was also established with priority for women and children. Prenatal and postnatal clinics are conducted, including infant welfare and family planning among their services.

(4) A youth centre was established and is responsible for adult education classes. Special instruction on modern agricultural practices is given here, and young persons are also encouraged to undertake farming.

In the third year a review of activities revealed that the number of households having kitchen gardens had increased from 4% to 84%. Many were also rearing poultry and practising periodic vaccination of poultry and cattle. A total of 46 ponds and ditches had been stocked with young fish.

Dietary habits had also been influenced favourably and green vegetables, previously eschewed by the community, had become an acceptable dietary item. The consumption of protein foods such as meat, fish and eggs showed a considerable increase.

The dietary habits of pregnant women and children were also favourably influenced, with a considerable improvement in weaning practices. It was noted that all the pregnant women in the demonstration zone were encouraged to attend the MCH centre at least once during pregnancy - an unusual occurrence in that community.

Poor environmental conditions were responsible for a high incidence of communicable diseases such as gastroenteritis, skin infections and respiratory diseases. In order to improve environmental sanitation, the project director had constructed tube wells and latrines for the community. The population had been inoculated against smallpox, cholera and typhoid, and children were being immunized against diphtheria, tetanus and whooping cough.

It was reported that there had been no outbreak of cholera or smallpox in the area for three years.

Conclusion

This project demonstrates clearly how the quality of life can be appreciably improved through self-endeavour - environmental sanitation being improved by procedures and nutrition by more effective agricultural practices, and MCH and social services being provided for hitherto illiterate and non-productive women in the community. In addition, the project demonstrates that it is possible to obtain local support for activities that will improve the health of a community.

ANNEX IV

HEALTH CARE IN THE PEOPLE'S REPUBLIC OF CHINA

National policies

The People's Republic of China has over the past quarter-century conducted a fundamental restructuring of the politics, economy, and human services - including, of course, health services - of the world's most populous country. In a country only a short time ago ravaged by starvation and communicable disease, and possessing extremely few personnel and facilities for modern "scientific" medicine and those few concentrated in urban areas, an attempt has been made to produce radical and rapid change. The principles followed after the successful revolution (called in China the Liberation) have included:

1. A redistribution of resources and of the power to allocate them from a small elite to a mass base but which has preserved many basic cultural and national values.

2. A commitment to the development of services, including medical services, for those who previously had least - in the Chinese expression, the "workers, peasants and soldiers". The question "for whom?" has been critical to the process, and the issues of "who is being served" and "to what purpose" are being constantly examined and re-examined.

3. An emphasis, especially since the start of the Great Proletarian Cultural Revolution in 1966, on the provision of services in the rural areas, where 80-85% of the Chinese people live.

4. A policy of developing these services as much as possible through local self-reliance and the involvement of all the people in a community rather than through the supply of services from higher levels or through highly trained personnel. This decentralization and use of personnel trained for very short periods of time occurs, however, within a highly organized and disciplined system of services.

5. A recognition of the value to the Chinese people, particularly in the rural areas, of traditional Chinese medicine and hence a policy vigorously attempting to integrate traditional medicine with what the Chinese call "Western medicine".

6. An understanding of the primary importance of preventive medicine and its implementation both through mass campaigns and through association with therapeutic medicine of both the Western and traditional Chinese type.

7. A process of instilling new social attitudes into health professionals and of reducing the social distance between health workers and those whom they serve. This is combined with opportunities for health workers at all levels to move to more complex levels of work through further training and experience.

8. An attempt to use as the motivating force for these efforts a devotion to the community and to China as a whole; a belief in the ability of man to change and improve, given the appropriate education and environment; and an ethic which describes "serving the people" - rather than individual self-aggrandizement - as the highest good toward which all should aspire.

Development of health services

Although attempts were made at national health planning in the 1930s and 1940s through a national health administration, the then Government of China was unwilling or unable to develop services for the vast bulk of the population. A few isolated local experiments in development of health services were tried, usually financed by religious groups or by philanthropic foundations whose headquarters were located outside China. Although many of

those working in these efforts were well-motivated to try to help the people of China, the amount of resources put back into China by these efforts were minuscule compared with the amount that was being removed by the exploiting Western powers and the efforts themselves were largely conceived, developed, and led by professionals who were not an integral part of the communities which these programmes were meant to serve. The programmes were often barely relevant to and barely scratched the surface of the community's needs.

On the other hand, in the "liberated" areas, first in Kiangsi Province in the late 1920s and early 1930s and, after the Long March, in and around Yenan in Shensi Province in the late 1930s and the 1940s, health services had high priority and were developed very differently. The basic principle used was the involvement of the people themselves in the development and shaping of their own services, through a process of discussing, questioning, and criticism and self-criticism. Although central policy direction was present, advisers were available, and some resources were provided by the Army, each local area was called upon to do its own decision-making and to supply its own resources and manpower for implementation.

After the Liberation in 1949 a National Health Congress in Peking established four basic principles for health work: "(i) serving the workers, peasants, and soldiers; (ii) putting prevention first; (iii) uniting doctors of both traditional and Western medicine; and (iv) integrating public health work with mass movements".

The Chinese Ministry of Health developed along similar organizational lines and apparently used strategies similar to those of the Soviet Ministry of Health. For example, the First Five-Year Plan (1953-1957) stated:

> "In developing health and medical services, priority must be given to improving the work in industrial areas, in areas where capital construction is in progress, and in forest areas, and sanitation work in rural districts must be gradually improved."[1]

This wording suggests an early policy emphasis on urban industrial areas and a relatively lesser priority on development of services for rural areas.

The manpower policies pursued were also similar to models used in the USSR. Higher medical education was vastly expanded, and a six-year curriculum based on separate faculties for adult therapeutic medicine, paediatrics, public health, and sanitation was adopted as the standard.

The number of doctors rose from approximately 20 000 (1:25 000) to 150 000 (1:5000) from 1949 to 1965. Large numbers of middle-level health workers such as 170 000 assistant doctors (similar to the Soviet feldshers), 185 000 nurses, 40 000 midwives, and 100 000 dispensers were also trained.[2] This extraordinarily rapid production of newly trained health workers made a great difference in the availability of care, but their number was still far too small and their concentration in the cities still too great to fully meet society's needs.

At the same time large numbers of new hospital beds were built, raising the number from some 90 000 (1:6000) in 1949 to some 700 000 (1:1000) in 1965.[3] In 1965 a Ministry of Health official reported that every one of China's 2000 counties had at least one hospital.[4] Other "centres of excellence" were built, following the "classical" model which called for knowledge and manpower to diffuse from these centres to areas of need. But one bed per thousand population was still far less than that thought necessary for adequate care and the centres were too limited and too few to meet the needs.

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At the same time the Government was fostering developments less classical and more oriented toward mass participation. Through the Patriotic Health Campaigns sanitation was strengthened and pests such as flies and mosquitos were largely eliminated. Opium addiction was eliminated and venereal diseases essentially eliminated by campaigns conducted by locally recruited briefly trained workers with community support. Vast numbers of people participated in campaigns against schistosomiasis and other parasitic infestations. Mobile health teams brought some measure of preventive medicine to isolated areas. Limited experiments were tried, particularly at the time of the Great Leap Forward in 1957-1959, in the local development of medical care, in the provision of mobile medical care teams, and in the training of what later came to be known as "barefoot doctors".

Yet, despite these significant advances in professional manpower and facilities and in mass efforts and demonstrable results in areas such as the reduction of the incidence of communicable disease and in infant mortality rates, there was considerable criticism in the mid-1960s of the Ministry of Health:

- Despite recognition of the importance of distributing additional resources to the rural areas and some success in doing so, urban health services still received a disproportionately large share of the limited resources. With 80% of the population living in the countryside, the disproportion was a glaring one.

- Despite recognition of the importance of preventive medicine and the striking success of a number of programmes, curative medicine still received more attention in research, teaching, and service than did preventive medicine.

- Despite recognition of the importance of integrating traditional Chinese medicine with Western medicine and some limited success in doing so, traditional medicine still received relatively short shrift and enjoyed a low status compared with "scientific" medicine.

- Despite recognition of the importance of modifying techniques borrowed from other countries to fit China's unique conditions rather than adopting them uncritically, much of medical education, public health, and medical care administration introduced into China from 1949 to the early 1960s was copied directly from Soviet models.

- Despite recognition of the importance of collective leadership and the use of education and persuasion rather than "commandism" to implement policies, a hierarchical managerial structure had developed, the top of which was said to be relatively unresponsive to criticisms or suggestions from the bottom.

- Despite recognition of the importance of speedily assuring that everyone in society had access to the limited medical resources, there was increasing concern with the "raising of standards" rather than with "popularization" of what was already available. It was said, for example, that the number of barefoot-doctor-type health workers that had been trained and were being used near Shanghai was decreased in the early 1960s in the name of "quality".

- Finally, and perhaps most important of all the eyes of the Chinese leadership, despite recognition of the importance of managers keeping in touch with those they served - and of breaking with the tradition of intellectual work being valued more highly than manual work - these key Maoist principles appeared in some ways to be honoured more in the breach than in the observance.

Annex IV

In June 1965, in what was later seen to be one of the forerunners of the Cultural Revolution, Chairman Mao singled out the Ministry of Health for criticism on what he cited as its lack of attention to rural areas in its service programmes and its six-year course, its emphasis on theoretical knowledge in the training of physicians, and its lack of attention to the prevention and treatment of "common diseases" in research. He issued a call, widely quoted in China: "In medical and health work put the stress on the rural areas". In response to this directive, and to the Cultural Revolution itself, many of the classical methods were at least temporarily abandoned. Much of the apparatus of the Ministry of Health was dismantled and it and its purposes were subjected to the "struggle, criticism, and transformation" which marked many institutions of China during the Cultural Revolution. Higher and middle medical school education was interrupted and did not resume until 1971, and then in a markedly shortened and modified form. Publication of medical and research journals was suspended and did not resume until 1973.

In place of the classic technical models there was substituted a much more vigorous attempt at the popularization of medical services. Mobile medical teams had visited remote rural areas in the past, but during the Cultural Revolution they were greatly expanded in number, in the areas they covered, and in their duties. All urban medical workers were required to spend a period of time in the rural areas - so that at any given time one-third of urban personnel were out of the cities - and some relocated permanently to the countryside. One million barefoot doctors and three million rural health aides were trained. Local "cooperative medical care systems", in both rural and urban areas, were developed and expanded. As of 1974, although medical education and medical journals had resumed, there remained aspects of decentralization and "deprofessionalization" which appeared to result directly from the Cultural Revolution.

Medical care in the rural areas

The mainland territory of China covers 3 692 000 square miles, an area close in size to that of Canada or the United States (including Alaska) and somewhat larger than that of Brazil. The precise population of China is unknown, but estimates of the current population are in the neighbourhood of 800 million, making it by far the world's most populous country. Eighty to 85% of China's population live in its rural areas, but the population is unevenly distributed; the vast majority of the people live in eastern China, and western China is exceedingly sparsely populated.[5]

Prior to 1949 China's land was largely concentrated on the lands of a relatively small number of landlords. It was estimated in 1937 that almost two-thirds of China's farmers rented land from others, and were forced to pay heavy rents. These poor peasants, who often worked land owned by absentee landlords with little concern for the peasants' conditions, received neither an adequate remuneration for their toil on the land nor even an adequate share of the food they produced.[6] Repeated cycles of drought and flood added to the uncertainty and misery, so that even the peasants who worked their own small plot of land could be destroyed by a few bad crops.

One of the first priorities in each liberated area therefore was for the peasants themselves to distribute the land among those who worked and lived on it.[7] In the period following the Liberation the land and the primitive tools for working it thus became the property of individual peasants.

During the 1950s groups with increasingly collective ownership called cooperatives were formed. By the late 1950s, as part of the Great Leap Forward, much of the farmland had been converted into communes, with collective ownership of agricultural tools and of the land, except for small private plots on which the peasants could grow food for personal consumption. The communes were often large enough to include all the households of a township, whose

government was then combined with the management of the commune. Unlike the cooperatives, which were purely economic organizations, the communes became units of both political and economic organization. Their members' representative assemblies function as the townships' "people's congresses". Today communes are formal, self-contained political units with their own internal government, usually reporting directly to the government of the county in which they are located. There are now said to be 27 000 communes in China, ranging in size up to those with a population of 60 000.

The smallest subdivision of the commune is the production team, with a membership of one or two hundred people. The team leadership is responsible for the day-to-day planning of the team's work. People on the same production team live close to one another, usually in small villages, and form the basic social unit in the countryside. Several teams, of the order of 10 to 20, combine to form a production brigade, which usually has wider responsibility than the team with regard to health, transportation, and, in the north, the grinding and storing of grain; the production brigade has also become the basic economic unit for the distribution of income to the peasants. A typical commune is composed of 10 to 30 production brigades. The commune is the lowest level of formal state power in the rural areas, analogous to the "neighbourhoods" in the cities, and is responsible for overall planning, education, health and social services, and the operation of small factories that produce goods for its members and for outside distribution.

The health care services at each level are shown in Table 1 and are summarized below. Health care at the production team level is provided by barefoot doctors (see the section on health manpower for a discussion of the recruitment and training) and, in some areas, by part-time volunteer health aides who deal with problems of sanitation under the supervision of the barefoot doctors. The barefoot doctors provide medical care, including health education, prevention, and the treatment of minor illnesses in their sparsely furnished health stations, which are located within the production teams, an easy walk from the peasants' homes. They also provide care in the fields, taking their medical bag with them when they are doing agricultural work. The primary role of the health aides is to educate the people about sanitation, to collect the night soil and to assure its storage for 10 days in cement vats before it is used as fertilizer. The health aides work in their lunch hour or after their regular working hours and are unpaid for this work.

Health facilities at the brigade level vary widely in communes throughout China. The care at this intermediate level is also provided by barefoot doctors out of somewhat more elaborate health stations. These stations are generally furnished with an examination table, a desk and a few chairs, a medicine cabinet with both traditional and Western medicine and an acupuncture chart hanging on the wall. The health care given at the brigade level includes immunizations, health education and the treatment of minor illness. Midwives also work from the brigade health stations; they perform normal deliveries in the mother's home and provide birth control.

Many large communes have their own hospital facilities to which patients are referred from the production brigade health stations. In the 10 counties that comprise the Shanghai municipality, for example, there are 212 commune hospitals (at least one for every commune), each with an average of 30 beds.

Each county in China has a general hospital, usually located in the county town and serving the people of the immediate area as well as patients referred from the commune hospitals. The hospital for Shunyi County, a part of the Peking municipality north-east of the city proper, has a staff of 104 men and 114 women to run its ambulatory and inpatient services for the 450 000 members of the 19 communes in the county. Of this staff, 143 are medical workers - 48 doctors (which probably includes "assistant doctors"), 63 nurses, and

32 pharmacists and technicians. In addition to this hospital, seven commune hospitals and 12 commune clinics provide medical care in the county. In all, 676 medical workers (excluding barefoot doctors and health aides) serve the population of Shunyi County: 312 doctors, 65 nurses, and 299 pharmacists and technicians.

Medical care in the cities

Although 80% of China's population live in its rural areas, there are still about 150 million people in its cities, giving China one of the world's largest urban populations as well. The cities of China are very densely crowded. The largest, Shanghai, has a population of about six million people living in the 54 square miles of the city proper who, with the five million in the surrounding rural areas, make up the Shanghai Municipality.[8] The city proper thus has a population density of over 100 000 people per square mile, about twice the population density of Manhattan Island and ten times the population density of the country of Singapore (2.2 million people in 226 square miles).

Cities are governed since the Cultural Revolution by revolutionary committees - formal government bodies. Their health services are coordinated by the local bureau of public health, which not only has responsibility for almost all the service units and almost all the health care personnel in the city but also for educational institutions for non-physician health care personnel as well. Each city differs somewhat in the organization of its health services, so generalizations beyond this level are difficult.

Three cities and their supporting countryside areas have been removed from the jurisdiction of the provinces in which they are situated and placed directly under the jurisdiction of the central government as independent municipalities. The largest of these is Shanghai, with a population of about six million in the city proper and three million in its nine surrounding counties, and Tientsin, with a population of four million. The third exempted city is Peking.

The role of the Shanghai Bureau of Public Health will be used as an example of the way municipal public health administration is now functioning and its relationship with other community services. There are six departments in the Bureau of Public Health: (1) curative medicine, pharmacy, hygiene, and public health, which has jurisdiction over hospitals, maternal and child health, middle medical schools, occupational hygiene, communicable disease, pharmacies and barefoot doctors; (2) medical research; (3) emergency medical care; (4) administration; (5) finance; and (6) personnel.

The Municipal Public Health Station, operated by the Department of Curative Medicine, Pharmacy, Hygiene, and Public Health, employs 300 to 400 people, most of whom are assigned to district and county stations. They have responsibility for epidemiology, sanitation, school health, and nutrition. There is also a Municipal Occupational Health Station with 200 inpatient beds, and a station in each district charged specifically with supervising BCG vaccinations against tuberculosis. Each district has a dental station, often located inside the district hospital. There are mental health stations in each district as well as in a few counties. The Bureau also has responsibility for maintaining statistics on Shanghai's health status.

Health services in the cities are shown in Table 2 and are described in greater detail below. The next lower level of urban organization after the municipal level is the "district", which is also governed by a revolutionary committee. Hangchow, a city of 700 000 people, is divided into four districts; the city proper of Peking into nine districts; and the city proper of Shanghai into 10 districts. Districts are subdivided into "streets" or "neighbourhoods", which are the lowest level of formal governmental organization in the city. The population of these neighbourhoods varies from approximately 40 000 to 70 000.

Annex IV

The neighbourhood is governed by a committee composed of representatives of the people in the area, cadres and, in diminishing numbers since the end of the Cultural Revolution, members of the People's Liberation Army. The committee's responsibilities include the administration of local factories, primary schools and kindergartens, the neighbourhood hospital or health centre, repair services, and a housing department, and the organization and supervision of "residents'" or "lane" committees.

The smallest unit in the urban areas is the "lane" (or "residents' committee") with from 1000 to 8000 residents. Some lanes are further divided into groups - for example, the residents of a single large apartment building - headed by a group or deputy group leader. The lane is governed by a committee chosen by, and from among, the "mass" living in the lane. This residents' committee is a "mass organization" rather than a formal governmental body and thus does not usually have the components of the revolutionary committees; the elderly play a key role in the organization and administration of these committees.[9]

Each of the nine districts of Peking city proper, to use it as an example, has a population of about 400 000. Among the services provided at the district level are hospitals, sanitation facilities, middle schools (roughly equivalent to our junior and senior high schools), and "prevention stations" for illnesses such as tuberculosis and mental disorders.

Within each district there are "neighbourhoods" consisting of approximately 50 000 people. The West District of Peking has nine neighbourhoods, of which Fengsheng neighbourhood, with a population of 53 000, is one. Within the Fengsheng neighbourhood's jurisdiction are six factories, eight shops, 10 primary schools, four kindergartens, and a neighbourhood hospital.

The people are grouped into 25 residents' committees, each of which encompasses about 2000 people. These committees usually provide a health station and other social services. Within each committee are organized "groups" of from 50 to 150 retired people and "housewives" (workers belong to groups at their place of work) who are led by a group leader and a deputy group leader who carry out a number of tasks in what we might call social or welfare work.

The residents' committee health station is located within a few feet of the residents' homes and its major functions are preventive work, health education, birth control and the treatment of minor illnesses. The health workers at the residents' committee level are local housewives who are called "red medical workers".

Health care is also given in factories either by worker doctors or by fully trained physicians. Most factories have a central clinic as well as health stations in individual workshops; often there is a factory hospital with beds for short-term stays.

The back-up institution for the residents' committees and the factory health stations is the neighbourhood hospital (which often has no beds and therefore might better be called a clinic in English). Neighbourhood hospitals are generally staffed by physicians fully trained both in traditional and in Western medicine, and by middle medical workers (nurses, technicians and assistant doctors). They are the referral centre for the local health stations and in turn refer patients to district hospitals and specialty hospitals. For example, the Fengsheng Neighbourhood Hospital occupies two large courtyards and has seven departments: medicine, surgery, acupuncture, traditional bone medicine, gynaecology, dentistry, and tuberculosis; and four auxiliary units: pharmacy (including both traditional Chinese and Western drugs), laboratory, X-ray, and injections. The public health department serving the neighbourhood is located in the hospital; patients requiring hospitalization are sent to the People's Hospital (the district hospital for the West District) several blocks from Fengsheng.

Although the equipment in the neighbourhood hospital is sparse and primitive, it seems adequate for the level of health work performed there. Simple laboratory tests and X-rays are available. In addition, the hospital acts as a centre for public health work in the neighbourhood.

Hospitals in China's cities range from these small neighbourhood hospitals to technologically sophisticated research and teaching hospitals. In Peking, for example, there are four research-oriented specialized hospitals operated under the aegis of the Academy of Medical Sciences; 23 municipal hospitals, 10 of which have over 500 beds, under the jurisdiction of the Peking Bureau of Public Health; and 20 district hospitals.

The theme of knowing by doing described in Mao Tse-tung's essay on Practice runs through essentially all aspects of Chinese life today.[10] A peasant learns the difficulties of determining agricultural priorities by taking part in decision-making. The urban doctor learns about the life of the peasants by moving to the countryside for a period of time and labouring with them. The child learns what it is like to be a peasant or a worker by growing vegetables or doing a job on consignment from a factory. And, according to this theory, the way to teach 800 million people the principles of health prevention and health care is to involve them in it.

The mobilization of the masses has been the primary technique by which the Chinese have accomplished their feats of engineering; the construction of their canals and bridges, their large-scale irrigation projects, and the damming of their rivers. The mobilization of the masses has been the key mechanism in their feats of human engineering also. In health care this has meant the broadest involvement of people at every level of society in movements such as the Patriotic Health Campaign; the recruitment of selected groups of people such as barefoot doctors from the population they are to serve; and the mobilization of the individual to "fight against his own disease". Individual concern with health reflects the Chinese belief in tzu-li keng-sheng or self-reliance, more accurately translated as "regeneration through one's own efforts" - a virtue as honoured today as its converse, mutual help.

In the early 1950s, in accordance with the fourth of the main health principles -- "health work should be combined with the mass movement" -- the Patriotic Health Campaign was launched. The primary goal of the mass movement in the early fifties was the elimination of mosquitos, flies, rats and sparrows (the sparrows were soon replaced on the list by bedbugs), and the people were mobilized to exterminate these pests under the guidance of health personnel. The Patriotic Health Campaign has been maintained and has been expanded to include the sanitary aspects of food, water, and the environment.

Health propaganda plays a crucial role in the participation of the community in health problems. Great attention is paid to educating the population on the importance of immunizations, on the handling of infectious diseases, and on the need for planned births.

The classic example of the use of mass organization in health has been the campaign against schistosomiasis. According to Horn this campaign was based on the concept of the "mass line" - "the conviction that the ordinary people possess great strength and wisdom and that when their initiative is given full play they can accomplish miracles". Before the peasants were organized to fight against the snails, they were thoroughly educated in the nature of schistosomiasis by means of lectures, films, posters, and radio talks.[11] They were then mobilized twice a year, in March and in August, and, along with voluntary labour from the People's Liberation Army, students, teachers, and office workers, they drained the rivers and ditches, buried the banks of the rivers, and smoothed down the buried dirt. Horn points out that in the antischistosomiasis programme the concept was not only to recruit the people to do the work but to mobilize their enthusiasm and initiative so that they would fight the disease.[12]

Annex IV

The elimination of venereal disease in China provides another example of both the mobilization and education of the people and the use of indigenous health personnel. In the early 1950s checklists of symptoms were posted in every store and every community centre throughout the country, and anyone with any of the symptoms was urged to get a blood test and be treated. Neighbourhood pressure was brought to bear on those who tended to ignore symptoms or who had a history of promiscuity. Where the concentration of the disease was great, specially trained individuals in the neighbourhoods made door-to-door visits to carry out examinations and blood tests. Prostitutes were identified and suitable alternative jobs were found for them - if necessary by moving equipment, such as sewing machines, into the brothels and turning them into factories. Thus prostitution was outlawed. Neighbourhood committees had, and continue to have, the authority to eliminate prostitution and promiscuity.[13,14]

In health, as in other aspects of the Chinese brand of socialism, there are no passive bystanders. One is expected to participate wholeheartedly in community public health measures, in the organization of medical care, and in the conduct of all aspects of one's personal life, including one's health. It is a country of mass and individual participation, of mass and individual responsibility. According to a recent description,[15] China views the role of the people in the following way:

> "To gain knowledge, people must be awakened from their half slumber, encouraged to mobilize themselves and to take conscious action to elevate and liberate themselves. When they actively participate in decision-making, when they take an interest in state affairs, when they dare to do new things, when they become good at presenting facts and reasoning things out, when they criticize and test and experiment scientifically, having discarded myths and superstitions, when they are aroused - then the socialist initiative latent in the masses will burst out with volcanic force".

Health manpower

There is no clear gradation from one level of health worker to another level in China. Job assignment is based much more on demonstrated skills than on the possession of a specific degree or other credential or even on the amount of previous education or experience. Nonetheless it is possible to divide China's health workers into rough categories:

Full-time workers:

- Higher medical workers:
  - Doctors of Western medicine
  - Stomatologists
  - Pharmacologists
- Doctors of Chinese medicine
- Middle medical workers:
  - Assistant doctors
  - Nurses
  - Midwives
  - Pharmacists
  - Technicians

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Part-time workers:

Barefoot doctors
Worker doctors
Red medical workers

Spare-time workers:

Health aides

The education of doctors of Western medicine has undergone profound changes in recent years. Students now often leave school after completion of junior middle school, at about 16 years of age. They then go off for at least two years, and more likely three years, to work in a commune or factory. At the end of that period of time, if they are chosen by their fellow workers, they are admitted to universities, professional schools or technical schools. The criteria by which they are chosen by their peers include not only their intellectual accomplishments, but more importantly the attitudes and principles they have expressed and lived by during their period of work. It is now said to be a person's "politics" and his "attitude toward the people" rather than how brilliant he is which determine whether he will be a good doctor or other kind of professional. Since 1971 some senior middle school graduates are also being admitted to medical school.

With regard to the style and content of education, not only was the curriculum generally shortened in the wake of the Cultural Revolution but the practical content was markedly increased relative to the theoretical content. Also, periods of direct work were included in all programmes. Thus a student studying physics now spends some of this time in factories learning how physics can be helpful in production and a student of biology spends time in the communes learning how biology can be helpful in agriculture.

The post-Cultural-Revolution curriculum is said to "eliminate the irrelevant and the redundant", by combining the theoretical with the practical and by using the "three-in-one" principle of: teachers teach students; students teach teachers; and students teach students. New methods of teaching are being tried. In contrast to the past, students are encouraged to question what they are taught much more and to participate much more in the educational process.

Since the Cultural Revolution, considerable emphasis has been placed in all medical schools on teaching traditional medicine. In some cities, such as Nanking, the former Chinese (traditional) Medical College has been combined with the Western-type Nanking Medical College; in others, such as Kwangchow and Peking, informal arrangements exist between the Western-type and traditional schools. In these cities some graduates of Western medical colleges may attend traditional colleges for further work after graduation.

Middle medical workers are trained in middle medical schools. Prior to the Cultural Revolution the training period was about three years. Since the Cultural Revolution the training of assistant doctors is said not to have resumed at all and the training of nurses and other middle medical workers, which has resumed over the past three years, has been shortened to about two years. Like all medical workers in China, they are given training in both Western-type medicine and traditional Chinese medicine.

The part-time health workers - barefoot doctors, worker doctors, and Red medical workers - are not thought of primarily as health workers at all; they are counted in the Chinese statistics - and apparently think of themselves- as primarily agricultural workers (barefoot doctors), production workers (worker doctors), or housewives or retired people (Red medical workers). These part-time health workers (1) remain an integral part of the group which they serve and (2) are part of a highly structured system which - while varying from place to place - seems usually to provide adequate supervision, to demand accountability, and to permit appropriate referral.

Annex IV

In the same way that much of the work of the part-time health workers seems to vary from place to place in China, so too does the pattern of their education. For the barefoot doctor the most frequent pattern appears to be a three-month period of formal training, either in the county hospital or in the commune hospital, that is fairly evenly divided between theoretical and practical work. The three-month training is followed by a variable period of on-the-job supervised experience. As seems to be common throughout most job requirements in present-day China, continuing training either on the job or in further short courses permits the upgrading of skills. Preference for entrance into medical college goes de facto to the barefoot doctors and other health workers because they are often the ones chosen by their fellow workers as the ones most suitable for such training.

Further details on all of these aspects of training and utilization of manpower and on the organization of health services, as well as family planning, may be found in the full report prepared on the health services in the People's Republic of China and in other publications.[16]

Conclusions

Faced with massive problems and extremely limited resources, the People's Republic of China has over the course of 25 years created a society -- and within that society a health care system -- which has acted vigorously to meet the basic needs of her people. While areas of very low population density clearly have less coverage than areas of high density -- as is true of every country in the world -- China has made great efforts to see that its still limited resources are distributed as equitably as possible. This is done, however, within the context of local self-reliance and initiative; the individual communes, which are the economic and political units of the rural areas, are responsible for the health services of their members. They fulfil these responsibilities in part with the help of mobile medical teams and other health workers on rotation from the cities and with the help of some county-wide or province-wide training facilities, but for the most part with their own resources. The coverage is still therefore somewhat uneven -- depending in part on the resources of the commune -- but is certainly much more equitable than in the past.

Precise figures for the utilization of the health services are unavailable, but it seems clear that, with the great efforts at merging traditional and modern medicine, many rural people are increasingly willing to avail themselves of the combined system. The efforts -- apparently highly successful -- to gain mass participation of people in sanitation and other health movements seem also to encourage the appropriate use of therapeutic facilities.

The cost of health services in China seems quite low, although again exact figures are unavailable. Economy is attained by a combination of low-cost local facilities, the use of traditional techniques and medicines, relatively moderate salary levels for health workers, and an incentive system increasingly based on social motivation rather than on economic incentives. While there is still often a direct charge to the patient at the time of service, it is low enough to be little or no barrier to access; most of the cost of health services is borne by regular "cooperative" individual family pre-payments or by contributions from factory or commune income. At higher levels of specialization much of the cost is borne by the appropriate government agency.

Perhaps the most difficult question in this analysis is the applicability of China's experience to that of other developing countries. It is often stated that because China's social, economic, political and cultural conditions differ so markedly from those of other countries, there is little in the Chinese experience that can be directly transferred. While this may be true -- and Chinese representatives have themselves frequently stated that each country must find solutions to its problems based on its own special circumstances -- there seem to be basic principles which may indeed be relevant to other societies. These include

the emphasis on local self-reliance, on brief training and structured part-time use of locally recruited and locally trained people, on the combination of modern and traditional medicine, and on preventive medicine. Perhaps even more important -- if difficult to implement -- are the principles that fundamental changes in health and health care may require funamental changes in the social structure in which they are embedded, that equitable distribution of resources must be a basic goal of society, and that the opportunity to be of service should be a prime motivating force in health work as in other human services. But it appears that the greatest lesson that China offers is that it can be done -- that a nation can within one generation move from a starving, sickness-riddled, illiterate, elitist semi-feudal society to a vigorous, healthy, productive, highly literate, mass participation society. If China can accomplish it, other nations can too.

Annex IV

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Annex IV

TABLE 1. LEVELS OF ORGANIZATION AND MEDICAL SERVICES IN CHINA'S RURAL AREAS

Organizational level	Population range	Medical facilities and personnel
Province or Autonomous Region (27 in China)	Approximately 1 million to 50 million	Provincial hospitals -- subspecialists, Western and traditional doctors bureau of public health
County (2 000)	Up to 1 000 000	County hospitals -- specialists Western and traditional doctors
Communes (27 000)	Up to 60 000	Commune hospitals or clinics -- Western and traditional doctors, assistant doctors, nurses
Production brigade (5-20 per commune)	500 - 3 000	Brigade health stations -- barefoot doctors, health aides
Production team (10-30 per brigade)	50 - 300	Barefoot doctors, health aides

TABLE 2. LEVELS OF ORGANIZATION AND MEDICAL SERVICES IN CHINA'S URBAN AREAS

Organizational level	Population range	Medical facilities and personnel
Municipality	From less than 100 000 to 11 million (Shanghai, of which about 6 million would be considered urban)	Specialized and teaching hospitals -- subspecialists bureau of public health
District	From less than 100 000 to 900 000 (a district in Shanghai)	District hospitals -- specialists epidemic prevention centres
Neighbourhoods (Also called "streets" or "urban communes")	40 000 - 70 000	Neighbourhood hospitals or clinics -- Western-type doctors, traditional doctors, assistant doctors, nurses midwives
Residents' Committee (Also called "lanes")	1 000 - 8 000	Residents' committee or lane health stations - Red medical workers with periodic visits by doctors
Group	50 - 150	

ANNEX V

CUBA

Background information

Cuba is an island with an estimated population of 9 170 000 (1972). The average population density is 77.1 persons per km^2. The climate is subtropical.

Agriculture is the most important economic activity. Cuba is the world's biggest producer of sugar. Diversification is taking place, with particular attention being paid to increased production of animal protein to cover the needs of the population. Industry is also being developed.

The JUCEPLAN (Junta Central de Planificación) is the Government unit responsible for the overall planning.

Reasons for starting the programme

The priority given to and the changes made in health services after the Revolution in 1959 were a political decision based on the needs of the population as perceived by the political leadership (which included a number of physicians).

Original situation

Until 1959 a considerable part of the total population, especially in the rural areas, had no access to any form of health services. The Government had a badly organized and insufficient service, mainly in towns. Private pharmacies, curanderos ("spiritualist" and "religious") and traditional birth attendants (comadronas empiricas) were rendering services to a considerable number of the population. Social insurance groupings (mutualistas) covered selected groups of industrial labourers. The medical school in Havana turned out 3-400 doctors a year, most of whom settled in private practice in the capital or other big towns, or emigrated. Private practice was subject to practically no control and varied widely in quality. There was no planned development of health services.

The pre-revolutionary situation can be summarized as follows:

1. Absence of a national health system, of elementary coordination of existing services, and of vertical programmes to solve priority problems.

2. Quantitative inadequacy of the services, the population being left to its own resources for medical attention, which for many people was unobtainable under those circumstances.

3. The low quality of State services compared with private services, which generally were very costly.

4. Predominantly curative services, there being hardly any preventive medicine.

5. Divorce between the teaching of medicine and social needs, doctors being trained for private curative practice.

The conceptual basis: the reasons why the particular approach was chosen

The Cuban experience in the health field is based on the results of a political, social and economic revolution that altered the socioeconomic and political structure of the country in the period following the Revolution in 1959. Health, education and means of communication

have the highest socioeconomic development priority in Cuba and get a considerable portion of the Government's budget and attention. Health care is considered a human right and an excellent political investment. Health services are free and run by the State. Equal distribution of services is a political dictum and is gradually being achieved. The health services are based on the following four basic principles:

1. The health of the population is a Government responsibility.

2. Health services should be available to the total population.

3. The community should participate actively in health work.

4. Preventive and curative health services should be integrated.

Planning is pragmatic and based on the scientific use of epidemiological data and on experience in other countries.

The World Health Organization's policies are being followed on regionalization, the use of auxiliaries, planning and programming, the eradication of specific diseases, MCH, etc.

Action taken

At the beginning of 1960, the Government took the decision that the State should be responsible for health. Full responsibility was given to the Ministry of Health for the development of health services, the setting of standards and norms and the implementation of policy.

In the period 1960-1961, the decision was taken to require six months' service in rural areas from all new medical graduates. They were sent into rural areas to develop services with whatever means were available. They were also given the task of selecting persons who could be trained as paramedical personnel.

The approach to the development of the health services was and is pragmatic and gradual. Private practice still continues (350 physicians), and the last mutualista (insurance of private, selected groups) hospital was absorbed in 1970; during its last years it was run by the Ministry of Health as a mutualista hospital serving only the original members.

In 1961 a National Medical Meeting, attended by 2000 physicians (out of 5000), was held in Havana, to explain to the medical profession the principles decided upon for the future development of the Cuban health services - full State responsibility, availability of services to all the population, community participation, and integrated services. Improved service conditions and possibilities for advanced training were also announced.

The basic WHO principles for the organization and development of health services were taken into account in the development of the services, and the implementation was gradual and pragmatic. In 1961-1962 a series of specific vertical programmes were established (reduction of gastroenteritis, tuberculosis, polio and malaria, DPT immunization, reduction of maternal mortality). To support the vertical programmes, health education teams were created to help organize the community.

In October 1962 the country was organized into "districts" responsible for all activities. The district medical officer was given full responsibility for all the health services in the district, including private practice. With some modifications, the districts correspond to the present regions. The regions were found to be too big to handle as units and were divided into areas and sectors. The health system is now fully regionalized with well defined functions at every level and centralization of inpatient (specialist care) and decentralization of outpatient (primary) care.

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In order to develop a well integrated health programme for rural areas, a pilot area was set up, with a health team responsible for the following eight areas:

integrated care for children;

integrated care for women;

integrated care for adults;

communicable diseases;

environmental sanitation;

food hygiene;

occupational health;

dentistry.

After six months the results of the pilot study became available. Health centres with the same programme were gradually developed all over the country, with the emphasis on underdeveloped areas. In rural areas 10-30 beds were attached to the unit, which is called the rural hospital. In towns the unit is called a polyclinic. In 1965 the hospitals were regionalized under great difficulties because of their very uneven distribution (e.g., in Havana 90% of all hospital beds were in one area). A general plan for hospital construction was made, absolute priority being given to areas without services. The plan was prepared in coordination with the plans of the political and other authorities, and the final decision on the overall plans were made by the Central Government.

In 1963 a small group of gynaecologists/obstetricians drew up a set of norms for the diagnosis and treatment of certain specific conditions related to pregnancy (toxaemia, rupture of the uterus, etc.). The norms were based on existing specialist knowledge. National norms for performance and techniques have been developed over the years by task forces in many fields (pediatrics, obstetrics/gynaecology, surgery, statistics and others). The norms are based upon the consensus of the health workers in the particular field and on generally accepted medical knowledge. The norms are considered as guidance, not as a straightjacket (la norma no es la orma). The norms are distributed all over the country and are used in basic training, inservice training, supervisory work, and the preparation of programmes and plans.

Training courses for different types of health staff were organized. The Ministry of Health was reorganized to deal with its extended and changing responsibilities. And norms were developed for different kinds of health staff and different specialties.

Planning, norm-setting and evaluation of the training programmes are undertaken by specialized national and provincial groups.

In the beginning of the 1960s most trained personnel were auxiliaries. At present the great majority of trained personnel are of the middle level. Thirty-four nurses' training schools run by the Ministry of Health are now producing nurses with three years of training, starting with students of the tenth grade. The nurses' schools are scattered in all the provinces so as to favour equally all areas and to allow those qualifying to work in their places of origin. Middle-level technicians receive two to three years of training in provincial or national schools. More than 20 types of technicians are trained, including technicians for the maintenance of equipment and buildings. Auxiliaries in both the nursing and the technical fields are also trained in large numbers. The needs in the different fields are carefully studied and training programmes are established accordingly. Staff functions are well defined and training (including social motivation) is adapted to the jobs to be performed.

Health staff and population ratios are increasing rapidly because of expanding training programmes. In 1971 there were 9.2 auxiliary nurses, 5.5 professional nurses and about 10 physicians per 10 000 inhabitants.

Modes of supervision and control

Regular technical and administrative supervision and control are carried out from the top to the bottom of the organization in a continuous and systematic way. There are no special supervisory teams; every person from the central, provincial and regional level supervises the organization below him, including the clinicians who belong to the normative groups. Even the vice-ministers go to a different province once monthly to look at the programmes under their responsibility. This ensures that each province is supervised at least once a year. These visits cover not only the headquarters of the province but district and area establishments as well.

Besides this administrative and technical control, the party and the mass organizations play an active role, seeing that the political directions given by the hierarchy are followed.

The supervisor gives actual assistance to those supervised in difficult tasks such as programming and evaluation, and teaching, as part of supervision, is considered very important and is effectively carried out.

Teamwork among personnel

The concept of teamwork goes beyond the classical coordination of activities of the local group for the direct delivery of services to the population. Every health worker at every level has the same philosophy and a very clear understanding of what his responsibility is in the accomplishment of the goals. A unified group has been created which crosses the boundaries of age, occupational status, level of training and disciplines.

The five most important factors in the esprit de corps that seems to have been instilled into the health teams seems to be:

1. All health staff belong to the same union which gives them a common sense of interest and responsibility and removes "factionalism" in the approach to problems.

2. Regular meetings are held with all the staff where all are expected to give their opinion and participate.

3. Clearly defined duties and responsibilities and a well defined system of interrelationships are established.

4. Indirect (and direct) pressure is exerted from the community, the mass organizations and the party through the established system of participation by the different groups at all levels for the creation of a team approach geared towards solving the problems of the community.

5. All levels and units participate in the planning of the activities, and this imparts a stronger sense of participation in the activities of the health system and possibly results in a more realistic planning of activities.

On the basis of the experience gained, a more structured programming process with more specified objectives and targets was developed. Since 1963 emphasis has also been put on developing an information system to be used in defining problems and monitoring progress.

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Environmental sanitation

There seems to be an imbalance between environmental sanitation and medical care, especially in the rural areas. For example, the rapid decline in the mortality due to diarrhoeal diseases (from 68 deaths per 100 000 inhabitants in 1962 to approximately 15 in 1972) has not been accompanied by a similar decline in morbidity. In fact, the decline in mortality has been achieved by an intensive programme of health education, early detection of cases and early hospitalization. This is linked with the general policy of bringing the scattered rural population together into concentrations around the production programmes. All the new rural housing projects fulfil all the sanitation requirements in relation to water supply, sewage disposal, and vector and rat control.

At the present time, a project is under study at the Central Government level to meet sanitation needs in the period 1976-1980.

Population involvement and mass mobilization

The whole population is enrolled in the fight against disease. A massive channelling of women into socially useful work has made a great contribution in this respect. At the local level, whether the rural hospital or the polyclinic, people's health commissions are active. These commissions are presided over by the physician-director of the institution and each one of the mass organizations or community organizations is represented, such as the Committees for the Defence of the Revolution, the Federation of Cuban Women, and the labour unions. In the rural areas a member of the National Association of Small Farmers, which belongs to the private sector, is also a participant in the people's health commissions. The team is completed by a representative of the party. It meets regularly and a great diversity of problems are discussed, such as schoolchildren's vaccination and the hygiene of local milk production.

From the very first years following the Revolution, each of these grassroots committees included a person responsible for health. Their coverage of the whole country and their enthusiasm made it possible very soon to give them enlarged functions. Among the first were those related to public health; others were related to education and voluntary labour. Year after year their functions have been increasing.

In the field of public health the first task, in conjunction with the health services, was immunization of the whole population. Other important activities were the removal of animals from near houses and the elimination of rubbish, to avoid the proliferation of flies and other disease carriers.

The Committees for the Defence of the Revolution alone group together over three and a half million adults. Their primary level of organization corresponds to city blocks in the urban areas and to large farms in the rural areas. The use of such an organization makes it possible to vaccinate one and a half million children with oral poliomyelitis vaccine in a few hours at almost no expense. The free availability of all the mass media of the country, including radio, press, and television, facilitates an approach to the people. The reasons for each health activity are explained. Each member of every health team is trained to adopt a community approach as a health educator or orientation-giver. The new physician is also trained in contact with the community from the first year of his studies.

Cost aspects

No absolute figures are available for expenditures in health, but 50% or more of the Government budget goes to health and education.

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Mortality rates (%, except as indicated)

Crude death rate	6.5	(1958)	5.8	(1973)
Infant mortality rate	33	(1958)	27	(1973)
Mortality rate age 1-4	2.6	(1958)	1.2	(1970)
Maternal mortality rate	1.2/1000	(1962)	0.6/1000	(1972)
Stillbirths	25/1000	(1962)	13/1000	(1972)

Disease-specific mortality rates (per 100 000)

Gastroenteritis	42.5	(1957)	18.4	(1970)
Tuberculosis	19.6	(1962)	7.3	(1970)
Typhoid	0.2	(1968)	0.0	(1971)
Poliomyelitis	32	(1960) cases	0.0	
Malaria	eradicated			

Morbidity rates (per 100 000)

Poliomyelitis	eradicated (342 cases were reported in 1961)			
Whooping-cough	15.6	(1967-1969)	7.2	(1970-1972)
Tetanus	4.3	(1967-1969)	2.3	(1970-1972)
Tetanus neonatorum	4.9/10 000	(1959)	0.0	(1970) - 1 case
Diphtheria	2.6	(1967-1969)	0.0	(1971-1973)
Tuberculosis	41	(1968)	17.8	(1971)

Leprosy control

Ninety-nine per cent. of patients and 85.4% (1972) of contacts are regularly supervised.

Coverage of tuberculosis programme

More than 90% of the population has been covered by the programme of diagnosis and treatment of tuberculosis. BCG is administered to about 95% of the newborn and repeat vaccination is given to all children in primary schools.

Present position and conclusions

Cuba has a health service system accessible and available to practically 100% of the population, with a referral system ensuring the appropriate level of care to each patient. Preventive, curative and rehabilitative services are well planned and integrated and show excellent results in terms of service indicators and mortality and morbidity data.

Certain factors have facilitated the efficiency of the Cuban health services, such as extremely high motivation of the health services, complete literacy, a high proportion of doctors and other health professional staff, good transport facilities, mass mobilization and the high participation of the people.

Annex V

APPENDIX 1

The following is a schematic representation of some of the main points that may have been instrumental in the successful development of the Cuban health services: