

# Three Paradoxes in Health Development

DONALD T. RICE, M.D., M.P.H.

**P**LANNING for health in developing areas of the world is agonizing and frustrating. Confronting the planners are multiple problems directly concerned with physical health, magnified by socioeconomic and cultural factors that are almost overwhelming. A severe shortage of personnel and money complicates the already confusing picture, thereby preventing use of more than a small fraction of the scientific knowledge available for health and medical care. Furthermore, conditions in these countries seem to result in the development of programs that appear contrary to goals.

Because of the immensity of the problems, I propose to examine three paradoxical situations.

1. The greater the proportion of the health budget spent on curative services, the longer the delay in permanent health improvement.

2. The greater the attraction of the mirage of Western health and medical care systems, the more difficult will be the development of an appropriate health and medical care system.

3. The smaller the difference in educational level between health auxiliary workers and the general population, the more effective those workers will be.

At first glance, one or all of these statements seem contrary to usual practice and attack suppositions on which much of health work is founded. The first would downgrade the importance of curative services. The second desecralizes the "sacred cow" of Western medical care and health systems. The third seems con-

trary to common sense. Yet, in thinking through the implications of these statements, the fundamental truth of each becomes evident.

## Preventive or Curative Services?

To rephrase the first paradox, the more effort, time, energy, personnel, and money spent on curative services, the less there is going to be for preventive services.

This economic fact confronts the human need in health planning and comes out second best. Few can bear to see people suffer from illnesses that they know can be cured. Medical care must be provided because the urgency to relieve suffering takes precedence over logical planning. It is not enough to know that the total and eventual improvement in a nation's health will be greater if physicians devote most of their time to preventive programs. If higher priorities are given to preventive programs in developing countries, it necessarily must be at the expense of suffering and possibly death of a few. Nations do not often face the cold, sober truth that humanitarian feelings can impede progress toward a higher standard of health.

This economic fact also encounters the political reality that most national governments are under pressure to alleviate the immediate suffering and sickness of their constituencies. Such political pressure is difficult to satisfy or withstand. It makes logical and essential allocation of expenditure for preventive services almost impossible to achieve.

There are instances where large investment in preventive measures has been courageously undertaken at the expense of additional medical

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*Dr. Rice is a lecturer in international health, public health, and preventive medicine, University of California School of Public Health, Los Angeles.*

care. The malaria eradication programs of India and other nations have yielded health benefits that far outweigh the original investment. More closely documented are the long-term savings from the diphtheria control program in New York during the 1920's and tuberculosis casefinding program in Detroit between 1936 and 1943 (1).

Numerous other recent programs of prevention in the emerging nations obviously have been sound financial investments. Nevertheless, most often the highest priority for the use of local monies is given to additional curative services. The truth of paradox one has been proved repeatedly. But in planning programs and in implementing them, this truth is often overlooked.

### **The Mirage of Western Medicine Paradox**

Recently Dr. E. A. Stead, Jr., of Duke University Medical School spoke at the 1964 annual meeting of the American Public Health Association about a plan for the training and use of physicians' assistants in North Carolina. Men with a high school diploma would be given 1 year of academic training and 2 years of on-the-job training to prepare them to carry out specified skilled procedures. They would be supervised by physicians who would have the legal responsibility for the patients' care.

Many persons associated with medicine and the related professions, as well as many knowledgeable American laymen, were shocked by this proposal. Yet, it is good to see this attempt to reduce the cost of our medical care system and to conserve the time of our professional health personnel for the more complicated functions.

The proposal also offers those interested in international health an argument supporting subprofessional medical training at a time when many developing nations are phasing out this category of personnel. This process seems to be motivated by an aura of colonialism attached to the training of physicians' assistants. A related reason for deemphasis seems to be the feeling among the leaders that these new nations should have nothing but the best in medical care. And the best that they see is in the West.

The mirage of Western medical care can be

as dangerous and as beautiful as the desert mirage. The danger, of course, is that the pursuit of one mirage, and then the next, may dissipate energy and confuse direction.

The World Medical Conference which met in Glasgow in 1961 is said to have been marked by the establishment of the "concept of the first rate." The proposition was enunciated that all medical schools around the world should be first rate. Second-rate medical schools could not be tolerated. This statement is part of the mirage and can be dangerous because it supposes that medical schools in other parts of the world should be fashioned in the image of the "first-rate" medical schools of the West. It leaves little room for cultural variations in the meaning of "first-rate." No one would say that the U.S. diet should be the pattern for the diet in other countries, or that the customary clothing in this country is what people should wear in other parts of the world, or that Western art forms must be integrated into the art forms of other continents. Why take it for granted that our style of medical education is best for other sections of the world just because it is first rate, or usually said to be first rate, in the United States? Perhaps the primary arguments against this assumption are the differences between the diseases and health needs in the United States and those in the emerging nations.

Furthermore, there are many who argue that our medical care system is not efficient. Even if it were good for the West, that is no reason it must necessarily be good for the countries of Africa and Asia. Wisely, these nations have not copied all our ways. Some they have rejected, some adapted. They must adapt or completely recast Western concepts in determining the nature of the medical care system most appropriate to the needs of individual countries.

Planning requires imagination and courage. Baumgartner (2) writes:

We must recognize that innovation and frank assessment of obstacles are essential to success. We need innovation particularly in revising our own ideas in terms of the places and conditions under which we shall have to work. There is no nation in which the methods for the delivery of medical services make complete sense and work with perfection. I think we need innovation and imagination more acutely in the delivery of services than we do in the laboratory, although we need them there too.

She goes on to make

... a plea for realism. The great need, for example, in most of the so-called less developed areas is not for sophisticated facilities and highly trained personnel to detect and treat rare, hard to manage, diseases. The substantial early advances in such areas are much more likely to come from rather basic, simple medicine, and from public health improvements.

An example of innovation and realism which illustrates this broader "concept of the first rate" is the Public Health Training College, Gondar, Ethiopia. Rosa (3) describes this college as not a "second-rate medical school, but a first-rate institution for training health workers who will in many ways be better adapted than medical graduates for the rural health services of this newly developing region in Africa. Elaborate clinical methods have been eliminated from the health officers' curriculum. Such methods can be a handicap rather than a help, since they divert limited resources from the primary task of preventing widespread communicable and nutritional diseases."

Sometimes the training and use of subprofessional health workers is approached apologetically. The sentiment is often voiced in these terms: "For the present 'such and such a country' will train and employ 'X' number of subprofessionals, but in 20 or 50 or 100 years, when its professional training goals are achieved, this type of personnel will no longer be needed." This statement is dangerous and self-deprecating and seems based on the false premise that medical care and preparation of personnel for it will be approximately the same when the millennium arrives as in the 1960's. Is there a doubt that the major portion of the U.S. medical practice will be computerized by 1980? This will certainly not occur in the disadvantaged parts of the world, but there too, it will happen, perhaps by 2000 A.D., long before the present professional training goals of most of the emerging nations are achieved.

So the mirage of the "best of the West" medical care hides many dangers. Those interested in international health must discern reality through the glare of the mirage in order to help discover ways to realistic and suitable goals and work with developing nations in devising appropriate and permanent solutions to their health problems.

## Values in Using Auxiliaries

Increased use of auxiliary health workers seems to be the key to reducing costs of both curative and preventive services. Unfortunately, their use is often restricted by the "mirage" of the ideal, even though there is much evidence that auxiliaries are often more effective than persons with full professional training. World Health Organization (4) literature gives us a few basic and pertinent definitions, concepts, and principles.

An auxiliary worker is a technical worker in a particular field with less than full professional qualifications. The auxiliary health worker is one who may also be trained to a level of function comparable to that acceptable for professional workers in a particular country or region.

The need for the auxiliary to act frequently as a substitute for, rather than as assistant to, professional personnel dictates the exercise of careful supervision, in order to achieve a feeling of adequate support for the auxiliary rather than one of discipline.

In the United States use of paramedical personnel has increased. Physicians rely heavily on the skills of technicians both in diagnostic and treatment procedures. Sometimes there is delegation of responsibility, although in most instances ultimate legal responsibility remains with the physician. Nevertheless, these specialized auxiliaries are an accepted and integral part of our health care system. As development proceeds, many of these technicians achieve quasi-professional status.

Nursing, which started out as an auxiliary service, has achieved professional status. As this has occurred, other auxiliaries have been trained and are widely used for nursing functions.

However, the really exciting advances in the training and use of auxiliaries have been in health programs among some minority groups. Examples are the auxiliaries used in the Indian health services, in work with Spanish-speaking people, and in programs aimed at lower economic groups. For the most part, these auxiliaries have worked in educational and preventive programs. Perhaps their greatest value is that they have greatly facilitated communication.

In tuberculosis control programs using aides among the Navajo, Deuschle (5) points out the

increased efficiency in communication that was possible. The professional would have needed many years to learn the language and to become acquainted with culture patterns. By training people of that culture and language in a limited number of technical facts and procedures, their effectiveness quickly supplemented the professional staff's abilities.

In a continuing experiment, growing numbers of auxiliary health workers are being employed by the Kern County Health Department in California. After using professional nurses and sanitarians for many years in an effort to improve the health habits of the seasonal agricultural workers, mostly of Mexican ancestry, the department decided this could best be done by people from those groups. For the past few years health leaders have been selected from among the laboring families. The leaders are given a short orientation in health and health department activities and employed to work in their own communities. They have been more effective than the professional workers were in stimulating use of the available health facilities. Sanitation in the labor camps has also improved.

The Los Angeles County Health Department is now employing a number of "untrained" college graduates as auxiliary health educators in an all-out immunization campaign under the Vaccination Assistance Act.

Even if sufficient professionally trained personnel were available, the question still arises as to whether they would be capable of rendering the type of service that a person or community needs. This paradox is most evident in the educational or preventive aspects of health, but it also is an important factor in the curative phases as well.

Because of their social status, education, and training, professional health personnel have fewer interests in common with the mass of the population. This phenomenon has been labeled the "status gap." It is further complicated by distinct professional subcultures, so that a physician often has difficulty communicating with other professional people, more difficulty getting the message across to lower socioeconomic groups, and is often helpless, ineffective, and frustrated in a cross-cultural milieu. This inability to communicate often limits even his

capacity to treat disease. But more important it severely hinders his ability to heal the whole person.

The status gap between physician and patient is often more obvious in developing countries, where classes are more rigidly defined, than in the United States. Although this gap also exists between the population and other health professions, it is usually not so marked. It even exists between the auxiliaries and the people they serve.

Reducing the status gap to a minimum by increasing the possibility of communication makes change more likely. Deuschle (5) reports a difference noted in two groups of auxiliaries.

It was recognized that many, if not most, Navajos who had been away from home for years in boarding school did have a difficult time readjusting to tribal life, especially 100 miles from town. This was borne out by the second group of "health aide" trainees who were somewhat more advanced in their formal schooling. While it was easier for them to read and write English, it was actually more difficult for them to translate this newly acquired medical information into the Navajo language and culture.

It has been repeatedly demonstrated that leaders with native intelligence but with minimum educational qualifications can be trained to be effective health workers, either curative or preventive. Perhaps the first documentation of this was by Hydrick in Java and later in Peru (6).

Troupin (7) further emphasized the importance of reducing the status gap by training people from within the cultural group in a relatively short time, thus being sure that the health worker and his population at least understand each other when he starts work. He points out that training for the use of many communicable disease control measures, including modern treatment of the most prevalent diseases in developing areas, need not be extensive. Yet, such a person "armed with a few vaccines and antibiotics . . . can be effective in some situations where Sir William Osler in his day was helpless."

This is not to say that only auxiliaries are needed. Professional personnel are essential in order to formulate plans and to provide suitable

training and supervision. It is not a question of one group or the other. In describing health work in Peru, Wellin (8) wrote:

It is useless to debate whether the highly qualified professional or the native auxiliary is the more effective in rural hygiene work. Rather, the need is to combine the virtues of both in complementary team efforts; each performs well what the other can perform only imperfectly. To be sure, the Los Molinos evidence demonstrates the usefulness of the public health physician in regions marked by many health problems and few health experts; it also demonstrates that in such regions the local hygiene worker, operating as a team member at the grassroots, can make a unique contribution to health work.

In many African nations extensive programs for the control of communicable diseases have used teams of auxiliaries supervised by a few professionals. These teams made significant contributions to the health of the people. Scott, who worked in Ghana, pays high tribute to the capabilities of his auxiliaries (9). Trained, supervised, and directed by a physician, several teams of helpers could satisfactorily diagnose diseases and treat large groups of the population. The essence was teamwork, with each member being proficient in a relatively simple phase of the total program. He said:

There is little doubt that the well trained and experienced auxiliary can show standards of skill which are comparable with that of the average medical man in performing his particular portion of the work, whether it be in examining slides for trypanosomes, in giving injections or in the performance of lumbar puncture.

The significance and necessity of starting with persons of rather low educational level and giving them specialized training based on repetition as a teaching technique has also been successfully demonstrated in other fields of community development. Agriculture, literacy campaigns, poultry keeping, and other programs have used this procedure.

Finally, in regard to the often-stated opinion that the use of auxiliaries is a stopgap procedure, the WHO Expert Committee on Professional and Technical Education of Medical and Auxiliary Personnel (4) points out: "The experience of developed countries shows that the need for auxiliary personnel does not diminish with the growth of professional personnel; the

contrary is the case, and the demand for auxiliaries may be expected to continue and even to increase."

## Conclusions

Experience in the development of health services in many parts of the world has proved that health professionals often are in short supply for a variety of reasons and it takes decades to develop an adequate number of them. However, auxiliaries can be trained to carry out many specific technical functions of professionals.

The status gap between auxiliaries and the people with whom they work can be minimized by selecting personnel whose basic education is just slightly higher than that of the general population. Reducing the status gap improves communication which, in turn, increases likelihood of cooperation.

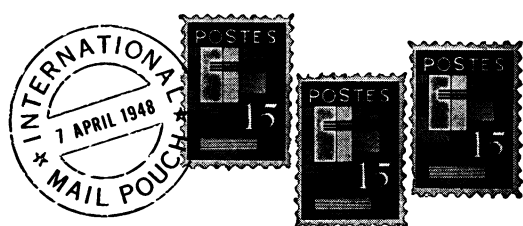
Western health systems cannot be adopted in their entirety and perhaps should not even be adapted. A fresh approach to improving each nation's health services is more likely to produce health planning that is appropriate and sound, with the possibility of keeping immediate and long-term goals in proper perspective. Permanent health advances can be achieved only by devoting a large share of the health budget to preventive services.

In the long run improvement in the health of the population will depend on the extent to which (a) the importance of prevention is reflected in allocating funds instead of allowing curative services to consume practically all the health budget; (b) a suitable, imaginative, and comprehensive system of health and medical care is created, instead of merely using some Western system as a model; and (c) the values, economy, and sensibility of using minimally trained auxiliaries are recognized.

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### ***U.S.-Czechoslovak Scientific Exchanges***

The U.S. National Academy of Sciences and the Czechoslovak Academy of Sciences have begun a 3-year exchange program of visits ranging from 1 month to 1 year by individual scientists of the two countries to lecture, exchange professional views, and conduct research.

The new program is the fourth this year between the U.S. Academy and one of its sister institutions in Eastern Europe; earlier, similar arrangements were concluded with the Council of the Academies of Yugoslavia, the Polish Academy of Sciences, and the Academy of the Socialist Republic of Romania. The U.S. Academy also participates in an exchange program with the Academy of Sciences of the U.S.S.R.

Under the Memorandum of Understanding on Exchanges, confirmed by the presidents of the Czechoslovak and U.S. academies, Academician Frantisek Sorm and Dr. Frederick Seitz, exchange visits totaling up to 40 man-months a year in each direction are provided.

The program will cover all the disciplines in which the two academies are mutually competent: physical, chemical, and biological sciences, including mathe-

matics; engineering sciences; and behavioral sciences. Under the program's flexible provisions, nominations for exchange visits may be made at any time. Arrangements are subject to the approval of the receiving academy, which may also suggest scientists of the other country whom it would like to receive.

The inter-academy understanding is not intended to be the exclusive instrument for scientific exchanges between Czechoslovakia and the United States, but rather to supplement existing contacts between individuals and institutions. Thus, the understanding provides that each academy will actively encourage and support interchanges beyond the scope of the formal program.

### ***Rheumatic Fever Study in India***

About 1,000 children in New Delhi, India, will participate in a Public Health Service-supported, 5-year study to determine if continuous penicillin prophylaxis will prevent recurrence of rheumatic fever in those who have rheumatic heart disease.

The subjects, aged 3 to 20 years, have not undergone previous prophylaxis. Half will receive penicillin at the Lady Hardinge Hospital and Cardiac Clinic in New Delhi once a month for 5 years; the other half will compose a control group.

Rheumatic heart disease constitutes a third of all heart disease in India and 35 to 40 percent of heart disease in New Delhi. The study will be directed by Dr. S. Padmavati, professor of medicine, Lady Hardinge Medical College.