Health Education in Principle and Practice

To work with—not to do things merely to and for people—became an accepted basic principle of the bilateral health programs in Latin America after the emergency period of World War II. This principle, the evaluators find, deserves much more emphasis in future, as well as current, programs, however, before the joint efforts of Latin and North American health workers can reach their maximum potential.

COMPREHENSIVE, effective health education programs embrace a wide variety of functions, all of which contribute to the overall goal of improved health practices. These functions may be grouped into the following broad categories:

Planning the educational phases of programs designed to meet specific health problems of a community.

Developing educational skills to carry out the program.

Producing educational aids.

Obtaining community participation in the solution of health problems.

Stimulating and maintaining an active interest in the health problems of the community and in the action being taken for their solution.

This listing does not indicate the order in which activities should be undertaken, nor does it indicate priority of importance. At particular times or at specific stages of development, different functions will be given major emphasis. Neither is there implied any rigid standardization of action for all communities, for programs must be developed to meet the needs and interests of the people concerned. The list provides, however, a convenient classification with which to evaluate the scope of programs within any given area.

This is the eleventh in a series of excerpts from the Public Health Service's evaluation of the bilateral health programs of the Institute of Inter-American Affairs undertaken during the decade 1942–52. For additional information, see page 1243 of this issue.

Planning the Educational Phase

Study of the development of the *Servicio* programs in the Latin American countries showed that in the beginning little consideration was given to the educational phases of the service or action programs. Emphasis was placed on immediate services, such as establishing a safe water supply, providing adequate sewage disposal, immunizing a population against diseases, and building and staffing preventive and curative medical clinics. These activities were planned with primary consideration for technical efficiency and effectiveness. The concepts of health, the attitudes, and the customary health practices of the people for whom these services were provided were given minor attention.

Later, as it became apparent that people must be willing to practice behaviors conducive to health if the full advantages of a health program are to be realized, the importance of systematic health education began to be stressed. In the planning that followed, emphasis was focused on direct educational programs which

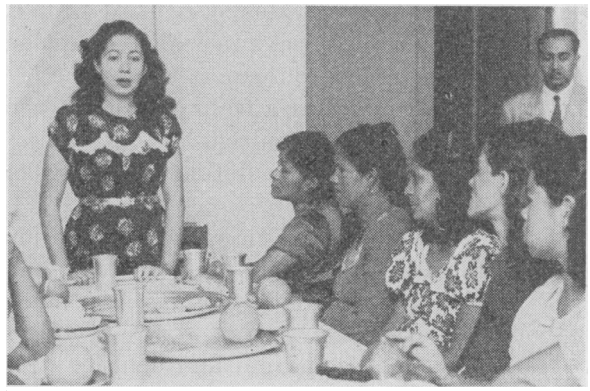
were carried on in connection with specific service programs, though not always as part of them. For example, in Chile, the health education personnel of the *Servicio* assisted other staff members in deciding what knowledge and behavior were desirable. They then organized a program for teaching the information and behavior in terms of the educational levels of the individuals for whom it was designed and according to the number of contacts available to the professional personnel doing the work.

Gradually, in some of the programs, the fact that every health service has an educational influence on the recipient came to be recognized. For example, the way in which a physician examines a patient or performs an immunization, or a sanitarian inspects a restaurant, was recognized as contributing to the education of the people. The effect of the education might be good or bad, depending on the extent to which the recipient's needs were being satisfied.

However, oftentimes health activities were being carried on without regard to, or recognition of, the inherent educational opportunities. Many informational and motivational opportunities were being lost simply because the educational potential was not recognized and the activities not planned to result in a favorable learning experience. If the educational as well as therapeutic phases of clinic service, for example, had been a part of planning, even though an excessively heavy caseload was carried by many health personnel, the activities would have been more meaningful and might have resulted in a reduction of readmissions to the health center and probably would have avoided creation of some antagonisms.

For example, in one community half a dozen persons displayed health department prescriptions saying bitterly, "The paper cannot cure." The physician had prescribed medicines which cost far more than the people could pay. A little more attention to the behavioral aspect of the problem during the consultation would have suggested the need for an alternative method of treatment or for assistance in securing additional financial resources. Consideration of both the patients' needs and economic limitations would have developed more favorable attitudes toward the health center.

At the time of the survey, there still existed among some of the health personnel the attitude that health education takes place only when teaching is done and that only the health educator should engage in health education. There was an obvious need for wider acceptance of principles such as these:



Word-of-mouth is supplemented by demonstration and participation as a public health educator in Colombia works with a group of pregnant mothers on problems of diet.

1. Health education is most effective when all health personnel, as well as other personnel engaged in educational effort, plan for the contribution each can make to meeting the health needs of a community.

2. Even though planning by one individual may appear to be logical and timesaving, such planning seldom results in concerted effort by all persons who have a part to play in carrying out the plan.

3. Emphasis in planning is best placed on the ways in which people learn and change their behaviors, rather than on the information professional people think should be given.

Development of Educational Skills

Possession of technical knowledge does not insure competence in stimulating learning among others. In addition, an understanding of the factors that influence changes in behavior and the development of skills in providing learning experiences for people are necessary. Certain of these factors and skills were identified as follows:

Understanding of the motivational forces for learning.

Ability to learn and respect the traditions,

social customs, and value systems of people, and ability to find ways in which education programs can fit into them.

Skill in stimulating a feeling of need when a problem is not recognized.

Competence in stimulating a desire to change.

Ability to find ways in which information can be made meaningful.

Skill in finding and developing channels of communication.

Ability to help people find solutions for their problems.

In the programs of a number of countries, the need to develop such skills has been recognized. Much of the emphasis, however, has been given to the training of teachers. Projects have included correspondence courses for rural elementary teachers in Bolivia, vacation courses in a number of countries, a textbook on health education for primary school teachers in Colombia, and a 5 months' course for normal school teachers in Brazil.

Top priority was being given to inservice training programs in Brazil. Recently, all key field personnel were brought together for a week of intensive orientation on supervision and teamwork in public health. Using a combination of the roundtable discussion and the workshop approach, and assisted by contributions from a cultural anthropologist, the group of physicians, engineers, and nurses developed a better understanding of how to work together more effectively in meeting the health needs of the community.

In both Chile and Brazil, health educators have worked with schools of public health toward the end of enriching the curriculum in health education. The need to develop practical field experiences in health education as an integral part of the preparation of public health workers is recognized as an urgent one.

Much still remains to be done in both preservice and inservice training in developing an understanding of the learning process and the ways in which educational experiences can be made meaningful. One of the biggest challenges to the cooperative programs is to develop methods for applying the latest findings of the social sciences in practical education programs.

Production of Educational Aids

Most of the educational effort in a majority of the countries has been devoted to the production of materials, and the tendency has been to make other activities supplementary to this one. In the beginning, centralized production in Washington of educational materials for the use of all the countries was thought to be an economical and effective method for disseminating information. This practice was later abandoned because differences in the culture, customs, language, and problems of the people in the various countries made such production impracticable.

At the time of the survey, however, in many of the countries materials were still being developed at the national level with little regard to the needs of the several sections of the country in which they might be used, or the existing differences in culture, customs, literacy, or terminology.

Frequently, expensive materials were produced when perhaps less expensive ones would have served equally well as aids to learning. Most of the work apparently was focused on the production of mass media for informing the people, with little attention to the development of teaching aids.

There was practically no evidence of an evaluation of the materials developed in terms of what was learned from them. The measures of effort were usually the number of pamphlets distributed, the size of the audience for radio programs or movie showings, with no data on the number and kinds of people who had learned anything from the material to which they were exposed.

Educational materials should be considered as aids to a cooperative health education program and not as the program itself. More adequate planning of programs in terms of learning and more attention to training of personnel in educational procedures should result in the demand for, the production of, and effective use of, better educational materials.

Insofar as possible, all educational aids should be pretested through preliminary trial use with representatives of the group for which they are intended before they are finally produced and distributed. Much time and money may be saved through such pretesting.

Obtaining Community Participation

Opportunity to study the cooperative programs at firsthand gave emphasis to the principle that only with community participation can health programs be successful. These programs do not operate in a vacuum; rather, they are affected by innumerable forces arising from all aspects of community life.

There was considerable evidence of collaboration by various professional groups. For example, in one state in Brazil a committee composed of both health and education authorities was developing a plan for an overall school-community health program. Similar cooperative arrangements were found at the national level in several of the countries.

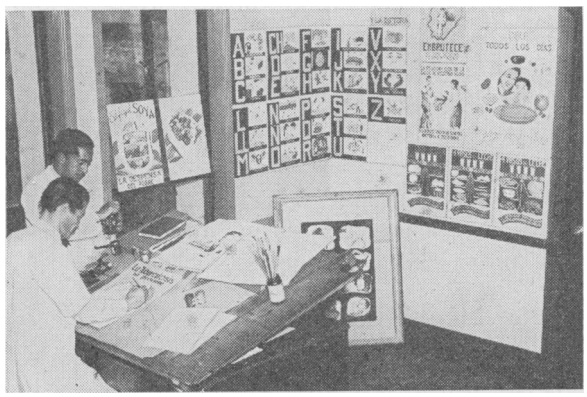
There was also some evidence that people in the community were working together to solve health problems. However, in some instances, the importance of the community effort had not yet been recognized by the professional health workers. Until health personnel understand the importance of having the people of the community work with them on health problems, maximum results will not be achieved from the programs developed.

With a view to their value in extending the limited community work observed in Latin America, the following suggestions, based upon experience and tested principles in furthering community participation, are offered:

1. A wide variety of social, psychological, educational, cultural, and related factors are to be considered in the planning and establishment of effective health services in any given local area. In a health education program, as in other health programs, functional knowledge of current attitudes, beliefs, customs, traditions, value systems, superstitions, and habits in relation to health and to everyday living is essential.

2. The expressed needs and interests of the people themselves are an important motivating influence for initiating individual, family, and community activities in solving health problems.

3. All communities, no matter how small, have an organizational structure on which to build. Potential avenues for reaching people exist and can be used for building community participation and cooperation.



Health education artists of the Servicio Cooperativo interamericano de Salud Pública in Colombia prepare education materials. Examples of their work appear on the walls.

4. There is no single pattern for solving community problems, since problem solving is essentially a creative process.

5. The creation of opportunities for people from all walks of life to become active partners in studying community health problems and in planning and carrying out health activities is an important component of health programs.

6. Problems and practices in health are bound together with many other aspects of daily living, for example, education, recreation, housing, social welfare, and earning a livelihood. Hence, health programs should be integrated with and related to problems, services, and resources concerned with the total well-being of the individual and the community.

7. The solution of health problems by a community provides an opportunity for fostering local, individual, and group initiative, pride, ownership, and responsibility. People are more likely to put into daily practice those learning experiences in which self-initiative and self-help are focal points in the education program.

8. A fundamental faith and belief in people's ability to contribute to the solution of their own problems is essential for effective and lasting health education.

Stimulating Interest

In some of the countries, public relations activities designed to stimulate and maintain ac-

tive interest in community health problems and programs were considered, along with the use of mass media, as the most important aspect of health education. In others, it was recognized that a good service program is the best approach to good public relations. The latter point of view is likely to result in the stronger and more permanent interest in and support of community health programs.

Role of Health Educators

During the early years of the bilateral health programs, health education consultants on the staff of the Institute of Inter-American Affairs visited most of the Latin American countries and concluded that the training of personnel in health education was one of the most outstanding needs. Consequently, in 1944, personnel were recruited, one from each of a number of countries, and given a year's training in health education in the United States. It was planned that these people would return to develop health education programs in their respective countries. Only a few of these individuals, however, were still working in health education at the time of the survey.

In recent years, health education consultants have been assigned to three countries. They have provided limited consultation to other countries. It appears that the countries served by full-time North American consultants have made the greatest progress in the development of comprehensive health education programs.

Many of the chiefs of field parties indicated a desire to strengthen the health education programs in their countries, but had not had full-time technical help to develop programs in terms of the specific needs of the country. There was a general feeling in many of the countries that a physician should be the director of the program. This attitude apparently sprang from considering health education only in terms of scientific content, with little regard for competence in educational methods and procedures.

Training Health Educators

In terms of long-range planning, the early selection and training of health educators for service in Latin America is very important. If possible, health educators should be trained in Latin American institutions. This may well require strengthening of the health education programs in the existing public health faculties in Puerto Rico, Brazil, Chile, and Mexico. Assistance from the Institute of Inter-American Affairs in this work might include purchase of equipment and assignment of personnel to participate in curriculum planning, demonstration teaching, and supervision of field training.

The professional health educator should have a bachelor's degree, preferably with a major in education or social science. A postgraduate degree should be obtained from one of the public health faculties of Latin America. Following postgraduate training and at least 3 years of field experience, professional health educators might well be given a fellowship for training in the United States, where they may observe and participate in the health education programs in local or State health departments and supervision of field training.

At present, the number of persons qualified for postgraduate training in many of the countries is so limited that it seems necessary to accept for training individuals without degrees if current emergency personnel needs are to be met. Several methods of obtaining the essential people are under way. In Chile, the primary focus is on the preparation of health educators and teachers to work through the schools to the community. In Peru and Brazil, plans are being formulated to train health education auxiliaries who have had primary or secondary education and to assign them to local or district programs to provide educational service in the community.

Latin American countries are making tremendous efforts to raise the educational level of their people. As more and more people become better prepared educationally, these short-term training programs will need to be revised accordingly. Otherwise, health education in these countries will be disastrously restricted because personnel with limited preparation are not equipped to carry out the many complex functions of health education in an advanced society.

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CDC 1951–1952 Activities

Public Health Service Publication No. 302. 43 pages. Tables; charts; illustrations. Available on request to the Communicable Disease Center, Public Health Serivce, Atlanta, Ga.

This is a summary of major activities of the Communicable Disease Center during the fiscal year 1952. Abstracted from basic reports, the material presented here emphasizes composite end results and brings into common focus the varied activities of the several components of the center.

The report is divided into two general parts: General Activities, and Activities Directed Toward Specific Diseases or Problems. It is not a complete catalog of projects undertaken during the year, the intent being, rather, to indicate in general terms of scope, nature, and interrelationships of activities carried on in different areas of public health by the combined staff of the CDC.

A Comprehensive Program for Water Pollution Control for the Red River of the North Basin

Public Health Service Publication No. 293. 1953. 7 pages. Maps. Available on request to the water pollution control agencies of Minnesota, North Dakota, and South Dakota from the Basin Office, and from the Division of Water Pollution Control, Public Health Service, Washington 25, D. C.

The Red River of the North Basin, formed by the junction of the Ottertail and Bois de Sioux, forms the boundary between North Dakota and Minnesota as it flows northward. The basin contains 90 municipalities with sewer systems which serve a total population of 189,200. Industrial wastes contribute a population equivalent of 76,000 to municipal sewer systems for a total untreated population equivalent of 265,200.

Despite the fact that 75 percent of the sewered municipalities and 65 percent of the industrial establishments provide treatment for their wastes, discharge of insufficiently treated wastes creates a health problem. Water quality for industrial uses, irrigation, and stock watering is also impaired.

This publication outlines a water pollution control program based upon the findings of a number of stream studies, surveys, and investigations undertaken by the health departments and water pollution control agencies of North Dakota, South Dakota, and Minnesota. Included are suggested improvements in treatment facilities for the towns in the area.

In conformance with the Water Pollution Control Act of 1948, the Public Health Service has adopted the comprehensive program developed by the States as meeting the requirements of the law.

The Dog in Medical Research

Public Health Service Publication No. 312. 1953. 19 pages. 20 cents.

In July 1949 a pamphlet was prepared by the surgery study section of the Division of Research Grants, National Institutes of Health, entitled "Care of the Dog used in Medical Research" (Supplement 211 to *Public Health Reports*). It included brief discussions on: animal research and medical progress; public relations; procurement; selection of dogs for specific purposes; care and handling; quarters; and feeding.

This publication is a revision of the earlier pamphlet and features a more comprehensive review of procurement problems and methods, as well as amplification of information on care and handling of the dog. It was prepared particularly for the use of institutions and individuals receiving Public Health Service research grants, with the hope that the standards and recommendations would be used as a guide by all institutions using dogs for research.

The committee which prepared the revised addition consisted of Drs. Claude S. Beck, professor of cardiac surgery, Western Reserve University; W. T. S. Thorp, chief, section on comparative pathology, National Institutes of Health; and C. F. Schlotthauer, Mayo Foundation, Rochester, Minn.

Aortography by Percutaneous Catheterization of the Femoral Artery

Public Health Service Publication No. 283. 1953. 6 pages; illustrated. Available on request to the National Heart Institute, National Institutes of Health, Public Health Service, Bethesda 14, Md.

This publication, prepared for physicians, explains a method to improve the contrast study of the aorta. Percutaneous catheterization of the aorta via the femoral artery followed by X-ray examination makes possible the visualization of any portion of the aorta.

Materials and methods for use in abdominal and thoracic aortography are described. The advantages of the commonly used aortographic methods are compared, and a bibliography of percutaneous femoral artery aortography and of other methods is appended.

The Preschool Child Who Is Blind

Children's Bureau Folder No. 39. 1953. 23 pages. Illustrated. 10 cents.

The fourth in a series designed to help parents of a child with a handicapping condition, this booklet stresses the fact that the child who is born blind is more like a seeing child than different from him, and

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is of the same average ability. If the blind child gets the opportunity, he can learn to do almost everything that the child with sight can do.

The booklet tells how the parents of a blind child can help him develop skills and abilities and have the experiences of normal life. Attention is called to community facilities and agencies which can help parents.

A Comprehensive Program for Water Pollution Control for the Yakima River Basin

Public Health Service Publication No. 292. Water Pollution Series No. 51. 1953. 15 pages; tables; maps. Available from the Washington Pollution Control Commission, Olympia, Wash., and from the Division of Water Pollution Control, Public Health Service, Washington, D. C.

The Yakima River system drains an area of 6,000 square miles located on the eastern slope of the Cascade Mountain Range and lower plateau in central Washington, one of the oldest irrigated agricultural areas in the Pacific Northwest. The total combined wastes reaching the water courses from the 22 municipalities, institutions, and other population centers, and 33 industrial establishments have a population equivalent of 200.000.

During the summer of 1951, the Washington Pollution Control Commission conducted a water-quality survey in the Yakima River area. Their findings indicated that although substantial progress has been made in correcting conditions, the pollution problem is still causing serious damage and interfering with the valuable uses of the waters in the basin.

This publication discusses the water-use and water-quality objectives developed by the Washington Pollution Control Commission for the basin. It also outlines the comprehensive program adopted to meet these objectives. Municipal requirements are given for various cities and industrial requirements for specified industries in the area. Appendixes include water quality objectives and minimum treatment requirements developed by the commission and minimum requirements for prevention of industrial waste pollution.

In conformance with the Water Pollution Control Act of 1948, the Surgeon General of the Public Health Service has adopted the Washington Pollution Control Commission's program as a comprehensive program meeting the requirements of the law.

The Virus and the Cell

Burnet, Sir F. Macfarlane, F. R. S. The R. E. Dyer Lecture 1952. Public Health Service Publication No. 328.

The second R. E. Dyer lecture at the National Institutes of Health, Public Health Service, was presented October 29, 1952, by Sir F. Macfarlane Burnet, director of the Walter and Eliza Hall Institute of Medical Research in Melbourne, Australia. This publication contains the text of Dr. Burnet's talk, as well as the introductory remarks of Dr. W. H. Sebrell, Jr., director of the National Institutes of Health and Dr. L. T. Coggeshall, dean, division of biological sciences, University of Chicago.

Dr. Burnet spoke on the interaction of influenza virus with the cell it parasitizes. He noted first that there is a basic similarity between the action of a bacterial virus on a coliform bacillus and the action of the influenza virus on the cells of the human respiratory tract or those of laboratory animals. The process of the interaction takes place in four steps: (1) Adsorption to the cell surface, at first reversible, then definitive; (2) entry of the virus into the cell and its disappearance as an infective entity; (3) an eclipse phase toward the end of which manifestations of virus activity, hemagglutinin, and complement-fixing antigen appear a little before infective virus; and (4) the gradual accumulation of new virus and its progressive liberation into the fluid without, in this stage at least, any gross morphological damage to the cell.

Dr. Burnet discusses each of these phases in detail in light of the progress that has been made in the understanding of them. He gives particular emphasis to the genetic approach, saying "it is clear that the intracellular multiplication of viruses cannot be regarded as simply a matter of binary fission plus the occasional appearance of a mutant form. Multiplying genetic mechanisms can in some way interact to give recombination of qualities in some of the descendants."

In his conclusion Dr. Burnet points out two lines along which we may look for important advances in virus research: that of the genetic approach; and an attack on the nature of the soluble complement-fixing antigen. "If the idea is correct that the antigen is essentially a host cell component bearing a virus 'pattern,' we may have in our hands a clue to what most biologists would, I think, agree is the central problem of biological chemistry—the replication of organic pattern within the cell. If we can implant at will into the cell new patterns to which the cell will respond by the production of detectable replicas, we should possess a tool of great power."

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