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REGIONAL ADVISORY COMMITTEE ON HEALTH STATISTICS

FIFTH MEETING



PAN AMERICAN HEALTH ORGANIZATION
Pan American Sanitary Bureau, Regional Office of the
WORLD HEALTH ORGANIZATION

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REGIONAL ADVISORY COMMITTEE ON
HEALTH STATISTICS

18-22 November 1968

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I. INTRODUCTION

The Regional Advisory Committee on Health Statistics met in Washington, D. C., from 18 to 22 November 1968. Dr. Abraham Horwitz, Director of the Pan American Sanitary Bureau, welcomed the members of the Committee. A brief review of the results of the previous four meetings of the Advisory Committee (1,2,3,4) was made by the Director, who mentioned also the Inter-American Investigation of Mortality (5) and the Inter-American Investigation of Mortality in Childhood (6) which is now under way. The first objective of the Fifth Meeting was to obtain advice regarding multinational centers of medical statistics. Other activities considered were those pertaining to the Ninth Revision (1975) of the *International Classification of Diseases*, the data processing and computer program, and the research program.

In recent years there has been much evidence in the Americas of efforts directed toward the establishment of educational, research, and advisory institutions of a multinational character. A multinational center may be a national institution that offers its services to a group of countries or to the Region, an institution maintained and directed by several countries, or one in which a group of national or regional institutions combine their resources. Such multinational centers have formed a part of the Organization; some have had years of service to their credit; some have been established recently; some are still in the embryo stage; and some are being planned. Such institutions, multinational in nature, will continue to spring up and grow in the Americas. They will stimulate and facilitate the transfer within the Region of the results obtained in scientific and technological research.

The time is opportune to consider the possibility of establishing multinational centers of medical statistics. In the past 10 years substantial progress has been made in the training of professional and inter-

mediate-level personnel in health statistics. However, still far off is the achievement of the "critical mass" with which the enterprise of health statistics will become self-sustaining. It is necessary to prepare professionals in advanced courses for education, research, and advisory services in universities and government agencies. To this end, multinational centers could become an efficient instrument. Dr. Horwitz invited the Committee to make recommendations on this matter after a thorough discussion, as well as on other important subjects included on the agenda.

II. MULTINATIONAL CENTERS IN THE RESEARCH PROGRAM OF THE PAN AMERICAN HEALTH ORGANIZATION

Research in medicine and related sciences is a part of a total health program and is ultimately justified because of its favorable effects on levels of health. Research is an indispensable means of uncovering causes of disease, preventing disease, finding remedies, and guiding the use of resources.

Indeed, the new attitude toward research was incorporated in the 1961 Declaration to the Peoples of America (7), reiterated in a number of subsequent statements of international policy, and spelled out in detail as part of the Regional Scientific and Technological Development Program (8) promulgated by the Presidents of America at Punta del Este in 1967.

Thus, the Pan American Health Organization is committed to expanding its program of research, which includes the inauguration of a set of multinational programs designed to make the most effective use of specialized skills and equipment existing in Latin America, and to overcome the handicaps of isolation, by financing cooperative efforts for research and research training, by involving distinguished biomedical scientists from all parts of the world in the work being planned and conducted by Latin American institutions, and by obtaining for PAHO the advice of outstanding experts from Latin America and elsewhere.

The program that is being developed will extend the existing research activities of PAHO by means of a series of new initiatives. In one—the

Multinational Programs for Research and Research Training—the field of medical statistics is being considered as a possible area for inclusion. Because of scarcity of resources, full advantage must be taken of the opportunities to combine forces in order to overcome the handicaps inherent in separated, specialized, and relatively limited research efforts.

The Organization is committed to encouraging the development of multinational research. It is hoped that ultimately all the existing centers for advanced training and research in the major disciplines related to health in Latin America will become formally associated with each other. The aims of such an association could be to increase the number of highly trained teachers and investigators by coordinating research and training at the graduate level, and to arrange through assistance to the multinational centers for an exchange of professors and investigators. The Organization would provide the necessary experts and supplementary funds so that groups of existing institutions of recognized standing in a given field could undertake joint efforts in research and teaching. The directors of the centers in each field will constitute a board responsible for recommendations on such matters as joint curriculum development, visits by noted investigators and teachers, collaborative research, exchange of students, and shared use of expensive equipment.

Three fields have been selected for initial emphasis: clinical medicine, viral zoonoses, and regional library services. However, biostatistics is an important related field and multinational centers in medical statistics are essential in order to provide the necessary statistical advisory service and consultation to other centers and research programs. It is hoped that the resources in terms of centers and highly qualified professors to give training at the graduate level in this field will soon become available.

III. MULTINATIONAL CENTERS IN MEDICAL STATISTICS

Present Programs in Potential Centers

The programs of those universities with which members of the Advisory Committee were affiliated were considered in terms of their

potentiality for development as part of a program of multinational centers in biostatistics.

Biostatistics Department, School of Public Health, Faculty of Medicine, University of Chile

The Biostatistics Department of the Faculty of Medicine has two university units for statistics, one in the Faculty itself and one in the School of Public Health. They function as a single working group. The Department has three sections—health statistics, mathematical statistics, and demography—and 11 professional staff members, nine of whom work on a full-time schedule. The Department's goal is to contribute to raising the level of health through the optimal utilization of statistics in the health field. Teaching, research, consultant services, and promotion of the uses of statistics are activities of the Department. The teaching is done at three levels: undergraduate, graduate, and postgraduate. The graduate students are divided into those who take statistics in their courses on public health and those who are specializing in health statistics in a course of 15 months.

In 1970 it is planned to offer a program leading to the equivalent of a Master's degree in biostatistics. Students in the course would be able to take specialized studies to prepare for either posts in the health services or teaching positions in medical schools.

Department of Mathematics Applied to Biology, School of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil

This Department has a two-year postgraduate course in medical statistics with the following curriculum:

Basic subjects: Mathematical review, probability, introduction to statistics, bioassay, introduction to demography, general ideas of sampling.

Special subjects: Sequential analysis, non-parametric statistics, multivariate analysis, mathematical models in biology and medical problems.

In this program young research workers are being prepared to promote in their own institutions the use of statistics in order to improve the design and analysis of experiments. During the course the students participate in all activities of the Department such as consulting sessions and teaching in graduate courses. The course has been conducted on a tutorial basis.

Epidemiology and Biostatistics Section, Department of Preventive Medicine, School of Medicine, University of Valle, Cali, Colombia

Up to the present time the Epidemiology and Biostatistics Section has devoted its efforts principally to teaching medical students and residents in preventive medicine. The teaching of biostatistics is done in close relation to studies in epidemiology and preventive medicine. Several research projects have been carried out or are now under way.

The School of Public Health of the University of Antioquia in Medellín is already training intermediate-level statisticians. A new section of biometry is being established in the School of Medicine of the National University of Colombia in Bogotá. These three schools could combine facilities and human resources in statistics and epidemiology to become, when strengthened by additional faculty, a multinational center.

Biostatistics and Demography Center, School of Medical Sciences, National University of Buenos Aires, Buenos Aires, Argentina

This Center has recently been created at the University of Buenos Aires under the joint sponsorship of the Ministry of Public Health and the Pan American Health Organization. By teaching at different levels, providing consultant services on research, and conducting research in the public health field, the Center is promoting the application of statistics in medicine. The plan of activities of the Department of Biostatistics includes several courses for different groups and consultant services in six fields; that of the Department of Demography includes three courses, advisory services, and three research projects. In the program for 1969, priority will be given to the training of staff to teach in the medical schools in Argentina.

*Department of Applied Statistics, School of Hygiene and Public Health,
University of São Paulo, São Paulo, Brazil*

Another center in Latin America which has already made considerable progress in building up a teaching and research staff is the Department of Applied Statistics of the School of Hygiene and Public Health of the University of São Paulo, Brazil. Its achievements in the fields of mathematical and applied statistics and demography offer a solid base for an expanded program in medical statistics, which should be planned in close relation with the School of Medicine.

Other Centers

The need for centers in other geographic areas of Latin America such as Mexico and Central America, Venezuela, and the Caribbean area was also stressed.

Training in Medical Statistics in Latin America

The recommendations made in previous conferences (South American Conference on Teaching of Medical Statistics (9) in 1958 and Second Conference of Directors of Schools of Public Health in Latin America (10) in 1961) have stressed the need for programs for the training of professional statisticians, intermediate-level statisticians, and statistical auxiliaries. Several schools of public health (University of Antioquia in Medellín, Colombia; School of Public Health, National University of Buenos Aires, Argentina; School of Public Health of Peru; School of Public Health of Mexico) are giving training at the intermediate level and some of these schools, as well as national health services, are offering training for statistical auxiliaries.

The purpose of the present meeting is to make recommendations for the establishment of multinational centers at the graduate level that will prepare professional statisticians, especially teaching staff, in the field of medical statistics in order to extend the teaching and advisory services in this field to each of the 146 medical schools in Latin America.

The professors and other teaching staff of medical statistics centers should have university education at the Doctorate or Master's level or

at a lower level corresponding to the basic university degree in the United States of America. The latter group would include personnel qualified to undertake additional studies leading to the Master's degree or its equivalent or eventually to another advanced degree.

The centers' programs of studies leading to the professional degree (Master or Doctorate) should be designed to prepare statisticians capable of solving the various problems encountered frequently in medical research, of instructing personnel at other levels, of promoting the use of biostatistics in the medical and other health sciences, and of developing research. Also, it would be advisable to organize another program for the preparation of statisticians of lower level capable of collaborating in research and teaching under the supervision of the professional statistician. Some individuals in this last group with sufficient qualifications and interest would continue their studies and advance to higher professional levels.

In order to promote the application of statistical methodology to medicine the centers should give introductory courses for the teaching staff of schools of medicine and related sciences, provide advisory services on research, and coordinate their own activities with those of institutions concerned with medical education, as for example, the associations of schools of medicine.

RECOMMENDATIONS

1. The Committee recommends the creation of new research and training centers of medical statistics and the strengthening of those already existing in the countries of Latin America in order to extend teaching and research in this field. Some of the centers should be multinational, centralizing the efforts and resources to form more versatile and efficient centers, and interchanging professors and investigators through fellowships. Curriculum content in these centers will vary depending on the institution and on the existing demand and resources, but in all cases it should lead eventually to the preparation of professional personnel holding the equivalent of a Master's or a higher university degree. In addition, the preparation of personnel at other levels may be a function of these centers.

2. The Committee recommends that the personnel so trained should give courses and consultant services not only within the medical schools but also in schools of related sciences and in specialized institutions; that the teaching staff of the centers of biostatistics should comprise personnel of the highest level and include specialists in several fields of statistics, for example, in the design and analysis of experiments, sampling, health statistics, etc.; that the centers of biostatistics should coordinate their activities with those of other centers and organizations that exist in the area and can contribute to the attainment of these objectives.

3. As a basis for an active program of teaching, advisory services, and research in all medical schools, the Committee recommends that an analysis be made of the quality of teaching and advisory services rendered in biostatistics, using for this purpose the data collected as part of the study of the teaching of preventive medicine.* It further recommends that all the schools of medicine incorporate in their teaching staff professors of biostatistics who have knowledge of the medical sciences, in order that instruction may be directed to the areas of interest of the professors and medical students and thus increase their recognition of the value of statistics and strengthen their use of statistical methods in research.

4. In order to realize the full potential of the multinational centers, it is very important that statisticians at the professional level be acquainted with the possibilities and the limitations of the most modern techniques of data processing and computers. For this reason the Committee recommends that the multinational centers should have access to computing centers; these, in turn, should maintain communication with each other, taking maximum advantage of similar programs that have been prepared in other places and establishing an efficient exchange procedure in order to avoid duplication of work and achieve rapid progress.

*Study on Medical Education and the Teaching of Preventive and Social Medicine. Department of Human Resources Development, Pan American Health Organization. (Data are being collected during the period 1966-1969.)

5. The Committee recommends that the multinational centers establish agreements with the universities whereby academic degrees and titles in medical statistics will be awarded and will be recognized by both universities and governments for administrative purposes as well as for the purpose of strengthening the professional career in statistics.

6. The Committee recommends that the support of the Regional Scientific and Technological Development Program of the Organization of American States be enlisted for the multinational centers of biostatistics, in order to strengthen research and teaching in medicine and related sciences.

7. The Committee recommends that the textbook program for medical schools sponsored by the Pan American Health Organization include specifically the discipline of biostatistics. In addition, a system of information on statistics texts in the different languages of the Region should be established.

IV. INTERNATIONAL CLASSIFICATION OF DISEASES

Ninth Revision (1975)

The Committee noted the plans of the World Health Organization for the Ninth Revision (1975) of the *International Classification of Diseases* and the report on this subject prepared by the National Center for Health Statistics of the United States of America.

With reference to the plans for the preparation of the Ninth Revision, the Committee agreed on the need for WHO to adopt a calendar of activities whereby the basic volumes of the Revision would be made available in sufficient time to permit completion of the preparations for the use of the Revision beginning on 1 January 1978.

For this purpose, it was considered advisable that a timetable be established to permit the simultaneous preparation of the Tabular List (Volume I) and of the Index (Volume II). In this way the major part of the task would be completed and ready for review at the International Conference for the Ninth Revision.

The Committee believed that the English and the Spanish versions of the Ninth Revision of the *Classification* should be prepared simultaneously so that the difficulties created by the delay in the release of the basic volumes may be avoided.

Regional Activities for the Introduction of the Eighth Revision (1965)

The Committee acknowledged the important role of the Latin American Center for Classification of Diseases (CLACE) and of the Pan American Health Organization in connection with the Eighth Revision (1965) of the *International Classification*. They have conducted a wide variety of activities, including formulation of suggestions on the sections on infectious diseases and nutritional deficiency, provision of teaching materials, organization of seminars and courses and advisory services on the use of the *Classification*, as well as preparation of the Spanish version for publication. Courses of training in the coding of causes of death using the Eighth Revision have been conducted by CLACE, PAHO consultants, and national personnel for students from all countries of the Region. Copies of Volume I of the *Classification*, of the Provisional Alphabetical Index, of the Manual of Instructions for Coding Causes of Death, and other material for training courses have been furnished to the countries of the Region.

Medical Terminology

The Committee was concerned about the problems created by the increasing complexity of medical terminology, which has resulted from the continuing advance of medical sciences and from the variations in usage of terms in the different countries of the Region. This trend is inevitably reflected in the growing number of terms that have to be included in both the Tabular List and the Alphabetical Index. No procedure at present exists for eliminating terms no longer in use that are carried over from previous revisions of the *Classification*. There should be some means whereby new approved terms that are incorporated into the medical vocabulary, as well as an explanation of their meaning, could be circulated among the various countries. The cooperation of the medical schools and medical associations and of specialists in the different fields should be sought in an effort to solve the problems posed by medical terminology.

Other Activities

Recognizing the importance of morbidity and mortality statistics in health planning, the Committee emphasized the value of training medical students and physicians in the use of the international death certificate, as a means of improving the quality of the statistical information collected in the various countries.

Conscious of the slowness and complexity of the process of improving statistical information, the Committee agreed that every effort should be made to ensure the correct interpretation of medical terms and the proper classification of causes of death.

In spite of the activities carried out in Latin America to promote proposals for the Eighth Revision of the *International Classification*, only two Latin American delegations participated in the International Conference for that Revision. In the next Conference for the Ninth Revision, more representatives from Latin America should participate and steps should be taken to obtain the necessary financial support for their attendance.

RECOMMENDATIONS

1. In connection with the preparations for the Ninth Revision (1975) of the *International Classification of Diseases*, the Committee recommends that the countries of the Region refer to the Latin American Center for Classification of Diseases problems that arise in the use of the Eighth Revision for the classification of causes of death (both underlying and multiple causes) and of morbidity. Knowledge of these problems will be very useful as a basis for formulating regional proposals for the Ninth Revision. Also, the Committee recommends that the various countries make studies of the adequacy of the *International Classification* for specific purposes, such as hospital indexing, and of its suitability for national statistical purposes, and that they submit proposals for the Ninth Revision and send representatives to participate in the International Conference for that Revision.

2. The Committee recommends that the Organization continue to give assistance to the programs of training necessary to ensure the

satisfactory utilization of the *International Classification* for the preparation of morbidity and mortality statistics, especially in those countries that are unable to provide their own courses.

3. The Committee recommends that the Latin American Center for Classification of Diseases and the Organization design and conduct a continuing study of the medical terminology used in Latin American countries. Information should be sought from hospital charts, death certificates, and other available sources. This study should lead to the development of a more efficient Alphabetical Index to the *International Classification of Diseases*. In addition, the study findings should be published periodically, so as to disseminate knowledge about new terms that are adopted as advances are made in the medical sciences.

4. The Committee recommends that the Organization collect periodically from the Latin American countries copies of death certificates which can be used for a test check to evaluate the coding of causes of death in the different countries, for comparisons of mortality statistics, and for training programs.

V. COMPUTER PROGRAMS IN HEALTH STATISTICS

The special subject considered by the Fourth Meeting of the Regional Advisory Committee on Health Statistics in 1966 (4) was the modernization of health statistics systems and the introduction and use of computers. At that time the Committee made recommendations to the Pan American Health Organization designed to promote an active program for training of personnel, development of systems in the health field, information services, research, and advisory services.

Status of Data Processing Programs

In reviewing the events since the Fourth Meeting and the methods used to improve and accelerate computer usage in Latin America, the Committee noted the problems common to many groups working with computers in the health field. Many different people are independently devoting time to preparing programs that produce essentially the same results. The development of a machine-type language that could be

used with all types of computers would make possible a much wider application of programs. Essential to the use of such language would be the development of compilers by each machine manufacturer.

The importance of the exchange of programs among computer users was emphasized, as was the use of general purpose programs (for example, general tabulation programs). Reference was made to a program prepared by the Australian Bureau of Census and Statistics that produces tabular output with relatively few restrictions. The control language is based on English words and statistical and mathematical symbols. The use of the language can be learned with only a few day's training.

An example was given of the high efficiency that was obtained by machine selection of underlying causes of death based on precoding of the conditions stated on death certificates. Research is continuing in order to develop machine selections based on the original words and phrases appearing on the certificates. In many areas such as this, the possibility exists of reducing the manual effort that is now required for data preparation, editing, and processing.

The differences in computer problems in various geographic areas were pointed out to the Committee. Particularly in Latin America, machine replacement is slow and the smaller and older types of equipment are still widely used. Development of control languages and programs—often considered too slow in relation to advances in machine capabilities in some areas—is far ahead of the machine capabilities in Latin America. Computer sharing also represents a problem there.

The Committee took note of the need to design complete systems in the health field and to standardize programs and techniques. The development of a flexible control language that can be used with all types of computers is also essential.

The activities of the Data Processing Center in Buenos Aires, Argentina, which was established with the collaboration of the Organization in accordance with the recommendations of the Fourth Meeting of the Advisory Committee, were described in three fields: (1) administrative and statistical systems in health; (2) internal information system for hos-

pitals; and (3) scientific applications. The Center has also carried out training programs for different levels of personnel.

The Committee believed that immediate steps should be taken to define the problems and the resources in Latin America and to plan for collaborative efforts over the next five years in the Region in order to advance rapidly and avoid duplication. It reiterated the recommendations made at the Fourth Meeting of the Advisory Committee in 1966.

RECOMMENDATIONS

The Committee recommends to the Pan American Health Organization:

1. That it conduct as soon as possible a survey of the computers available for use in the health field in the countries of the Region and of the personnel trained in this field.

2. That, within approximately six months, it convene a meeting of a Regional Advisory Committee on Computers, with representatives from countries that have established computer systems or have made advanced plans for establishing them. The findings of the aforementioned survey would serve as documentation for the meeting. This Committee should have responsibility for the following:

- a. Formulation of a five-year plan for computer development in the Region, in the health field.
- b. Development of methods to obtain the tabulations needed in vital and health statistics.
- c. Ascertaining the feasibility of creating a medical-statistical computer language to enable the statistician and the medical researcher to use computers more easily. This language should be designed for use with different types of computers.
- d. Establishment of methods for the exchange of information on programs, systems, and experience in data processing.
- e. Development of close communication or collaboration between the computer centers, to facilitate the interchange of programs and techniques and avoid duplication of effort.

3. That it carry out a study of the different types of computer equipment available, and of their cost, capability, and reliability, in order to make this information available to the health services or institutions of the Region.

4. That it promote the training of personnel at the following levels:

- a. Short courses or seminars of a few days' duration for executive and managerial personnel of health departments and health statistics organizations, which would provide an overview of the capabilities and limitations of computers as applied to the health field and create an awareness of how this tool can be used to produce the information needed for decisions and actions leading to the betterment of health.
- b. A series of courses of instruction for statisticians at the professional level to improve and extend their knowledge of the modern techniques of computers and data processing.
- c. Training, both theoretical and practical, in courses of one year or more at established training centers for high-level personnel of computer centers (directors and systems analysts). This training should be given in centers that have processing equipment comparable to the installations with which the trainee will be working. This third group of personnel will be responsible for training programmers and analysts for their own centers.

5. That it expand its advisory services to national health services and other health institutions with the goal of developing efficient systems and ensuring maximum utilization of data processing equipment.

6. That at its Washington Headquarters it function as an exchange center for computer programs (tapes and cards) and for information and technical data on equipment. A program library, subject to periodic review, will be essential. The countries should inform the Organization of developments in their data processing systems in order to make possible a complete interchange of information.

7. That it explore the possibility of securing central locations for data processing services for use by countries that do not have their own facilities and wish to utilize the standard methods and computer programs which will be developed for the Region.

VI. RESEARCH PROGRAMS

Collaborative International Research

The Committee reviewed the main research projects already completed or in progress with the participation of the Department of Health Statistics of the Pan American Health Organization.

The following examples of this type of program were mentioned:

- a. The Inter-American Investigation of Mortality, a study in adults, of which some of the findings have already been published in English in the volume *Patterns of Urban Mortality* (5) and in Spanish in *Características de la Mortalidad Urbana*. The report is producing a positive impact on health planning and medical education in several countries. The Committee believed that further research should be undertaken on the basis of the results already available.
- b. The Inter-American Investigation of Mortality in Childhood, which it is expected will contribute to the improvement of maternal and child health programs and medical education. Although recently initiated, this Investigation has already produced positive results in several areas of the study, and it gave rise to important recommendations at the Special Meeting of Ministers of Health of the Americas (12) in Buenos Aires, Argentina (October 1968), particularly with respect to measures for prevention of measles and possible future actions in maternal and child health.
- c. Epidemiological Study of Population Dynamics in Peru, and Prospective Study of Fertility in São Paulo, Brazil; these are considered to be pilot studies that will serve as a basis for planning collaborative international investigations on human reproduction in various countries of the Americas, as proposed at the meeting of the Working Group on Research on Human Reproduction (Santiago, Chile, 30 October-1 November 1968).
- d. The Study of Health Manpower and Medical Education in Colombia (13), which included a national morbidity survey, is considered to be a pilot study for Latin America and has led to a series of other studies and plans in the health field and to the preparation of health personnel. Similar studies are being initiated in Argentina.

Multiple causes of death have been the subject of important studies in the past and at present further investigations are under way in Europe and in the United States of America. In 1965 the U.S. National Center for Health Statistics published a supplement (14) to *Vital Statistics of the United States, 1955*, on multiple causes of death. This supplement served as one of the bases for the preparation by PAHO of a draft Manual of Procedures for Selection and Coding of Multiple Causes of Death, for use in the Inter-American Investigation of Mortality in Childhood. In this Investigation, in addition to the underlying causes of death, the associated causes will be classified. It is expected that the analysis of multiple causes of death in childhood will contribute to the planning for the Ninth Revision (1975) of the *International Classification of Diseases*. However, additional research on multiple causes, using death certificates for all age groups, should be carried out.

The Committee studied a plan of work that could serve as a basis for proposals for the Ninth Revision of the *Classification* and would include the following:

a. *Research on multiple causes of death.* The objectives of this research program would be:

To experiment with linking information from hospitals, including autopsy reports, with death certificates.

To develop methodology for use with the Ninth Revision.

To determine the quality and completeness of diagnostic information recorded on death certificates for purposes of multiple cause studies.

The program would be a coordinated investigation with the participation of several important urban centers in Latin America, ideally those that took part in the Inter-American Investigation of Mortality, and it would include the study of death certificates of persons of all ages. Because of the type of information required, the study would be confined to urban centers only.

b. *Research on medical terminology.* It was proposed that the information obtained in the Inter-American Investigations of Mortality (in adults and in childhood), as well as the data to be collected in the aforementioned investigation of multiple causes, be used to study and gain a better understanding of the medical terminology in current use in Spanish- and Portuguese-speaking countries. The methodology for this study would be determined after careful consideration.

RECOMMENDATIONS

As a result of this review, and recognizing the important role of PAHO in research in the health sciences in the Americas, the Committee makes the following recommendations:

1. That the Pan American Health Organization carry out, promote or stimulate, and technically assist statistical research projects in the health sciences, placing particular emphasis on the development of

coordinated investigations, national or international, that produce a major impact on health programs and on training of health personnel.

2. That research activities (promotion, assistance, and execution) constitute priority functions of multinational centers of biostatistics that are organized or assisted by the Pan American Health Organization, since such activities are considered to be an essential part of the training of professional personnel in such centers.

3. That coordinated research projects at the international or national level, as well as pilot research projects in which measures are developed for extensive application or as a basis for research of greater scope, be strongly supported by the Organization.

4. That plans be made for the further development of the collaborative continental research projects discussed in this section, namely: those on multiple causes of death, on human reproduction, research stemming from the Inter-American Investigations of Mortality, and studies on health manpower.

VII. OTHER HEALTH STATISTICS ACTIVITIES

The Committee was informed of the recommendations made by the Special Meeting of Ministers of Health of the Americas (12) on problems related to statistics. Among the points pertaining to national health plans (Section VIII) was a recommendation encouraging "the adaptation of statistical systems to enable them to measure not only the health level, but also the use and the output of the resources of the health sector." The conduct of surveys and research to obtain the necessary information in due time was also recommended.

The Ministers of Health noted the evaluation of the objectives of the Charter of Punta del Este which was presented in the publication *Facts on Health Progress* (15), in which comparisons were made between health-related indicators in the period 1961-1966 and projections were presented for 1971, with graphs to illustrate changes. After examining the data appearing in that publication, the Ministers stated (Section XVI) that "it is evident that the quality of the statistical information

provided by the Governments of the Americas has improved in recent years, thanks to the training of an increasing number of professional health workers and auxiliaries and the improvement of systems for the registration, analysis, and distribution of data.”

RECOMMENDATIONS

Taking into account the afore-mentioned recommendations of the Ministers of Health, and recognizing the need for constant effort in this direction, the Committee recommends that the Pan American Health Organization continue its function of encouraging the improvement of the statistical systems in the health field through:

1. Training of statisticians and statistical auxiliaries for local health services and hospitals.
2. Consultative service to health departments to aid in the establishment or strengthening of a network for the rapid transmission of statistical information.
3. Cooperation with Governments in the carrying out of surveys to obtain information on aspects of vital statistics and public health in the countries of Latin America.

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