REGIONAL ADVISORY COMMITTEE ON HEALTH STATISTICS

Third Report

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HEALTH STATISTICS

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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
8-12 June 1964

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REGIONAL ADVISORY COMMITTEE ON HEALTH STATISTICS

Third Report

I. INTRODUCTION

The Regional Advisory Committee on Health Statistics met in Washington, D. C. from 8-12 June 1964. Dr. Abraham Horwitz, Director of the Pan American Sanitary Bureau, welcomed the members, commented on the contributions of the previous two meetings *(1, 2)* and outlined the objectives of this meeting. Advice from the Committee was requested on a number of subjects such as the 1965 Revision of the *International Classification of Diseases*, civil registration, education and training of statistical personnel, and research, but particularly in two fields; namely, (1) indices of evaluation or measures of progress in health and (2) hospital statistics.

The importance given to indices of evaluation stemmed from a mandate of the Charter of Punta del Este *(3)* and from the specific recommendations made at the Second Annual Meeting of the Inter-American Economic and Social Council *(4)* for the evaluation of progress toward the goals specified in the Charter. Measurement of the returns of the investment in health programs has become indispensable, requiring a system of evaluation indices or measurement units. The emphasis should be on measuring the results of health programs rather than the health activities themselves since the activities may not always lead to the desired results. The task of the Committee in this field would be to recommend suitable indices for measuring health progress and ways of applying such indices. In this task consideration has to be given to the accuracy and completeness of vital and health statistics in the countries of the Region. These difficulties might be met by the establishment of registration areas in which reliable statistical data could be collected.

The second field emphasized in the meeting, the development of reliable hospital statistics, is of great significance both for the administration of hospitals and for national health planning. The establishment of satisfactory medical record systems in hospitals is required for the provision of

basic data for measuring health progress. Recommendations are also needed for an expanded program for training personnel in this field.

In conclusion Dr. Horwitz pointed out the complexity of the task stressing that health administrators, planners and statisticians should work together in the development of data in these fields. The advice of the Committee would therefore be of great help in determining the form and content of health programs in the Americas.

II. REGIONAL ACTIVITIES FOR 1965 REVISION OF INTERNATIONAL CLASSIFICATION OF DISEASES

During the past few years the Latin American Center for Classification of Diseases in cooperation with the Pan American Health Organization has had an active program in developing certain sections of the Classification of particular concern to Latin American countries - mainly the sections on diarrheal, infectious and nutritional deficiency diseases. Field trials were carried out in several countries and proposals were developed for Section I, Infective and Parasitic Diseases, and for nutritional deficiency diseases and anemias (5).

The Regional proposal on Section I submitted to Headquarters of the World Health Organization was considered by the WHO Sub-Committee on Classification (6) and received considerable support. However, at the same meeting another proposal was made to the Sub-Committee for a rearrangement of the diseases so as to make "mode of transmission" the principal axis of classification.

As a result WHO has now prepared a draft revision of the Section of Infective and Parasitic Diseases having as the principal axis of classification the mode of transmission (Annex 9 of Report of Sub-Committee (6)). This, it was suggested, brought together conditions of similar interest for the epidemiologist and would be helpful in the control of infectious diseases.

The Regional Committee appreciated the commendable objective and the ingenious approach to the problem of providing

a classification suitable for epidemiological purposes. The Committee also appreciated the difficulties, as pointed out in the WHO report, in dealing with this subject. The notion of a classification of infective diseases by mode of transmission was theoretically attractive to the Committee. However, it was felt that there are serious practical difficulties in applying this axis consistently through this section. One problem arises with diseases which have more than one mode of transmission. Another is the insufficiency of knowledge of the method of transmission to permit definite and unequivocal assignments. Because knowledge in this area is changing more rapidly than that relating to the etiological agent, a classification by mode of transmission may become outdated long before the next periodic revision of the International Classification of Diseases.

Although the intent of the proposal was to have the mode of transmission as the principal axis of classification, the Committee noted that it was not possible to follow this through with consistency. For a considerable portion of the section the portal of entry or the primary location was used in place of mode of transmission. This approach has led to many unfamiliar and unusual groupings of diseases. For example, syphilis and rabies are brought fairly close together simply because the portal of entry is the skin or mucosa. Diseases of major public health importance are arranged alongside diseases of relatively minor nature even though the mode of transmission is totally different, such as rabies and viral conjunctivitis, and syphilis and rat bite fever.

The stated intention of the proposed classification is to make statistics available in a form which will be helpful to the epidemiologist. It was the consensus of the Committee that the proposed classification will not always be helpful in this respect. In many instances, in epidemiological studies, the agent is of greater importance than the mode of transmission. In the present state of knowledge several diseases of specific etiology fall into a residual group when classified by mode of transmission.

Although one of the important uses of the Classification is to present data on epidemic diseases, there are other significant uses where the mode of transmission is not of

primary interest. For example, in the treatment of diseases in hospitals, this factor is not necessarily of consequence. Because the natural thinking of clinicians is not first along the lines of the mode of transmission or portal of entry, the insistence on this emphasis may affect the acceptance of the Classification for uses other than communicable disease control. It is not even certain that the proposal will find acceptability among most epidemiologists.

The Committee believed, furthermore, that it would be difficult to develop a short list for tabulation purposes which will be at all meaningful or which would not appear illogical in the absence of descriptive titles indicating the mode of transmission. However, consideration could be given to the addition of a few categories which would serve best the needs of the countries.

In view of the foregoing considerations, the Committee did not see any advantage of the proposed Classification over the present Classification or that proposed by the Pan American Health Organization. On the other hand, the proposed Classification has the serious disadvantages enumerated above. The Committee therefore recommends that WHO does not use the mode of transmission as the main axis of classification for the Section on Infective and Parasitic Diseases. It recommends that the PAHO proposal be used as a basis to this important Section of the 1965 Revision of the Classification and that this recommendation be transmitted to countries of the Region. The Organization should request further study of this Regional Proposal in the countries. Comments from the health officials of the countries on the WHO proposal and also on the PAHO proposal which is the one recommended by this Committee should be sent to the Organization before August 31, 1964 for consideration by the Expert Committee on Health Statistics in October 1964. The Expert Committee will review all comments and submit a final proposal early in 1965 for the Revision Conference to be held in July 1965.

III. HOSPITAL STATISTICS

A working document[7] gave the current general situation regarding hospitals in Latin America. There are known to be at least 9,380 hospitals with 727,471 beds.

Complete information was not available to describe the hospitals by type and size or to study the morbidity of patients. Data for hospitals are urgently needed; first for the administration of the individual hospitals and second for national health planning. In addition, university hospitals have an important and special role in medical education and research and medical educators recognize the importance of providing training for their students in hospitals with satisfactory record systems. Also good hospital records are essential for certain types of medical research. Moreover, many of the records of births and deaths and notifiable diseases are derived from hospitals.

Hospital statistics have been a subject for consideration by several Expert Committees on Health Statistics of the World Health Organization. A comprehensive report of the activities on hospital statistics with recommendations are included in the Eighth Report [8] of the Committee which served as a basic and useful reference document for this Regional Advisory Committee.

The Committee devoted its attention to the development of medical records and reports in the individual hospital, to statistics relating to hospitals and patients, manuals on hospital statistics, indices for evaluation of hospital programs and education and training of personnel working on medical records and hospital statistics.

A. Development of Medical Records and Reports for a Hospital

The requirements in each hospital for a satisfactory medical record system were reviewed. These include individual medical records, a central department for hospital records, a manual of procedures and a medical record committee. A record system is the source of the basic statistical data needed for effective administration and operation of the hospital in order to provide proper care for its patients.

1. Individual Medical Record

Consideration was given to the content of the individual medical record required to assure good medical care and to provide the basic information for morbidity and mortality

statistics. It was recognized that the stage of development of the hospital affects the content of its medical record.

The Committee recommends:

(a) that every patient have a medical record
(b) that this be a unit medical record (only one record in the hospital for each patient) based on a single number
(c) that at least the following items be included in the record:

i. identification number
ii. name
iii. age
iv. sex
v. residence
vi. marital status
vii. date of admission
viii. chief complaint
ix. medical history
x. physical examination
xi. provisional diagnosis
xii. diagnostic procedures (laboratory, X-ray, electrocardiogram, etc.)
xiii. treatment, medical and surgical
xiv. progress notes
xv. final diagnosis
xvi. outcome
xvii. date of discharge or death
xviii. post discharge recommendations
xix. summary

The Committee believes that staff or consultants of PAHO could render valuable assistance in the design of medical record forms.

2. Central Department of Hospital Records

To insure proper handling of the unit medical record the Committee recommends that each hospital maintain a central record room which would provide for the correct procedures with the records and their utilization.

3. Handbook of Procedures

The Committee recommends the preparation, publication (in the languages of the Region) and distribution of materials designed especially to assist staff of hospitals in the proper handling and filing of medical records and necessary indexes.

4. Hospital Morbidity Statistics and Diagnostic and Operation Indexes

The Committee recommends that in hospitals in which disease and operation indexes are maintained or in which hospital morbidity statistics are desired, the International Classification of Diseases [9] of WHO be used. An Adaptation [10] for diagnostic indexing is available in the United States and also there is one in Spanish [11] for Spanish-speaking countries. The Committee recommends that an Adaptation be prepared in Portuguese for Brazil.

5. Medical Record Committee

The advisability of having in each hospital a medical record committee composed largely of physicians was pointed out. This committee establishes the standards for the medical records, reviews the medical records in order to assure the fulfilment of these standards and develops the necessary forms. Also it is responsible for the adequacy of the clinical data which are recorded and available for many uses including care of the patients, reports for administrative and statistical purposes, teaching, medical audit and research.

B. Statistics Relating to Hospitals and Patients

Hospital statistics such as administrative statistics, morbidity statistics, service statistics and financial statistics are developed according to the purpose they are to serve. As pointed out in the report of the Expert Committee the first objective of hospital statistics is effective administration and operation of a hospital to provide proper care for its patients. The fundamental division of hospital statistics into two types, those based on the "hospital" and those based on the "patient", has been made in this report. This is in

accordance with the division made in the Report of the Expert Committee[8] which in the Annex, Utilization of Hospital Statistics, gives the uses of hospital statistics at the hospital or community level, and at the regional and the national levels.

1. Statistics Relating to the Hospital

The Expert Committee[8] adopted the following working definition of a hospital:

> "A hospital is a residential establishment which provides short-term and long-term medical care consisting of observational, diagnostic, therapeutic and rehabilitative services for persons suffering or suspected to be suffering from a disease or injury, and for parturients. It may or may not also provide services for ambulatory patients on an out-patient basis".

Thus a hospital is equipped with beds, facilities for diagnosis and treatment of patients, and with personnel for diagnosis, care of patients and for maintenance of the institution. Also an accounting system with revenues and expenses is required. Thus the minimum essential data for each hospital are as follows: a) number, distribution and utilization of beds, b) services provided by laboratory, operating room, emergency room, outpatient clinics, etc., c) number and type of staff, d) fiscal data, revenue and expenditures.

These are expressed in detail in the Eighth Report as follows:

(a) Distribution of beds by service area and type of accommodation and utilization
(medical, surgical, obstetrics, etc., and private, semi-private, standard, etc.)

(b) Departmental service statistics
(laboratory, radiology, clinical, operating-room, emergency, etc., and dietary, housekeeping, etc.)

(c) Hospital personnel statistics
(numbers employed, qualifications, work conditions, hours worked, remuneration, etc., occupational and departmental breakdowns.)

(d) Statistics of hospital revenues and expenses

i. amounts and sources of operating revenue : earnings from services to patients, grants, donations, investment income, etc.

ii. detailed expenditure by type of service and object of expenditure; departmental breakdown; costing data.

iii. financial balance sheets: detail of assets and liabilities for revenue fund, plant fund, endowment fund.

In addition to these four types of data, statistics on hospital training facilities were recommended in the Eighth Report, including particulars of enrolment, costs, etc., of courses for nurses, orderlies, technicians. Although small hospitals will not have such facilities, large hospitals will have such training and should keep records.

2. Statistics Relating to the Patient

Statistics of patients serve two main purposes, namely (1) to provide data regarding utilization of hospital beds by types of illnesses and conditions and (2) to provide hospital morbidity statistics for knowledge of the health status of the population. These statistics would be derived from the individual medical records recommended in A.1 and maintained in the central record room as recommended in A.2.

The minimum data relating to patients to be derived from the medical records are:

(a) age and sex
(b) length of stay
(c) diagnosis
(d) operation
(e) condition at discharge

The minimal list of data to be derived from medical records completed on discharge of the patients was expanded in the Eighth Report [8] to include: a) cases and days by residence of patient, b) cases and days by diagnosis, age

and sex, using the Detailed List or the Intermediate List of International Classification of Diseases or a special hospital list, and c) operations by diagnosis. In addition to these data for in-patients, records of out-patient consultations should also be kept.

The Committee recommends that plans be made in each hospital for collection and utilization of such statistical data as soon as possible.

An alternative method of grouping was suggested: (1) statistics of resources and facilities of the hospital including a) beds, b) equipment and facilities and c) personnel; (2) statistics of activities of the hospital, namely, discharges, out-patient visits and services such as X-ray and laboratory examinations etc., and (3) financial statistics of the hospital with revenue and expenditures. However, major discussion and recommendations were centered on the first method of grouping as proposed by the Expert Committee.

3. Statistics at Community, Regional, National and International Levels

In addition to the uses of hospital statistics for administration of each hospital, data are needed at community, regional and national levels. The objectives of such statistics *(8)* are the following:

(a) organization, coordination and planning of hospital services in an administrative area,

(b) economic utilization of hospital facilities within the general health program of the community, region or country,

(c) assessment of morbidity in the population including epidemiological aspects of diseases.

At least on an annual basis a report of each hospital should be transmitted to the community, regional and national level. For each hospital this annual report should include minimum essential data regarding the hospital such as the number and utilization of beds, services provided, staff and

fiscal data. In addition to data relating to the hospital, minimum data would be transmitted relating to patients including age, sex, diagnosis, operation, patient days and condition at discharge. Such data could be sent as individual reports for each patient or as summaries in accordance with the method of processing reports at the regional and national levels.

Mechanical methods of processing hospital data rapidly are proving feasible. The system of the Professional and Hospital Activities Study for processing data for over 300 hospitals with 3 million discharges annually utilizing a computer was described to the group. Such a processing system might be considered for one or two countries with adequate hospital records and mechanical equipment. In the future with increased availability of mechanical equipment and computers much greater use of hospital records for administration, planning and research is anticipated.

In addition to the uses of hospital data within each country, there are expressed needs for hospital statistics on a hemispheric and global basis. Data provided from the countries are published in the *Annual Epidemiological and Vital Statistics* of WHO and *Health Conditions in the Americas* of PAHO. Also the United Nations includes data on hospital facilities and their utilization in the series of basic statistics recommended as measures in programs of economic and social development.

Important objectives of such reports are to stimulate and encourage the national health services of countries to develop national data on a practical basis and in turn to provide them with comparative information for other areas of the world in evaluating their programs.

Data for use on an international basis include numbers of hospitals, beds, discharges, patient days by category of hospital and ownership. It is expected that within a few years many national health services will be obtaining such information routinely and thus hospital statistics will be available for many purposes.

The Committee recommends that national hospital statistics be developed and transmitted to the Pan American Health Organization for inclusion in the reports of PAHO and WHO and that hospital statistics be made available to the countries on a regional and world-wide basis through these publications.

C. Manuals and Publications on Hospital Statistics

The World Health Organization has recognized the need for uniform definitions and standard procedures in order to develop comparable data. Basic definitions of a hospital, of a general hospital, and the uses of hospital data are given in the Eighth Report (8). The Expert Committee recommended that the World Health Organization prepare and issue manuals dealing with the technical aspects of the recording, collection, compilation and presentation of statistics relating to the hospital.

The Committee agrees with the statement of the Expert Committee and also requests guidance from the Pan American Health Organization on the design and content of reporting forms and the systems of collection and compilation of hospital statistics.

In order to achieve comparability of hospital statistics within a country and between countries the Committee recommends that a manual be prepared that contains the following:

1. basic definitions for hospital administrative and morbidity statistics,

2. suggested forms and basic procedures for the recording, compilation and presentation of hospital statistics,

3. indicators of hospital activities for administrative and morbidity statistics.

The specific subject matter to be included is as follows: beds (number, distribution and utilization); department service statistics (laboratory, operating room, radiology, emergency room, etc.); outpatient department statistics;

hospital personnel statistics (number and type of staff, etc); movement of in-patients; hospital morbidity statistics and fiscal data (capital, revenue and expenses).

The Committee notes with satisfaction that the Draft Manual on Hospital Morbidity Statistics [12] has been translated into Spanish and Portuguese. As a complement to the manual proposed above the Committee recommends the issuance of this Manual by Heasman as a contribution to the hospital literature and wide distribution of Spanish, Portuguese and English versions.

The *International Classification of Diseases* [9] is published by the World Health Organization in English, French and Spanish. The 1955 Revision of this Classification has not been available in Portuguese for use in Brazil, a country of over 70 million people. The Committee notes with satisfaction that the work on translation of the 1955 Revision has been almost completed by the "Serviço Federal de Bioestatistica" of Brazil and recommends that the Pan American Health Organization be responsible for publication of the Classification, the Adaptation for Diagnostic Indexing [11] and related teaching materials in Portuguese for use in Brazil.

The Committee recommends that manuals in the field of hospital statistics produced by WHO be examined by a regional advisory group representing hospital administration, hospital statistics and health planning to determine their applicability to this Region and further recommends that PAHO be responsible for preparation and adaptations of manuals for specific needs of the Region.

D. Indices for Evaluation of Hospital Programs

The Committee recommends that indices of evaluation be developed in the individual hospital, in the community and in the country. However, in this report it limits the recommendations to a minimal number for the country which may be extended to meet specific needs. The population bases should be obtained and thus rates and other indices calculated for the country. National health services should collect annually at least the minimum data relating to hospitals and patients as given in B for calculation of indices as well as for many other uses.

Indices to be calculated according to type of hospital and other variables are as follows:

1. beds per 1000 population

2. percentage occupancy for a hospital and for specific services

   the ratio of actual patient days to the maximum available patient days in a given period of time

   on annual basis: $\frac{\text{Patient days}}{\text{beds x 365}} \times 100$

3. turnover rate

   discharges during a period divided by the average number of available beds during the period

4. average length of hospital stay

   for short-term hospitals: total patient days divided by number of discharges
   for long-term hospitals: hospitals days of discharged patients divided by the number of discharges

5. hospital death rates including neonatal, fetal and maternal death rates

6. discharges by diagnosis

7. costs per patient day.

The Committee recommends further study and development of indices with definitions and procedures to be used in this field.

E. Education and Training Program

The provision and utilization of hospital statistics require that each hospital have a person in charge of handling medical records and of developing statistics. There are approximately 9,400 hospitals in Latin America which need

medical record personnel. Training of such personnel has been undertaken only on a limited basis in Latin America. The time is most auspicious for the establishment of education and training programs in this field. The *International Classification of Diseases* [9] of the WHO is now accepted as the suitable classification for use in the preparation of morbidity statistics and for diagnostic indexing. The Latin American Center for Classification of Diseases has developed teaching materials and is extending its activities into training for hospital morbidity statistics.

Planning units have been established in national health services and one of the goals of the Alliance for Progress [3] is to take measures "for improving the organization and administration of hospitals and other centers for the care and protection of health". The Executive Committee of PAHO [14] has charged the Organization with responsibility for assistance in a training program for auxiliary personnel. Auxiliary personnel should be trained to work in the field of medical records.

The Committee agrees with the necessity of a training program for personnel working on medical records and hospital statistics. These personnel are classified as follows :

statisticians specializing in hospital statistics
personnel in charge of medical record departments of large hospitals
personnel in charge of medical records in small hospitals
auxiliary personnel working on medical records.

Such personnel should be prepared in accordance with assigned responsibilities. A system of supervision and training should be developed by regional or national health services to insure adequate medical records and hospital statistics for patient care, administrative uses and for planning.

Statisticians specializing in hospital statistics would be prepared through graduate courses usually connected with schools of public health.

The Committee recommends that schools of public health in Latin America provide courses of four or five months for persons in charge of medical records in large hospitals and especially in university hospitals serving for training of medical students. The following places were suggested for training centers:

School of Public Health, University of Buenos Aires, Buenos Aires, Argentina
Faculty of Hygiene and Public Health, University of Sao Paulo, Sao Paulo, Brazil
Institute of Hygiene, University of Recife, Recife, Brazil
School of Public Health, University of Chile, Santiago, Chile
School of Public Health, University of Antioquia, Medellin, Colombia
Medical School of the University of the West Indies, Kingston, Jamaica
School of Public Health, Mexico City, Mexico
School of Public Health, Lima, Peru
School of Public Health, University of Venezuela, Caracas, Venezuela
Department of Preventive Medicine and Public Health, University of Puerto Rico, San Juan, Puerto Rico

The Committee recommends that these schools as well as others with staff and facilities be encouraged to provide training for large numbers of medical record personnel through short courses.

The Committee encourages PAHO to assist through its staff and consultants and other means, and to request UNICEF funds for fellowships and stipends required in training programs for auxiliary personnel.

In order to train as soon as possible a larger group of medical record personnel than could be managed through formal courses, a course combining workshop instruction with a correspondence course is suggested for development as a pilot project by one center. The American Association of Medical Record Librarians in the United States and the Canadian Association of Medical Record Librarians have

already developed correspondence courses in English. These courses which could be adapted into Spanish and Portuguese correspondence courses might be developed on an experimental basis. The lack of text books and teaching materials in Spanish and Portuguese necessitates translation of reference material as well as adaptation of lessons. A pilot center might take as a goal the training of around 75 persons a year for the first one or two years.

In addition to courses of four or five months, shorter courses on specific subjects should be tried out for training of personnel. For example, a course of two weeks on in-patient statistics proved of value in Argentina. The Commission on Professional and Hospital Activities in the United States has developed instruction in two-day sessions on the use of reports. Such group instruction is provided to teams from hospitals, each consisting of a physician, hospital administrator and chief of medical records, who are also shown the uses of the data of the individual hospital. Also in this mechanical computer system, training is carried out by instruction in the completion of case abstracts. *Programmed Instruction in the Use of the ICDA* (13) is an example of another important training method, one which permits the student to learn while answering questions regarding the *International Classification of Diseases, Adapted* (10). This Manual has been adapted to Spanish (15) by the Latin American Center for Classification of Diseases. The Working Group recommends that this publication be made available in Portuguese. Also further exploration is advisable in the development of short courses and training materials to meet specific needs for organization of records in a hospital and for developing hospital statistics.

F. General Recommendations

Several general recommendations for implementation of the program on hospital statistics were made.

1. Research and Demonstration Activities

The Committee recommends that the Organization assist in the establishment of selected projects which may serve as experimental and/or demonstration units for collecting and elaborating hospital statistics. The Committee believes

that data on out-patient services and morbidity are a necessary complement to data on hospital in-patients and therefore recommends that a research program be conducted to determine the types of data to be collected, an efficient methodology of collection and demonstration of their use for administration and planning.

2. Mechanical Processing of Data

The Committee recommends the development of methods of collecting and tabulating data on patients. Success in obtaining adequate hospital patient statistics within a reasonable number of years depends upon the use of simple systems. A system was described which involves: a) recording of basic data to serve for clinical record and for data processing (by carbon copy), b) use of centralized mechanical tabulating facilities serving a group of hospitals for preparation of reports and indexes. Such a procedure decreases greatly the required training program since only meticulous completion of a single document is necessary at the local level. Collection of data on an individual patient basis and mechanical tabulation in a central office permits far greater variety of statistical studies and analyses than could be performed reliably at local levels. Implicit in this system is the return to each hospital of its indexes and statistics for use in the hospital as well as the provision of data for a group of hospitals.

The Committee recommends that a mechanical system be started for a group of hospitals in order to study its suitability and to demonstrate the advantages of mechanical processing.

3. Coordination of Agencies Collecting Statistics

Hospital statistics may be collected by several governmental agencies within a country (the national statistics office, the national hospital service or special health services such as tuberculosis.) Often duplication of work results yielding inconsistent data due to difference of interest and coverage. Therefore, the Committee recommends that steps be taken in each country to evaluate the current status of hospital statistics with the view of achieving coordination in this field with one agency responsible for the collection and analysis of these data. This coordination might be studied by the National Committee of Vital and Health Statistics.

4. Dissemination and Distribution of Reports of Meeting

The Committee recommends that the report of this meeting be widely disseminated in the countries to hospitals, hospital associations, health services and associations, medical professional groups, etc.

IV. INDICES OF EVALUATION

A. General Background

In the Charter of Punta del Este the American Republics resolved in 1961 to adopt a program to establish and carry forward an Alliance for Progress. Twelve fundamental goals were stated in Title I of the Alliance for Progress, including the following on health:

> *"To increase life expectancy at birth by a minimum of five years, and to increase the ability to learn and produce, by improving individual and public health. To attain this goal it will be necessary, among other measures, to provide adequate potable water supply and sewage disposal to not less than 70 per cent of the urban and 50 per cent of the rural population; to reduce the present mortality rate of children less than five years of age by at least one-half; to control the more serious communicable diseases, according to their importance as a cause of sickness, disability, and death; to eradicate those illnesses, especially malaria, for which effective techniques are known; to improve nutrition; to train medical and health personnel to meet at least minimum requirements; to improve basic health services at national and local levels; and to intensify scientific research and apply its results more fully and effectively to the prevention and cure of illness."*

Resolution A-2, Ten-Year Public Health Program of the Alliance for Progress, provided the recommendations for basic long and short-term measures. To the Inter-American Economic and Social Council was given the responsibility under the Alliance for Progress of reviewing annual progress achieved in the formulation, national implementation and international financing of development programs. Each year since the signing of the Charter of Punta del Este annual meetings have been held at both the expert and ministerial levels. The Pan American Health Organization has annually prepared a questionnaire on health which is included as part of the Guidelines for the Presentation of National Reports which are sent by IA-ECOSOC to the countries.

Among the resolutions on health which were approved at the Second Annual Meeting of the Inter-American Economic and Social Council held in Sao Paulo, Brazil in November 1963 is the following:

> *"That the Pan American Health Organization appoint a Technical Advisory Committee to draw up a system of measurement units or evaluation indices which will make it possible to measure progress in health activities, at both the hemispheric and the national levels, within the general aims set forth in the Charter of Punta del Este, and in relation thereto."*

To implement this resolution the subject Indices of Evaluation was included on the agenda of the Third Meeting of the Regional Advisory Committee on Health Statistics.

The Committee discussed the objectives of both Title I, 8 of the Charter of Punta del Este and of Resolution A-2 classifying them as follows:

1. Recommendations expressed as changes in the health level such as:

   (a) *"To establish as a broad goal for health programs during the present decade an increase of five years in the life expectancy at birth of every person."*

   (b) *"To reduce the present mortality rate in children under five years of age by one-half."*

   (c) *"To eradicate malaria and smallpox from the Hemisphere and intensify the control of other common infectious diseases, such as enteric ailments and tuberculosis."*

2. Recommendations to modify the susceptibility to illness of the population, for example:

   "To make substantial improvements in the feeding and nutrition of the most vulnerable sectors of the community by increasing the consumption of animal or vegetable protein."

3. Recommendations referring to changes in the environment such as:

   To supply potable water and sewage disposal for at least 70 per cent of the urban population and 50 per cent of the rural population during the present decade, as a minimum."

4. Recommendations directed to resources for health programs and the activities in which they are used. for example:

   (a) "To give particular importance to the education and training of professional and auxiliary personnel to engage in activities related to the prevention and cure of diseases."

   (b) "To take measures for giving increasingly better medical care to a larger number of patients, by improving the organization and administration of hospitals and other centers for the care and protection of health."

5. Recommendations referring to planning:

   (a) "To prepare national plans for the next 10 years."

   (b) "To create planning and evaluation units in the Ministries of Health..."

   (c) "To improve the collection and study of vital and health statistics as a basis for the formulation and evaluation of national health programs."

The last three in particular of these five groups represent methods and resources to be used in achieving both general and specific goals in the major problem areas in health in Latin America which are set forth in the Charter of Punta del Este.

The general goals are to reduce the incidence, prevalence, debility and deaths from disease and accidents and thereby increase the expectation of life at birth and the well being and the productivity of the people. In addition a general goal is to promote the health of people who are not sick by developing good personal habits, by proper nutrition and by general measures not in the health field such as better education, housing, and improvement of social and economic conditions.

The major problem areas in health for which there are also specific goals delineated in the Charter of Punta del Este include the following:

(a) maternal and child health (including that of physi - cally handicapped and mentally retarded children) ;

(b) transmissible diseases, both acute and chronic, including infections and infestations;

(c) environmental hazards, mainly those related to water supply and sewage disposal, but involving also conditions of accidents (home, work, play, road), air, food supplies, solid wastes and housing;

(d) nutritional status;

(e) other types of medical conditions not included in the above, especially those requiring hospital care and also those requiring long-term care for chronic ill- ness.

B. Types of Evaluation

Two approaches may be taken in evaluating progress in health. The first is to measure the success of health programs through the changes produced in the level of health. The second approach is to measure changes in the numbers of health activities carried out and of the persons served.

For both approaches indices or indicators are needed which, as far as possible, should be valid, reliable and easily obtainable. Present deficiencies in statistical systems hinder the construction of both types of indices and emphasize the need for improvement of basic statistical data.

Evaluation is needed at several levels, regional, national and international. For international uses indices or measures for the entire country may often suffice. At the national level indices to be most useful must be developed and analyzed in relation to other factors within the country such as by urban and rural divisions.

1. Evaluation of Changes in the Level of Health

Among the classical measures of the health status of populations are several related to mortality by age and cause

- e.g. death rates among infants and among children 1-4 years of age, maternal mortality, death rates from infectious diseases and from ill-defined causes, and proportionate mortality under 5 years and over 50 years of age. All these reflect the effect of environmental conditions which can be controlled. Improvement in all these measures is recommended in Resolution A-2 of the Alliance for Progress. Reported case rates from certain notifiable diseases - smallpox, poliomyelitis, tetanus, diphtheria, whooping cough, tuberculosis, malaria, and other diseases for which prevention or eradication programs are available - also are commonly used to indicate the success and use of available prevention techniques, and thus the resulting disease level of the population.

Changes in the level of health often are not the exclusive results of given health activities or programs; other components of the level of living may also affect simultaneously the level of health of a population. Also many indices of the level of health may not reflect within a short time the accomplishments of health programs and only through a long-term evaluation will evidence of progress be marked.

2. Evaluation of Activities of Health Services

Many indicators exist which show the quantity of health activities and progress in relation to the population to be served. However, measurement of the quantity of health activities carried out in relation to the population does not necessarily indicate that success has been achieved in improving the level of health. Research is urgently needed to determine the effect of specific health actions. However, in developing health services goals for programs are essential - that is numerical expressions of health activities which are planned for a specified number of persons in a community in a defined period of time. The establishment of reasonable and realistic goals is a function of planning. In the planning process the level of health is studied together with the factors which may affect it and the available resources in order to determine the priorities, the most effective methods to be used and the objectives. Once goals are established, the general structure for indicators for evaluation of health services will be the comparison of the activities carried out with those programmed.

Indicators can be divided into those relating to resources available and those relating to the health services which are provided to the community.

a. Resources

With respect to resources the indicators should measure

i. availability (that is, the number and type of these resources in relation to the population to be served).

Examples: number of hospital beds per 1,000 population,
number of physicians per 10,000 population,

ii. utilization (the relation between the quantity of resources utilized and the quantity available).

Example: percentage occupancy of hospital beds.

iii. production (the volume of activities realized through the available resources).

Example: number of discharges per hospital bed in a year.

b. Activities

With respect to activities carried out, the indicators should measure

i. coverage (the relation between the population directly served by the activities and the population which should be served).

Examples: percentage of population provided with potable water,
percentage of susceptible children vaccinated,
percentage of deliveries attended by trained personnel.

ii. services rendered (the average number of the activities provided for the population which should receive such benefits).

Example: Number of prenatal consultations per 1,000 pregnant women.

Within this general structure indicators may vary widely depending on the programs and the resources for collecting statistical information. In this area the committee did not make detailed recommendations.

C. Recommendations

1. In pursuing the aims of the Charter of Punta del Este, the countries of this hemisphere should make every effort to develop indices of evaluation designed to measure the progress of their health programs and the performance and results of their health activities.

a. International comparisons of health indices utilizing accurate statistical measures of health status such as morbidity and mortality are a desirable means of evaluating progress and the countries are therefore requested to develop such information.

b. Although the Committee believes it is presently not possible to describe standard international indicators of the organization and administration of health services the Committee suggests that the countries endeavour to develop national data for this purpose.

The Committee has referred to and given examples of the kinds of indices and indicators which will be useful for evaluation of progress toward goals established in each country.

2. Deficiencies in vital and health statistics in many areas in the Region make it difficult to measure the level of health. Therefore it is recommended that all possible effort be concentrated on the improvement of the basic statistical data.

To accomplish this the following steps are proposed :

a. Improvement of the professional level of statistical personnel and strengthening of their training.

b. Creation of areas with complete registration of deaths and causes of death, and of births; with adequate reporting of cases of notifiable diseases; and in general with reliable systems for

statistics of the health activities and of health resources. The creation of such areas is essential in countries in which registration is not satisfactory for the entire country. Such areas should be extended progressively to cover the entire country.

c. Careful revision by health agencies of systems of statistics on health activities so that the data will serve for practical purposes and facilitate the construction of indicators and indices of evaluation.

3. The discussion of the problems related to evaluation stresses the need for study of various aspects including the following:

a. Procedures to measure the true effect of health programs on the level of health, taking into consideration that modifications in other components in the level of living also affect health status.

b. The accuracy and reliability of different indicators in order to be able to select those most suitable for the conditions prevailing in the Region.

To accomplish the above the Committee recommends the establishment of properly selected study or experimental areas within countries.

4. The Committee also recommends that the Pan American Health Organization study the best means of developing a research program on the effect of specific health activities on the improvement of the health level of populations.

V. ACTIVITIES OF THE LATIN AMERICAN CENTER FOR CLASSIFICATION OF DISEASES

The Committee expressed its interest in the activities carried out by the Latin American Center for the Classification of Diseases and in its plans for the future. The 1965 Revision of the International Classification of Diseases will

require the intensification of the activities of the Center in order to familiarize the Latin American countries with the new Revision and necessitates translation or adaptation to Spanish and Portuguese of considerable training material.

Even though the Center has been covering the fields of application of the International Classification in mortality and morbidity, at present the Center is in a stage of expansion in the latter field, due to the increasing requests from the countries. This will necessarily signify an important extension of the work which will be required in the preparation of teaching material and in the activities of teaching and publication.

The Committee considered also that the recommendations contained in the Report of the Regional Advisory Committee on International Classification of Diseases (5) in relation to the promotion of the Classification in Portuguese create the need of extending teaching into Brazil as well as of adapting the basic volumes into Portuguese with the collaboration of the Brazilian officials.

Therefore in order that this delineated program may be possible the Committee recommends that the Pan American Health Organization continue giving its support to the Center and provide the funds required for its development.

VI. GENERAL ITEMS

A. Civil Registration and Vital Statistics

The Committee considered the importance of vital statistics in the processes of planning and evaluation and the role of civil registration in the collection of these data. Reports were given of the plans of the Statistical Office of the United Nations and of the Inter-American Statistical Institute as well as the promotional work of the Pan American Health Organization.

The Committee recommends that the Pan American Health Organization continue working in collaboration with other international organizations for the improvement of systems of vital statistics by the following:

1. stimulating the establishment of areas of registration to obtain current and accurate data that would enable national estimates to be made and that would be used for measuring progress of national health plans,

2. extending the coverage of registration areas to the entire country,

3. encouraging the improvement of systems of civil registration by developing a centralized system,

4. exploring the possibilities of the use of sample surveys to obtain natality and mortality estimates and recommending their application where pertinent. However, the objective of extending registration areas to obtain complete and continuous coverage should always be retained.

The Committee recommends that the Organization send participants from health services in the countries to the Second Inter-American Seminar on Civil Registration sponsored by the United Nations, the Inter-American Statistical Institute, the Inter-American Institute for Children, the Inter-American Association of Civil Registration and the Pan American Health Organization, which is to be held in Lima, Peru, November 30-December 11, 1964.

B. Education and Training Program

The education and training programs in statistics were reviewed with consideration of needs for professional statisticians, statistical technicians and auxiliaries. Quantitative data concerning the needs for trained personnel for work in health statistics should be developed and contained in ten-year health plans in each country.

Problems related to general education in Latin American countries and the requirements for admission to courses were discussed. Schools of statistics do not exist in sufficient numbers to provide sufficient statistical personnel. One solution is to recruit personnel from other disciplines such as economics, engineering and mathematics with some

statistical background and training. Such persons with an interest in a career in health statistics could receive training. Another approach which has been tried in Chile is to use teams of doctors and statisticians whose skills are complementary.

Recommendations were made for training of personnel of all three levels. Courses for auxiliaries should be provided in each country. Also the need for intermediate and basic courses was stressed. Although more than 300 persons have been trained at the School of Public Health in Chile during the past eleven years, many more such trained personnel are required.

Seminars and conferences on preventive medicine (16) and medical statistics(17) recommended that professors of medical statistics be added to faculties of medical schools. This has been done in some areas. A program of demonstration of the value and use of medical statistics by personnel from health departments in the vicinity of medical schools might aid in preventing undue emphasis upon theoretical aspects of statistical methodology in introductory courses. Short courses to promote the teaching of medical statistics were given in Sao Paulo, Brazil in 1961 and 1962. It is hoped that additional funds will be available for both short and long-term courses in medical statistics.

C. Research

Research underway and planned in the field of health statistics covers: a) Inter-American Investigation of Mortality, b) epidemiology of cancer, c) cardiovascular diseases, d) coordinated research on congenital malformations, e) health manpower and medical education in Latin America and g) research on demography.

The progress and development of the Inter-American Investigation of Mortality in twelve cities was reported. About 88 per cent of the 40,000 expected questionnaires have been received by the Washington Office and by early 1965 the remaining 5,000 questionnaires will be completed. A report was given of a study of deaths due to malignant diseases. For 90 per cent of the cancer deaths there was supporting

diagnostic evidence in addition to clinical findings. In another analysis of data it was found that autopsies were performed on 22 per cent of 8,000 deaths; 12 per cent were medico-legal and 10 per cent hospital autopsy. The assignment of the cause of death of nearly 40 per cent of the deaths autopsied was changed from that of the original medical certificate. For 25 per cent the change was from one system to another.

The preparatory work for the pilot study of health manpower, sponsored by the Milbank Memorial Fund, the Pan American Health Organization and the Ministry of Health in Colombia is underway. This study will be officially launched in the near future and will be completed in two years. In stressing the importance of the manpower studies the Committee recommended that a permanent research unit be created in each country to provide data to be utilized for national health planning. A pilot study in a country would furnish important information for medical training and planning.

An outline was given of the general fields of health research being recommended by the World Health Organization, namely:

(a) biological research which is generally carried out by a large institute,

(b) epidemiological and vital statistics studies,

(c) social sciences related to health such as cultural patterns and motives for seeking medical care,

(d) administrative research in which operational research would be included.

In order to carry out research as covered in the last three fields it is advisable to focus on experimental areas. The Committee expresses great interest in research of these types.

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