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STUDY ON HEALTH MANPOWER AND
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STUDY ON HEALTH MANPOWER AND
MEDICAL EDUCATION IN COLOMBIA*

Since 1964 a study on manpower for health and medical education has been in progress in Colombia. Implementation of this study has been entrusted to the Colombian Association of Medical Faculties and the Ministry of Public Health. These two institutions are, in effect, the most qualified in the country to apply the resulting recommendations. The study was originally proposed at a round table meeting in New York during the fall of 1963,** sponsored by the Pan American Health Organization and the Milbank Memorial Fund, to prepare for the analysis of the problems of medical education in Latin America in relation to the socio-economic changes and the increasing demand for qualified personnel in this Continent.

In 1966, Colombia had a population of 18.5 millions, an area of 1,338,155 square km., and a population growth rate of 3.2% a year. Fifty per cent of its population is in the cities, and about 98% is concentrated in almost half of the territory.

1. Aims

The study's four main objectives are:

- 1.1 To ascertain the population's needs and demands in matters of health,
- 1.2 To determine the manpower necessary for the health services to reach their aims,

* Prepared for the Sixth Meeting of the PAHO Advisory Committee on Medical Research, 12-16 June 1967, by Dr. R. Paredes-Manrique of the Colombian Association of Medical Faculties and by Dr. A. Mejía Vanegas of the Ministry of Public Health of Colombia.

**"Manpower for Health Activities and Medical Education Programs in Latin America. Report on a Round Table Discussion." Milbank Memorial Fund Quart 12:11-66, 1964.

1.3 To define revisions needed in medical and para-medical education, and

1.4 To develop a methodology that can be applied to similar studies in other Latin American countries.

2. Contents and Coordination

The approach of the study is multiple. It is not limited to the registration of personnel available for health and medical education but extended to the analysis of the needs and demands for health services, the means to provide them, and the evaluation of the systems of personnel training. The study is divided into a series of substudies, grouped as follows:

2.1 Manpower in the field of health:

- Census and study of the activities of physicians and nurses.

2.2 Educational institutions:

- Surveys of Medical Faculties.
- Surveys of Schools for Nurses.

2.3 Inventory and functioning of health institutional resources and arrangements to provide services:

- Survey of hospitals and health centers.

2.4 Population's needs and demands in the field of health:

- National survey of morbidity.
- Studies of mortality.

2.5 Socio-economic survey of communities.

The two institutions charged with the study share the direction of the various working areas in accordance with their resources to develop them.*

Throughout the development of the study, however, coordination, exchange of information and mutual collaboration have been maintained between the two institutions irrespective of which one has the executive responsibility. This administrative procedure not only has given the opportunity for reinforcing the existing resources of each and reducing operation costs, but has proved to be an effective mechanism for bringing the Ministry closer to academic and educational activity and giving medical schools a better knowledge of the country's health problems.

3. Methodology

The lack of investigation in this field makes the study a pilot one for Latin America. It has made necessary a methodology suitable for the human and financial resources of these countries. Its most prominent features are:

Maximum utilization of resources and of information available in health services, medical schools and other institutions,

Utilization of sub-professional personnel in duties compatible with their educational level and training,

Concentration of efforts in a relatively short period, involving simultaneous activities in different areas,

*Bulletin of the Division of Education, Planning and Development, Colombian Association of Medical Faculties, Bogota, 1965.

Inclusion of national specialists as advisors and use of international technical experts for specific tasks,

Small studies undertaken to verify the feasibility of proposed methods in a Latin American environment,

Directing research to matters of the first priority in Colombia, and

Adoption of techniques and procedures suitable for Latin America.

3.1 Development of Operations

3.1.1 Manpower in the Field of Health

A census of doctors and nurses was undertaken using special forms and drawing on all sources of information. A statistical selected sample was taken of 5% of the total number (almost 400), to study in detail, by means of personal interviews, items such as the professional education, socio-economic status and practice pattern of the Colombian doctor. The form for the nurses census, being a small undertaking, was prepared so as to obtain at once all information on their activities. Moreover, this department included an inventory of auxiliary nurses, graduated from the 28 existing schools.

3.1.2 Medical and Nursing Education

By direct interviews and visits to the seven medical schools and the six schools for nurses, the following aspects were investigated:

- The Institutions: objectives, administration, State and university relations; directives, stability; departmental organization; financing; relations with hospitals and health centers.

- The students: origin; socio-economic level; systems of admission; withdrawal.
- Faculty: census, distribution of time per activities; education; regulations in force.
- Curricula and systems of education.
- Methodology for evaluating the relations between education and actual manpower and the capacity of such institutions to follow new courses in personnel training.

3.1.3 Health Institutional Resources

This includes an inventory of health institutional resources for open and closed medical care and examines the most important characteristics of its operation by transmitting a form through the National Administrative Department of Statistics (DANE).

Based on a representative sample of medical care institutions, a cost-analysis is being carried out of activities, with particular reference to medical and nursing personnel, both professional and sub-professional, as well as a study on hospital morbidity, reflected by diagnosis of discharged patients and outside consultations.

3.1.4 Population's Needs and Demands in Health

3.1.4.1 The National Survey of Morbidity gives a cross section of the country's morbidity and the socio-economic impact that disease exerts on questions concerning disability, incapacity and cost of medical care; investigates the characteristics of medical care in relation to its availability, quality and cost, and makes an attempt to verify the degree of reliability of certain vital phenomena.

The study is based on statistically selected samples of areas of the country, of the civil ambulatory population of 18 Departments of Colombia, representing 98.7% of the country's total population concentrated in a 52.7% of the total area. By selection, 40 primary sample units "Unidades Primarias de Muestreo" (UPM) were determined. One UPM is a municipality of more than 5,000 inhabitants with some type of health service or a combination of small municipalities.*

The basic principles of the National Survey of Morbidity (NSM) are:

- The subject is a representative sample of the Colombian population;
- Standardized techniques and procedures with a reasonable uniformity have been achieved by adequate training, use of manuals of detailed procedures, and by careful supervision;
- Rigid control of the quality of information in the most critical aspects of data collection;
- Voluntary participation is the basis of the study.

The NSM obtains its information through two well-defined phases, whose principles, objectives and methods have been integrated to produce complementary results and conclusions.

The phase of domiciliary interviews obtains its information through personal interviews of 10,000 families, approximately 70,000 persons, in their respective homes, directed by trained medical students.

The phase of clinical evaluation obtains its information through clinical examinations of 5,000 selected individuals made by internal medicine and pediatrics residents from medical schools and odontologists from public health services, assisted by trained nursing auxiliaries.

* Manual on Field Operations (Study of Manpower). Ministry of Public Health, Bogota, D.E., 1966.

Special examinations are taken by procedures reducing individual variability in the interpretation of data. All elements of judgement are then integrated for a definitive diagnosis.

3.1.4.2 The studies on mortality comprise analyses of the most important causes of death, their trends, geographical distribution and age groups distribution. DANE's data and special studies are used for this purpose.

3.1.5 The socio-economic studies analyze the value of the physical, social and economic environment in health in order to explore the reciprocal relationships between morbidity and mortality and such factors as educational level, family income, social security, accessibility of health services and living conditions.

A great part of the information will come from the domiciliary interviews, general information, and from the various regions of the country. This area includes a previous delimitation of the health sector and a financial analysis of it.

3.1.6 All information collected in the substudies in Sections 3.1.1 - 3.1.5 should provide the basic data for the elaboration of a National Health Plan of which the medical and paramedical education plan will be part.

4. Status of the Study

The rate of response in the various areas of the study was very satisfactory as can be shown by the following figures: 86% of the physicians and 87% of the nurses answered the census form; 97% of selected families were interviewed in their homes; and clinical examinations were performed on 96% of the selected persons.

All field work is completed and data are being processed and analyzed.

The complete methodology and preliminary results will be presented at the International Conference for Health Manpower and Medical Education to be held in Maracay, Venezuela, June 19-23, 1967.