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METHODOLOGY: COLOMBIA

(From: "Study on Health Manpower and Medical Education in Colombia")

Health Planning

Investigations carried out for the health Manpower Study identify and measure the extent and relationship of many health problems. These in turn were related to the resources available to solve them. This measurement of needs and resources is basic to the planning process.

The collection of valid information on health phenomena is essential to show problems in their true proportions and to formulate estimates as to future changes.

This scientific information can serve to show the contribution of health to economic productivity and general development, and thus to provide a basis for judgment as to the share of the national resource which should be assigned to the health sector.

It can also be of great benefit in showing the relative importance of different health problems as a basis for developing a rational scale of priorities in relation to such criteria as the nature, frequency and extension of health problems, their vulnerability to the available technology and the social effects which are anticipated from its solution. This critical point in the planning process requires reliable information on the basis of which to estimate the social and economic benefit which can be gained from the efficient use of a given unit of resources. It would make it possible to relate health services to those conditions which cause a great number of deaths, incapacity or invalidism in those age groups which represent the greatest social and economic significance, and in which the application of available technology can prevent relatively high mortality or morbidity in relation to the costs of control.

The effects or benefits of institutional medical attention should not be measured only by the condition of the patient when discharged, in terms of "cured", "improved", or "dead". New measures are needed which will give a better measurement of the results of the economic effort represented by the medical attention

given and to measure how much of its effect can be translated into an increase in productive years for the individuals. This study has tried to determine the benefits of the medical attention expressed in terms of life expectancy and work capacity, which is a better indicator of the efficiency in the use of resources, since it reflects the social and economic benefits of the expenditure incurred.

The information assembled is also useful for setting health manpower goals, determining objectives, preparing projections and adopting technical and administrative standards.

Organization and Administration of the Services

The study of health resources included the identification of the fundamental features of the organization and operation of health services. This will permit the development of measures to improve efficiency and to determine the requirements for satisfying present and future demands.

This study can serve to establish a basis for the better co-ordination of the different medical service institutions, rationalize expenses, increase efficiency and extend coverage of the services.

The inventory of medical service institutions which included the study of financing techniques and the analysis of costs for the services, will allow quantifying the resources, with respect to geographical distribution and degree of utilization, as well as source of funds. At the same time it identifies possible sources of waste.

The analysis of the activities of medical attention allows a more precise definition of the function and responsibilities which each occupational group must develop, and identify those functions which can be delegated to auxiliary personnel.

In general, the information which has been assembled is useful for rationalizing the administration of medical attention and for raising its productivity.

Toward a National Health Plan

The information obtained from the Study of Human Resources can provide a basis for the formulation of a national health plan. This should be adjusted annually as health services develop and as basic data of quality satisfactory become available to give a better basis for regional and local planning.

Most important is the initiation of the planning process and the immediate application of the conclusions, recommendations and decisions of the plans. A health plan should be conceived as a feasible action program, with clearly defined magnitude, characteristics, time and cost; it should not be merely a document which describes what is in existence and pronounces hopes which can not be fulfilled.

The planning process includes a series of complex stages which require extensive preparation. The effectiveness of a plan depends in great measure on the quality of the data upon which it is based. The report of the Study on Human Resources, compiled in a scientific manner, with careful controls and making appropriate use of statistical sampling methods, furnishes a diagnosis of the health situation which has a high degree of reliability.

The plan requires first a definition of the health policy which the state decides to adopt, in relation to its convenience and interest, and to the economic capacity of the country.

The fundamental and final objective of the Study of Human Resources, has been to provide information necessary for the development of such a plan. This includes both the utilization of information as well as the assembling and analysis of much new information.

The following are the most important aspects of the proposed plan:

1. The starting point will be at a central level, with analysis of the general health situation of the country. The basic characteristics of its major geographical and socioeconomic regions will be identified, but local situations will not be dealt with individually; therefore, the priorities, standards and goals will have primarily national application.

2. It will include all activities and investments directly linked with health, whether carried out by public or private, national or international agencies. It will include national, regional, and local programs related to health services.

3. It shall include planning for education for physicians, dentists, nurses and other health workers as a fundamental part of the plan.

4. It shall be applied to the entire country and the programmed geographical units shall be identified in relation to the political subdivisions of the country.

5. It shall refer to the ten-year period from 1968 - 1977 with the year 1968 as a base line. It shall project goals for meeting certain problems and carrying out certain activities during this ten-year period, but will relate in broader terms to a longer period for such activities as the development of medical, nursing and other health manpower resources, and the availability of hospital beds.

6. It shall include a calendar of operations for each year, related to the resources and facilities which will be available for its development.

7. It shall be linked with the National Plan for Economic and Social Development of the country in such a way that its objectives and goals shall be compatible and complementary to those for other sectors.

8. It shall propose alternative solutions which can adjust to the general policy decisions for development which may be adopted.

9. It shall identify the mechanisms which should be used in the continuing review of plans at the national level, and at regional and local levels. The annual preparation of plans should be adjusted more and more closely to the local situations as regards priorities, standards and goals.

10. The agencies and personnel from the health sector involved in carrying out the plans shall be closely linked to the formulation of those plans. This is particularly important in the relationship between medical education and the Ministry of Public Health; in this manner they will follow the policy adopted in the development of this study.

Examples

Examples of some of the uses which might be made of findings of the study of human resources for carrying out different parts of the planning process are presented in a schematic form. These illustrate some of the applicable aspects of the study.

These examples are drawn from the field of planning for health services. The very important uses that these same results will have in the field of medical education and applied research discussed in other sections of this document.

Uses of Findings of the Human Resources Study in Planning Health Services

Information required	Sources
A. Description of the Population	
a) Total population, distributed by age and sex.	Population census of 1964. Population projected from household interview sample.
b) Socio-economic characteristics of the population.	Population census of 1964 (housing, education, occupation). Population projected from household interview sample (housing, education, occupation, income).
c) Geographic distribution; urban-rural distribution.	Population census of 1964. Population projected from household interview sample.
d) Population projections.	Population census and vital statistics. Records of births and deaths under 5 years of age, and fertility data obtained through household interview sample.

Information required	Sources
B. Definition of the Problem	
1 - Mortality	
a) Distribution by age, sex, place of occurrence, place of residence and medical care received.	Mortality study Deaths under 5 years of age, from the household interview survey.
b) Distribution by socio-economic characteristics	Deaths under 5 years of age, from the household interview survey
c) Distribution by cause, by age, sex, place of occurrence and medical certification	Mortality study
d) Trends	Mortality study
2 - Morbidity	
a) Incidence and prevalence of disease accidents disability, dental conditions, hospitalization, by age, sex, geographic distribution, and socio-economic cultural characteristics.	Household interviews Clinical examinations Hospital discharge diagnoses and out patient diagnoses from the institutional study.
b) Distribution by cause and severity	Household interviews Clinical examinations Institutional study
c) Trends	Hospital discharge analysis
3 - Associate factors	
Housing conditions, income, education, occupation	Population census, household interviews

Information required	Sources
C. Determination of Available Resources	
1 - Delimitation of the Health Sector	
a) Definition of the health service	Socio-economic study
b) Identification of health institutions.	List of hospitals and other institutions furnishing medical attention developed from information from DANE, the Ministry of Public Health, the Comptrollers General's Office of the Republic, the Colombian Institute of Social Security and Retirement Fund Activities.
2 - Quantification	
a) Health manpower. Type, geographic distribution, age, type of activity and other characteristics.	Physicians, nurses, and dietitians: Information on age, present specialization, profession and position, obtained from the special census. Nurses aides: Special inventory Hospital personnel: Personnel list from the institutional, study and payroll data from the cost analysis.
b) Facilities Availability of facilities and equipment. Facilities and equipment of physicians in private practice. Determination of health expenses, their magnitude, sources and distribution by items of expenses in activities selected from the public and private sectors. Proportion of public expenditure for health from the national budget and the national gross product. Health expenditures for the civil population, correlated with socio-economic, geographic and other factors.	Quantification from institutional studies. Location of facilities and equipment for nutritional and dietetic services. Physician activity study. Financial analysis of the health sector, including the study of national budgets and public health expenditures. Budgetary activity obtained from the inventory of resources. Expenses for ambulatory medical service hospitalization, and dental care, by source of payment from household interviews.

Information required	Sources
C. Determination of Available Resources (Cont'd)	
c) Availability of human resources and facilities. Availability of resources, and admissions and graduates of medical and nursing schools, losses due to retirement, death or migration; costs of medical education and health services.	In addition to sources cited above, information on these items was obtained from the studies on medical and nursing resources and education. Analysis of national expenditures for health were obtained from the socio-economic study.
3 - General organization	
a) Organization of health services, financing sources and mechanisms, administrative patterns systems of furnishing services.	Information on the characteristics of the sector was obtained from the socio-economic studies; on types of services and activities was obtained from the inventory of resources; on personnel and resource materials, from the functional study.
4 - Functioning	
a) Activities, their cost, usage, production and efficiency; sources of medical and other health services.	Analysis of costs and functions of the institutional study; information from house-hold interviews; as to types of service received, analysis of effects of medical attention from the institutional study.
D. Demand for Services	
Potential demand for health services in relation to age, sex, geographic distribution and socio-economic characteristics and availability of water and sewerage facilities.	Incidence and prevalence of illness from household interviews and clinical examinations. Housing conditions from household survey.

Information required	Sources
E. Coverage of Services	
a) Receipt of services in relation to age, sex, geographical distribution and socio-economic characteristics: - for ambulatory and hospital medical attention - for care during pregnancy and childbirth - for dental care	Receipt of health services as determined through household interviews and clinical interviews and examinations. Medically attended deaths obtained from the mortality study and, for those under 5 years of age, from household interviews.
b) Availability of facilities for water services and excreta disposal	Hospital out-patient study. Household interviews.
c) Length of time since receipt of medical and dental services.	Household interviews, Clinical interviews and examinations.
F. Definition of General Policy	
In addition to the foregoing information upon which the diagnosis of the health situation is based, data must be secured concerning the following elements in order to formulate a general policy.	
a) Economic impact of illness - days of incapacity - invalidism - loss of years of potential earning capacity through death or invalidism.	Days of restricted activity of confinement to bed, relationship of employment and health status obtained from household interviews. After-effects of illness and injuries obtained from clinical examinations and from interviews.
b) Effects of medical attention on rehabilitation and prolonging the life of the patients - changes in work capacity or life expectancy.	Analysis of effects of medical attention in the institutional study.

Information required	Sources
F. Definition of General Policy (con'd)	
c) Costs of medical care expenses for ambulatory medical care hospitalization and dental care, institutions which pay for health services in total or in part, affiliation with social security institutions. Expenses in the health sector and drug consumption.	Household interviews Socio-economic studies.
G. Definition of Health Policy	
1 - Technical-administrative rationalization	
Organization of services, use of resources, benefit from activities, effectiveness of medical attention.	Institutional study: Analysis of costs,* functional study of the work and demand satisfied study of circulation of patients. Studies on coverage of health services in the public and private sector.
2 - Establishment of priorities	
Elements for the definition of criteria such as: - mortality and morbidity by causes, distribution by age. - costs of medical care - socio-economic impact of illness.	Study on mortality Household interviews Institutional study: analysis of the effect of medical care, coverage of services.
H. Setting Objectives and Goals	
a) Information contained under all the prior topics	All areas in the Study on Human Resources furnish information for these final stages of the plan.

Information required	Sources
I. Evaluation	
a) All prior information and that which is compiled during the time the plan is being carried out.	Those mentioned previously and that emanating during the carrying out of the plan or in new research.

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* The National Cost of the Health Sector

Delimiting the health sector was an essential step to be taken before a financial or any other study can be made of it. This required defining the sector in order to bring its scope within bounds that would allow description of its functions, responsibilities, resources and expenditures. This delimitation posed methodological and operating difficulties. It was first necessary to define health service so as to differentiate its resources, expenditures and other features from those of other components of the level of living which indirectly affect health.

The health sector is, fundamentally, a source of services and some goods, such as vaccines, and sera. It produces services in a complex of varied activities for the promotion, protection, and recovery of health-activities which are dispensed through such establishments as hospitals and health centers, in the public sector, through private hospitals and other facilities, and the medical and paramedical professions.

The identification of all of the agencies that have funds and spend money on health services either directly or through transfers to other agencies is a substantial task. This process was facilitated by the inventory of public and private medical care institutions prepared as part of another area of the study. The task was complicated however by the fact that many non-health agencies, such as the Ministry of Education or a sugar mill, provide health services; on the other hand, certain health agencies such as the Ministry of Public Health, may spend part of their funds for purposes that do not necessarily fall within our definition of "health service". Another general problem lies in the need to prevent the double counting of funds, especially when the expenditures of some organizations include transfers or subsidies to others.

Criteria: In deciding whether to include the expenditures for a given purpose as a health service, a conservative policy is preferable to an excessively comprehensive one for the following reasons:

1. The need to present the facts in a uniform and internationally comparable way in order to avoid the impression that Colombia is more or less liberal than it is in fact in its expenditures for health services.

2. To avoid duplication of inclusions with other sectors of the Colombian economy in which studies of this type are being undertaken through the National Planning Bureau.

3. To present a clear picture of the trends by using reasonably precise definitions today and in the coming years.

4. To avoid the artificial inflation of real costs, which would distort the picture of health costs as a part of the nation's expenditures.

Figures for total expenditures in health that are artificially high, either in absolute terms or as percentages of gross national product, would probably reduce rather than enhance the prospects for additional appropriations to meet unsatisfied needs in the health field.

However carefully the rules for defining health service are established, rules that will not always be easy to apply. Financial accounting varies widely from one agency to another and some flexibility is needed. A close approximation to reality can, however, be achieved.

The definition of the health sector for purposes of financial analysis was preceded by a definition of the following principles and criteria for computation of the expenditures made in that sector:

1. Activities which exert a direct impact on health.
2. Preventive and curative activities, personnel training, construction, outfitting, and research.
3. Activities financed by any source, including government, other agencies in the public sector, private and international agencies.
4. Activities at all administrative levels in the country.
5. Every expenditure to be counted only once in any subsector of the health sector.
6. Expenditures refer to a specific year (1965).
7. Only administrative expenditures relating to health in the stated activities are included.
8. Expenditures for non-scientific services ("teguas" and midwives, etc.) are also included.
9. When they cannot be differentiated, the components of the expenditure are estimated.
10. It is desirable to obtain the same information from different sources so as to check its consistency. Discrepancies are to be reconciled.
11. Expenditures excluded from the health sector are to be identified for consideration in some other sector.
12. The precise content of each item included is to be explained.

Classification

Institutions performing functions in the health sector can be classifed as to:

1. Type of service
2. Source of financing

With these classifications it is possible to make analyses of expenditures for health purposes of public or private agencies, by type of function. It is also possible to show the relationship between the cost of health services and public expenditure policy.

Source of financing: Information on the distribution of expenditures among the various sources and purposes is essential to the planning of changes in apportionment and amount of expenditures in order to satisfy health needs more effectively.

The most important distinction is undoubtedly between public expenditures and those which are purely private or individual. In the public sector many further subdivisions must be made among the various governmental and voluntary agencies. Obtaining information about purely private expenditures is more complicated. If the information on these expenditures is obtained from private persons, as in the household interviews of the National Morbidity Survey, they should not again be added as the budget of the hospital. As a practical matter, the reliability of the information on private disbursements is higher when obtained from the ledgers of the hospital, and it is hence accurate to use the latter source. The same complexity obtains in totaling disbursements for private medical services or the purchase of drugs in pharmacies.

Analysis of Public Outlays for Health

For the purposes of this study, public outlays for health were taken to include all public allocations for the rendering medical, dental, obstetrical and related services, the control or eradication of communicable diseases, environmental sanitation, the construction and equipping of hospitals, health centers and health ports, etc., and the establishment of rural potable water supply and waste disposal systems.

Also included were the health outlays made by the municipal governments and the contributions from international organizations such as PAHO/WHO, UNICEF and others, in both equipment and technical advisory services. An important omission, owing to lack of data, was the international contributions in supplementary food supplies distributed to needy groups.

Type of service: The activities engaged in by the public and private health services in Colombia may be categorized as follows:

1. Preventive health services.
2. Medical treatment of ambulatory patients.
3. Hospitalization and similar services.
4. Construction of health facilities.
5. The training of health personnel.
6. Medical research.

The components of each of these activities must be accurately defined. Many problems in the determination of categories.

The six categories of health service listed above must be subdivided so that expenditures can be assigned to a specific service.

The heading "Preventive health services", for example, embraces a wide variety of activities such as: - Maternal and child health examinations, dental health services, nutritions (food supplements and education), mental health services (except hospitalization), laboratory tests, vaccine production, tuberculosis control, leprosy control (except hospitalization), venereal disease control, malaria eradication programs, control of other communicable diseases and zoonoses, the identification of chronic diseases, programs of water supply, waste disposal (including latrine construction), food hygiene, nursing, health education of the public, occupational health, etc.

The heading "Medical care of ambulatory patients" includes not only diagnoses and treatment by physicians outside the hospitals, but also the services of dentists, pharmacists, optometrists and related personnel, supervision of such personnel, and drugs. These are included in "Medical care of ambulatory patients" whether rendered by professional personnel or by laymen such as the "tegua" and the "curandero".

A similar analysis was made for the other service categories to ensure that every specific activity was included and properly classified. Subcategories were consolidated under the six principal headings for greater simplicity of presentation. This detail is valuable, however, to provide expenditure data which reflect the general nature of programs and facilitate the planning of changes.

References

1. Zschock, Dieter. El Crecimiento de la Poblacion en Colombia. Tercer Mundo Nos. 29-30, Bogota, Septiembre-Octubre 1966.

2. Office of the Comptroller General of the Republic. Financial Report 1965, Bogota.