INFORMATION ON COUNTRIES' POLICIES,
ACTIVITIES AND RESEARCH NEEDS FOR DEVELOPMENT

PANAMA: CASE STUDY

Document No. 2 - Health Sector

- Health Situation and Policy
- Research Activities
- Research Needs in the Health Sector
- Appendix

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INTRODUCTION

This document compiles the results of the study on Panama's Health sector. This was the first complete methodological trial design to discover the research needs of a Latin American country. The methodological outline was based on the study of the same sector in Colombia. In the case of Panama, corrections were introduced in the methodology, some of them significant.

Panama was chosen for this exercise for several reasons: It is a small country in which the Centre (IDRC) has carried out no activities up to this date. Its institutional structure is less complex than that of other countries on the continent, but it is nevertheless representative of many of them, particularly in Central America. The fact that it is easily accessible from the regional office of the IDRC in Bogota was also considered.

From the methodological point of view, the results of the study were highly satisfactory: in some steps of the process, new systems of data collection and analysis were introduced and the original perspective of the three stages - sectorial policy, research activities and needs for research - was broadened.

The starting point was to consider that the three stages would lead - in a vertical sequence - from one to the next, in such a way that information collected in each stage would only be meaningful and useful in relation to the last chapter on research needs. However, it was understood that each one of the stages could offer valuable information in itself, in relation to the knowledge of the country's and the sector's problems and not only serve as an instrument for the next stage.

This new criterion produced the following changes in the approach to each stage:

The first part refers to the health situation and policy in Panama; in the first place it expounds a diagnosis of the sector, which within the new point of view is of special importance for the comprehension of the health problems in the country. To the diagnosis we have added an explanation of the historical evolution of sectorial health planning, which illustrates special aspects of the present policies and their origin. Secondly, we present a summary of the health policies according to documents of the official agencies, which was submitted to the sectorial planners's evaluation as the methodology calls for. Following this, we express some annalytical notes on the particular trends of Panama's health sector. In this way we have obtained not only a summary of the

policies expressed by the government, but also a complete description of how the sector operates and of its problems.

The second part, on research activities was limited, according to the original plan, to an inventory of research arranged according to the policies. We have added a few notes on research problems, in an effort to get as close as possible to an understanding of the country's research capacity in this sector. This was obtained, thanks to the collaboration of the Research Division of the Health Ministry, which collected the data for the inventory.

The third part, on needs for research is based on a set of interviews with planners of the sector and members of the scientific community. The people interviewed showed great understanding of the country's problems, in spite of the fact that most of them were educated abroad. Their approach in answering the questions invariably gave priority to Panama's specific problems and to generating knowledge adequate to the country's needs. In the appendix to the document we include the list of the people interviewed and the materials used as guides for the interviews.

PART ONE

HEALTH SITUATION AND POLICY IN PANAMA

I. HEALTH SITUATION IN PANAMA

During the last five years, the evolution of the principal indicators reveals significant changes in the health levels of the Panamenian population. In addition, it must be noted that the differences in health conditions between the urban and rural population have greatly diminished.

A. Indicators 1973:

1. Demographic indicators:

Estimated population*	1,570,100 inhabitants
Population growth	3.1 o/oo
Rural population	51.0 %
Urban population	49.0 %
Population under 15 years	43.4 %
Population density/Km^2	20.8 %
Women of child bearing age (15-49 years)	22.0 %
Births	34.0 o/oo

The birth rate has diminished by about 2% in relation to 1968.

For the period between 1970-1975, life expectancy at birth was estimated at 66.53 years, about 7 years more than the figure for 1960.

Mortality**	
General death rate	5.9 o/oo inhabitants
Urban death rate	5.6 o/oo
Rural death rate	6.3 o/oo
Total infant mortality	32.1 o/oo live births
Urban infant mortality	28.6 o/oo
Rural infant mortality	32.2 o/oo
Neonatal mortality	16.3 o/oo

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* See charts 13, 14, 15 and 17 in the Appendix to Document No. 1.

** See charts 18, 19 and 20, Ibid, and Chart 1 in the Appendix.

Post-neonatal mortality	17.5 o/oo	
Mortality from 1 to 4 years	5.7 o/oo	inhabitants of this group
Total maternal mortality	1.1 o/oo	live births
Urban maternal mortality	0.4 o/oo	
Rural maternal mortality	1.7 o/oo	
Deaths certified by doctors	64.1 %	

2. Health indicators:

a) The 10 main causes of death (1973)* 58.8 % of total deaths

1.	Arteriosclerotic and heart degenerative diseases	9.8 %
2.	Accidents, suicides, homicides	8.8 %
3.	Maligmant tumors	8.2 %
4.	Vascular damage of the central nervous system	6.5 %
5.	Pneumonia	6.0 %
6.	Gastritis, duodenitis, enteritis and colitis	5.8 %
7.	All forms of tuberculosis	2.3 %
8.	Birth injuries	2.7 %
9.	Other diseases during early infancy	2.1 %
10.	Congenital malformations	1.6 %

It is important to note that in comparison with other countries, Panama has greatly reduced the percentage of deaths due to parasitic, gastrointestinal and respiratory diseases. This shows a significant advance in the country's health conditions.**

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* See Charts 2 and 3 in the Appendix.

** See Charts a, b, c, d, in order to compare them to Colombia and the rest of the continent (Appendix)

According to data provided by Panama, the program of environment sanitation has affected this situation considerably.

b) Morbidity

The most important communicable diseases in relation to morbidity are measles, tuberculosis, tetanus and whooping cough.

The main causes of adult morbidity are: influenza, renal diseases, venereal diseases which show a tendency to increase, and infectious hepatitis. There is evidence that the prevalence of moderate protein-caloric malnutrition in children under five reached 10.8%; the prevalence of severe malnutrition reached 1.1%.

c) Inmunization

There is an infant sub-program which has greatly emphasized protection of this sector of the population through vaccines. In 1973-74* this sub-program intensified its vaccination activities against measles, injecting 125,000 doses; 175,000 children under 6 were protected from poliomyelitis, diphteria, whooping cough and tetanus with 2 or more doses.** In 1970, 71 and 72, thirty two thousand children received anti DIP vaccines and 50,000 against poliomyelitis. In February 1972 Panama recorded its last cases of polio. It is calculated that 76% of the children under fifteen have received B.C.G. vaccines.

Due to the efforts of the national service for the eradication of malaria, 36 of the 66 districts in the country have passed to a phase of supervision and consolidation, including the whole province of Herrera after several years' absence of this disease.

A source of malaria has been detected in the less populated jungle areas, where 90% of the cases are produced, but where only 10% of the country's population live.

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* As part of the mother and child care program, in 1973 there was a massive vaccination campaign.

** Estimated population under 6, in 1973, was 260,000 children.

d) Health care

The total volume of consultations for the adult population has increased in the past 4 years at an annual rate of 1%. Pregnancy, labor and puerperal care have increased and in 1973, in the urban area, professional attention during labor was 97.5%* and in rural areas 44.3%. Fertility regulation activities are directed toward the protection of mother and child through spacing of the children and not toward controlling or limiting the number of children per family.** The following percentages indicate the situation of mother and child care in 1972:

Prenatal care	28.6%
Adequate care during labor	68.8%
Puerperal care	7.4%
Care of children under 1 year	23.5%
Care from 1 to 4 years	7.0%
Care at 5 years	7.0%

Before 1968, dental services were practically nonexistent. In 1970, 150,000 consultations were provided and in 1973***, 332,450.

e) Environmental sanitation

At the end of 1972 Panama had: 91.4% of home water connections in the urban area; 51.3% of the rural population with a source of drinking water; 72% of the urban population with sewage systems; and 69.2% of the rural population with some type of sanitary disposal of excreta (rural sewage systems, septic tanks or sanitary latrines).****

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* Hospitals; medical and paramedical staff.

** As a medical service and not as a population policy.

*** Thanks to the regulation of obligatory rural service for the dentists.

**** See Chart 4 in the Appendix.

All cities with a population over 20,000 have garbage collection services, but its transportation and final disposal are not adequate.

f) Material and human resources

By the end of 1973 Panama had 1,172 doctors - 7.8/ 10,000 inhabitants; 7.1 nurses/10,000 inhabitants; 14.1 nurses aides/10,000 inhabitants; 0.9 sanitation inspectors/10,000 inhabitants; 0.3 X ray technicians/ 10,000 inhabitants; 1.2 dentists/10,000 inhabitants; and no dentists aides.* Six hundred twenty nine of the doctors (53.8%) worked with the Health Ministry. Approximately 1 of every 2 doctors who practice in the country are specialized. The Health Ministry emphasizes the need of training general practitioners and para medical staff, specially environmental sanitation inspectors, health education aides and rural health aides.

Annual dental consultations have increased due to a legal disposition of obligatory 2 year service to the State in order to practice the profession in the country.

There are 3 types of hospitals in the country**: national, regional or provincial and local or district. The first kind, found in Panama City, are general hospitals, with all the specialties; they serve the metropolitan area and are reference centers for the rest of the country. The second kind have the basic specialties and sub-specialties and are located in the most densely populated areas of the provinces. They serve these areas and are referal points for the health centers. The third kind are located in some of the district seats and offer general medicine, obstetrics, pediatrics and surgery.

Other communities receive medical attention through health centers and sub-centers. The former have permanent medical service. There are: 65 health centers (in 1973),

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* See Charts 5, 6 in Appendix. The first 39 dentists aides are now being formed in the University.

** In 1973, the total number of hospitals and clinics was 13.

15 of which have maternal, pediatric or mother and child departments; and 112 sub-centers attended by paramedical staff, mainly nurses aides, who are visited periodically by doctors and nurses from neighboring areas.

There are 5,724 beds - 3.8/1,000 inhabitants (excluding the indian population) - 4,121 of which are for adults (72%); 630 for maternity (11%), and 973 for children (17.9%); in addition there are 384 cribs, 465 clinics and 124 dental units.*

B. Institutional Aspects

Panama's Health Ministry was created in January 1969, by Cabinet Decree No. 1, which establishes the rules for integrating and coordinating the institutions of the health sector**. In addition, it recognizes this Ministry as the ruling agency of the sector.

By constitutional mandate all the health services have been integrated into a unified health system. The institutions which will form this system are the Health Ministry and the Social Security Agency. However, regulations for the new system have not been completely defined. Both, the Social Security Agency and the Water Supply and Sewage Institute (IDAAN) are considered institutions of the health sector, both are autonomous, but both work in coordination with the Health Ministry, whose Minister is the chairman of their respective board of directors.

Of this group, the Social Security Agency seems to be the most powerful economically. However, its coverage is low in comparison with that of the Ministry because it only serves its members. It is expected that the use of resources will be rationalized through the integration process and that coverage will be extended to the population in general.

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* See Charts 7, 8, 9 in the Appendix.

** The following institutions perform, either permanently or sporadically, some activity in the health field: Health Ministry, Social Security Agency, Institute of National Water Supply and Sewage (IDAAN), Red Cross, University of Panama, General Community Administration, Institute of Culture and Sports, Panamenian Institute of Special Rehabilitation, Hogar Bolívar, Gorgas Laboratory.

The integration process has already begun in three provinces (Bocas de Toro, Colón and Veraguas) where health problems were very serious. The objective is to extend it gradually. However, the integration and the unified system, as such, have not been regulated yet; therefore there is a dicotomy of functions in the health sector, because of the coexistence of two administrative structures. The old one, the Health Ministry and the Social Security Agency, working separately, which functions in six provinces, and the new one, the integration of the agencies, which is working in the three provinces already mentioned.

The sector's authorities consider fundamental the creation of adequate mechanisms necessary to begin the operations of the unified health system.

As a significant trend in research activities, we would like to emphasize the creation of a division of teaching and research in the Health Ministry which depends directly on the Minister.

C. Financial Aspects

If the budgets of the IDAAN (Institute of National Water Supply and Sewage) and of Social Security Agency are added to the health budget, the percentage of the national budget dedicated to health surpasses **30%.***

The Ministry receives 10% of the national budget, plus about 5% of municipal incomes, plus important and considerable contributions from the communities through the health committees. These also share, along with the Ministry's technical team the responsibility, administration, supervision and evaluation of the programs.**

The Social Security budget comes from special security dues paid by the workers, about 6.75% of their whole salary, and from 9.5% of the sum of the workers' salaries which the companies pay. Including investments, the Social Security Agency allows approximately 25% of its total annual incomesto health care. The IDAAN's budget comes from the national budget and from the contributions of the users. Some resources for the health sector also come from international agencies through loans which mainly reinforce the investment programs.

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* See Chart 10 in the Appendix.

** See History of the Evolution of the Health Sector in Panama, Appendix.

D. Fundamental Problems of the Health Sector

Those responsible for the sector pose a set of problems towards the solution of which they are dedicating their efforts: they can be classified into three types:

1) Those related directly to health,

2) Administrative, technical and institutional,

3) Those related to material and human resources.

In the first group, within the three types, the following problems are singled out:

a) Geographic and population coverage of the services are still not sufficient, and furthermore, the supply and production of health services are still deficient.

b) The unequal distribution of income and wealth keeps great sectors of the population (mainly rural) from having access to health services. Deficient nutritional conditions also affect the population's health negatively.

In the second group:

a) The improvement of the administrative and planning process of the sector's agencies is a cause for worry, as well as the correction of deficiencies in the use and rentability of resources.

b) There are geographic differences in the quantity and quality of the services offered and in the use of technology.

The third type includes problems related to programming human and material resources, mainly:

a) Lack of adequate identification of the needs in order to plan expansion and obtain resources.

b) Disproportionate growth of existing infrastructure and its corresponding human and operative resources.

c) Lack of qualified and adequate human resources for the implementation of the health programs.

d) Budgetary rigidity which complicates the agile implementation of new policies and programs.

E. Progress in 1973

The following are considered as the two most important advances:

1) Rural population access to the health services through a so called integral health program

In order to carry this out additional financial resources were assigned.

This project of integral health is aimed at raising the health level of the rural population. Actions which tend to modify environmental and social health conditioners are given priority: supplying drinking water, fostering food production through community vegetable gardens, community education and organization; minimal medical attention (treatment of ambulatory morbidity, emergencies, vaccines and referals).

2) Organic and functional integration of the services of the health sector

The process of functional integration of the main agencies of the sector, the Health Ministry, and Social Security Agency, has been initiated with the aim of creating a unified national health service. This process responds to the need of rationalizing the use of resources, and furthermore, constitutes the means of satisfying health demands and extending coverage.

II. HISTORICAL EVOLUTION OF THE HEALTH SECTOR IN PANAMA

A. ORIGINS

Stages of Institutional Development	Characteristics	Comments
1. 1903-1914 - Donation Division of the Public Works Section, Department of Development - Division of Public Hygiene and Welfare	- Actions circumscribed to the zone related to the construction of the canal: Emphasis on attack on malaria - Disease treatment in the few existing hospitals - Public sanitation - No preventive medicine	Sanitary responsibility for Panama in the hands of the Canal Company
2. 1914-1929 - Development of campaigns against specific diseases (Department of Development) - Santa Tomas General Hospital 1925 - Department of Hygiene and Public Health 1927 - Division of Sanitary Engineering - Group of Sanitary Inspectors	- Cooperative campaign with Rockefeller F. against uncinariasis: - Drainage of soils - Creation of antitubercular committee	
3. 1930-1943 - Development of basic health institutions in communities: Hospitals, sanitary units, clinics, etc.		Greater state participation in the health field, lacking planning, which implies irrationality and duplication in the allocation of resources.

Stages of Institutional Development	Characteristics	Comments
1941 - Creation of the Ministry of Health and Public Works - Creation of Regional Sanitary Units	- First attempt at grouping health services under one authority - Exclusively preventive functions, completely isolated from activities taking place in hospitals	
- Creation of Social Security Agency	- Health programs, mainly curative, aimed at insured population	
4. 1944-1956 1945 - Creation of Ministry of Labor, Social Security and Public Health 1947 - Sanitary Code 1951 - Creation of the School of Medicine in the University of Panama - First antitubercular hospital 1955 - State assumes sanitary responsibility for Panama city and Colón	- The administrative structure changes constantly, but normative and execution levels are centralized. - Different cooperative programs established with several international organisms. - (1955) - Seminar on sanitary education in Chitré. Pilot Project: 5 health committees organized.	This stage is characterized by greater significance to health in the government structure. Initial awareness of the importance preventive medicine has over curative medicine, both within the government and the community.

Synthesis

The analysis of the previous stages shows the disorganized and dissimilar origin of the different health institutions at different levels which up to this time did not follow any specific program. In addition, political factors contribute to the irrational location of physical installations and services. Excessive centralization, both executive and normative, at the ministerial level can also be observed. The conceived programs which constituted an effort at solving problems were executed separately without any coordination or cooperation between them. This is aggravated by the deep division, at institutional level, between preventive and curative programs with the consequent duplication and limited coverage. A general view of the problems is non-existent.

B. HEALTH PLANNING PROCESS - 1956-1974

Stages of Institutional Development	Previous Studies and Activities	Characteristics	Comments
5. 1956-1961 - First attempt at regionalizing services 1957 Health in Panama: "A Study and a Program" by I. Falk	- Study of Panama's medical-sanitary conditions	- Integration of preventive and curative services: institutional and functional - Descentralization of administration of health services into 3 regions; each one represents a separate regional health administration: - Normative centralization and executive descentralization	The process described shows that Panama is prepared to begin the development of integral health programs, as a way of changing the duplication of services, the inefficient utilization of the budget, as well as great technical-administrative differences. Falk's study initiates the development of the planning stage.
6. 1960 - National Public Health Plan 1962-1970	- Survey of resources in the central region - Regional plan for the western region - Penonomé guide area (pilot project)	- Establishes greater descentralization in "medical-sanitary areas" (16), which depend on each regional administration. Their operative base is the hospital, which includes the regional medical centers serving as technical and administrative authorities for the satelite institutions in the area. - Work policy: Integration defined as "a process of effective organization... in which the services form a functional unit in everything related to biological health and not only a physical fusion of institutions", with the aim of:	This plan is the first attempt at organizing the institutional location of health resources with the aim of extending coverage to areas unprotected up to now (marginal rural areas) through descentralization at a more local level. Its basic objective is to avoid overlapping of services offered by the agencies of the sector.

Stages of Institutional Development	Previous Studies and Activities	Characteristics	Comments
		a. Establish a sequence between health (preventive) and disease (curative) services.	a. This emphasis aims at correcting the problems posed by the previous existence of the two dislocated structures: one preventive and one curative.
		b. Obtain better utilization of all available resources.	b. Rationalization of resources in terms of: 1) descentralization and therefore greater coverage and the solution of specific problems; 2) coordination between the lending agencies.
		c. Develop the most adequate attitude of the community towards the use of those services.	c. This plan gives a great impulse to the health "committees" through the PUMAR: (Programs of Mobile Sanitary Education Units). These committees were to be organized in order to manage the funds originating from the provision of State health services. The regulations included in the plan surpassed this conception and assigned functions which defines the integration of the community into the health programs.

Stages of Institutional Development	Previous Studies and Activities	Characteristics	Comments
7. 1967-1972 1967 - First national seminar on Planning: 45 representatives from the different agencies of the sector: (CPS) - Social Security and Health Ministry, IDAAN, Social Security Agency, the Lottery and the Planning Ministry. - Formulation of the sectorial Health Plan as part of the National Development Plan 1968-78. 1969 - Creation of the Health Ministry. 1970 - Decree ruling over the health committees	- The National Commission on health planning formed as a result of the seminar is in charge of coordinating the actions of the programs carried out by different agencies. It also makes a diagnosis of the health situation.	- A unified health planning methodology is established and coordination programs are initiated. The three medical-sanitary regions are empowered to expedite programs through the following satellite system: - General hospital - Specialized hospitals - Integrated medical center: urban - rural - Local health centers: -pediatric stations (clinics) -maternity ward - Health sub-center - Medical - sanitary tours	Less importance is given to institutional development and greater importance to services offered, particularly prevention, early diagnosis and timely treatment. In order to cause impact with these programs a new impulse is given to the development of the health committees. Their objectives are:* - To ensure efficient and coordinated participation from the members of the community in health programs and campaigns. - To administer funds originating from the provision of services. - To inform the public about health activities and administration.

* Committee evolution:
5 in 1955;
40 in 1963;
179 in 1969;

Stages of Institutional Development	Characteristics	Comments
8. 1972 1973 - Constitutional Mandate ordering the integration of services: Health Ministry, Social Security Agency - Functional integration in three provinces	The process of functional integration between the two most important agencies is begun with the goal of establishing a unified health system.	In spite of the fact that the constitution provides for the integration of services provided by the Health Ministry and the Social Security Agency, this has only been carried out in three provinces: Colón, Veraguas and Boca del Toro. It will include the rest gradually with the criterion that they must learn from the experience and that the integration of each province should be decreed when conditions for its becoming are a reality.
- Coverage of the rural population	Integral health program: with the following sub-programs: - Nutrition through communal vegetable gardens - Provision of drinking water to villages with 100 to 500 inhabitants - Communal education and organization	50,000 people are organized through health committees for participation in this program. 140 hectares were cultivated of vegetables in 1972; however, the vegetable gardens are not a total success even though the program exists in 145 communities and there are plans for its expansion.
1974 - Health Policy and Programs (health Ministry). Operative Plan of the National Government (Planning Ministry)	The policy is centered around the "Communal Health" programs defined as: - Medicine based on health (preventive) and not on illness - Conceptual emphasis on disease causes (and not on symptoms) - Social and environmental factors are conceived as the most important in disease etiology (and not biological factors) - Medical service based on the needs of the population (and not on the demand for services) - Health services, coordinated and integrated with other welfare and development programs (and not specialized and isolated from other social problems) - Regionalized services offered as close to the . . .	In four years, 160 communities with populations under 500 have built water supply systems through the health committees. (See Policy Chart) . . . community as possible (not centrolized in the hospital) -Medical attention offered by a health team (not by a doctor) -The doctor knows the family and the community (not the "intestines" and the hospital) -Community participates in medical attention (it is not authoritarian, it is a two way relationship).

III. HEALTH POLICY IN PANAMA 1/

The Panamanian government's guiding principle in health policy is raising the health level of the whole population. This global purpose is specified in a set of goals, policies and programs oriented towards its implementation, which can be synthesized as follows:

A. Goals

Keeping in mind the above stated* accomplishments of the health sector, the government considers the following as the principal goals of its activities within the sector:

1. Speed up the process which tends to incorporate the marginal population, specially the one living in the rural areas, into the health services.

2. Guarantee the quality and efficiency of the health services.

3. Diminish risks originating from the environment, specially all those arising from epidemiological risks.

4. Diminish the morbidity and mortality of mothers and children and maintain the actual levels in the population over 15.

5. Accomplish the integration into a unified system, of all the health services in the country.

These are medium range goals and seem as the frame of reference from which to formulate the policies and programs carried out by the sectorial agencies.

B. Policy

The health policy can be summarized in the following points:

1. Assign and organize the resources for the provision of minimal, basic and integrated services to marginal population groups.**

1/ See Policy Chart, at the end of this Chapter.

* See Panama's health situation.

** Minimal, basic and integrated services differ in the complexity of the medical attention they provide. The first have a nurse's aide and an environmental sanitation inspector, the second have, in addition, a nurse, a doctor and an auxiliary laboratory for diagnosis, and the third includes beds.

2. Increase organization and health education programs in the communities.

3. Create a unified regionalized health system, through the integration of the resources of all state agencies which provide health services.

4. Recuperate the health infrastructure from a physical and functional point of view.

5. Reorient and extend training of human resources for the health sector.

6. Increase activities related to prevention and health protection.

7. Maintain existing standards and increase efficiency of coverage of services provided at present in the urban areas.

C. Programs

The policies originate programs for which funds are allotted; these programs are actions oriented towards the achievement of goals. We will present the programs and their goals divided into three areas: services to the individual, environmental sanitation programs and supporting services. Following the programs for each area, we will set forth the goals, formulated on the basis of the situation described in the diagnosis.* However, it is necessary to note that the program areas and the goals do not correspond strictly to each other. The latter are conceived for a 10 year period, from 1971 onward and on the basis of the "Ten-year Health Plan for the Americas", adapted to the country's conditions. The program areas arise the planning process of Panama's health sector. Due to this, a certain goal may be included in one specific area of the program or in several of them simultaneously. In the same way, one program area can have one or several concrete programs.

1. Services to the Individual

Programs:

a. Mother and child care - with a maternal sub-program aimed at: fertility regulation, prevention of female cancer, gynecological attention, prenatal care, technical assistance during delivery, and puerperal care; and a child

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* See Health Situation (Part I).

sub-program whose functions are related to control of child growth, vaccination programs, nutrition and pediatrics morbidity.

b. Nutrition and food production

c. Adult health (insured and unsured population) - Includes prevention, protection, recovery and rehabilitation of adults and has sub-programs for cronic diseases (tuberculosis, leprosy, venereal, parasitic, etc.). Care for work accidents and control of occupational risks.

d. Dental health

e. Mental health

Goals for the end of the decade:

- Infant mortality:	Reduce it by 50% in children under 1, in all the country. Reduce it by 60% in 1 to 4 year-olds, in the whole country.
- Maternal mortality:	Reduce it by 50%.
- Prenatal care:	Achieve 60% coverage.
- Adequate attention during delivery:	Achieve 80% coverage.
- Attention to children under 1:	Achieve 65% coverage
- Attention to 1-4 year-olds:	Achieve 50% coverage
- Attention to 5-15 year-olds:	Achieve 50% coverage
- Smallpox:	Maintain 0 morbidity
- Measles:	Reduce mortality from 21.1 x 100,000 inhabitants to 1 x 100,000 inhabitants

- Whooping cough:	Reduce mortality from 4.9 x 100,000 inhabitants to 1 x 100,000 inhabitants
- Tetanus:	Reduce mortality from 11.6 x 100,000 inhabitants to 0.5 x 100,000 inhabitants
- Diphtheria:	Maintain present situation: mortality of 0.3 x 100,000 inhabitants
- Poliomyelitis:	Maintain mortality at 0 x 100,000 inhabitants and morbidity at 0 x 100,000 inhabitants
- Tuberculosis:	Reduce mortality to 12 x 100,000 inhabitants
- Enteric infections:	Reduce mortality from 46.9 x 100,000 inhabitants by 50%
- Venereal diseases:	Reduce actual tendency of increasing incidence
- Leprosy:	Maintain present incidence of 0
- Malaria:	Eradicate it in 80% of the territory
- Dental health:	Improve coverage in rural areas fluorinate all drinking water, intensify education and preventive action
- Occupational health:	Protect 70% of workers exposed to risks (51% in 1970)
- Coverage of services:	Cover 100% of communities with less than 2,000 inhabitants with minimal services; guarantee quick referal in regionalized services.

- Mental health:	Define a mental health policy. Improve quality of primary prevention; provide service to 60% of the population. Diminish increasing tendency toward drug addiction.
- Nutrition:	Reduce second degree protein-calorie malnutrition in children under 5 by 30% (prevalence in 1968: 10.8%).
	Reduce third degree malnutrition by 75% of its prevalence (1.1% in 1971).
	Reduce prevalence of endemic goiter (16.5%) by 90%.
	Eliminate cretinism.
	Reduce the prevalence of hypovitaminosis by 30% (rural 7% in 1971).
	Reduce increasing tendency of prevalence of cronic diseases relate to overweight (cardio-vascular, diabetis, obesity).

2. Environmental Sanitation Programs

Programs:

a. Environmental health - Through excreta disposal, garbage controls, housing improvement in rural areas, sanitation for schools, sanitary food control, veterinary medicine and occupational health.

b. Construction and maintenance of water supply systems, rural wells and sewers.

c. Garbage collection and disposal in Panama City and in Colon.

d. Eradication of malaria and yellow fever through the elimination of breeding grounds for mosquitos, and community training for the treatment of the disease.

Goals for the end of the decade:

Urban water	Reduce the percentage of the population without house connections (8.6%) by 50%.
Rural water	Reduce the population without drinking water (49.2%) by 30%.
Urban sewage	Reduce the population without sewage service (27.2%) by 30%.
Rural sewage or other means of excreta disposal	Reduce the population without service by 30%.
Garbage	Improve urban service and final disposal in all municipalities
Air and soil pollution	Approve a legislative project which has already been elaborated and put it into effect.
Noise control	Control 100% of the manufacturing industries by applying decree No. 150 of February 1967.
Animal health and veterinary public health	Keep the country free of human rabies. Immunize 80% of the canine population. Maintain the country free of foot and mouth disease. Coordinate the health and agriculture and animal husbandry Ministries in activities related to meat and milk hygiene.
Control the use of pesticides	Reduce intoxication and deaths caused by pesticide pollution to the maximum. Establish rules for control.

Aedes Aegypti	Eradicate it by the end of 1974 and maintain surveillance in vulnerable areas.

3. Supporting services

Programs:

a. Organization and health education of the community. This is the basis for carrying out the health policy. The country attaches great importance to the formation of health committees in every community, which carry out preventive, educational, etc. activities. This program includes the promotion of said committees, their orientation and education as well as the training of technical health teams.

b. Training of human resources. Through training of staff already in service and the training of new personnel.

c. Develop and recuperate operational capacity of services dependent on the Ministry and the Social Security Agency, specially of those located in integrated areas.

d. Supplementary feeding with nutritional aims.

Goals for the end of the decade:

Organization and health education. Organize health committees in every community in the country and through them introduce the integral health program.

Human resources. Develop planning of human resources; improve knowledge about these resources. Increase availability per 10,000 inhabitants of:

doctors to 8.0, dentists to 2.0, nurses to 8.0, dentists' aides to 3.0, nurses' aides to 24.0.

Installed capacity. Develop financing and planning systems. Create maintenance systems for installations and equipment.

D. Development plan for 1974

The "Operative Plan of the National Government for 1974" contains, in addition to the already mentioned goals, policies and programs,

a set of non-budgetary actions necessary for the efficient achievement of these goals. They are:

1. Rationalize resources of the urban areas and redistribute new resources in the rural areas, through the evaluation of resource distribution in relation to the country's needs.

2. Introduce efficient regulation for the control of acquisition, use, production, importation, sale, prices and quality of drugs and other materials of the health sector. For this purpose the creation of an institute has been planned.

3. Adopt a uniform salary policy for medical personnel and other professionals in the health sector.

4. Establish and formalize centralized sectorial programming for the creation and development of the health sector's installations, according to norms established jointly by the entities of the public sub-sector.

5. Regulate and reorganize the training and qualification of the sector's human resources, creating a work commission to evaluate the present situation and design a training program with teaching models adequate to the country's needs.

6. Introduce technical regulations and norms for the control and evaluation of the private sector's health services and installations.

7. Carry out analytic legal, technical and administrative studies for the identification and selection of institutions which should form part of the health sector; and also revise and devise legal norms to define it, and its boundaries, and to orient its conduct.

8. Prepare the legal dispositions, norms and regulations relative to organization, structure and administrative and technical systems which will orient the integration process towards the formation of an adequate health system and which will guarantee the rational and efficient administration of the desired health services.

9. To insure the suitability of the actions of the sector to the country's needs, they will proceed to revitalize and reinforce the sectorial planning structure and mechanisms. This will serve as an instrument to help in policy decision and as an essential condition for the formulation and execution of integral plans for services and investment in the health sector, and, in its turn, for intra and inter sectorial coordination.

10. Establish indicators and standardize the system of statistics so that it satisfies the needs of the sector's institutions.*

E. Summary of Specific Characteristics of Panama's Health Sector

It is interesting to observe how the health sector has been acquiring ever greater importance within the framework of the Panamanian state's tasks since the war.

The evidence seems to indicate that at present this sector has acquired special leadership through its established tradition of communal participation, spear head of the present government's general policy programs, as well as because of the dynamics generated by the Ministry since its creation in 1969.

The leadership of the sector results, among other things, in the fact that the health sector receives 30% of the national budget.

Equally significant is the fact that the communal medicine programs, backed by the education and organization process generated in the community, have shown every concrete results; in the past six years significant changes in the population's state of health have been observed: general, child and maternal mortality have decreased 15% in comparison with 1968. Professional assistance during delivery and medically certified deaths have increased by more than 10% and the birth rate has diminished by about 2%. In addition, the differences between urban and rural areas as far as health indicators, have diminished.

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* This is specially important for the records kept by the Social Security Agency.

In this respect it is interesting to note something particular to Panama: the fact that preventive programs are centered around the child, under the responsibility not only of the local medical and paramedical teams (pediatric teams coordinated by the Child's Hospital), but also of the families, whose participation in these activities is encouraged through education and even through active help in treatment of their sick children. The idea which orients this program is that the only way of attacking diseases is by producing health.

The two most important aspects of Panama's health policy are:

a. Communal education and participation, and

b. The functional integration process of the entities which provide the health services.

Both elements are related in that they are part of a long process of rationalization, search for efficiency and extension of coverage.

In relation to the first one, to the description in the chart on "Historical Evolution of the Health Sector in Panama", we can add the following points: The conception of communal health considers the health problem as interdisciplinary and intersectorial (see mentioned text, 1974) and linked to factors of development. As a result it emphasizes:

a. Training of human resources different from the traditional one, as the solution requires team treatment of the problem.

b. The process of health education through community seminars. This emphasizes the need of said interdisciplinary teams; (the importance of "giving back" to the community collected information about its characteristics which can indicate problems for production of health: demographic aspects, sanitation problems, common diseases, etc., gives the team and its functions a fundamental role.

c. The treatment of health problems as part of the treatment of the more general problems of development, particularly in the rural areas.

The fact that communal participation is a process long established among the functionaries of the sector as well as in the community itself, indicates that there is an impulse, difficult to hold back,

which sustains the programs. In addition, this program is presently backed by a political decision which allows the communities to organize and press for programs offered by the government.

The concept of communal medicine does not separate the preventive from the curative, on the contrary, it establishes a continuum which emphasises the initial function of knowing the environment and educating the community as a form of really attacking diseases.

In relation to the second aspect, the one of functional integration, it is worthwhile emphasizing the fact that this is the culmination of the process begun with the regionalization of services (1957). It has gone through different stages before arriving at the present one, in which the decision of integrating the separate structures, Ministry - Social Security Agency, has priority and is irreversible. The process is being carried out gradually. It has begun in three provinces, and will be extended to the other six as soon as there are favorable conditions. For this reason, the question of the convenience of evaluating the characteristics of the program in the three provinces* was raised among the people interviewed. As well as the usefulness of a study previous to expansion, of the problems, characteristics and benefits (actual extension of coverage) which would be applied in the remaining provinces.

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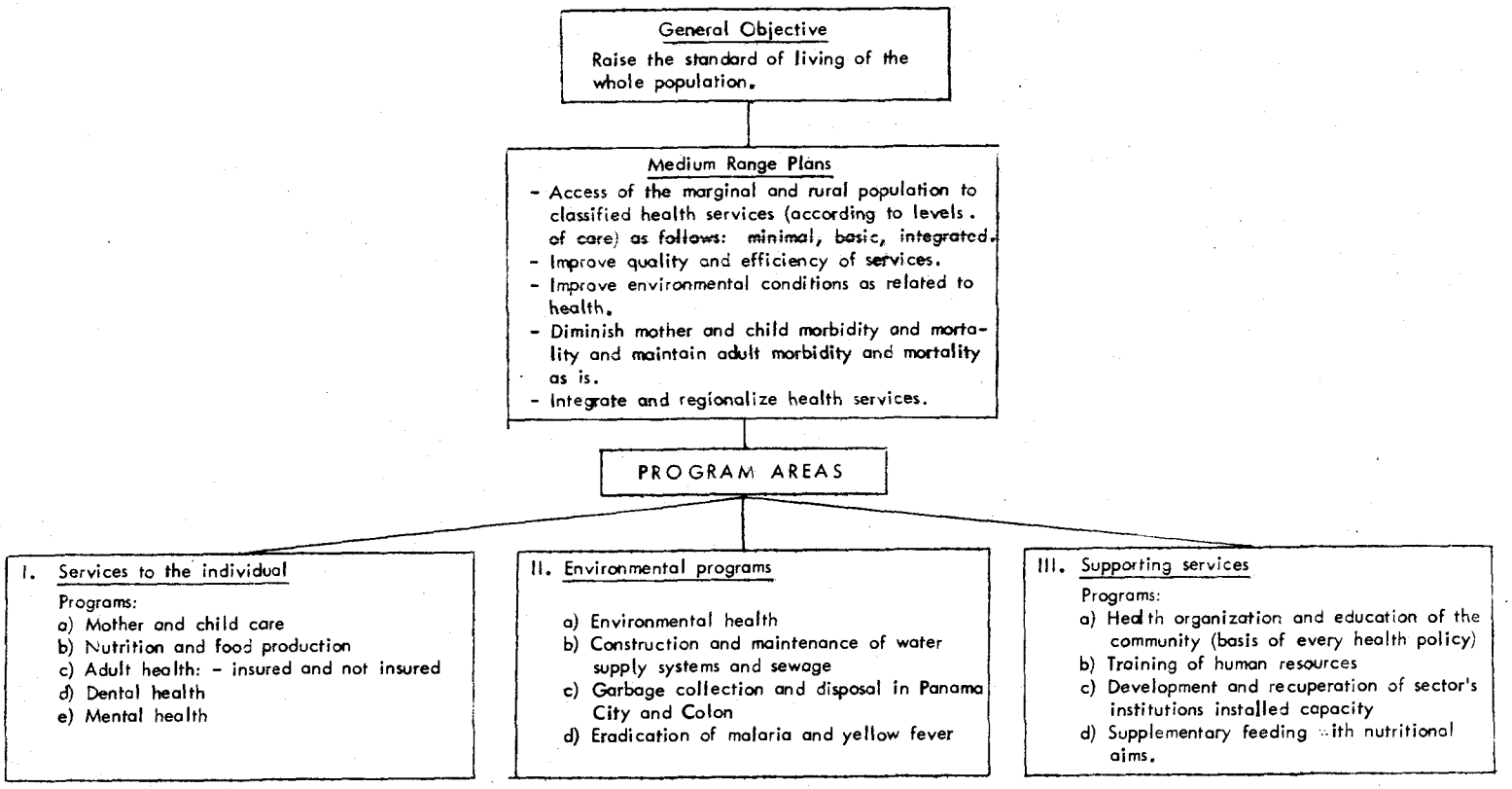
* Specially Colón and Bocas del Toro.

HEALTH POLICIES



PART TWO

RESEARCH ACTIVITIES IN PANAMA

1. RESEARCH PROBLEMS IN PANAMA

The recent created "teaching and research" division in the Health Ministry is evidence of the Panamanean Government's growing interest in the development of research as part of their health programs. However, in the opinion of the sector's planners and researchers, the development of health research activities in Panama is faced with various obstacles which have to be surpassed. These obstacles limit research and its application to the solution of problems.

The following obstacles have different degrees of importance. However, the majority of researchers and planners interviewed emphasized all of these. In order to define a research policy for the sector, they must be taken into account and strategies to progressively overcome them must be devised.

1. The importance of research

The first type of obstacles are related to the importance assigned research by those who in some way or another are related to research activities: administrators, doctors, nurses and auxiliary staff. There is very little understanding of the neef for research in order to improve the services offered. This results in inadequate salaries for researchers, who immigrate to other countries looking for better employment opportunities. It also results in a scarcity of those funds allotted to research by administrators.

In hospitals and other services, medical and paramedical staff's lack of awareness affects the data collection processes which sould supply and update research data.

Something similar occurrs in the university; more importance is given to teaching than to research because of teachings' more direct application. In addition, as teaching occupies all the teacher's time, they have neither time nor motivation for research. This is even more serious given the dominating conception of research as necessarily separate or only marginally related to teaching instead of being considered as part of the same process. This creates the necessity of educating and motivating all personnel in order to change their attitude toward research. However, it must be noted that the opinions of the people interviewed and the creation of the teaching and research division indicates the existence, at the level of the Ministry and the boards of directors of other institutions, of a clear understanding of the need for research and of the intention of stimulating it widely.

2. Institutional organization

The second type of obstacles is related to organizational aspects of the agencies of the sector which must be modified and adapted to the development and use of research in planning and implementing decisions.

Research carried out to solve specific problems is rare as the urgency of such problems often demands immediate solutions and does not allow for previous research which would guarantee a more adequate solution. Furthermore, in some cases, the administrative processes delay the implementation of decisions to begin research.

In hospitals and other health centers the organization is not well adapted to systematic data collection often resulting in notable differences in the records.

Panama does not have a National Council of Science and Technology which in other countries plays an important role in the rationalization of the use of resources and the establishment of research priorities. Only recently, a science and technology commission was formed in which the Ministry of Education and the Planning Ministry participated through the office of the International Technical Cooperation Coordination. A sminar sponsored by the OAS was held (July, 1975) on science and technology which seeks to determine the needs of the country in this area in order to draw up a science and technology policy.

3. Research resources

Third, there are the obstacles concerning the availability of financial, human and infrastructural resources.

The lack of research funds is a significant problem which affects other resources negatively by, for example, not allowing the existance of full time researchers because they must devote themselves to teaching or other activities. On the other hand, the little importance given to research by some administrators limits their iniciative in obtaining financial aid for research from outside sources.

Closely related to the lack of funds is the lack of all those elements which could be considered research infrastructure. This is probably one of the most serious problems: the lack of libraries or documentation centers, the deficiency of clinical archives and in general the

scarcity of basic information sources. Another factor is insufficient laboratory installations and the lack of means of access to remote regions of the country. The latter is specially important due to the emphasis on community research in implementing programs.

There is little qualified personnel for research due to some of the above mentioned reasons. As a result, when research is needed to solve some problems, there is no clarity as to what must be investigated for that specific problem. In this sense they lack a frame of reference. As has already been mentioned, the few people qualified for research are generally occupied in teaching or service areas and are not easily available as the temporary nature of research offers little employment stability.

Auxiliary personnel for research tasks is also scarce and poorly trained. Therefore, the researcher has to work alone and in difficult conditions. The strengthening of research in Panama requires, as a result, training of personnel at all levels for the tasks which this activity demands, as well as a change in the conception of what research is, as explained in the following paragraph.

4. The concept of research

To conclude, it is necessary to make some observations about the meaning which is often given to the term "research". In general it is used to denote a certain type of study with very definite formal characteristics, preferably carried out in laboratories or using sophisticated procedures. This separates research from the daily activity of providing services and implementing programs, making it appear accessible only to the highly qualified. However, the idea is slowly getting accross that research should be an integral part of the services and programs in which even the communities which use the services can participate. At the same time, the multidisciplinary approach to research in which a health problem is studied from many points of view: social, economic, cultural, medical, is progressively gathering supporters. This new perspective, which surpasses the "scientistic" limits of the previous, offers many possibilities for the development of the country's research capacity.

II. RESEARCH SITUATION IN PANAMA

We will now make some observations on the current situation of research in Panama. As the basis for our analysis we have used the research inventory put together by the teaching and research division of the Health Ministry of Panama.

This inventory is the first work of this kind made in the country; it was made as a part of the cooperation between the Health Ministry and the IDRC for the current study and it was done exclusively by Ministry personnel.

Some of the inventory's characteristics limit the validity of some of the interpretations we can make about its data. We must, therefore, keep them in mind for our analysis :

1) Two sources were used for data collection : magazines and research institutions. Thus, for some of the studies, credit is given to the institution in which they were done, while for the rest - the minor part - the origin is uncertain (this is the case with "Revista Médica de la Caja del Seguro Social" and "Archivos médicos panameños" - "Medical review of the Social Security Agency" and "Panamanian medical archives").

2) In both cases, the source was published research; which is why the inventory does not include unpublished studies or research projects in process.

3) Though the total number of studies done since 1960 is known, those completed before 1968 were excluded from the inventory.

4) Also not included were basic studies, that is, those whose purpose is knowing a subject rather than putting forth its possible applications or immediate usage in any given field. Of those studies, the analyzed data only includes the total number of studies carried out by each source since 1968.

5) One of its important limitations is that it does not include the diagnosis, program and evaluation studies which have helped the governmental institutions to design the programs and decide the policies.

6) All this reduce the inventory to a group of 218 studies done after 1968 (except for the ones corresponding to the Natural Sciences department of Panama University's Nursing Department which began a bit earlier), characterized by the fact that their results can be

applied immediately.

So as to observe some significant tendencies, we have grouped the studies according to their year, source, policy area and sub-area and the kind of research, in keeping with the following definitions :

Practical research (P) In which the researcher observes a phenomenom and his interference in it, that is, his control of the variables involved, is very limited.

Experimental research (E) in which all or most of the variables are controlled by the researcher.

Bibliographic research (B) In which the sources are data or analysis found in books or documents.

Charts A and B sum up some of the variables found in the whole of the studies already described and which are listed at the end of the chapter. On this basis, we will comment some tendencies which we consider important.

1. Research Institutions

Even though some of the studies done in the Social Security and Santo Tomás hospitals may not have been included in the inventory, their number does not have the weight to alter the results given in the charts. The most important Panamanian institution in health research are the Gorgas Laboratory and the Medicina and Natural Sciences departments of Panama University. The studies done in the latter institution are almost all thesis written by students as a graduation requirement, so it is probable that the ones done at Gorgas Laboratory have a broader scientific scope for it is a research centre with a long history, well equiped and financed by the United States government.

In addition to these entities and hospitals, the Ministry of Health and the Ministry of Planning carry out research or have the capacity to do it. Even though these studies may be small in number, their importance in determining the policies and programs is considerable. Questions about this kind of research were included in the interviews on research needs. The list of data obtained follows the inventory and we will later make some observations on those data.

PANAMA: RESEARCH ACTIVITIES

CHART A

Source / Type / Date	INSTITUTIONS												MAGAZINES												
	LG				UP (e b q f t m)				FM				AMP				RMP				RMCSS				
	Total	P	B	E	Total	P	B	E	Total	P	B	E	Total	P	B	E	Total	P	B	E	Total	P	B	E	
Before 1968	-	-	-	-	22	1	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
1968	6	4	-	2	10	1	3	6	-	-	-	-	6	1	5	-	-	-	-	-	1	-	1	-	23
1969	5	4	-	1	15	3	3	9	-	-	-	-	-	-	-	-	-	-	-	-	7	1	6	-	27
1970	2	2	-	-	15	7	5	3	-	-	-	-	-	-	-	-	7	2	5	-	41	3	38	-	65
1971	8	4	2	2	-	-	-	-	7	-	2	5	-	-	-	-	-	-	-	-	-	-	-	-	15
1972	6	2	3	1	5	-	-	5	1	-	-	1	1	-	1	-	-	-	-	-	8	-	8	-	21
1973	3	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	1	11	1	16
1974	3	-	1	2	4	-	-	4	1	-	-	1	5	-	5	-	-	-	-	-	-	-	-	-	13
1975	-	-	-	-	16	1	8	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
Total Selected	33	16	7	10	87	13	40	34	9	-	2	7	12	1	11	-	7	2	5	-	70	5	64	1	218
Not included before 1968	578				89				-				91				-				-				758
Included after 1968 (Basic)	142				76				35				-				-				3				256
TOTAL	753				252				44				103				7				73				1,232

CHART B

	Area / Sub-Area / Sources	I							II						III									
		-	A	B	C	D	E	Total	-	A	B	C	D	Total	-	A	B	C	D	Total	No Clas	Total	Total Selected	Repeted
INSTITUTIONS	LG	-	15	-	17	-	-	32	-	12	2	-	7	21	-	1	1	-	-	2	-	55	33	22
	UP e b a f MIT	1	25	10	36	-	3	75	1	5	2	-	1	9	-	4	3	-	-	7	1	92	97	5
	FM	1	1	2	-	-	-	4	1	4	-	-	-	5	1	-	-	-	-	1	-			
MAGAZINES	AMP	-	-	-	9	-	-	9	-	1	-	-	2	3	-	-	-	-	-	-	-	12	12	-
	RMP	-	1	-	5	-	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	7	7	-
	RMCSS	-	12	-	64	-	-	76	-	1	-	-	2	3	-	-	-	-	-	-	-	79	70	9
	TOTAL	2	54	11	133	-	4	204	2	23	4	-	12	41	1	5	4	-	-	10	1	256	218	38

2. Kinds of Research

The number of discarded studies done after 1968 indicates the nature, be it basic or applied, of the research carried out in the consulted sources. Among the selected studies, the ones done by the Gorgas Laboratory diminish in relation to those done by the University and those published by the Social Security magazine. The research done at the Gorgas is mainly basic. In the University there is a balance in the Natural Sciences Department between basic and applied research, in the Medical Department there is a strong tendency towards basic research. The consulted magazines, whose studies come mainly from hospitals, show a great emphasis on applied research.

In relation to the types of applied research, the most frecuent is the bibliographic (129 of 218) which surpasses in quantity the sum of both practical and experimental research (practical 37, experimental 52). At the Gorgas Laboratory, practical (16) and experimental (10) have more importance than bibliographic research (7); while at the University, in both the Medical and Natural Sciences Departments, bibliographic (42) and experimental (41) are prevalent over practical research (13). In the consulted publications bibliographic research is the most important (80 out of 89).

3. Research and Policy Areas

Chart B, classified according to policy areas and sub-areas, shows the practical problems toward which applied research is oriented. Most of the studies are related to Area I, services to the individual. Area III may be underestimated because program studies done by governmental agencies are not included, though the tendency would remain the same if they were. Within this area, adult health and mother and child care are the sub-areas where most research is done, while in mental health and nutrition there is very little research.

In this area most of the research is done by the Natural Sciences Department of the University and by the Gorgas. The area occupies an important place in the Social Security Agency magazine.

Area II, environmental programs, receives little research attention; the most numerous part of the studies related to this area come from the Gorgas Laboratory. This institution also has the greatest number of studies related to more than one policy area. According to the chart, many of its studies have to do with services to the individual as well as with environmental programs.

Area III, is possibly the most affected by a sub-register of date, specially in sub-areas A and B : organization and community education and personnel training. This registration shortage not only refers to the quantity of studies not included but mainly to the importance for the programs that research.

4. Studies not Included in the Inventory

As said before, the interviews included questions on diagnosis and program research due to the inventory's deficiency in this respect. The results appear in a list following the inventory.

The data obtained in the interviews is far from complete and most of it does not identify the institution or give the date of the study. Nevertheless, it complements the panorama we have presented and includes several diagnostic studies at the national and provincial level from which many of the current programs have been derived. In the Child's Hospital and in the Medical Department there also are some studies directed mainly at policy area III and particularly directed at the area of community education and organization.

5. Public Health : Diagnostic and Programatic Research (completed and in process).

Health in Panama: A Study and a Program - I. Falk; 1957 basis for regionalizing.

Diagnosis of the Health situation in Panama; carried out by the National Planning Commission, 1968.

National survey (1967) on nutrition :

- Levels of protein-caloric malnutrition in the population.
- Anemia.
- Goiter.
- Vitamine A and iodine deficiencies, etc.

In 1975 it was updated by a sampling study covering population centers already studied in 1967 and some isolated ones considered representative, not studied before.

Diagnostic studies on the mother and child population done before defining programs.

Medical Geography Atlas 1970.

Surveys on resources of the central region (1960's)

Pilot project in the Penonome area (1960's)

Diagnosis of the Azuero zone previous to the integration of health agencies in the Herrera and Los Santos provinces.

Diagnostic research in Bocas del Toro.

Diagnostic research in Veraguas.

Studies in Panama and La Chorrera (1970-71) whose aims were to determine attitude and socio-economic structure variables. These studies generate social organization and communal medicine programs.

Fertility studies (as part of the World Fertility Survey which is being aimed out).

Research carried out by the Child's Hospital

Nutritional needs of each family.

Study on place of origin of the children treated in the Child's Hospital.

Survey on the mother's health education - from whom has she received health education? - in order to analize the role played by auxiliary personnel and the mass media.

Medical Department's research in process

Medicine and community in Colon - teaching, research and service program. Its aim is to discover the population needs through the attention given by the students in order to adapt the study plans.

Hypertension epidemiology : genetic and environmental factors.
Mycology : vaginal infection, fungi in pregnant women.
Clinic psico pharmacology, drug tests (Litio) etc.
Mental disorder ecology in Los Santos province.
Research project on psiquiatric urgencies in Panama City.

III. INVENTORY OF RESEARCH ACTIVITIES*

Introduction

With the purpose of making an inventory of the situation of research in the health sector in Panama, we have resorted to the institutions that, in our country, are dedicated exclusively to research activities and to other institutions whose work is in one way or another related to research in this field.

We have consulted:

a) The research indexes of the Gorgas Laboratory (1968-1975)**

b) The medical magazines published in Panama.

c) The graduation theses for the Natural Sciences and Pharmacy departments at the University of Panama.

d) The reports of the dean of the Medical Department to the rector of the University of Panama.

For classification purposes the sources have been codified in the following manner:

	Source	Code
a)	"El Laboratorio Conmemorativo Gorgas: su historia y su labor". (The Gorgas Memorial Laboratory: its history and its work). Loterias' Magazine Supplement, No. 222-223. August-September 1974, Panama, pg. 184-200.	G.L.
b)	Archivos Médicos Panameños (Panamanian Medical Archives). Vol. XVII, No. 1, Panama, April, 1968 and Vol. XXII, Panama 1972.	A.M.P.

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* This inventory is presented as received from the Ministry of Health.

** The decision to reduce the inventory to this period was taken because it was considered that it is representative enough. The sole exception is the Nursing School of the Natural Sciences and Pharmacy Department of the University of Panama. Here the period studied included the theses presented from 1960 through 1975.

	Source	Code
c)	Revista Médica de Panamá (Medical Review of Panama) Vol. I, No. 1, Panama 1970	R.M.P.
d)	Revista Médica del Hospital General (Medical Review of the General Hospital of the Social Security Agency). Volumes I, II, III and IV. Panama, 1969-1972.	RHCSS
e)	Theses indexes of the Natural Sciences and Pharmacy Department of the University of Panama, Schools of:	
	Nursing	UPE
	Biology	UPB
	Chemestry	UPC
	Pharmacy	UPP
	Medical Technology	UPMT
f)	University of Panama, Medical Department. Dean's report to the Rector. Years: 1964-1965, 1969-1970, 1970-1971, 1971-1972, 1973, 1973-1974	FM

The studies were also classified according to their type, that is: Practical, bibliographical and experimental works.

The inventory's limitations consist in that it includes published studies leaving out those in process and those not published in scientific periodicals.

Likewise, it does not include those studies of diagnosis and program or evaluation type that have contributed to the definition of sectoral policies and programs. Interviews on research needs try to make up for this deficiency.

CONSULTED RESEARCHES

1968 - 1975

SOURCE	TOTAL	INCLUDED	NOT INCLUDED	
			Post 1968	Pre-1968
Laboratorio Gorgas	753	33	142	578
Facultad de Ciencias Naturales y Farmacia	252	83	80	89
Biología	36	21	14	1
Farmacia	34	10	-	24
Química	44	--	43	1
Biología y Química	81	--	20	61
Enfermería	44	41	3	--
Tecnología Médica	13	11	--	2
Revista Médica Panameña	7	7	--	--
Archivos Médicos Panameños	103	12=	--	91
Revista Médica del Hospital General de la Caja de Seguro Social	73	70	3	--
Facultad de Medicina	44	13	31	--
TOTAL	1232	218	256	758
			1014	

INVENTORY

No.	Year	Source	Subject	Type	Political areas
1.	1968	L.G.	Epidemiología de Enfermedad de Chagas	E.	IIa
2.	1968	L.G.	Farmacología de la Malaria	P.	IId
3.	1968	L.G.	Epidemiología de la Encefalitis Equina	E.	IIa
4.	1968	L.G.	Farmacología de Leishmaniasis	P.	Ic, Ia
5.	1972	L.G.	Enfermedad de Chagas	E.	Ic, IIa, Ia.
6.	1971	L.G.	Farmacología Malaria	E.	IId
7.	1969	L.G.	Clínica Enf. Chagas	P.	Ic, Ia
8.	1969	L.G.	Bacterias Enteropatógenas en Diarreas Infantiles.	P.	Ia
9.	1968	L.G.	Sero-Epidemiológica de Rubeola	P.	Ia, Ic
10.	1972	L.G.	Epidemiología de Murciélagos Hematófagos	B.	IIa
11.	1972	L.G.	Herpestología en Panamá	B.	Ia, Ic
12.	1971	L.G.	Epidemiología de Encefalitis Equina	B.	IIa
13.	1971	L.G.	Farmacología Malaria	P.	IId
14.	1970	UPB.	Estudio Comparativo Bacteriano en Orina	P.	Ic
15.	1970	UPB.	Estudio Hemoglobina Hereditaria-Importancia Pre-matrimonial	P.	Ia
16.	1970	UPB.	Epidemiología Brucelosis Bovina	P.	IIa
17.	1970	UPB	Est. Niv. Normales de Acido Urico	P.	Ic
18.	1970	UPB.	Inv. Diagnóstico del Duodeno	E.	Ic
19.	1970	UPB.	Indicadores de Anemia, Diferentes Grupos de Edad	P.	Ia, Ib, Ic
20.	1970	UPB.	Hemoglobina A2 en Población	E.	Ia
21.	1968	UPB.	Estudios Serológicos	E.	Ic
22.	1970	UPB.	Valor Nutritivo de Ahumar Carne	E.	Ib
23.	1968	UPB.	Parasitología Ganado Porcino	E.	IIa
24.	1968	UPB.	Análisis Químico, Agua Bahía	E.	IIb
25.	1969	UPF.	Bromatología Harinas	E.	Ib
26.	1970	UPF.	Costo Prescripciones, CSS	P.	
27.	1968	UPF.	Purificación, Leche Higuerón	E.	Ia, Ic
28.	1968	UPF.	Nutrición: Nance	E	Ib
29.	1968	UPF.	Farmacología Uterina	E.	Ia
30.	1970	UPF.	Inventario de Antibióticos	B.	Ic
31.	1969	HCSS.	Cáncer (Linfoma)	B.	Ic
32.	1969	HCSS.	Otosclerosis - Panamá	P.	Ic
33.	1969	HCSS.	Cardiopatías	B.	Ia, Ic
34.	1969	HCSS.	Cáncer Endometrio	B.	Ic

No.	Year	Source	Subject	Type	Political areas
35.	1969	HCSS.	Cáncer Reg. Paratidea	B.	Ic
36.	1969	HCSS.	Bronquiectasia	B.	Ic
37.	1969	HCSS.	Cardiopatías	B.	Ic
38.	1970	RMP.	Farmacología de la T.B.	P.	Ic
39.	1970	RMP.	Cáncer (Colon)	B.	Ic
40.	1970	RMP.	Cuidado Paciente Neurocirugía	B.	Ic
41.	1970	RMP.	Dermatología (Corticoesteroides)	B.	Ic
42.	1970	RMP.	Psiquiatría (Adoc. Religioso)	B.	Ic
43.	1970	RMP.	Cardiología de Embarazo	P.	Ia
44.	1970	RMP.	Cirugía Aorta Abdominal	B.	Ic
45.	1972	RHCSS.	Medicina Interna (Arterioesclerosis)	B.	Ic
46.	1972	RHCSS.	Rehabilitación Mano (Riesgos Profesionales)	B.	Ic
47.	1972	RHCSS.	Medicina Interna	B.	Ic
48.	1972	RHCSS.	Cáncer Epidídimo	B.	Ic
49.	1972	RHCSS.	Cáncer: Tumores	B.	Ic
50.	1969	L.G.	Ecología (Encephalitis Equine)	E.	IIa
51.	1968	L.G.	Infecciones Arbovirales, Frecuencia y Distancia	P.	IIa
52.	1971	L.G.	Frecuencia y Dist. de Trypanosona	P.	IId
53.	1971	L.G.	Epidemiología de Culex	P.	IId
54.	1971	L.G.	Bacterias Entéricas en Infantes	E.	Ia
55.	1969	L.G.	Clínica de la Enfermedad de Chagas	P.	Ic, Ia
56.	1971	L.G.	Infección con Virus Bussuquaba	P.	Ic
57.	1969	L.G.	Prevalencia de Bacterias entero Patógenas en Diarreas Infantiles	P.	Ia
58.	1970	L.G.	Malaria Humana	P.	Ic
59.	1972	L.G.	Diagnóstico de la Leischmaniasis	P.	Ic
60.	1972	L.G.	Farmacología de la Malaria	P.	IId
61.	1971	L.G.	Enfermedad de Chagas	B.	Ic, IIa, Ia
62.	1970	L.G.	Cardiología en Embarazo	P.	Ia
63.	1969	U.P.E.	Problemas emocionales del paciente hospitalizado por Tuberculosis	P.	Ic
64.	1969	U.P.E.	Preparación Psíquica del paciente para intervención indoscópica	P.	Ic
65.	1966	U.P.E.	Cuidados de enfermería en cirugía cardíaca	B.	Ic
66.	1963	U.P.E.	Preparación Psíquica de las embarazadas para el parto.	B.	Ia
67.	1966	U.P.E.	Descontento en la enfermera Profesional	B.	IIIb
68.	1967	U.P.E.	Educación del paciente diabético	B.	Ic
69.	1965	U.P.E.	Prevención del cáncer de la mujer	B.	Ia, Ic
70.	1966	U.P.E.	Cuidados del paciente epiléptico	B.	Ic

No.	Year	Source	Subject	Type	Political areas
71.	1967	U.P.E.	Participación de enfermeras en educación de padres durante el embarazo	B.	Ia, IIIa
72.	1966	U.P.E.	Cuidados de Enfermería en la Fisura palatino	B.	Ic
73.	1970	U.P.E.	Sistema de enfermería en Panamá	B.	IIIb
74.	1970	U.P.E.	Problemas de enfermería en pacientes hospitalizados por aborto	P.	Ia
75.	1965	U.P.E.	Prevención y tratamiento de úlceras de decúbito	B.	Ic
76.	1965	U.P.E.	Farmacología aplicada a enfermería	P.	Ic
77.	1965	U.P.E.	Prevención y cuidado de diabetes mellitus	B.	Ic, Ia
78.	1966	U.P.E.	Educación sanitaria en el control de Tuberculosis	B.	IIIa
79.	1967	U.P.E.	Cuidados del paciente con hiperplasia de la próstata.	B.	Ic
80.	1966	U.P.E.	Tratamiento de enfermedades cardíacas	B.	Ic, Ia
81.	1967	U.P.E.	Geratría	B.	Ic
82.	1970	U.P.E.	Problemas mentales de la adolescencia	B.	Ic
83.	1970	U.P.E.	Efectividad del servicio continuado del Niño Prematuro en el Hogar.	B.	Ia
84.	1967	U.P.E.	Atención de pacientes con cáncer de la mujer	B.	Ia, Ic
85.	1968	U.P.E.	Rehabilitación de operados de Tubucoplastía	P.	Ic
86.	1966	U.P.E.	Participación de enfermeras en Programa de Prevención del Tétano.	B.	IIIa
87.	1966	U.P.E.	Participación y Función de Auxiliares de Enfermería.	B.	IIIb.
88.	1968	U.P.E.	Atención de adolescentes con disturbios psicopáticos	B.	Ic
89.	1966	U.P.E.	Cuidados de niños prematuros sanos	B.	Ia
90.	1966	U.P.E.	Importancia de la educación en la prevención de Gastroenteritis Infantil	B.	Ia, IIIa
91.	1969	U.P.E.	Problemas en el control ambulatorio de glomerulonefritis infantil	B.	Ia
92.	1968	U.P.E.	Participación de la enfermera en la preparación psíquica del paciente quirúrgico	B.	Ic
93.	1966	U.P.E.	La Enfermera y el Paciente Esquisofrénico	B.	Ic
94.	1968	U.P.E.	El control domiciliario del diabético	B.	Ic
95.	1969	U.P.E.	La enfermera obstetra y la atención del parto.	B.	Ia
96.	1966	U.P.E.	Manual de técnicas básicas de enfermería en la Sala de Operaciones	B.	IIIb

Total de Enfermería = 33

No.	Year	Source	Subject	Type	Political areas
97.	1969	UPTM.	Nutrición: Proteínas séricas	E.	Ib
98.	1969	UPTM.	Evolución del método P.A.S.	B.	Ic
99.	1969	UPTM.	Análisis inmunolectroporetico de las proteínas del suero.	E.	Ib
100.	1969	UPTM.	Técnica de laboratorio	E.	I, II
101.	1969	UPTM.	Análisis de sueros	E.	Ia, Ic
102.	1969	UPTM.	Determinación de valores normales de Hemoglobina y Hematocritos	E.	Ia, Ic
103.	1969	UPTM.	Estudio Serológico	E.	Ia, Ic
104.	1969	UPTM.	Estudio Serológico	E.	Ia, Ic
105.	1969	UPTM.	Parasitología: Tricomaniasis	P.	IId
106.	1969	UPTM.	Estudio Serológico TM = 10 Rechazo antes 68 = 2	E.	Ia, Ic
107.	1970	RMHCSS.	Farmacología del Halotano	B.	Ic
108.	1970	RMHCSS.	Cirugía	B.	Ic
109.	1970	RMHCSS.	Medicina Interna	B.	Ic
110.	1970	RMHCSS.	Cáncer	B.	Ic
111.	1970	RMHCSS.	Epidemiología de la Malaria	B.	IId
112.	1970	RMHCSS.	Medicina Interna	B.	Ic
113.	1970	RMHCSS.	Obstetricia	B.	Ia
114.	1970	RMHCSS.	Neurología	B.	Ic
115.	1968	RMHCSS.	Tuberculosis	B.	Ic
116.	1968	AMP.	Parasitología	B.	IIa
117.	1968	AMP.	Cirugía	B.	Ic
118.	1968	AMP.	Farmacología del Cáncer	P.	Ic
119.	1968	AMP.	Cirugía	B.	Ic
120.	1968	AMP.	Cirugía	B.	Ic
121.	1968	AMP.	Urología	B.	Ic
122.	1970	RMHCSS.	Cáncer	B.	Ic
123.	1970	RMHCSS.	Ortopedia	B.	Ic
124.	1970	RMHCSS.	Cáncer	B.	Ic
125.	1970	RMHCSS.	Neurología	B.	Ic
126.	1970	RMHCSS.	Cáncer	B.	Ic
127.	1970	RMHCSS.	Farmacología de la Malaria	B.	IId
128.	1973	L.G.	Epidemiología de la Leishmaniasis	B.	IIa
129.	1973	L.G.	Epidemiología de Diarreas Infantiles	E.	Ia, IIb
130.	1974	L.G.	Epidemiología de Aguas Negras	E.	IIb
131.	1973	L.G.	Epidemiología de la Brucelosis	E.	IIa
132.	1974	L.G.	Infecciones Virales	E.	IIa
133.	1974	L.G.	Farmacología de la Malaria	B.	IId
134.	1972	L.G.	Epidemiología de la Encefalitis	B.	IIa

No.	Year	Source	Subject	Type	Political areas
135.	1970	RMHCSS.	Farmacología de la Quiridina	P.	Ic
136.	1970	RMHCSS.	Medicina Interna	B.	Ic
137.	1970	RMHCSS.	Epidemiología (Morbilidad, Mortalidad Infantil)	P.	Ia
138.	1970	RMHCSS.	Cáncer	B.	Ic
139.	1970	RMHCSS.	Cirugía	B.	Ic
140.	1970	RMHCSS.	Cirugía	B.	Ic
141.	1970	RMHCSS.	Epidemiología (Prestaciones Pediátricas)	P.	Ia
142.	1970	RMHCSS.	Cáncer	B.	Ic
143.	1975	UPB.	Obstetricia	E.	Ia
144.	1975	UPB.	Parasitosis Intestinal	E.	Ia
145.	1975	UPB.	Parasitología	E.	IIa
146.	1975	UPE.	Medicina Interna	B.	Ic
147.	1975	UPE.	Medicina Interna	B.	Ic
148.	1975	UPE.	Educación en Salud	B.	IIIa
149.	1975	UPE.	Planificación Familiar	E.	Ia
150.	1975	UPE.	Medicina Interna	B.	Ic
151.	1975	UPE.	Cirugía	B.	Ic
152.	1975	UPE.	Medicina Interna	B.	Ic
153.	1975	UPF.	Farmacología Clínica	B.	Ic
154.	1975	UPF.	Farmacología	B.	Ic
155.	1975	UPF	Nutrición	E.	Ib
156.	1975	UPF	Tabacosis	P.	Ic
157.	1971	FM.	Parasitología	E.	IIa
158.	1972	FM.	Enfermedad de Chagas	E.	IIa
159.	1971	FM.	Farmacología	E.	Ic
160.	1971	FM.	Nutrición	E.	Ib
161.	1971	FM.	Microbiología	E.	IIa
162.	1971	FM.	Epidemiología de teratologías	B.	Ia
163.	1971	FM.	Salud Pública	B.	I, II, III
164.	1971	FM.	Cirugía	E.	Ic
165.	1975	UPB.	Hematología	E.	Ic
166.	1975	UPB.	Parasitosis intestinal - Epidemiología	E.	Ia, IIa
167.	1974	UPB.	Parasitología Intestinal	E.	IIb, Ib, Ic
168.	1974	UPB.	Micología	E.	IIa
169.	1974	UPB	Laboratorio Clínico (Niveles séricos de Proteínas)	E.	Ic
170.	1974	UPB.	Laboratorio Clínico (Niveles de Cu y Zn)	E.	Ic
171.	1970	RMCSS	Neurología: Meningitis	B.	Ic, Ia
172.	1970	RMCSS.	Otorrinolaringología	B.	Ia, Ic
173	1970	RMCSS.	Nefrología	B.	Ia, Ic

No.	Year	Source	Subject	Type	Political areas
174.	1970	RMCSS.	Cirugía (Prostatitis crónica)	B.	Ic
175.	1970	RMCSS.	Nefrología (Creatinina)	B.	Ic
176.	1970	RMCSS.	Cirugía Resección Intestinal	B.	Ic
177.	1970	RMCSS.	Obstetricia, Epidemiología	B.	Ia
178.	1970	RMCSS.	Neurocirugía	B.	Ic
179.	1970	UP.	Laboratorio Clíni co	B.	Ic
180.	1974	AMP.	Cardiología (Terapéutica)	B.	Ic
181.	1974	AMP.	Tripanosomiasis	B.	IId
182.	1974	AMP.	Histoplasmosis	B.	IId
183.	1974	AMP.	Tuberculosis	B.	Ic
184.	1974	AMP.	Urología, Lesiones Quirúrgicas Ginecológicas del Uretre	B.	Ic
185.	1974	FMIM.	Parasitología	E.	IIa
186.	1973	RMCSS.	Otorrinolaringología	B.	Ic, Ia
187.	1972	UPB Y N	Psiquiatría: Proteínas y Acido Urico	E.	Ic
188.	1972	UPB_q^q Y N	Psiquiatría: Electrolitos en Enfermos Mentales	E.	Ic
189.	1972	UPB_q Y N	Nutrición: Valores Acido Ascórbico	E.	Ib
190.	1972	UPB_q Y N	Nutrición: Urino-Bilinogeno y Patrones	E.	Ib
191.	1972	UPB_q Y N	Tecnología Médica	E.	Ia, Ic
192.	1973	RMCSS.	Cáncer, cuello uterino	P.	Ia, Ic
193.	1973	RMCSS.	Ortopedia	B.	Ia, Ic
194.	1973	RMCSS.	Ortopedia	B.	Ia, Ic
195.	1973	RMCSS.	Cirugía (Ano-Recto)	B.	Ic
196.	1973	RMCSS.	Cirugía Intestinal	B.	Ic
197.	1973	RMCSS.	Neurología	B.	Ic
198.	1973	RMCSS.	Cirugía, Colostomías	B.	Ic
199.	1973	RMCSS.	Cirugía, Quemaduras	B.	Ic
200.	1972	RMHCSS.	Neurología	B.	Ic
201.	1972	RMHCSS.	Urología	B.	Ic
202.	1972	RMHCSS.	Epidemiología Reumática	B.	Ic
203.	1972	AMP.	Cirugía: Riñón	B.	Ic
204.	1970	RMCSS.	Epidemiología: Bocio	B.	Ic
205.	1970	RMCSS.	Diabetes	B.	Ic
206.	1970	RMCSS.	Diabetes	B.	Ic
207.	1970	RMCSS.	Cirugía : (Páncreas)	B.	Ic
208.	1970	RMCSS.	Cirugía (Ulcera)	B.	Ic
209.	1970	RMCSS.	Cirugía (Faringo-Esófago)	B.	Ic
210.	1970	RMCSS.	Otorrino (vértigo)	B.	Ic
211.	1970	RMCSS.	Ginecología	B.	Ic

No.	Year	Source	Subject	Type	Political areas
212.	1970	RMCSS.	Cáncer cuello uterino	B.	Ic
213.	1970	RMCSS.	Cáncer Vías Digestivas	B.	Ic
214.	1970	RMCSS.	Cáncer Tumores Maxilares	B.	Ic
215.	1973	RMCSS.	Prevención Rabia (Medicina Preventiva)	B.	IIa
216.	1973	RMCSS.	Hematología Clínica	B.	Ic
217.	1973	RMCSS.	Rehabilitación en Neumopatías	B.	Ic
218.	1973	RMCSS.	Psiquiatría: Excreción y Retención de Litios.	E.	Ic

PART THREE

RESEARCH NEEDS IN PANAMA

RESEARCH NEEDS IN THE HEALTH SECTOR

In this chapter, we present the results of the interviews on research needs. In the first place we will explain some of the concepts given by the people interviewed in relation to the aspects which research in Panama should include. We will then list the needs mentioned by them, classified according to the program areas which appear in the policy chart.

I. PARTICULAR ASPECTS OF RESEARCH IN PANAMA

All the interviewees considered as specially important all research related to the government's health programs, that is to say, all research that could be called "applied-operational". The interviewees do not exclude the need for basic research, whose relation with the programs is indirect, but rather assign to it a particularly significant content: it is always related to the country's main problems. That is to say, that the reference point used to define its importance is not its significance within the limits of a particular science, but mainly its significance in relation to the country's problems. Even though the first criterion is not ignored, it is subordinated to the second one.

Within this general view of the usefulness of research, the interviewees listed some concepts which define even more clearly what type of research should be given priority. The main ones are:

1. Diagnostic Research - which seeks to understand a problem in order to devise realistic policies.

2. Epidemiologic research

3. Programatic Research - which seeks to grasp those data and situations needed to implement specific programs.

4. Evaluative Research -

   a. On services offered: analyses programs in operation, to determine positive aspects and mistakes.

   b. On administrative processes and procedures: specific evaluation of administrative processes, in order to improve them.

These types of research make evident the widespread concern with perfecting the systems of planning and implementing policies and programs. There is a desire to avoid improvised decisions due to the urgency of problems and to the lack of timely information. It should be noted that this concept of research allied to programming is defended not only by planners and administrators, but also by researchers of the scientific community.

One important concern expressed by those interviewed was the individual and isolated character of research. In order to solve this and other problems already mentioned, it was repeatedly suggested that it is necessary to plan, organize, and rationalize resources for research and for the training of research groups. These can guarantee the multiplication of individual efforts as well as their continuity and the creation of "research policies and priorities".*

The role that higher education should play in the training of human resources is important in this context. Consciousness raising on the fact that research is needed in order to solve problems is a task which belongs mainly to the University, according to the people interviewed. Research should be part of the training and motivation of professors and a permanent activity in the academic field. The University should also be directed towards the problems of the community and in relation to this, should put more emphasis on laboratories and the pure sciences.

II. NEED FOR RESEARCH RELATED TO PROGRAM AREAS

During the interviews on the need for research, the interviewees, using the policy chart,** pointed out the subjects which in their view constituted the country's needs. Some of the answers went beyond the chart's categories. Because of this, we have classified the answers according to the three pre-established areas, but setting up new sub-areas when necessary. This, plus the fact that the interviewees did not consider it important to do research in some of the policy areas, explains why it the list of needs does not correspond exactly to the policy chart. Though wasused as an instrument to guide the interviews, in some cases it was surpassed by the results.

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* Interview with Dr. Ezequiel Jethmal.

** Policy chart annexed at the end of Part I.

Before presenting the list we must make some observations in order to make reading easier. In the first place, it is necessary to understand the scope of the needs mentioned in each point of the list. It deals with subjects or research problems that differ in extension, but are closely related one to the other, and to the general health policy explained in the first chapter of this document. For this reason, in some cases the subjects have points in common instead of being mutually excluding and can only be understood in the context of this whole chapter and not separately. This context is one of the elements which will allow us to emphasize as being problems specially important.

Even though it is practically impossible to determine a strict scale of priorities for the needs found, it is possible to point out as specially important some aspects emphasized in the health policy and in the opinions of those interviewed.

One specific research subject can correspond to several of the needs mentioned here. The more aspects of the list it includes, the more adequate it will be to the country's policies and to the research needs expressed by planners and scientists in relation to those policies. This criterion can be useful as an aid for evaluating specific projects. In cases in which there is a direct relation to another aspect, the reader is referred to it.

The list is not in the same order as the chart on policies and program areas. Area III (supporting services) comes first, followed by areas I and II (services to the individual and environmental programs). This is due to the importance or priority assigned to each one of these areas.

Area III, Supporting services, is specially important in the health policies. As was seen in the chapter on policy, it consists of activities which are fundamental to the provision of services and which is the basis for the fulfillment of the sector's goals. Furthermore, because the interviewees all greatly stressed research in area III, this area ended up with the greatest number of proposed research subjects. Undoubtedly, one of the reasons for this emphasis is that it deeply affects the other two. Moreover, area III concentrates those research subjects previously classified as having priority: diagnostic, programatic and evaluative, and managerial and procedural studies.

Within this area, the most important subareas are organization and health education in the community and training of human resources,

both related to the evaluation of the simplified medicine programs and to the staff requirements at different levels for such programs. The approach derived from this and also evident in the other areas, is the emphasis on the social problems present in almost all the indicated research subjects. This denotes a concern for the use of multidisciplinary approach in the solution of health problems. It is significant that this socio-economic or cultural concern appears even included in medical subjects as is the epidemiological study of health problems.

The area of Services to the individual (I), permeated viewpoint found in the supporting services, also gives special importance to the preventive element, and especially to all nutritional aspects. It was observed that there is a great research vaccum in this field, inspite of its priority within the health policy.

It must be pointed out that all aspects mentioned as specially important to the country, stress the interdisciplinary approach to research. Prevalent was the idea that health problems are not of the exclusive concern of the medical sciences and that they are all related, in one way or another, to life in society.

The area on Environmental programs (II) appears as the least important in the list due to several reasons. In the first place, among the people interviewed there were few functionaries or specialists in that area. Secondly, everything seems to indicate that it receives little priority due to the success already obtained in this field, specially as regards the supply of drinking water for the population. This does not mean that there are no environmental problems. It means that the most urgent ones have already been solved or are in the process of being solved and probably because of this they are not given much importance for future research.

List:

A. Need for Research in Area III: Supporting Services

1. General research:

1.1 Work out a comprehensive diagnosis of the sector in order to improve planning (already foreseen by the Planning Ministry).

1.1.1 Do socio-economic diagnostic research aimed at acquiring knowledge of community characteristics in order to plan the coverage of health services in terms of:

- organization
- income
- forms of production
- nutritional habits
- cultural characteristics, etc.

1.1.2 Research on indicators which will permit the study of the relationship between the family and rural and urban environmental pecularities to adapt programming to specific forms so as of communal organization and participation.

1.1.3 Draw up surveys on the population's values and attitudes toward health.

1.2 Carry out a national survey on morbidity.

1.3 Epidemiologic research to complement the morbidity survey.

- Prevalence and incidence of most common diseases in Panama.
- Their relation to the ecological and social environment.
- Development of a system of collection and diffusion of up-to-date and permanent information about these diseases to be distributed within the health sector.

1.3.1 Specific subjects for epidemiological research:

- Research on falciform anemia in the black or mixed population.
- Studies on Chagas' disease which could be causing a great number of deaths as a result of heart diseases.

1.3.2 Laboratory research on communicable diseases such as hepatitis, equine encephalitis (arbovirus), leichmaniasis, which are considered important in Panama.

1.4 Studies on the integration of services of the Ministry and the Social Security Agency; evaluation of its effects on expansion of coverage: will it be enough for the uninsured adult population? How will integration be carried out in rural areas? Necessary administrative mechanisms for successful integration. Evaluation of the process in the three integrated provinces.

2. Need for research related to program subareas:

a. Organization and health education in the community:

2.1 Study and standarization of past experience to serve as guides for the continuity of programs and their expansion (evaluative research) so that they won't depend on the personal experience of those who implement them and so that it will develop horizontally:

2.1.1 Evaluative comparative research of the primary health care program (simplified medicine in rural communities) with local staff (health aides) trained locally, in the three health integrated provinces:- Colón, Bocas de Toro and Veraguas - with the goal of improving, unifying and extending it, once standard criteria for the training of staff are established.

2.1.2 Evaluate programs which tend to incorporate the community with the health authorities in sector's activities.

2.1.3 Evaluation of the "Integral Health Program": food production, community vegetable gardens', etc.

2.2 Evaluate community organization and education methods. Are they the most adequate or can they be perfected?

2.2.1 Investigate orientation and content of health education in the community.

2.2.2 Evaluate effect of health committees' activities on change of values and attitudes toward health in the communities.

2.3 Research on human resources for the mental health sector potentially existing in the community and their use as paramedical staff.

b. Training of human resources:

2.4 Medical staff

2.4.1 Evaluative research on kind of training given and that which should be given to doctors, according to the country's needs.

2.4.2 Study on staff working in the health sector and teaching staff at the University training, attitudes, age, etc.

2.4.3 Research on causes of migration of medical staff.

2.4.4 Evaluation of the "teaching through practice" program: Has there been a real change of attitude among medical students? (A.2.1.1)

2.4.5 Studies which will permit rationalization of capacity of services to absorb practicing students available, equipment and staff. (2.6)

2.5 Professional staff in other sciences:

2.5.1 Evaluative research on participation of students of other branches in on-the-spot activities, in the health and community programs (see A.2.1.1).

2.5.2 Research on team work methods, and the role of each professional.

2.5.3 Research on ways of adapting mental health personnel such as doctors, psychologists, social workers, etc. to community work.

2.6 Paramedical and technical personnel:

2.6.1 Research on demand of medical and paramedical personnel in general in order to plan training of human resources according to the country's needs and absorption capacity, and ways of linking trained personnel to the administrative structure and the work market in general.

2.6.2 Research on training of new medical and paramedial personnel in:

- training costs
- definition and redistribution of functions
- rationalization of distribution and location of human resources according to requirements; selection criteria for personnel according to this.

2.6.3 Evaluate and study the possibilities for the expansion of the program for health aides training with aid of setting common criteria (see A.2.1.1).

2.6.4 Research on training of technical personnel at intermediate levels: radiologists, instrumentalists, laboratory workers; motivation, work sources, human resources, programs, etc.

c. Development and recuperation of existing infrastructure

2.7 Evaluation of physical and functional conditions of sector's infrastructure, in terms of organization, space and administrative procedures. Establish regulations and standards for characterizing institutions according to the services they provide (see A.1.1.).

2.7.1 Feasibility studies of optimal use of installed capacity with the goal of putting the local health infrastructure to its maximum usage in order to relieve the congestion of services in the hospitals and to make these services easily accessible to the populations.

2.7.2 Study of costs and justification of the use of imported technology in relation to local pathology peculiarities.

B. Need for Research in Area I: Services to the Individual related to Program Subareas:

1. Mother and child care:

General research was suggested for this subareas, with emphasis on studies which include socio-economic and cultural factors. This approach coincides with the studies suggested in part A.

1.1 Subjects suggested:

1.1.1 Study of causes of low coverage of institutionalized care during delivery and assistance during puerperium in rural areas.

1.1.2 Research on mother and child neurology. More detailed research on neonatal convulsive disorders (or particularly in the first years of life), studying metabolic problems, traumatisms during birth, and early infections which could cause it.

1.1.3 Research on mental health in the maternal and child group (see subarea 5).

2. Nutrition

Research on nutrition and its incidence on morbidity. Analysis of local cases. The interviewees put the greatest emphasis on this field, which shows that it is a very important policy aspect (as a preventive factor of other health problems) and on research (because the necessary research has not been carried out.)

2.1 Socio-economic studies; attitudes; feeding habits; land tenure; educational aspects; particularities of the problem in Panama (see numerals A.1.1.1 and A.1.1.2).

2.2 Research on food production, marketing, storage and conservation. Elasticity coefficient of basic products.

2.3 Up-dating information on the country's nutritional situation:

2.3.1 Establish rules and guides for a periodic evaluation of the population's nutritional state:

- Determine methodology, including cost-effect analysis.

2.3.2 Evaluate existing nutritional programs.

2.3.3 Research related to traditional nutrients in the country's diet; this is necessary for the success of existing programs on supplementary feeding and on food production.

3. Adult health:

3.1 Research on rehabilitation of adults with cronic diseases: treatment alternatives within the family: training.

3.2 Promote data collection and studies on cronic diseases.

3.3 Geriatric problems: with improving health conditions, life expectancy is increasing and in 20 or 25 years the aged could become a significant problem.

4. Dental health:

4.1 In dentistry, carry out studies which will allow preventive action.

5. Mental health:

5.1 Research on mental health, with emphasis on preventive treatment.

5.2 Research on mental health of mother and child and adolescent groups (for example, behaviour problems and problems with drug addiction).

5.3 Research on ecological and epidemiological mental disorders.

5.4 Research on training of human resources (see A.2.3 & A.2.4.3).

C. Research Needs in Area II: Environmental Programs

1. General research:

1.1 Studies on the people's attitudes toward resources for environmental improvement available to them: Use of latrines, stoves, boiled water, etc.

1.2 Survey on the Panamanian doctor's attitude in general and of the health workers in particular, toward the idea that medical problems are related to the environment that as a result, the approach to their solution should be interdisciplinary and intersectorial. Attitude toward the changes in the doctors' role which this implies.

1.3 Previous research to analyze, give solutions and reduce the impact of health problems caused by government development projects such as: displacements and relocation of villages, opening of roads, etc. (concretely in the construction projects of the Bayano hydroelectric plant and the Panamerican Highway to Darien).

2. Research needs related to programs sub-areas on:

a. Environmental health:

2.1 Establish local indicators in order to be able to decide on criteria for environmental health.

2.2 Diagnostic studies on housing in the countryside as well as norms and standards for its improvement.

2.3 Research on problems caused by animals to health and food (rodents, insects, etc.)

2.4 Research on occupational health: measures to prevent work accidents (important cause of morbidity and mortality in Panama).

b. Construction and maintenance of water supply systems, rural wells and sewers:

2.5 Research on stabilizing pools for sewage, particularly in relation to the risk of contaminating lake Maden as a result of the urbanization process on its shores.

c. Garbage collection and disposal

2.6 Studies on garbage collection, disposal and possible treatment in Panama City and Colon.

This sub-program has been given special importance, additing the need of making similar studies for the rural areas, because here garbage becomes an environmental health problem and counteracts disease prevention.

III. NEEDS FOR TRAINING HUMAN RESOURCES

The interviewees greatly emphasized the need of training medical personnel with greater knowledge of the Panamanian setting and with a less "bookish and academic" education. On the other hand, the training of intermediate, auxiliary and paramedical personnel was emphasized, as was the need of studying the type of training requirements for this personnel.

Training levels

It is worthwhile mentioning that at present in the nursing field there are the following training levels:

- Graduate nurses (B.A.) - 4 years of university training.*
- Under graduate nurses -. 3 years of university training (Nursing Department, University of Panama).
- Nurses - 2 years at the Azuero training school.
- Nursing auxiliaries - Institutional training in hospitals.
- Health aides - seven months of on-the-spot training: Colon province.
- Health committees - On-the-spot training from health teams on community health problems.

It would be useful to obtain information on training of community educators, sanitary inspectors, etc. which is not included in this document.

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* In addition to post-surgery technical nurses in the Child's Hospital.

APPENDIX

Chart No. 1

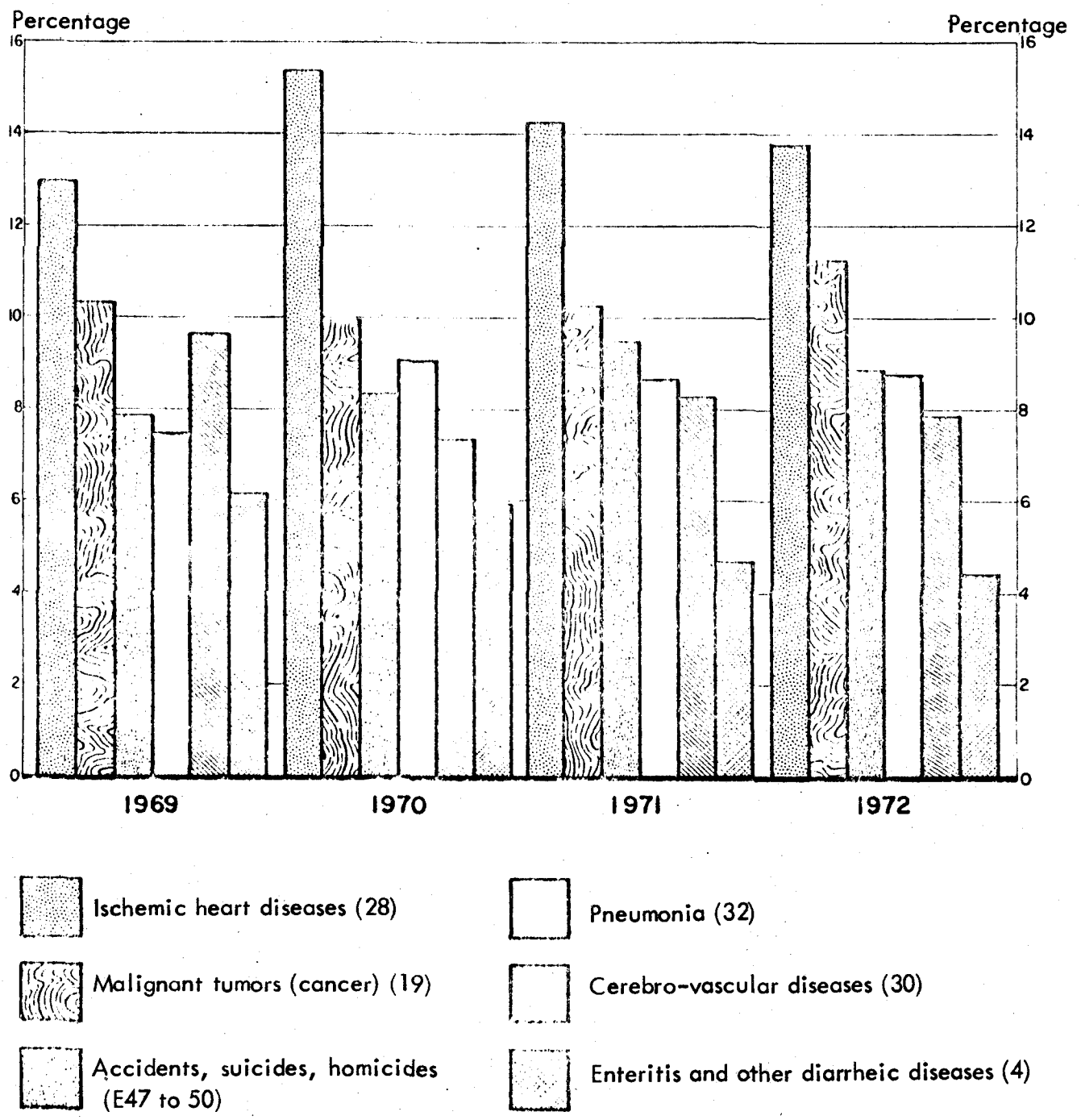
BIRTHS AND DEATHS IN 1973

Province	Births	Fetal Deaths	Deaths		Rates under 1 year
			Total	Under 1 year	
TOTAL	53,363	2,928	9,249	1,698	31.8
Panama City	11,157	1,313	1,967	214	19.1
Colon City	2,072	243	526	91	43.3
Bocas del Toro	2,054	22	340	101	50.5
Coclé	4,897	88	820	163	33.3
Colón	4,532	385	1,022	214	47.5
Chiriquí	9,524	179	1,614	339	35.7
Darién	710	21	100	23	32.9
Herrera	2,433	31	463	79	32.9
Los Santos	1,942	30	448	56	29.5
Panama	21,481	2,098	3,298	510	23.7
Veraguas	5,790	74	1,138	213	36.7

Source: Statistics and Censuses Bureau. General Comptrollership of the Republic.

Chart No. 2

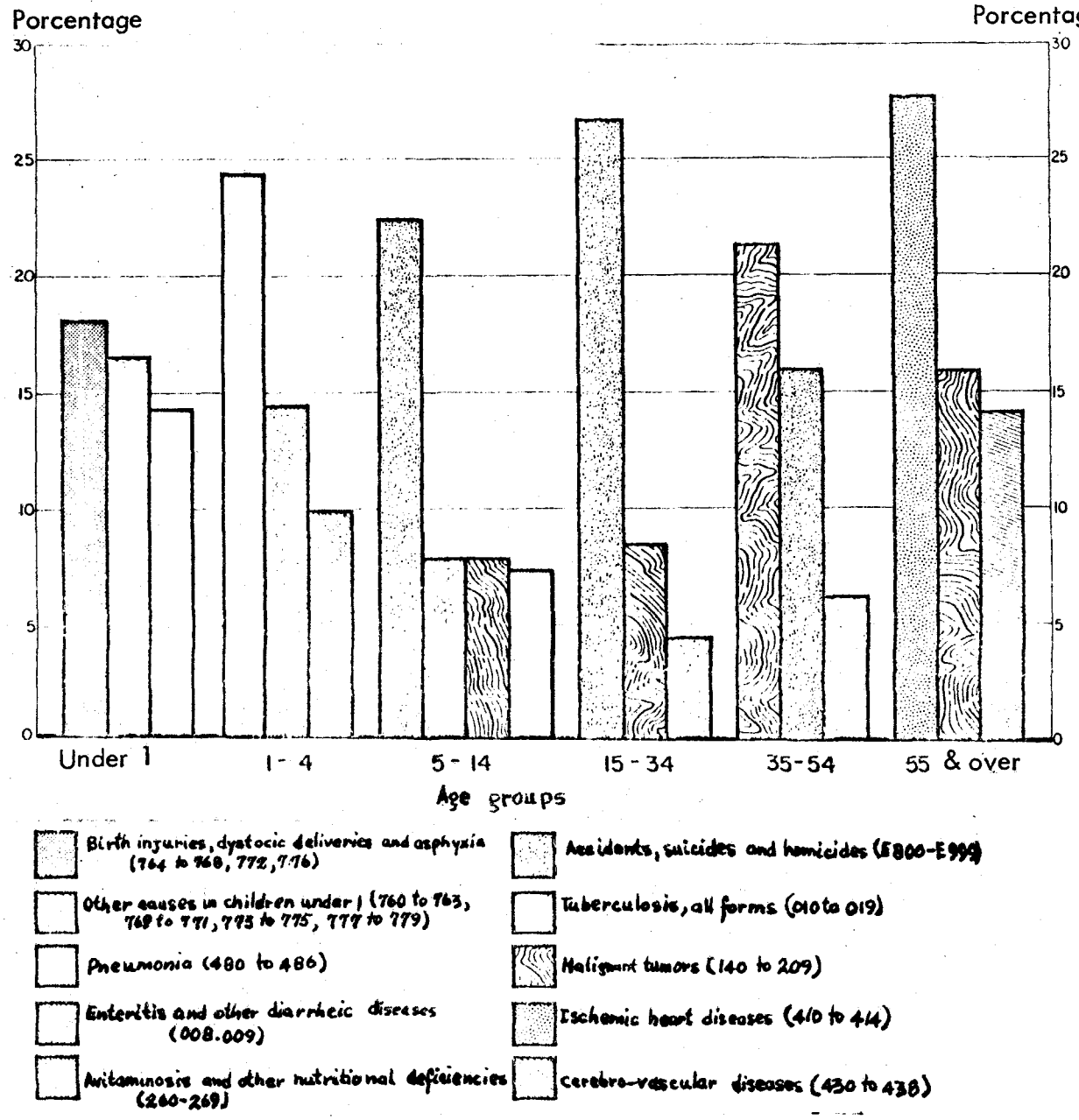
MEDICALLY CERTIFIED DEATHS, ACCORDING TO THE SIX MAIN CAUSES, IN THE REPUBLIC: 1969, 1970, 1971, 1972



Note: The numbers in parenthesis correspond to the International Disease Classification (Eight Revision, B List of 50 groups of causes).

Chart No. 3

MEDICALLY CERTIFIED DEATHS ACCORDING TO THE THREE MAIN CAUSES IN EACH AGE GROUP, IN THE REPUBLIC: 1972



Note: The numbers in parenthesis correspond to the International Disease Classification (Eighth Revision - Detailed List).

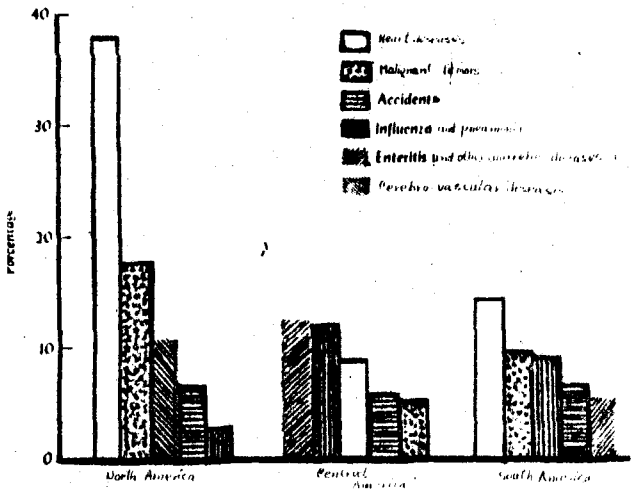
Comparative Charts a, b, c, d

COLOMBIA: MAIN CAUSES OF DEATH (1969)

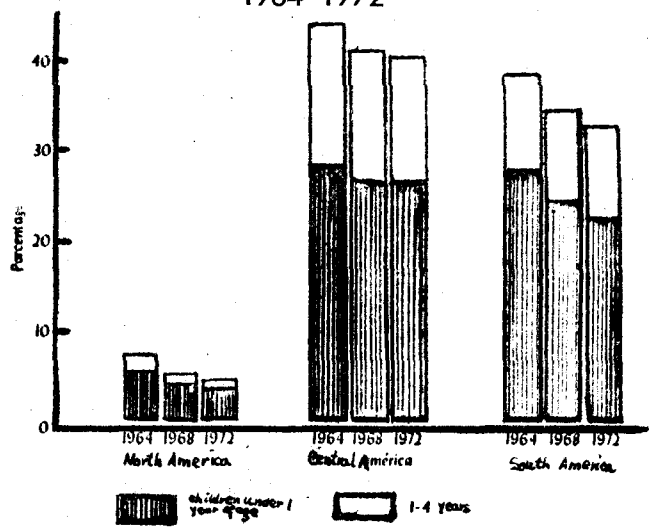
Order	CAUSE OF DEATH	No. of deaths	&%
1	Enteritis and other diarrheic diseases	19,807	11.0%
2	Pneumonia, with the exception of viral pneumonia	12,992	7.2
3	Heart diseases, other forms	10,221	5.8
4	Brochitis, emphecema and asthma	9,317	5.3
5	Ischemic heart diseases	7,637	4.2
6	Cerebro-vascular diseases	6,957	3.9

Source: Planning Office - Mealth Ministry

Percentage of Deaths Attributed to the Five Main Causes in the Three Regions of the Americas - 1970-1972



Percentage of Deaths in Children under 5 Years in the Three Regions of the Americas 1964-1972



Percentage of Deaths due to Infectious and Parasitic Diseases, Excluding Enteritis and Other Diarrheic Diseases, in the Three Regions of the Americas, 1960-1972

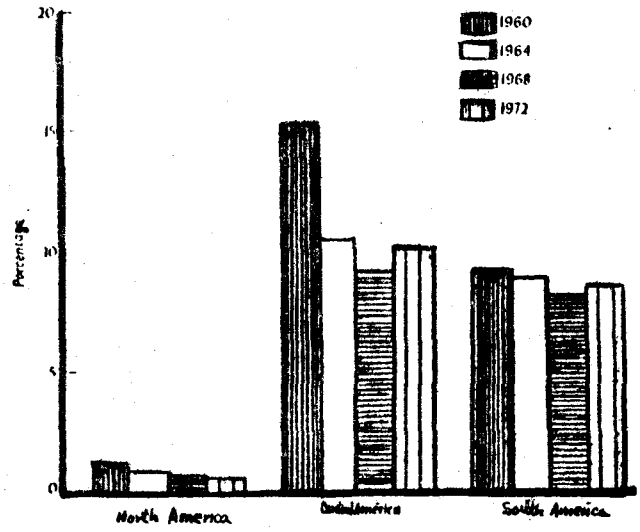


Chart No. 4

REPUBLIC OF PANAMA - HEALTH MINISTRY

ENVIRONMENTAL HEALTH PROGRAM

ACTIVITY	1968	1969	1970	1971	1972	1973	TOTAL	POPULATION BENEFITED
Rural Water Supply Systems	5	--	35	77	39	60	216	71,149
Drilled Wells	168	304	397	331	195	244	1,639	83,105
Dug Wells	50	54	70	66	60	129	429	21,900
Constructed Latrines	1,829	4,726	6,051	5,294	6,078	6,431	30,409	151,560

Chart 5

SOCIAL SERVICE

PRACTICING DOCTORS AND NURSES IN THE REPUBLIC, BY PROVINCES AND IN THE CITIES OF PANAMA AND COLON

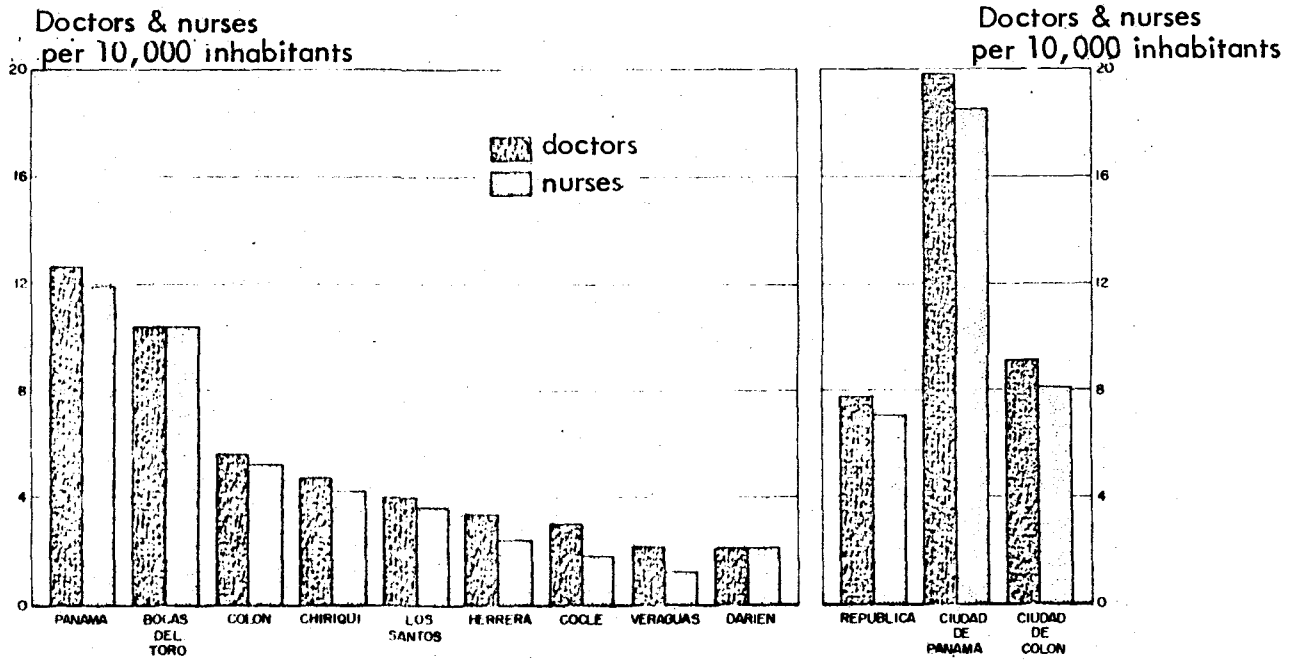


Chart 6

PRACTICING NURSES AND DOCTORS IN THE REPUBLIC, BY PROVINCES AND IN THE CITIES OF PANAMA AND COLON: 1972 & 1973

Province and City	Doctors				Nurses			
	1972		1973		1972		1973	
	Total	Per 10,000 inhabitants (1)	Total	Per 10,000 inhabitants (1)	Total	Per 10,000 inhabitants (1)	Total	Per 10,000 inhabitants (1)
TOTAL	1,070	7.4	1,172	7.8	1,059	7.3	1,063	7.1
Panama City	702	18.8	756	19.8	781	21.0	706	18.5
City of Colon	59	8.5	64	9.1	55	7.9	57	8.1
Bocas del Toro	25	7.7	35	10.4	21	6.5	35	10.4
Coclé	34	2.7	39	3.0	19	1.5	23	1.8
Colón	59	5.0	67	5.6	55	4.7	62	5.2
Chiriquí	102	4.6	108	4.7	88	4.0	95	4.2
Darién	4	2.1	4	2.1	5	2.7	4	2.1
Herrera	25	3.3	26	3.4	19	2.5	18	2.4
Los Santos	32	4.4	29	4.0	17	2.3	26	3.6
Panamá	757	12.0	829	12.6	818	13.0	781	11.9
Veraguas	32	2.1	35	2.2	17	1.1	19	1.2

(1) Based on the approximate population on July 1 of the respective year. Does not include the indian population.

Source: Integrated medical centers, hospitals, health centers, Social Security Agency, private clinics and centers, General Health Bureau of the Health Ministry and other welfare institutions

Chart No. 7

SOCIAL WELFARE

BEDS IN THE REPUBLIC'S WELFARE INSTITUTIONS, BY PROVINCE AND IN THE CITIES OF PANAMA AND COLON

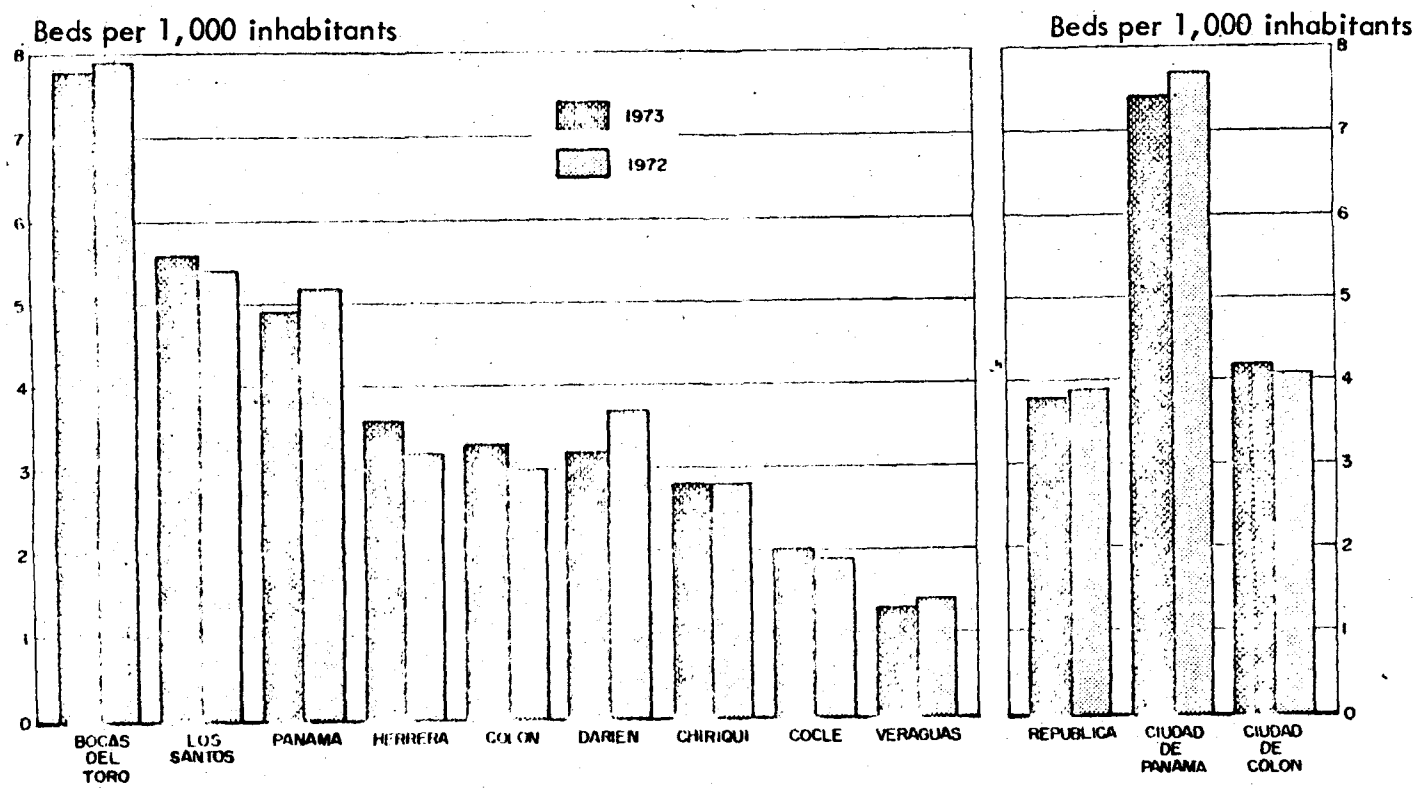


Chart No. 8 - BEDS IN THE REPUBLIC'S WELFARE INSTITUTIONS, BY PROVINCE AND IN THE CITIES OF PANAMA AND COLON: 1972-1973

Province and City	Beds (1)			
	1972		1973	
	Total	Per 1,000 inhabitants	Total	Per 1,000 inhabitants
TOTAL	5,665	3.9	5,731	3.8
Panama City	2,872	7.7	2,837	7.4
City of Colon	289	4.1	294	4.2
Bocas del Toro	257	7.9	264	7.8
Coclé	238	1.9	253	2.0
Colón	348	3.0	398	3.3
Chiriquí	635	2.8	636	2.8
Darién	69	3.7	61	3.2
Herrera	262	3.2	280	3.6
Los Santos	396	5.4	407	5.6
Panamá	3,272	5.2	3,224	4.9
Veraguas	210	1.4	208	1.3

(1) Includes cribs. The proportion of beds per 1,000 inhabitants is based on the approximate population on July 1, of the respective year. Does not include the indian population.

Source: Integrated medical centers, hospitals and health centers with beds which function in the Republic

Chart No. 9

BEDS, PARAMEDICAL STAFF AND DOCTORS
IN THE REPUBLIC

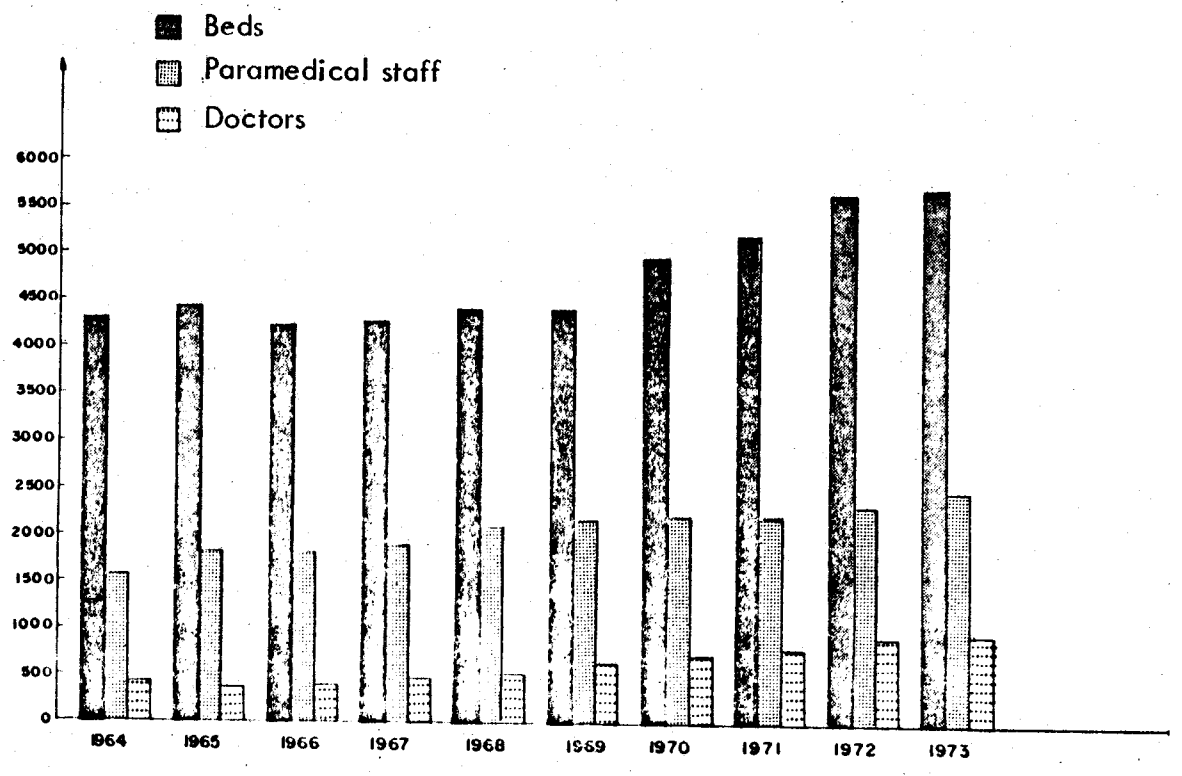


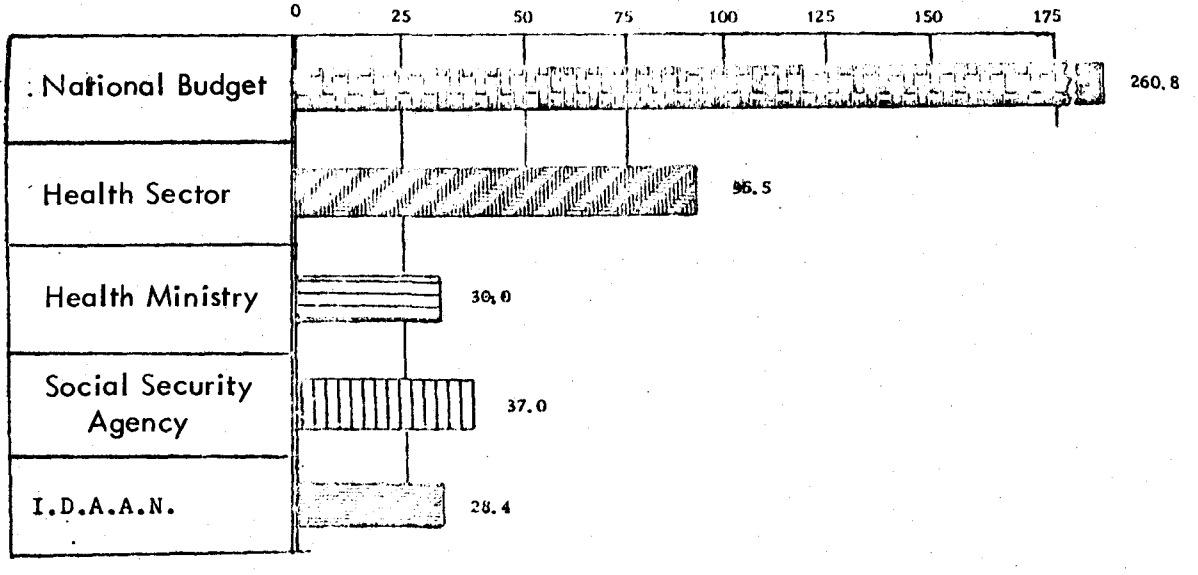
Chart No. 10

BUDGET OF THE HEALTH SECTOR, BY AGENCY, IN THE REPUBLIC

1973 AGENCY	Total	Investment per inhabitant
TOTAL:	95,040,346	60.53
Health Ministry	28,594,180	18.15
Social Security Agency	33,458,006	21.31
I.D.A.A.N.	32,988,160	21.01

1974 AGENCY	Total	Investment per inhabitant
TOTAL:	95,519,419	59.02
Health Ministry	30,059,187	18.57
Social Security Agency	37,026,632	22.88
I.D.A.A.N.	28,433,600	17.57

National Budget and Budget of the Health Sector, By Agency
1974 (1)

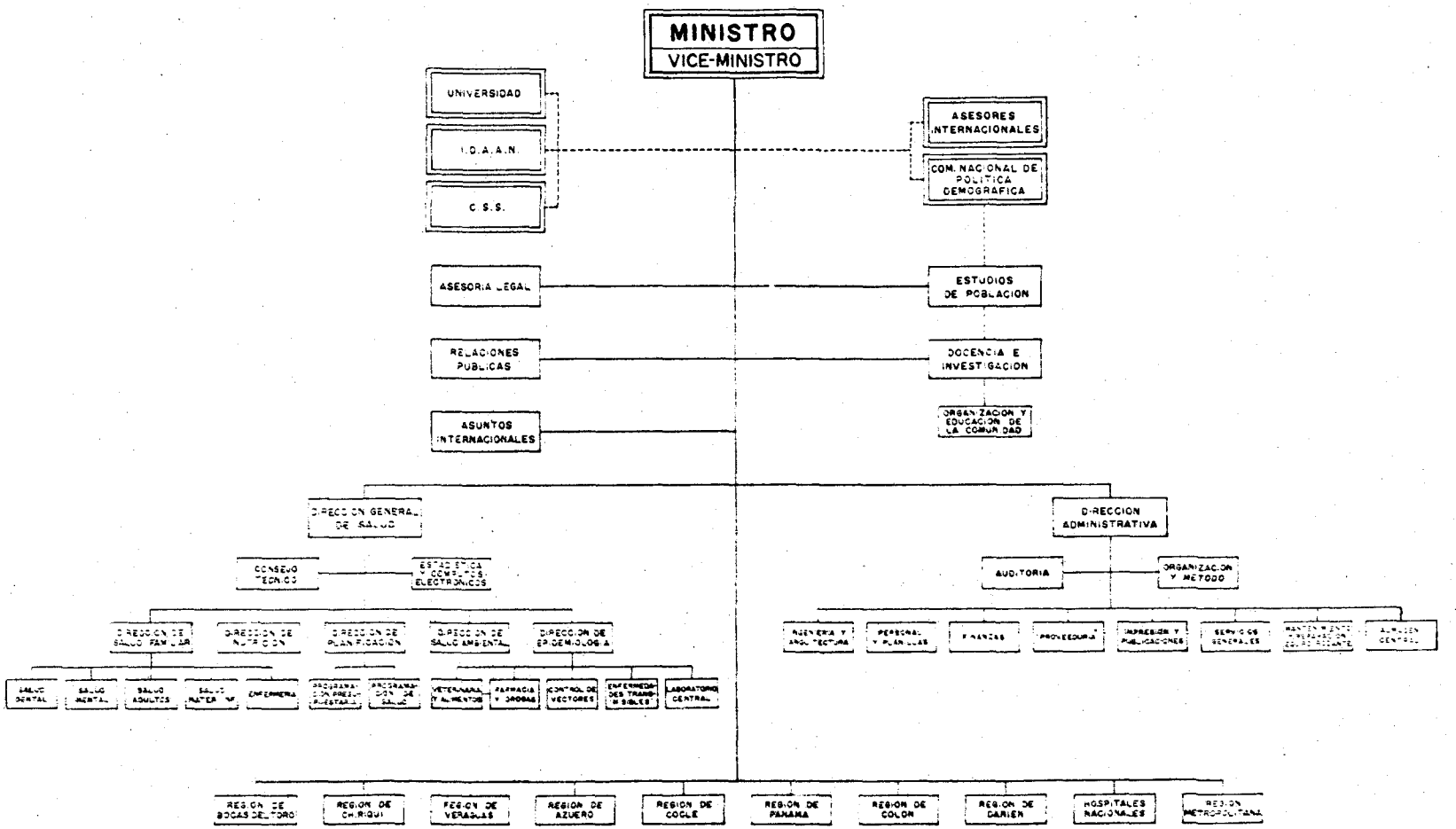


(1) In millions of Balboas

Source: Public Treasury, General Comptrollership of the Republic.
Budget Department of the Social Security Agency.
Budget Department of I.D.A.A.N.
Budget Department of Health Ministry

Chart No. 11

ORGANIGRAMA DEL MINISTERIO DE SALUD - Republica de Panamá



INTERVIEWS ON RESEARCH NEEDS

Guide:

1. Explain the study to the interviewee

   A) The letter

   B) Go into detail: The study consists of three stages: knowledge of policies, activities and needs. The object of the interview is to collect information on needs.

2. What type of research is most frequently carried out in the country and why?

3. What are the most frequent obstacles in the development of research?

4. Explain:

   A) Using the policy chart as a starting point, indicate areas, problems or subjects on which research is needed for the country.

   B) In addition to the research needs pointed out, explain what type of research is required.

5. Some of the needs mentioned have special priority, why?

I. Services to the individual

Programs:

A) Mother and child care

1. Maternal sub-program aimed at:

a) Fertility regulation
b) Prevention of femenine cancer
c) Technical attention during delivery
d) Puerperal care

2. Child sub-program with activities related to:

a) Control of child growth
b) Vaccination
c) Nutrition
d) Pediatric morbidity

B) 1. Nutrition

2. Food production

C) Adult health (Insured and uninsured). Consists of:

1. Prevention

2. Protection

3. Recovery

4. Adult rehabilitation

5. Cronic disease sub-programs

a) Tuberculosis
b) Leprosy
c) Venereal diseases
d) Parasitic diseases

6. Care for work accidents

7. Control of occupational risks

D) Dental Health

E) Mental Health

II. Environmental Programs

A) Environmental Health, through:

1. Excreta disposal

2. Garbage control

3. Improvement of housing in rural areas

4. School sanitation

5. Sanitary control of food

6. Veterinary, public health

7. Industrial health (occupational)

III. Supporting services

Programs:

A) Organization and health education of the community

1. Encourage formation of health committees

2. Orient and educate the committees

3. Prepare technical health teams

B) Training of human resources

1. Training of personnel already in service

2. Training of new personnel

C) Development and recuperation of installed capacity of services dependent on the Health Ministry and the Social Security Agency, specially of those located in the integral areas.

D) Supplementary feeding with nutritional aims.

Sample of People interviewed

The sample of people chosen to be interviewed represented the following functions:

Functionaries of the public health sector:

Dr. Julio Sandoval, Vice-Minister of Health

Dr. Gaspar García de Paredes, Director of Departmental Teaching in the Social Security Agency.

Dra. Gabriela Candanedo, Co-ordinator of International Technical Cooperation.

Arq. Yolanda Escala, Head of the Health Department.

Prof. Fuentes del Cid, Head of Educational Reform, Health Ministry.

Dr. José Renán Esquivel, Director or the Child's Hospital.

Dr. Hugo Spadafora, Head of Health Services in Colon Province.

Dr. Cutberto Parrillón, Nutrional Program.

Dr. Marco Gandazegui, Community Education Department.

Dr. Enrique García, Head of Planning in the Ministry of Health.

Personnel from the scientific communty (Administrators and researchers):

Dr. Ezequiel Jethman

Dr. A. Asenjo

Dr. Jorge H. Díaz

Dr. Ovidio de León

Ms. Luzmila de Illueca

Dr. Pedro Galindo

Dr. Miguel Korany

Dr. Ceferino Sánchez

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