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HEALTH SECTOR ASSESSMENT

EL SALVADOR

submitted by

THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT MISSION

to

EL SALVADOR

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I. OVERVIEW

INTRODUCTION - THE EVOLUTION OF THE ASSESSMENT

The Health Sector Assessment exercise in El Salvador began in 1975 in response to a Mission request that it be allowed to develop a vector control project to help the GOES address the country's growing malaria problem. AID/W indicated that a Health Sector Assessment would need to be completed, preferably in cooperation with the GOES before such a project could be approved

Initial efforts to develop a scope for a joint Assessment, however, were rejected by the GOES on the basis that such studies had already been completed, and MOH resources were needed for development of the new Five Year Plan (1978-1982). The MOH proposed rather that AID participate in the development of the Plan. AID initially agreed to participate, but withdrew on the basis that the planning process was not designed to provide a diagnosis of the health sector.

In view of the heavy commitments of MOH personnel to the planning process, it was finally determined by AID/W and the Mission that the Assessment would be developed independently, by AID, for the most part from existing documents and discussions with MOH and other officials, and without extensive research or studies. Essentially, the emphasis was to be placed on analysis and coordination of existing information.

The majority of the Assessment itself was carried out by a series of consultants under the direction of a coordinator from the Office of International Health, Department of Health Education and Welfare, Washington, D.C. Outside consultant work on the Assessment was completed in May 1977, just prior to the departure of the USAID Health, Population and Nutrition Officer of the Mission. His departure was followed by those of the Mission Director and his Deputy.

In July 1977 a new Minister of Health and Deputy took office, and the former Minister of Health became Vice-President of El Salvador.

With the arrival of the new Health, Population and Nutrition Officer in August, a review began of the existing analytic material (the HSA, other documentation and the Five-Year Plan of the MOH), and discussions were held on it with the New Ministry leadership and other donor organizations. On the basis of the review and discussions, the Assessment materials have been corrected, supplemented or updated to reflect the Mission's current Assessment of the Health Sector and the Government's commitment to and capability in it. The Mission's strategy has been developed on the basis of that assessment.

Whereas the Health Sector in El Salvador includes a wide variety of participants, in view of the fact that the Ministry of Health is responsible for health care for an estimated 85% of the population, the Assessment has focused on its programs. The need to integrate other health resources of other Salvadorean institutions to improve health care for the majority of Salvadoreans is discussed in the document, but no extensive evaluation is made of capabilities of these institutions.

TABLE I

SELECTED INDICATORS OF HEALTH STATUS - EL SALVADOR

Population (July 1977 estimate)	4,387,000	1/
Infant Mortality Rate (per 1000 live births)		2/
National	58	
Rural (estimate)	95 - 100	
Life Expectancy at Birth	59.1	3/
Crude Birth Rates (per thousand) 1976	40.2	2/
Crude Death Rates (per thousand) 1976 (Official)	7.8	2/
Rate of Natural Increase (per thousand)	3.3	
Estimated Net Outmigration Rate (per thousand)	3.0	2/
Maternal Mortality Rate (per 100,000 live births)	95	
Principal Causes of Mortality		3/
Gastrointestinal Diseases	25%	
Acts of Violence	11%	
Principal Causes of Reported Morbidity		3/
Diarrheas	53.9%	
Respiratory Illness	18.4%	
Malaria	18.0%	
Principal Causes of Hospitalization		3/
Deliveries and Delivery Complications	20.6	
Gastrointestinal Diseases	7.5%	
Literacy Rate	61%	
Urban	77%	
Rural	47%	
Estimated malnutrition prevalence in children	74%	4/

1/ U.S.Bureau of Census: World Population Report. 1977

2/ Ministry of Economics-Director General of Statistics and Census

3/ Ministry of Health

4/ INCAP Functional Classification Study

FIVE HEALTH REGIONS OF EL SALVADOR

PART I OVERVIEW

A. COUNTRY CHARACTERISTICS

El Salvador, one of the smallest of the American countries, is situated on the Pacific coastline between Guatemala and Honduras. The total land area is 8,260 square miles, approximately the size of Massachusetts. The country is divided into three distinct regions by mountain ranges running East and West; a hot, humid coastal strip on the south, the warm plateaus of the central region, and the cooler mountainous northern region. The entire country has just two seasons; a dry season from November to April, and a rainy season from May to October.

As is reflected by the indicators of health status provided in Table 1, the country is one of the poorest in Latin America, with estimated per capita national income of $381 per year, and overall literacy of 61%. Its development prospects are severely hampered by its estimated annual rate of natural population increase estimated at 3.3%. As one of the most densely populated countries in Latin America, with 531 people per square mile, it is nearing the limit of the number of people who can be supported from its land base using present levels of agricultural technology. Its rate of underemployment, at 47%, is the highest in Latin America.

Although 40% of the country is characterized as urban, the percentage of persons living a "rural" life is much higher, considering the lack in many of these "urban" areas of facilities such as potable water supply, sewerage disposal, telephone and electrical services. Moreover, the population in these marginal urban areas shares with Salvadorean rural dwellers substantially higher rates of infant mortality and fertility and lower rates of literacy and contraceptive prevalence than those of the country as a whole.

These characteristics of a developing country are belied, however, by the picture of the country's macroeconomic situation.

PART I OVERVIEW

B. THE ECONOMY

1. Economic Growth

The economy of El Salvador has undergone some drastic changes since 1960, after the formation of the Central American Common Market (CACM). During the period 1961-1967, the gross domestic product (GDP) grew at the average annual rate of 6.7%. This relatively high rate of growth was realized mainly from the industrialization that took place in response to the captive industrial products market behind the protection of the newly formed CACM. El Salvador, a country with very limited landspace and few natural resources but an abundant labor force, established many manufacturing industries to produce import substitute goods for the CACM. By 1968, however, the CACM began to show signs of regional trade difficulties resulting from uneven economic growth of member countries and consequent balance of payments problems experienced by some of them. The GDP growth rate during 1968-1975 slowed down considerably to about 4.6% per annum. The Honduran-El Salvador war of 1969, the worldwide crop failure of 1972, and the oil crisis of 1973 explain a large part of the economic slowdown. In 1976, however, the economy rebounded and grew at about a 6% annual growth rate mainly due to high world coffee prices. The recovery extended into the first half of 1977, with estimated real GDP growing at about a 10% annual rate. The unseasonal summer draught, however, together with the ill-timed rains in the fall reduced the basic grain and coffee harvest substantially. Furthermore, inflation accelerated during the second half of 1977 to reach more than 11% for the year. As a result, the overall growth for 1977 is now estimated to be about 5%.

2. Current Economic Situation

Many characteristics of El Salvador's economy are different from that of most developing countires. The usual economic problems that one expects to find in a developing country are not evident in El Salvador. First, public sector fiscal deficit financing through emission of new money by the Central Bank, commonly observed in a typical developing country, has not been a big problem in El Salvador. Although Central Government tax revenues are short of its expenditures in current and capital accounts, the shortfall has been financed through public sector borrowing as shown in the Table that follows:

TABLE III EL SALVADOR CENTRAL GOVERNMENT FISCAL ACCOUNTS
(In millions of Colones)

	1974	1975	1976	1977	1978
A. Current Revenue	484	578	810	990	1160
B. Current Expenditures	422	493	617	694	813
C. Current Account Balance	+ 62	+ 85	+193	+296	347
D. Fiscal Surplus of the Prior Year	39	42	102	61	40
E. Available Capital Fund	101	127	295	357	387
F. Capital Expenditures	173	216	411	375	438
G. Surplus (+) or Deficit (-)	- 72	- 89	-116	- 18	51
H. Sources of Finance					
- External Borrowing	55	83	78	56	51
- Sale of Government Bonds	56	100	98		
I. Carry over the next year*	39	94	60	38	0

* Line "I" should equal line "D" one year lagged. The differences are due to errors and ommisions that are ignored here.

SOURCE: Ministry of Finance, "Informe Complementario Constitucional sobre La Hacienda Pública" 1974-1977 and Official Newspaper, "Ley de Presupuesto General," 1977-1978.

Central government current revenues covered all operating expenditures and an average of 71% of the capital budget during the period 1974-1977. Financing of the remainder (deficit) of the capital budget is traditionally achieved through foreign borrowing and sale of government bonds (internal borrowing). The percent of required deficit financing as a proportion of total expenditures is about 12% in a typical year. In 1977, however, it was only 2% because of the increased coffee export tax revenue. Table III also shows that the GOES has always borrowed more than the necessary amount (See Line "I") to insure surplus of public resources.

Second, although El Salvador has experienced international payments problems during the last 15 years, two or three years of trade deficits have been followed by one or two years of trade surpluses. A closer look at the balance of payments situation reveals that the net long-run balance of goods has been roughly in equilibrium. High world prices for El Salvador's principal exports (coffee and cotton) and the country's relatively advanced manufacturing position in the Central American Common Market account for this situation (although El Salvador's trade balance vis-a-vis CACM countires has been negative for the past two years). The balance of services, however, is heavily negative largely due to shipping charges, and only slightly offset by current transfers, so that the current account balance of payments has tended to be in deficit. In 1977, however, the balance of payments of goods and services swung back into an estimated ₡83 million surplus.

Table IV that follows shows that in 1974 and 1975 El Salvador had large trade deficits. It should be kept in mind, however, that these were the world's worst recession years since the great depression of 1930 and that no country except those of OPEC, had a favorable balance. In 1976, El Salvador's trade balance made a recovery and, in 1977, was in the surplus column.

When there was an imbalance of international payments, substantial net inflows of private capital (including those to autonomous entities of the public sector) have been the main offsetting factor to balance reserves, but net inflows of official capital (including concessional loans to the government) have also been important. Thus, although El Salvador has had balance of payments difficulties in the past, it is in a relatively better balance of payments position than many other third world countries.

The third point that distinguishes El Salvador from the typical underdeveloped country is the historical low level of inflation. El Salvador experienced only 1-2% annual inflation during 1960-72. During 1973-75, however, El Salvador could not avoid the external inflationary pressure caused by the worldwide crop failure of 1972 and the quadrupling of oil price increase in 1973. As a result, inflation rates in 1974 and 1975 reached 20% per year. The general consumer price index (CPI), however, declined steadily to about a 5% annual rate beginning in June 1976 and maintained itself at that level until March 1977. The inflationary pressure fueled by the recent coffee windfall again appeared in April 1977, and the year 1977 ended, as mentioned above with an inflation rate of more than 11%.

In spite of these favorable conditions, El Salvador has two major economic and social problems for which it must provide solutions. They are (i) the imbalance between the growth rate of the work force and new job creation, and (ii) the extemely uneven distribution of income. Although the annual population growth rate was estimated at 3.3% in 1977, the labor force is projected to grow for the next 10 years at about 3.5% annually. An economic implicatioon of this is that the economy has to provide 50,000 to 60,000 new jobs annually just to maintain the same number of unemployed, much less reduce the number of currently unemployed workers.

Moreover, the demographic and labor survey completed in 1974 for the metropolitan area of San Salvador reveals the severity of uneven income distribution. It shows that the lowest 20% of income earners obtained 2% of total income, while the highest 20% enjoyed 66% of the income. There are four basic reasons for this: (1) uneven distribution of land, (2) low levels of education, (3) fast population growth, and (4) capital intensive industries.

PART I OVERVIEW

C. HEALTH STATUS SUMMARY

The health status of the Salvadorean populace does not reflect the existence of El Salvador's extensive health infrastructure described in the following section. Infant mortality for the country as a whole is a high 58 per 1000 live births, but several studies have indicated that in rural areas it exceeds 100 per 1000 live births, largely due to diarrheal and respiratory diseases. Approximately 40% of mortality occurs in infants and children under 5, in most cases from preventable diseases. Life expectancy, estimated at 59.1, has changed little in the last decade.

An accurate picture of the causes of mortality is difficult to draw since only one-third of reported deaths are medically certified, and more than a quarter of those are attributed to ill-defined causes. The leading cause of reported mortality is, however various forms of gastro-enteritis (25%), followed by acts of violence (11%)

Although a majority of hospital admissions are made for deliveries, complications of delivery, or abortions, reported morbidity as measured by out-patient consultation in MOH facilities is primarily due to diarrheas and respiratory disease. Malaria ranks third as a cause of reported morbidity and is extremely serious in two regions of the country key to its economic development; the new Cuscatlán International Airport and the areas surrounding the new Cerrón Grande Dam.

Malnutrition is prevalent among Salvadorean children, 70% of whom are considered malnourished according to Gómez standards, and 20% of whom are estimated to suffer form third degree protein-calorie malnutrition. Malnutrition is a leading underlying cause of child mortality.

Finally, El Salvador's rapidly growing population (annual rate of natural increase of 3.3% per year) is recognized as the primary hindrance to the country's economic development and has a major impact on the health of both women and children. The current total fertility rate of 6 reflects the fact that contraceptive prevalence in rural areas is estimated at only 9% of women of fertile age.

Constraints to improved health status particularly in rural areas, include poor environmental conditions, low literacy rates, low income and lack of employment opportunities, low levels of health knowledge and hygiene and finally minimal contact with or use of available health services

TABLE IV: EL SALVADOR BALANCE OF PAYMENTS
(In millions of colones)

	1974	1975	1976	1977
Goods & Services				
Exports	1293	1499	2126	2450
Imports	1677	1799	2213	2367
Trade Balance	- 384	- 300	- 87	83
Transfers	46	71	75	NA
Current Balance	- 338	- 229	- 12	NA
Private Capital (net)	154	274	177	NA
Official Capital (net)	61	45	59	NA
Errors	+ 1	+ 21	- 16	NA
Balance	- 123	111	208	NA

SOURCE: Central Bank of El Salvador. October 1977.
Exchange rates $1 = 2.50 colones (¢)

PART I OVERVIEW

D. THE GOES HEALTH SECTOR

In response to these problems and similar ones in other sectors, the GOES has made expansion of the Social Sector a primary goal of the new Five Year Plan. The Plan lists as its first priority in that Sector "the whole health of the people as an essential part of human existence." Six of the 52 strategic programs of the Five Year Plan are directly related to the health sector, including population and nutrition, while eleven others are indirectly related to improved health.

The Plan defines the Health Sector as that "which plans, develops, executes and controls, by central government policy, all activities pertinent to the promotion, prevention and delivering of health care to the national population."

As such it includes four basic types of organizations:

1. entities delivering health services, including: the Ministry of Health's hospitals, health centers, units, posts, and rural health aides; hospitals and medical services of the Social Security Institute, Ministry of Defense, Ministry of Interior, Ministry of Education and the National Telecommunications Administration (ANTEL Hospital); organizations receiving financial support from the National Government including the Red Cross, Green Cross clinics of the Service Clubs and other profit and non-profit institutions of the private sector.

2. human resource development institutions of the Public Sector, including the National University Schools of Medicine, Dentistry, Pharmacy, and Medical Technology; the high school specialization in health offered by the Ministry of Education; the National Schools of Nursing, and the National Training School of the Ministry of Health.

3. entities providing technical, monitoring and support activities to the sector including the Ministry of Planning, the National Health Commission, the National Department of Census and Statistics, the Superior Council of Public Health (responsible for monitoring pharmaceuticals) and international organizations; and,

4. entities providing coordination directly with the Health Sector, including the Ministry of Agriculture (Food, Animal Health and Environmental Sanitation); Ministry of Public Works (Roads and Drainage); Ministry of Interior (Municipal Sanitation); Ministry of Justice (Jails and Orphanages); and Autonomous Institutions (National Administration of Water Systems, Agrarian Transformation Institute, Lempa River Hydroelectric Commission, Salvadorean Turism Institute).

The public sector is the major health care provider in El Salvador, responsible for covering an estimated 95% of the total population. The Ministry of Health is responsible for health services for 85% of the population, while ISSS covers 7% of the population. The Military Hospital and the ANTEL Hospital provide direct health care to 1.6% with only an estimated

five percent of health services provided through the private sector. The structure of the key health organizations—the Ministry of Health and ISS—are outlined below.[7]

The multiplicity of these institutions directly providing health services to the population which are not under the direction of the Ministry of Public Health although supported by the Government, leads to a broad dispersion of national resources the coordination of which is essential to rationally allocate health attention to those who need it. Amidst a growing awareness that many of the health problems and programs of the country are beyond mandate or ability of any one Ministry to implement, the National Health Commission was created by Presidential decree in July 1974. The primary goal of this National Health Commission is to develop a National Health System as a means for coordinating all activities for the promotion, prevention, conservation, and recuperation of health of the population of the country, with special emphasis on the rural population. The following actions were considered necessary for this system to function:

1. formulation of a health sector policy for the country, and institution of a viable National Health Commission with sufficient authority to execute it.

2. institutionalization of integral health planning to establish individual institution responsibilities, to define autonomous but inter-related activities, and to ensure the most efficient and effective utilization of resources.

3. establishment of a national referral system to enhance utilization of health facilities and personnel; and

4. the formulation of norms and means for inter-sectoral program coordination at the operational level.

The Commission is comprised of the Minister of Health, Minister of Defense, Minister of Labor, and the Directors General of ISSS and MOH. It is attached directly to the Presidential Office, thereby facilitating its ability to secure the authority necessary to execute the national sector policy. All sector organizations retain administrative and financial autonomy; nevertheless, each is required by law to adhere to norms established by the Commission and to coordinate all discrete organizational activities toward achievement of the goal of an integrated national health program.

Despite the nominal power held by the Commission, its effectiveness in implementing a national health system has been sporadic and its

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[7]More detailed discussion of the other sector organizations is provided in Appendix II.

primary attention in the past two years has been directed at the establishment of health priorities for the National Five Year Plan.

Ministry of Health

The organizational charts in Figure 1 shows the infrastructure of the MOH, and the relationship of the Normative, Operative, Health Engineering, Administrative, and Planning Divisions to the Minister through the Office of the Director General. Hospitals and autonomous organizations such as ISRI and the Superior Council on Public Health are responsible to the Minister through the Office of the Vice-Minister.

The planning process is implemented through the Technical Committee comprised of the MOH Planning Office (and Normative Division), other sectoral institutions, and the Ministry of Planning The Five-Year Plan and Sector Programs are defined by the Technical Committee, and approved by the President of the Republic and the National Council of Health.

The Normative Division of the MOH is responsible for defining the norms and procedures of the programs while the five regional offices within the Operative Division are responsible for program implementation in the line with these guidelines.

The Operative Division of the MOH at the National level supervises the regional offices to ensure proper interpretation of these guidelines in program implementation. (See organizational chart, Figure 4).

Each Regional Office is responsible for elaboration, implementation, and supervision of the health programs of the Ministry in its geographic area. Services are provided through five distinct levels of attention ranging from the local community to the regional headquarters beginning

with the Rural Health Aide and progressing through Health Posts, Health Units, Health Centers and finally to Hospitals. Services and kinds of care available from each level of attention are described in detail in the Health Infrastructure Section of the Assessment.

Although a national referral system is recognized in theory by the Ministry of Health, in reality there is little coordination between personnel of the different health service levels, and weak understanding by personnel of services provided by different levels. The population itself tends to seek medical care in the hospitals rather than in the less costly health units or health posts. Although preventive medicine and health education are emphasized as a priority need for the population, the primary focus of health services provided is curative.

The Ministry of Health was the first Ministry in the country to implement a planning process when the first Five-Year Plan was elaborated in 1964 along guidelines presented by the Pan American Health Organization. Since that time several different planning methods have been used; because of the difficulty in planning for the health sector, the Ministry still has not found an effective procedure.

Salvadorean Social Security Institute (ISSS)

The Salvadorean Social Security Institution (ISSS) was created in 1949. Three classes of benefits are provided to industrial employees registered in the ISSS and spouses requiring Maternity or Family Planning consultation only:

1. hospitalization and outpatient clinics for Medical and Dental Problems.
2. maternal benefits that include medications, orthopedic prostheses and apparatus, and baskets of baby products for maternity patients.
3. financial benefits which cover incapacitation, burial expenses, survivors benefits for deaths by work-related accidents, and old age pensions.

At the present time the hospitals and clinics of ISSS are located in municipal areas only, as the coverage of the Institute does not extend beyond industrial workers of the urban areas. The evaluation of the 1973 - 1977 Five Year Plan by the Technical Coordinating Committee showed underutilization of facilities and human resources and recommended that studies be undertaken as to the feasibility of increasing coverage of ISSS to family members, public employees, rural employees, or domestic employees. It is expected that familymembers will be incorporated into the ISSS as soon as the study is approved by the Board of Directors of ISSS, the National Health Commission, and the President of the Republic; the other suggestions for increased coverage are still being studied.

PART I OVERVIEW

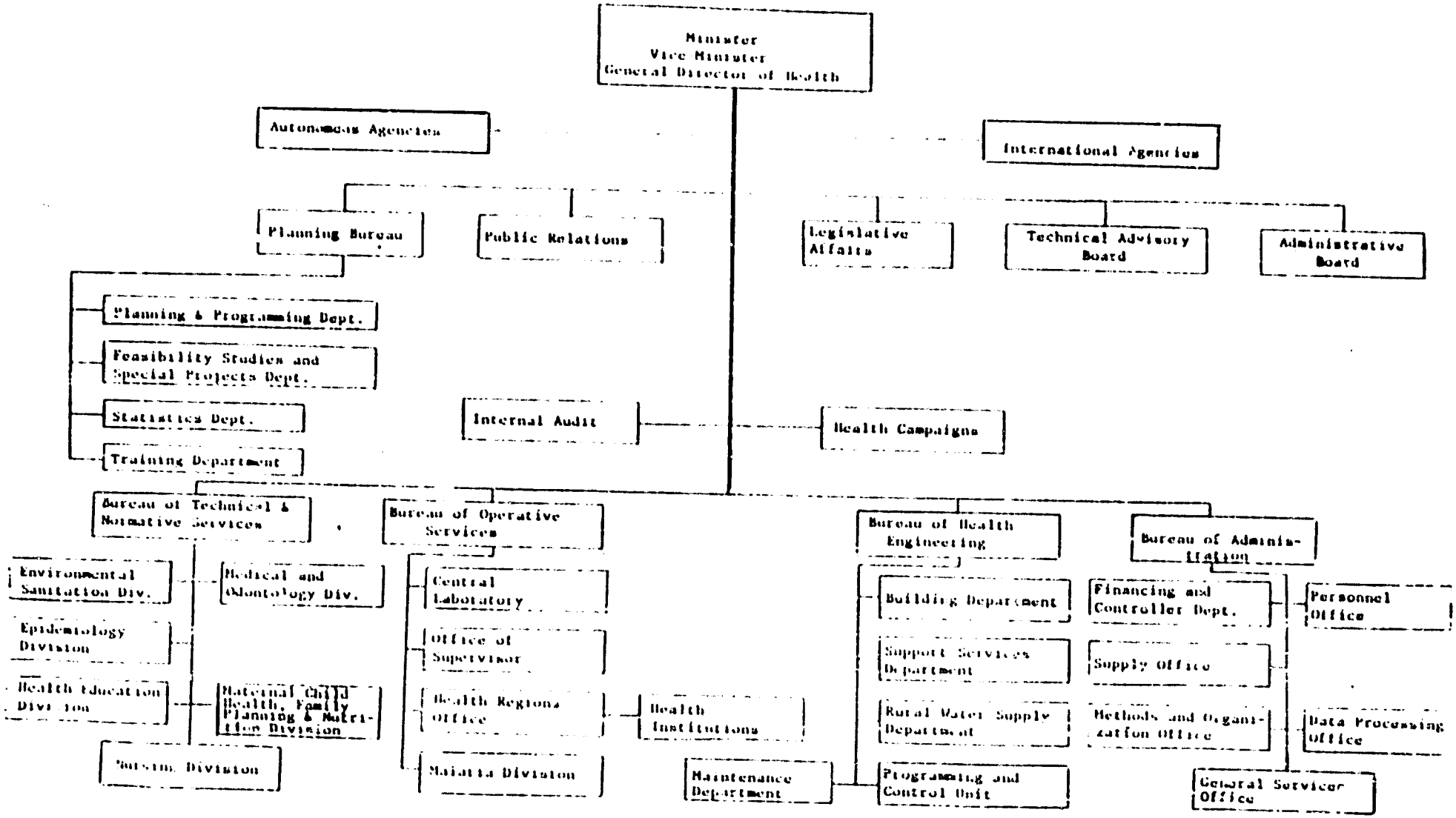
E. THE ASSESSMENT

The following section entitled Analyses represents the assessments performed over the last two years by a variety of Mission personnel and consultants. A general description of the target population and its health status is provided in Parts A and B, followed by a detailed description in Part C of the infrastructure of the largest provider of health services, the Ministry of Health. Supplements to this section are provided in Appendices A and B. Part D contains the findings in the Key Sub-sectors Analyses, which form the basis for the subgoal component sections of the AID Strategy, Part IV C. The Analyses section concludes with a discussion of the GOES Commitment to the Health Sector as exemplified by the new Five Year Plan and financial support trends to the sector, as well as by the Rural Penetration Program which represents the GOES' principal approach to the delivery of rural health services.

The Health Sector Strategy is presented in Part IV, following a resume of major conclusions drawn by the Mission from the Assessment. Details of the Strategy and recommendation of priority areas that should be addressed by the GOES and/or other donors in relationship to the AID Strategy are included in the section.

The GOES has expressed great interest in parts of the Assessment which USAID will provide for use in joint discussions with the MCH and other donors on program needs and problems. The Mission believes that the HSA will provide the GOES with a clearer understanding of AID's sense of the priorities among problems in the Sector and its views regarding programs leading toward their resolution. In addition, some sections provide technical analyses which the GOES will be able to use to modify existing programas or to develop new ones.

ORGANIZATIONAL CHART OF THE MINISTRY OF PUBLIC HEALTH AND SOCIAL ASSISTANCE



PART II ANALYSIS

A. TARGET POPULATION IN PERSPECTIVE

Introduction

The Foreign Assistance Act of 1973 Amendment redirected U.S. development assistance efforts toward the alleviation of the problems of the most marginal population groups of the less developed countries whose status has remained relatively constant, or in some cases even worsened, over the last decade. In response, AID has identified the areas of 1) food and nutrition; 2) population and health; and 3) education and human resources development as priority sectors, the support of which could most effectively serve as a catalyst to encourage recipient Governments to implement policies and programs essential for achieving an enhanced quality of life for the very poor.

In order to define more clearly the "poor majority," a series of benchmarks or measures of poverty have been established. These include: a) per capita income of less than US $150 per year; b) daily dietary intake of less than 2160 to 2670 calories, depending on the country; and c) diverse health indicators: life expectancy at birth of below 55 years, infant mortality rate of more than 33 per 1000 live births, crude birth rate of more than 25 per 1000 population, and access to broadly defined health services by less than 40 percent of the population. Overall, any person or family or defined subgroup of the population in an AID-assisted country which meets any one of these criteria is considered to be within the poor majority.

Table 1 outlines the salient demographic and quality of life indicators of El Salvador's fourteen departments.

1. Demographic Characteristics.

El Salvador, with a total estimated population in 1977 of 4,496,165 persons,1 is one of the fastest growing and the most densely populated of countries in the Western Hemisphere. Continued high birth rates of +40 per thousand population coupled with rapidly declining overall mortality rates officially estimated to be 7.8 per thousand population, have resulted in an annual rate of natural increase of 3.3 percent. Growth rates would have been even higher had population increases due to births not been partial-

1 -Estimate by Ministry of Public Health, Department of Statistics.

Table I.A-1

Demographic & Quality of Life Indicators
for El Salvador

Department	Index of Masculinity [1] (a)	[1] (b)	Rural Pop. as % of Total	Pop. Density of Population (in pers. / sq. km.)	Pop. Inter Growth Rate	Crude Death Rate /1000 pop.	Crude Birth Rate /1000 pop.	Proportional Mortality [2] Less 5 of all Deaths	[2] 1-4	[2] 5-9	[2] Total	IMR Infant Mortality Rate (in %) (a)	[1] (b)	Percentage of School Age Pop. in Regular Attendance (a)	[1] (b)	Percentage of Population over 6 yrs. without any formal education	Pop. Percentage of Illiterates over 6 yrs. in regular reading & writing	Average Number of Rooms per Dwelling Unit (a)	[1] (b)	Houses with Piped Water (in %) (a)	[1] (b)	Houses with Electric Illumination (in %) (a)	[1] (b)	Houses with Flush Toilets (in %) (a)	[1] (b)	Houses with Concrete Floors (in %) (a)	[1] (b)
Ahuachapán	90	[illegible]	78.2	46.7	30	8.9	47.9	26	21	47	25.4	63.1	72.5	71.1	56.6	61.5	5.11	5.43	65	67	43	92	54	1	[illegible]	10
Santa Ana	93	109	57.5	33.3	28	10.5	45.1	34	15	43	26.7	47.6	45.1	71.6	46.0	45.7	4.42	5.35	55	64	70	88	73	4	51	18
Sonsonate	97	101	61.5	47.2	44	9.8	47.4	30	18	44	25.2	43.6	41.1	75.1	52.7	51.8	4.26	5.37	53	70	44	91	59	7	85	17
Chalatenango	97	104	73.8	44.8	32	7.9	42.7	27	16	38	29.5	41.4	45.8	75.0	55.7	64.6	5.20	5.54	63	56	55	89	36	1	35	1
La Libertad	97	105	65.8	46.3	35	10.1	45.2	31	15	30	27.5	50.8	45.8	70.6	49.7	57.[illegible]	4.91	5.45	56	65	33	75	61	6	85	21
San Salvador	87	102	23.4	64.8	50	9.8	[illegible]	31	10	43	24.1	67.7	45.7	81.1	25.7	37.8	5.11	5.[illegible]	69	65	77	71	75	10	[illegible]	[illegible]
Cuscatlán	97	101	77.9	48.3	35	9.6	45.9	27	18	45	25.7	51.3	47.7	73.4	48.4	51.6	5.24	5.51	58	74	61	91	45	1	74	1
La Paz	89	101	84.9	69.9	41	6.9	47.6	26	16	47	25.7	53.1	[illegible]	76.7	48.4	55.1	[illegible]	[illegible]	61	77	58	90	34	0.9	65	12
Cabañas	90	102	83.4	45.6	37	6.3	48.6	15	11	26	25.3	34.5	48.6	75.8	48.8	47.5	5.01	[illegible]	51	65	51	90	45	1.9	47	7
San Vicente	91	104	71.8	48.5	34	6.8	33.8	21	16	37	26.5	44.2	51.8	80.7	51.8	55.7	5.22	[illegible]	51	64	51	95	43	1.2	[illegible]	
Usulután	92	100	72.3	47.4	47	7.1	47.9	29	15	24	28.7	31.6	45.6	42.5	55.7	54.2	5.07	5.53	49	73	51	92	46	0.8	77	11
San Miguel	93	101	65.7	47.3	39	6.7	41.9	29	15	41	27.3	36.8	45.4	73.5	58.5	57.1	5.16	[illegible]	47	53	54	91	43	0.7	76	2
Morazán	90	104	81.6	49.7	22	5.8	40.5	11	11	25	45.4	46.8	42.9	[illegible]	41.3	[illegible]	5.17	5.60	51	75	66	93	36	1	65	7
La Unión	96	106	70.7	54.0	49	6.3	44.0	19	13	32	45.6	36.9	45.1	73.7	64.4	45.1	5.17	5.28	65	74	67	90	33	0.3	60	1
Total			67.3	47.4		7.9	47.3	26.8	16.9	43.7	26.7	45.7			60.0		5.05	5.7	57	67	65.5	87.3	49.8	7.1	71.7	[illegible]

[1] The index of masculinity is a measure of the number of male per 100 females in the given population

[2] Proportional mortality is computed by dividing the number of deaths in the age specific group by the total deaths in the country over the same period

a/ refers to urban population
b/ refers to rural population

Source: Censo Fotográfico (1971)

ly offset by substantial out-migration amounting to approximately 3 per 1000. 2

Excessive population growth has already exerted noticeable pressure on natural resources as well as on the Government's capacity to provide Salvadoreans with essential social services such as water supply and sanitation, education, and public health. Unless seriously checked, such explosive population growth will require Government services to be doubled within 22 years merely to "hold the line" on the existing level of population coverage for social services.

The population distribution, according to the 1971 Census, is 39.5% urban and 60.5% rural.3 Urbanization is evident; defining "urban" as cities with 10,000 or more inhabitants, the 1971 Census indicated 13 such cities exist which together include 909,000 persons. The metropolitan area of San Salvador, the capital, is the predominate city with a reported population in 1977 of 750,000 persons or 17% of the total population. Its size is almost six times that of Santa Ana, the second largest city in the country, and three times the size of Santa Ana, San Miguel and Sonsonate together. Over the 1961 to 1971 period, San Salvador grew at a rate of almost 5% annually. It generates 40% of the national income and, according to a 1974 InterAmerican Development Bank study in 1971, the metropolitan region accounted for 57% of total Government expenditures in public health alone.4

Although the population of the 13 urbanized areas collectively is projected to more than triple over the 1971 to 2000 period, reaching a total of 2.8 million and representing one-third of the national population by the year 2000, the actual rate of urbanization in El Salvador is quite moderate. While the urban population is growing at a faster rate than the non-urban population, the rural population, in which the vast majority of the marginal poor lives, is increasing by more persons in absolute numbers annually.5

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2 -Ministry of Planning.

3 -For official government purposes, the country is divided into political administrative divisions called municipalities. "Urban" is defined as the place of residence of the municipal authorities, the limits of the area being those determined by the authorities themselves. The definition does not take into consideration that the urban areas have traditional "urban" services such as potable water, electricity, educational center, or a determined number of inhabitants. The remainder of the municipality is considered "rural".

4 -Interamerican Development Bank Loan Paper, March 5, 1974.
Fox and Hugnet, Demographic Trends and Urbanization in El Salvador, Interamerican Bank. April 1976.
Note: For purposes of the IBB study, urban was defined as those cities with 20,000 inhabitants, as reported by each country in its 1970 Census. Projections are based on estimated 1960 population as a base, projected forward for 20 years based on average population growth rates. This is in contrast to the governmental definition.

5 -Ibid.

A recent study of rural to urban shift for several Latin American countries for the 1961 to 1980 period estimates that El Salvador will have one of the lowest rates of net urban increase. At the same time, the study indicates that population growth of the rural population will be the highest among the countries studied, increasing a projected 82% over those 20 years.6 Overall, it is clear that rural population pressures will be building rapidly in a small and already overcrowded country. This significant increase in rural people by 1980 holds important implications for health sector planning. A total estimated rural population of 2,835,762 by 1980 will place significant strains on the existing health system and will command a massive portion of the sector's human and physical as well as financial resources.

The moderate normal growth of the major urban areas in El Salvador is exacerbated by the migration pattern. Unlike many developing countries in which rural to urban migration is often two-stepped—that is, persons move from rural communities to secondary cities and then to the major metropolitan area—El Salvador's migration pattern most commonly is one of movement directly from municipalities to San Salvador. The massive influx of rural persons is abetted by the extensive transportation network linking virtually every region of the country with the Capital.

A recent Government study indicates that much rural to urban migration is by women in search of employment to support their children. Typically, children remain in the rural areas in the care of mothers or other family members who receive financial support from their daughter's urban income. Most commonly these women are employed as domestic servants or in other service areas; others resort to prostitution to support their financial obligations at home. Their generally low salaries have an adverse impact on their well-being as well as that of their children.

A resultant phenomenon of this influx of rural women is that women now comprise 44.2% of the urban workforce and exceed men as a proportion of total urban residents.7 As reflected by the 1976 index of males to females, there were 92 men for every 100 women in the urban areas as compared to 102 males to 100 females in rural areas.

Bureau of Census and Statistics data for 1971 indicate that the average family size for El Salvador as a whole was 5.37 persons with significant variations between urban and rural areas of 5.08 and 5.57 respectively.8 Extended family living patterns in some parts of the country increase family size to 7-8 persons.

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6 -Ibid.

7 -Encuesta de Mano de Obra, Chart Population Economically Active by Rural and Urban Area, Sex, Age Groups.

8 -Dirección General de Estadística y Censos. Censos Nacionales de 1971, III de Vivienda, IV de Población. Cifras preliminares, p.1.

The significance of excessive population growth can be viewed not only from the fact that the country has an average population density of 531 persons per square mile, but as importantly in terms of the country's agricultural productive capacity. According to a 1970 FAO study, each hectare of arable land had to support an average of 4.98 people, one of the heaviest population burdens in the world and more than double the Latin American average. Further, given the high population growth rate of the country, the burden can be assumed to be even greater now.9

To the extent that age structure of a population is a useful indicator of the susceptibility of a community to health problems, the markedly young age composition of El Salvador, with 45% of the population under 15 years of age, implies a great vulnerability to the environment. The socioeconomic consequences of this youthful population result in an excessively high dependency ratio with approximately 3.2 dependents under 10 or over 65 years of age per each economically active person. Such a highly skewed population composition inherently leads to low income levels and fosters child labor, thus depriving them of educational opportunities over the short-term and an overall improved standard of living over the long-term.

TABLE 2

AGE-SPECIFIC BIRTH RATES

EL SALVADOR, 1970-75

Age of Mother	Birth Rate/1000 Population	Percentage Distribution
15 - 19	151.2	11.8
20 - 24	301.4	23.6
25 - 29	301.3	23.6
30 - 34	255.8	20.0
35 - 39	166.2	13.0
40 - 44	88.3	6.9
45 - 49	15.1	1.1

SOURCE: La Población de El Salvador por Sexo y Edad en el Periodo 1950-2000 Principales Indicadores Demograficos. Consejo Nacional de Planificación y Coordinación Económica (CONAPLAN) Hypothesis II, based on estimate of low fertility decline over the 1970-1975 period. Cuadro 21.B, p. 65, El Salvador, Febrero de 1976.

9 -Agriculture Sector Assessment, USAID El Salvador, 1977.

2. Political/Administrative Setting

The country's political organization is highly centralized. The Constitution provides for three branches of Government—the legislative, the judicial and the executive—which act independently within the scope of their powers. The Office of the President is supported by 13 Ministries including a Ministry of Public Health and Social Assistance. Under Chapter V of the Constitution, the State assumes responsibility for the preservation and restoration of the health of the inhabitants. Overall, it is officially stated that the principal governmental providers of health—the Ministry of Health, the Social Security Institute and the military—provide coverage to more than 90 percent of the total population; however, actual coverage is significantly less, as outlined in following sections.

For administrative purposes, the country is divided into 14 departments. Easch department, the equivalent of a state, is headed by a Governor appointed directly by the President but responsible to the Minister of Interior. While the Governors theoretically have primary responsibility for implementation of all Government funded programs in their respective departments, in actuality the vast majority of public service activities are directed by the National Governmental headquarters in San Salvador.

The department are subdivided further into 261 administrative divisions called municipalities each of which has a degree of autonomy locally and serves as the political center for the surrounding communities or cantones. The nation's 1966 cantones are semi-nuclear or dispersed groupings of houses commonly connected by two or three principal dirt roads or a network of small footpaths. No clearly defined geographic boundaries exist for a given canton; rather, these local communities are more informal divisions. It is this level of organization which is the focal point of the Ministry of Health's program for extending health services to the rural areas.

At the local rural level; two important authority figures have been identified—the comandante cantonal and the comisionado. The comandante is a local civilian appointed for a temporary term, varying among areas, to direct both military and police in the rural areas. He in turn selects a number of assistants from each caserio 10/ to form in effect a civilian militia which is occasionally mobilized. Several times a year he must go out and forcibly recruit young males for a period of national military service; commonly the pattern is to round up young men at night.

10/-For a discussion of caserios, see Community Organization below.

The comisionado plays a complementary role as the chief civilian authority. He is a local resident but is appointed by the mayor of the nearest town rather than through direct election. He generally carries out his functions without assistance from other community members.

Neither the comandante nor the comisionado receives any salary for their jobs. Nevertheless the positions are highly coveted. In at least one rural area studied, the comandate himself names his successor. Thus, local power tends to follow familial lines so that protection against military service can be continued. This pattern of local political organization fosters social rifts and personal grudges between residents of even contiguous caserios and serves a constraint against community cohesion and mobilization.11

3. Transportation and Communication

An extensive road network traverses the country north to south. In the southern portion of the country roads cut across the country with the PanAmerican Highway spanning from Guatemala on the west to the gulf on the east. Although a highway is planned, at present no linkages exist east to west in the northern most part of the country approaching El Salvador's border with Honduras. Steep mountain ranges mark this area, and movement from one area to another necessitates travel south to one of the principal cities and then north on another route. Although a new highway is planned to link this more remote area, the two main departments—Chalatenango and Cabañas—remain relatively isolated and notably among the most economically poor areas of the country.

The physical layout of the national road system has a significant influence on patterns of health service facility utilization. The abundance of roads merging into the major cities coupled with numerous relatively inexpensive buses periodically moving from rural cantones to these population centers favors the use of regional hospitals, particularly those in the Capital, over existing health units and centers often in closer geographic proximity to the rural inhabitant but nevertheless, less accessible. Further, evidence has shown that if both a lower level of care facility and a hospital are relatively equidistant from a given point, the patient is much more likely to go to the hospital. While there are some medical justifications for this, in terms of availability of trained staff and more adequate supplies of drugs and medical equipment, nevertheless the overall impact in terms of the health system as a whole is a most expensive delivery pattern. Hospitals' outpatient departments remain overcrowded and unable adequately to attend the massive daily flow of patients demanding all levels of attention while, conversely, many other levels of regional health facilities remain seriously underutilized.

11 -Gerald F. Murray, Traditional and Modern Strategies of Health Care Delivery among Peasants of El Salvador, March 1977, (Mimeographed.) pp. 227-228.

4. The Environment of Health

The environment in which a people live, encompassing not only the natural, physical features of their land but also that broad spectrum of components which together comprise a measure or quality of life, have a profound impact on health status. In El Salvador these factors include income, employment, education, housing and general living conditions as well as distinct religious and cultural values. Compositely, they represent an essentially pathogenic environment, the prime result of which is an overall bleak health profile for the vast majority of the urban and rural poor.

a. Geography and Climate

El Salvador is highly mountainous land with four active and numerous inactive volcanoes; ninety percent of the land mass is of volcanic origin. The country is also highly susceptible to earthquakes which are frequent and have often caused extensive human as well as physical damage.

The country is divided by mountain ranges running east to west into three distinct regions: a hot, narrow Pacific coastal belt on the south; a subtropical central region of valleys and plateaus where the majority of the population live; and a cooler mountainous northern region. The coastal plain and the upland areas are the nation's two principal agricultural zones producing the cotton, sugar cane and coffee which account for the vast portion of agricultural output and sector income. As is highlighted in the Health Status section of this report, the disease pattern of the population appears to follow more closely these natural geographic and agricultural boundaries than any political or administrative divisions of the country.

The extensive salt marsh along the southern coastal belt, which is the most agriculturally productive zone, provides an ideal breeding site for mosquitoes. This mosquito-filled marsh has an adverse effect not only on the national economy, but importantly upon the health of the population. Excessive mosquitoes reduce the potential for tourism, a key goal of the new Five Year Development Plan, in this sole beach area of the country and thus hamper the nation's ability to generate needed foreign exchange. Further, this heavily mosquito infested area is a prime vehicle for transmission of malaria. It, thus, has a negative impact on productivity in this principal cotton production area of the country, since many workers are now suffering from repetitive cases of malaria annually.

The tropical climate with an average temperature ranging from 64.4 to 89.6 degrees is a natural setting for numerous disease vectors that affect the health of the population. Heavy rainfall averaging 72 inches annually with periodic torrential downpours lasting for

days to weeks at a time, provide yet another hazard for the wellbeing of the population, the vast majority of whom live in adobe homes extremely vulnerable to heavy rains. The prevalence of gastroenteric disease, the primary cause of morbidity and mortality throughout the country, shows significant variations which can be correlated to the rainy season.[12]

b. Income and Employment

Although official statistics reveal an average per capita national income of US $322,[13] the highly skewed income distribution of El Salvador renders this traditional economic indicator virtually meaningless. In fact, it is generally recognized that national income distribution is among the most maldistributed in the world.

In actual monetary terms the disparity between the rich and the poor is dramatic. One 1974 study showed that one-third of all families in San Salvador earned less than US $20 per week, while nine percent earned US $160 or more per week and earned nearly half of the total income:

TABLE 3

DISTRIBUTION OF FAMILY INCOME BY LEVELS

SAN SALVADOR, AUGUST 1974

Weekly Family Income Level (In US $)	Percentage of All Families	Proportional Share of Total Income
Less than $20	34.4	7.4
$20 — $39.60	28.2	12.5
$40 — $59.60	13.2	10.0
$60 — $99.60	9.2	10.9
$100 - $159.60	6.5	12.6
$160 - or more	8.5	46.6

SOURCE: PRELAC, op. cit., Table 1-1

12 -See Health Status Sector.
13 -Ministry of Planning.

TABLE 4

El Salvador: FAMILY INCOME DISTRIBUTION BY DECILS IN THE METROPOLITAN ZONE - 1974

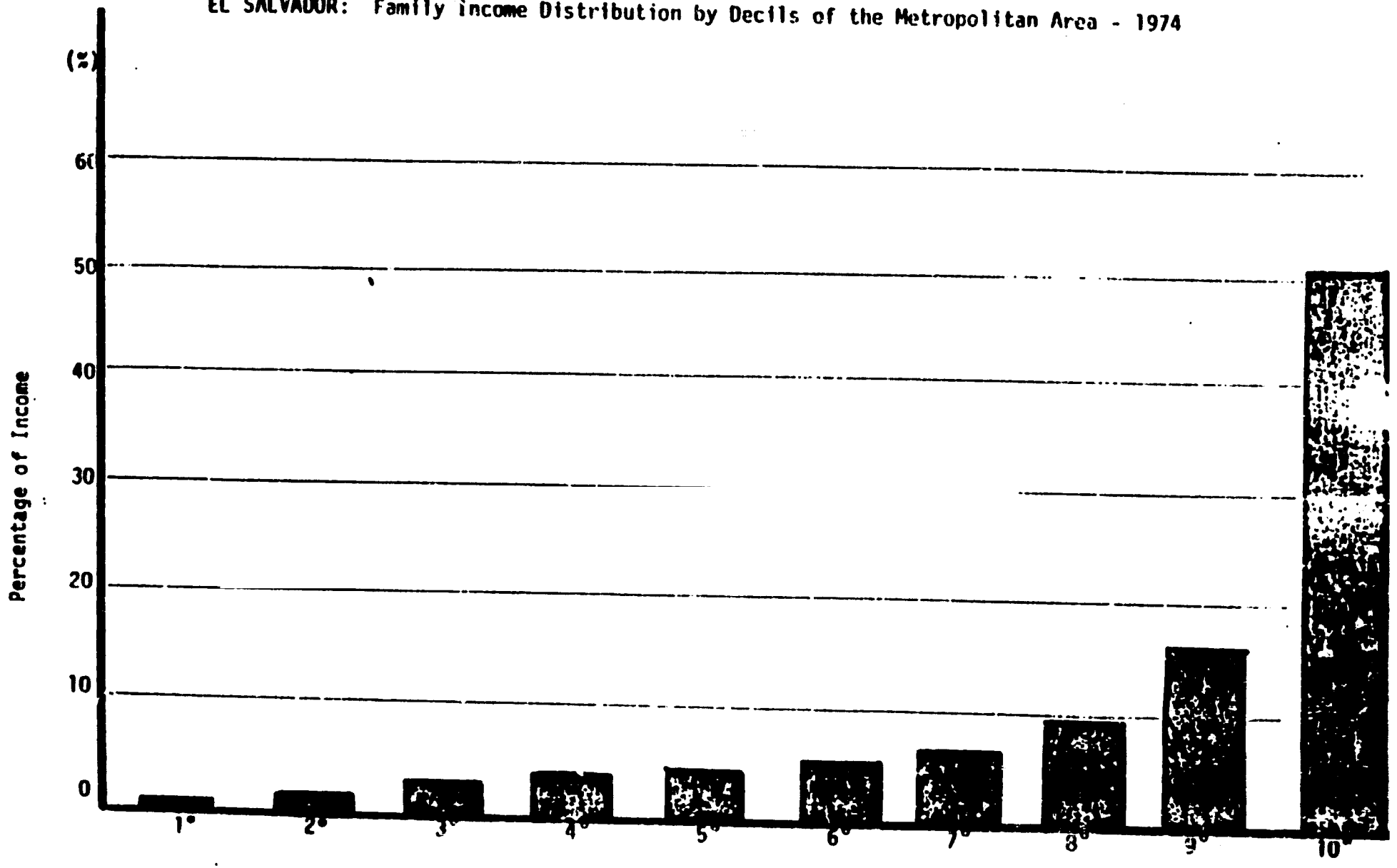
Decil	FAMILY INCOME Percentage	Accumulative Percentage	Average Income (1)	Accumulative Average Income
1°	0.42	0.42	2.56	2.56
2°	1.54	1.96	9.61	12.17
3°	2.40	4.36	14.86	27.03
4°	3.37	7.73	20.48	47.51
5°	3.81	11.54	26.13	73.64
6°	5.35	16.89	32.79	106.43
7°	7.04	23.93	43.52	149.95
8°	9.65	33.58	60.19	210.14
9°	15.52	49.10	101.86	312.00
10°	50.90	100.00	320.16	632.16
Highest 1%	15.35		957.40	

SOURCE: PRELAC "Situación y Perspectivos del Empleo en El Salvador"

(1) In U.S. Dollars per week.

FIGURE 3

EL SALVADOR: Family Income Distribution by Decils of the Metropolitan Area - 1974



Source: PREALC = Programa Regional del Empleo para America Latina y el Caribe, "Situation y Perspectivos del Empleo en El Salvador."

Recent studies undertaken by the Fundación Salvadoreña de Desarrollo y Vivienda Mínima (FSDVM) of the socioeconomic status of families living in low-income housing in Santa Ana provide another indicator of the earnings of the marginal urban population. Data obatined from the surveyed population were compared with that of participants in the FSDVM sites and services project being developed in that city.14

Analyzing monthly family income, including income from all persons living in the house plus the monetary assistance or supplies received from persons outside the house (which amounted to 15% of family income in those participating in the housing project), the following was found: average monthly income for families in popular housing was US $117, but the dispersion within this group was quite wide with 16.1% of the families with incomes below US $40 monthly, and 40.5% with incomes less than US $50 monthly. Only 35.3% had incomes greater than US $120, and only 11.5% more than US $200 monthly.15

The economic situation of the typical rural family is even more dismal. As revealed in estimates of rural income for 1974 by PRELAC, the average annual income of the landless rural family is about $374 or just about one-third of that of their urban, marginal poor counterparts; on a per capita basis the average landless peasant earns less than one-fifth on the average estimated per capita national income of $322.

TABLE 5

1974 RURAL PER CAPITAL INCOME ESTIMATION

Family with	Yearly income including all earning (family of 6)	Per Capita Income*
2.0 Ha	$ 998.00	$ 166.00
0.5 Ha	582.00	97.00
Without land	374.00	62.00
Urban poor in San Salv.	929.00	88.00
Per-capita National Income		322.00

* Based on assumption of average poor family size of six persons.

SOURCE: Programa Rgional del Empleo para America Latina y del Caribe (PRELAC) "Situación y Perspectivas del Empleo en El Salvador", 1975.

14 - La Vivienda Popular en El Salvador, Vol. 1, p. 153, FSDVM, 1976

15 -FSDVM, Unidad de Evaluación Socio-Económica, Serie de Informes... Notably the monthly income for the families participating in the FSDVM project was significantly higher, averaging US $144, with a much narrower dispersion; only 1% had incomes less than US $40.

Pervasive unemployment and underemployment are underlying causes of the strikingly low income profile of the poor majority. Overall, unemployment rates for the nation's urban areas are high and appear to be increasing, amounting to 14.2% in San Salvador in 1974 according to a 1974 Encuesta de Mano de Obra. Total national unemployment in 1976 was estimated to be 17.6%.

Poverty throughout urban El Salvador is basically a structural problem. As the FSDVM points out, despite the fact that Santa Ana is the second-largest city in the country, the capacity for private enterprise in the modern sector to generate employment is still very small. As noted in the survey, less than one-third of all families living in low-income housing were employed in the private sector; conversely more than half were self-employed, many in their own houses, or in the service sector. Almost all jobs are relatively unstable, low paying and excluded from the protections and benefits of existing labor legislation. The majority of these families are in a dependent if not indebted, position to their employers, or their suppliers.16

In the rural sector, a recent study by the Interamerican Labor Organization (ILO) revealed that El Salvador has the highest rate of rural labor under-utilization in Latin America with an estimated 47 percent of the available labor force not used.17

c. Education

Despite massive investments in the educational system by the Government over the last decade, levels of educational attainment and opportunity for education remain extremely low, particularly for the rural poor majority. The national literacy level is only 60% as revealed in the 1971 Census with only 44% of the rural population over 10 years of age able to read and write.

Educacional opportunities for the poor majority are severely limited. This surely affects income earning potential and consequently health status. The underlying causes for low educational attainment, particularly among rural youth, are complex and in-

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15 -It should be noted that it is believed that substantial under-reporting of income occurred during the initial selection process in order for families to be considered eligible. This probably accounts for the fact that the housing project is not reaching a large portion of the true target population.

16 -FSDVM, Estudio Socio-Económico...op.cit.m.p.

17 -USAID Agriculture Assessment, May 1977.

timately tied to the sociocultural fabric of Salvadorean society. While education is provided free by the Government to all children, substantial economic barriers and social discrimination to school attendance by the poor exist. While, as noted in the agriculture assessment, only 6.3 percent of active laborers on small farms are under 15 years of age, these nevertheless represent 27,565 children unable to attend school. Further, the assessment concludes that child labor is related to poverty; the region with the lowest per capital income (East) employs 100.2 percent more child labor than the higher income areas. The rural child represents a needed economic asset to his family and throughout rural areas young boys work closely with older family members in agricultural as well as numerous service activities such as cutting firewood, carting water, etc. At the same time, young girls must assume major household responsibilities including care of younger children, especially when mothers are employed, preparation of meals and obtaining adequate supplies of water, firewood, etc.

Even when need for a child's contribution to family income is not a major factor, numerous other barriers to school attendance are evident. Many families cannot afford adequate clothing or shoes to send their children to school; others have no means of transportation to take children to distant school facilities. Essential school materials such as notebooks, pencils, writing paper are often economically out of reach of the poor majority Recently, the Government initiated a program of purchasing such materials for needy children at a total cost of US $200,000.

Serious shortages of trained teachers and facilities also are major impediments to increased school attendance. The fact that the majority of rural schools provide only the first cycle (3 years) of education effectively "shuts-out" the vast majority of rural children from the opportunity of advanced education. Problems of educational and thus employment opportunities for youth are going to be exacerbated by a population growth rate which is among the highest in Latin America, coupled with already serious deficits in numbers of schools in rural areas. Over the next Five Year Plan period, a few hundred thousand primary school age children will be moving into the secondary school cohort placing additional pressure on the Government to expand the educational system.

Such a state of affairs has particularly crucial implications for the health sector. The Government's new directions to extend the national health delivery system through the use of paramedical personnel from the local communities in which they are to work implies the need for a core of persons with an adequate level of education for training as so-called rural health aides. Currently, prerequisite for eligibility include a minimum of a sixth grade education (completion of second cycle). Furthermore, the health sector must compete with others for its labor force. As noted in the above Table, potential candidates are seriously proscribed in

many regions of the country. Additionally, given the current highly skewed distribution of trained health personnel in the urban areas, renewed efforts will have to be undertaken to recruit more rural persons for all levels of health personnel and support staff, from auxiliary nurses and maintenance personnel to graduate nurses and physicians. The achievement of the national health sector goals as outlined in the Five Year Plan for 1978-82 are, therefore, integrally tied to the expansion of educational opportunities for the nation's children, particularly in rural areas.

Low educational attainment is not strictly a rural phenomenon, however. Recent studies in Santa Ana, the second largest city, have shown an average of just 3.7 years of schooling for persons over 10 years of age among the marginal population. Further it was noted that of the children eligible for schooling—those between 7 and 14 years of age—less than half (45%) actually attended. Overall, only one head of household in three has completed six years of basic education; in the urban population, one in four persons; and for the nation as a whole, only half of the population has had any formal education. (See Table 7).

d. Housing

(1). Urban

Housing throughout El Salvador as a whole is deficient, as highlighted in Table 8. The Census data point out the significant variations in quality of housing and living conditions for the urban and rural population as a whole. No data, however, are available which are disggregated by income level so that one can determine the precise conditions of the urban and rural target populations of this study. Nevertheless, several studies undertaken in specific parts of the country provide a useful basis for analysis of the overall living standards of the poor majority.

A 1976 study of urban persons living in the second largest city, Santa Ana, indicated that almost 70% of all families live in one of three types of housing termed "popular housing"; rented rooms in mesones (accounting for almost 80% of all urban marginal poor housing); illegal settlements or lotifications; or central urban slums or tugurios.[18] This pattern can be assumed to be fairly representative of other urban areas as well.

8 -Information for this section is from the following study: Fundación Salvadoreña de Desarrollo y Vivienda Mínima, Unidad de Evaluación Socio-Económica, "Estudio Socio-Económico de Santa Ana." Volumen 2. "Los resultados de la Investigación y sus aplicaciones para la política de la Fundación en Santa Ana." Febrero 1977. The actual study was conducted in June-July, 1976.

Mesones, which house an estimated 10,000 families in Santa Ana, are rented rooms generally found in older, converted middle class housing and thus tend to be in the center of the city, fairly accessible to schools and other social services. The original construction was generally adequate with either clay, asbestos or laminated roofs and tiled floors. More than 90% of these mesones as well as illegal settlements have walls of permanent materials, most commonly adobe, cement or wood. Most have deteriorated considerably over the years, however, and maintenance is virtually nonexistent. Almost all families have both communal potable water via standpipes and communal toilets, thus creating ideal situations for disease transmission. Eighty-seven percent of mesones have electricity; almost two-fifths (39%) had two or more rooms with an average of 3.1 persons per room. Three-fourths of meson residents pay $10 or less monthly rent; nevertheless, for 40% of this population this represents more than 10% of their total income. Despite the closeness of living quarters, there is little sense of community or resolve to share common problems.

Illegal settlements, most commonly located on the urban fringes are developed on land which was divided into lots and sold for housing without legal permission. The majority (60%) are privately owned; most are constructed similarly to mesones, although one-third have dirt floors and about one-fourth are constructed of adobe. Half have a potable water system (43% from standpipes and 7% from wells); the balance of families either buy water (27%) or carry it from a public standpipe (13%). Ninety-five percent have their own sanitary facilities; most common are latrines although some do have toilets. Almost 80% have electricity The average number of rooms per house varies considerably between 1 to 2.6 persons per room. The normal pattern of land acquisition is through rental with promise of sale. Although such basic sanitation services as water drainage and garbage collection are often seriously lacking, the lot size is commonly two to three times that of other housing and thus is preferred by many families despite their tenuous residence rights.

Central urban squatter settlements or tugurios are less common in El Salvador than many other Latin American countries. Dwellings are commonly inferior scrap material, often cardboard, or adobe with straw roof and dirt floors. Only 4% of such families in Santa Ana were supplied water by standpipes; the balance either carried it from a nearby river or purchased it from a truck. In contrast to the prevalence of sanitary services in the other popular forms of housing, 84% of slum dwellers have no sanitation and only 2% have any electricity. Only one-fifth of such residences had two or more rooms; the average number of persons living in each room was 4.3 or almost 40% as crowded as the next most densely occupied form of housing.

The Fundación Salvadoreña de Desarrollo y Vivienda Mínima (FSDVM),

in an attempt to redress the housing shortages in urban areas and concomitantly upgrade the standard of living of the poorest urban population, has instituted a number of sites and service projects throughout El Salvador, funded through a World Bank Loan. The typical project design is the purchase of a tract of land on which a block of housing for 20 families is developed. A basic house structure is built with a high level of sanitation services, including a domestic potable water connection and an individual flush toilet. Participants make a down-payment and then monthly mortage payments. A graduated purchase scheme is available in which families can buy a house at a few different service levels, ranging from a basic lot with just services provided to an almost completed house. As conceived, each family on the block was to assist the others on Saturday mornings in completing the houses. The success of this cooperative approach has been limited, however, by the necessity of many heads of household to work on Saturdays; further, many heads of household are women who have had to overcome traditional resistance to their participation in construction activities. It is noteworthy that many women have become among the most skilled bricklayers in the projects. Other families have chosen to contract out the work required to finish their homes.

Most importantly, in attempting to improve the conditions of the urban poor, the FSDVM finds itself in a true dilemma; the cost of the housing excludes a large proportion of the most needy families from participating. At the same time, given the very nature of the target population many participants live at the margin of subsistence, and thus achieving an overall higher standard of living is most difficult. It is hoped that the service package, and hence the cost of the houses, can be reduced to a point at which the project can reach a larger percentage of the marginally poor. Overall, the Santa Ana study indicated that two thirds of the city's families did not have access to the Foundation's housing programs due to limited economic resources; and thus have no means for improving their housing condition. The analysis concluded that the Foundation's program, despite its many benefits, has not been able to reach the poorest 25% of the urban families.[19] Given the strong positive correlation between housing conditions and health, this fact augers poorly for the achievement of national health sector goals.

(2) Rural

Throughout the rural areas, the lack of adequate housing constitutes a serious health threat. A census in 1975 by the Ministry of Planning and the Bureau of Statisitcs and Census indicated that the "typical" home for almost 80% of rural residents is adobe, of one room, with a dirt floor and a tile roof. All materials utilized for housing construction are made by hand from materials available locally; thus construction materials vary according to the region. The second most common type is bajareque which is mud supported by

19 -FSDVM, Serie of informes...p.103

a grid of small free branches or split bamboo (26.5%), adobe (31.1%), straw or grasses (15.0%) or wood (11.0%). These cottages typically have thatched roofs of sugar cane leaves, jaragua grass, etc. The one basic room usually serves a multifunctional purpose as the living and sleeping area; it may, however, be divided into smaller areas. The solidity and durability of the house is related to the economic status of the family. The wealthiest rural residents build long lasting houses of adobe most often with several adjoining rooms. The bajareque cottages, in contrast, tend to last only a few years. Their deterioration is directly related to the impermanence of the material with which they are commonly constructed. There is a noticeable consciousness among the rural residents as to the importance of housing durability given the constant threat of earthquakes in the country.

Higher economic status and better houses in the rural areas do not automatically, however, translate into more "advanced" hygienic and esthetic practices. Wealthier families do not necessarily maintain cleaner houses than their poorer neighbors. Although houses, kitchens and patios are commonly swept several times a day with brushes made of local materials, nevertheless, regardless of economic class, kitchens are constantly invaded by diverse domestic and farm animals. The main exception is in the few houses which have erected railings around the front porch area. Further, it is usual practice for chickens and other farm animals to be fed sorghum while inside the house in the evening. Flies, fleas and other disease vectors are prevalent and their entry facilitated by the lack of screens on windows, when present, or doors to close off open patio areas leading to the interior of the house.

The kitchen is a major source of disease. In most rural homes, the kitchen area is located in a separate room or at least an area apart from the rest of the house (in some houses it is a separate building while in others it is located outside, under the sloping roof).

Most stoves have two cooking discs — the "Comal", a large, round clay disc used to toast or cook tortillas, and a separate mound used for preparing beans, soups and rice. Ventilation is almost non-existent. There are still few chimneys constructed in most houses; smoke either exhausts through a small square window above the fire or it just slithers through the cracks in the tile roof. Additionally, many houses have "hornos" - ovens used to bake bread and cookies but used only during special festive days, especially Christmas.

One of the major home improvements promoted by the Agriculture Ministry's "home educators" is the construction of a "folgon" — a type of clay stove where the comal and one or two other burners are situated together, and under which one fire can provide sufficient heat for all cooking purposes. The "folgon" is constructed out of available materials, commonly either cement, tile, scrap iron, or mud.

Chimneys, when included, are made of two to three cement tubes costing about $0.60-80 each and are built at least as high as the highest point of the house.

The advantages of a folgon are clear: (a) one fire to heat all pots; (b) less wood required to heat all pots; and (c) usually less smoke, particularly if a chimney is constructed.

The principal cooking material is leña--wood--including small branches and brush usually gathered and carried from the local area by the woman. Because of the heavy burden of collecting sufficient wood preparing the family's meals, other materials are used when available to supplement the wood supply. These include: corn cobs, husks,and stalks which will last several months, commencing in November and continuing through the dry season, and are saved after the corn has been degrained.

People living near small sugar cane "molineros"--grinding mills --utilize the sugar cane "bagazo"--split and crushed, dried sugar steam--as a fuel also. This is generally available during the January to May period. Another source used, although not as commonly as the two above, is tobacco stems, discarded after the tobacco leaves are harvested.

Kerosene lanterns are the most common source of light (77%), as only 14.4% of the homes have electrical connections. Latrines are rare. Water is acquired from rivers or springs by nearly half (48.8%) of the rural population; public facilities such as community wells (24.8%)or public standpipes (9.9%) are other frequent water sources. Some rural residents have constructed open "pilas" (basins) to collect rainwater from the roof. The water is used primarily for washing. Where water sources are relatively close, women and children obtain water in samll quantities at a time by filling metal cíntaros (containers). For larger quantities of water, men will offer to collect water from a public tap or nearby river or stream in 50 gallon barrels set on a cart for facilitating transportation.

One successful rural water project was that developed jointly by the Community Development Foundation (FOCCO) and the Ministry of Health constructing cisterns for two cantones located in the uppermost areas of the San Vicente volcano. Before constructed, residents had to make a three hour trip to San Vicente and four hours return to collect needed water every two days. However, the failure of the Interamerican Development Bank Loan to the Ministry of Health to include funding for cisterns as an approved approach for expanding rural water supply systems has resulted in a virtual neglect of this model. Transporting water and gathering wood are time-consuming tasks, and supplies of both are used very sparingly.

Overcrowding is symptomatic of the rapid population growth. The Encuesta de Hogares points out that 63.5% of the one room homes are occupied by 5 or more people. Further, a census by the pilot group of Rural Health Aides working in 20 cantones indicated that in almost half the houses surveyed, more than one family resides within one household; the mean family size is 5.9 people, but occupancy rates of 10-12 people in one house are common. Privately owned homes are claimed by 57% of the rural population; very few people rent homes (5%) but 38% of the population either borrow homes, live in houses as caretakers, or have constructed a shack on land that is not owned by them.

Throughout rural El Salvador the emergence of so-called colonias chorizos stands as stark evidence of the bleak economic situation for many. Long sausage-like rows of crude housing sandwiched in extremely narrow spaces between large tracts of agricultural land and principal road networks, these are the homes of many of the landless and most marginal rural poor. The product of population pressure and concomitantly large-scale rural unemployment, these colonias represent a relatively new phenomenon in the rural areas where the poor have traditionally had at least a small plot of land, rented if not owned, which permitted some subsistence agriculture. The communities are marked by their high population density, most notably abundance of children under five years of age, and virtual absence of latrines, although most homes do have private wells.

e. Rural Community Patterns.

Salvadorean society is basically a highly homogeneous one;notable is the virtual absence, even in rural areas, of linguistically and culturally distinct subgroups of the population. Spanish is the common language embracing all socio-economic levels and all areas of the country. Unlike the majority of Latin American countries in which dual societies of persons of European and Indian heritage coexist, often with little integration, the population of El Salvador is almost totally ladino, or racially mixed.

Throughout the country one can see the peasant working the fields with bullocks and plows, or in many cases without plowing, simply penetrating the ground with a digging stick and dropping seeds into the hole. One can also see the peasant family living in extremely primitive grass huts, lean-to structures, or adobe houses, littered and crumbling. However, these suggestions of traditionalism and primitivism, so striking in their visible characteristics, belie the true condition of life in the rural areas. Compared to other peasantries, the Salvadorean rural culture should be understood as an advanced peasantry, one with very few remaining traditional institutions and values, one in some important ways on the brink of "modernism."

Although the Salvadorean small farmer may be modern, in the

sense he is not bound by deep rooted traditions and tribal culture, he nevertheless is in the paradoxical situation of farming his land in about the same way his Mayan predecessors did centuries ago, living in the same type of home, and eating the same type of foods. The irony of this situation has had important social and psychological consequences for Salvadoran society. For essentially the small farmer is very much aware of modern technology and the benefits it could bring him and his family. He uses fertilizers, insecticides, and machinery when he can afford them and understands the market and money economy. Only his limited resources, land and capital, hold him back from a better life.

The world of the small farmer in El Salvador is unusual in its lack of social integration. The target group farmer lives in a nuclear family and is highly independent. He has almost no external family ties, no functional godparent obligations, and receives little if any help from friends and distant relatives. Cooperation and reciprocal relations between friends and neighbors are almost totally lacking when compared to other societies in Latin America or even the United States. From an early age the rural Salvadorean learns to be autonomous, self reliant, and industrious. The wearing of the machete or side arm is understood as symbolic of personal autonomy and self mastery. The family unit is also the basic social and economic unit. Beyond this there is relatively little social, economic,political, or religious structuring. Even soccer, so important throughout Latin America in promoting community spirit and social integration, lacks the force to contribute much to a broad sense of community. There is little concern with so-called community affairs; in fact, there are few community affairs to be concerned with. Contrary to most peasantries, fiestas (religious or secular) are few and arouse only casual interest and involvement. There are few social or recreational clubs and near zero participation in traditional politics at any level. In spite of this rather austere picture, it should be understood that the small farmer does often depart from this pattern of life to join with others to solve specific economic problems. Credit and marketing cooperatives have been successful in a significant number of cases. Even people not formally joined to a cooperative often form solidarity groups in order to qualify for credit from the Agricultural Development Bank(BFA).

Although the nuclear family is the rule in rural El Salvador, it can be extended somewhat to include single daughters who have children or who are pregnant. In many cases in the rural areas, a man may live with the daughter and attach himself permanently to his father-in-law's household. Thus, the household unit in many instances may easily become a "house of mothers" and exhibit many features of a matricentric family.

While there are certainly legitimate, legal, and religious marriages in the rural areas, marriage is somewhat unusual. People

say they respect matrimony in the traditional sense, but they do not practice it. The relationship between a man and a woman is a "companionship". The resulting family structure when it becomes stabilized, is called an "accompanied family." Most males frankly and openly admit they do not want to get married because they don't want to be bound or because it is too expensive. When and if a man becomes more prosperous, he may have more than one companion or "wife." While many such arrangements are temporary, some develop a degree of stability and in effect form a pattern of plural wives and plural households with the attendant children.

To an observer from another culture or even from another social class within Salvadoran society, it might seem that the rural poor family is chaotic or loosely structured. This is not so. Certainly there are many failures, but in time the family unit which stabilizes becomes a strong unit of economic and psychological security. There is little else in the contemporary rural society and culture for the very poor. The family is a tightly structured economic operation. Male-female division of labor is well defined and complementary. Every child and every adult has specific responsibilities, and everyday work activity proceeds more or less in an orderly and effective way. The mother often is the anchor point of the family; she is responsible, hard working, and a symbol of stability and security. Among the poorest of the poor this is especially typical. The father, while hard working and fond of his children, seems to feel less responsible and often has sexual affairs, and children, with other women.

Four things stand out strongly in the value system of the Salvadorean small farmer. These are the desire for his own piece of land, desire for education, an all-embracing concern for subsistence security, and an attachment to a rural versus an urban environment. The first thing any farmer, day worker, or squatter wants is land. When asked what else he wants, it is more land, for cash crops and thus self-improvement. Although fifty percent of the small farmers rent the land they are working, considerably more people have no land at all and simply scratch out a living along the side of the road or are employed on a part-time basis by those who own land outright or by those who rent.

Although illiteracy is high, up to 75% in many rural areas, people generally see education--formal, informal and technical--as a means to improve their lot in life. Parents see to it that children take advantage of all educational opportunities, meager as they may be. The only compromise with this high regard for education appears at peak work periods when all members of the family must join together in common effort.

Closely related to the desire for land is an all-encompassing concern for day to day security. As mentioned above, most of the rural poor have no access to land of any kind unless they are employed as day workers or live along the fence posts of large farms.

Even small farmers who rent their land and have been doing so for several years, know that next year the owner may want to rent to someone else or perhaps convert to sugar cane or coffee. Thus, land becomes a means to an end—immediate survival. One hectare or less would be all many people would ask in order to subsist on corn and beans. Another hectare for cash crops and an additional layer for security would be an idle dream. For those, however, who have given up hope of ever having access to land, the immediate concern is with food, shelter, jobs, and whatever dignity may go with these basic necessities as given out at the lowest levels of society.

Finally, the Salvadoran small farmer and the rural poor nearly always express a preference for rural life as opposed to urban living. This is true even though people in the rural areas are unfettered with traditional values and, in fact, exhibit patterns of consumerism similar to urban dwellers. Thus such migration to the cities as there has been over the years is a result of the push of economic necessity rather than the lure of better living conditions and the "dolce vita." But one should not believe that a preference for rural living means the small farmer is immobile. In fact, due to good roads and cheap transportation most individuals have travelled throughout the country, mostly as migrant workers following the harvest cycles for cotton, coffee, and sugar cane.

f. Health Attitudes and Practices

Concepción Clara de Guevara offers a campesino definition of health derived from her considerable ethnographic research:

> "Good health is to feel good, to have physical and spiritual strength, the will to work, good appetite, good humor, good appearance, beauty and goodness... to be ill is to feel worthless, without the zest to perform one's daily activities... to not be able to work... anything else is simply not feeling well." 20

A study of the population of Uluazapa 21 corroborated this perception of health among the rural poor. A positive state of health is contingent upon the body's achievement of a state of equilibrium. Few people, however, felt they enjoyed this state of equilibrium. Of those interviewed, 67.5% felt they personally had only fair health and their children had fair (37.5%) or poor health (52.5%). Only 20% felt they had good health; 7.5% that their spouse had good health. The study noted a significant variation between man and women in the perception of their children's

20 -Concepción Clara de Guevara, Creencias y Prácticas en la Medicina Tradicional de El Salvador. Paper presented in the Public Health Section, 16th Central American Medical Congress, San Salv., December 1975.

21 -Polly Harrison, The Social and Cultural Context of Health in Rural El Salvador, Implications for Programming, Dec. 1976, Oriental Region (mimeographed).

health; 55% of the men judged their children's health as poor as opposed to just 15% of the women. This discrepancy is particularly important in view of the fact that women have primary responsibility for child care and must make the crucial decisions to seek medical assistance.

For the typical campesino, life is generally viewed as a source of suffering, in which people are at the mercy of many forces that cannot be influenced or affected. A pervasive sense of environmental fatalism exists in which it is believed that the very nature of the milieu in which one lives makes illness inevitable; therefore, one must learn early to cope with pain and suffering. Ultimately children will live or not, according to the will of God.

Numerous personal hygiene practices adversely impact on health status, including the collection, storage and use of water. While there does appear to be a differentiation between water for drinking and that for washing, bathing, etc., in the rural areas, the concept of potable water is not well understood. For many families, potable water means merely that water which is taken from a tap or pipe. Thus, polluted water may actually be used for drinking simply because it came from a pipe.

The logistical problems of obtaining water in many rural areas make it a most treasured and sparingly used commodity. The collection of water from local sources to meet adequate daily family needs may require as many as six or seven distinct trips by women or young female children; three to four trips are generally the average. It is not uncommon, however, for people to have to travel as much as several hours to obtain water.

All water is stored in the kitchen area of the house, thus often exposing it to the use of numerous animals moving freely in the house. Containers vary widely within a community but tin jugs in which the water was originally collected are the most popular form of storage. Sometimes the water is transferred into a clay jug to facilitate cooling for drinking. Water for other than drinking purposes is generally stored in large basins which are uncovered.

The boiling of drinking water is a rare occurrence in rural areas While often fuel shortages are an underlying cause, there is also a substantial reticence to boil water because of reportedly bad taste and belief that it can actually cause physical damage to a person.

Neither adult nor child bathing usually is undertaken daily. The general impression is that a weekly plunge in the local river is more than adequate for health purposes. The main exception is that of infants who are washed daily at home. Because of a general mistrust of cold water, bathing is stopped when one has a cold or during menstruation or the immediate postpartum period. Commonly,

soap is not used for bathing; handwashing appears to be done only if the hands are visibly dirty and children will tend to have hands washed after rather than before eating. Young children will frequently crawl naked on the ground, and the dirt on their hads will frequently enter the mouth and eyes. Such conditions are basic underlying causes of the prevalence of eye infections. It does appear to be recognized by some campesinos that diarrheas become more frequent once the child begins to crawl, but the relationship is not understood.

Recently studies have documented traditional findings of the existence of a large body of autochthonous (indigenous), pre-scientific explanations for illness and its causes among the rural Salvadorean population.35 There is an impressive lack of animistic concepts with respect to the causes of illness; there is no evidence of beliefs in sickness caused by angry spirits. There is, however, some belief in sorcery among the rural population. Newborns and infants are viewed by many rural people as being vulnerable to the evil eye sickness (mal de ojo). This illness is believed to be precipitated either intentionally or more often unintentionally by a passerby with "strong eyes," who comments on the beauty of the young child. This serves to explain in the rural person's viewpoint the high prevalence of disease among the very young.

In contrast to this "benign" sorcery, adult illnesses are frequently associated with sorcery effected by an enemy enraged by sexual jealousy or desire for revenge for violent death, a frequent occurence in rural El Salvador. Headaches, diarrhea and stomach pains which are unrelenting and for which the pharmacy-purchased medicine is ineffective may eventually be categorized as being this mal procurado. It is important to note that virtually all members of a rural community will suspect sorcery, however, only after the use of modern medicine has failed.

Local folk interpretations of medicine abound in rural El Salvador but are closely tied to natural causes. Three such folk-constructs are prevalent which posit natural illnesses that are not generally recognized as sichnesses by modern medicine. These include the empacho, the espanto and aires. The major folk belief appears to be that of the empacho, which is a blockage that occurs in the stomach when some item of food, usually a poorly digested torrilla, is obstructed in its passage through the body. The most common treatment to alleviate such illness is to break it up by massage so that it can continue on its path. This procedure is often used in conjunction with modern medicine; one theory is that massaging must be performed first so that modern medicine can have its effect.

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22 -This discussion of traditional belief is derived from Gerald Murray, Traditional and Modern Strategies of Health Care Delivery among Peasants of El Salvador, March 1977, (Unpublished).

A less frequent form of illness, but nevertheless recognized, is that caused by an espanto, a sudden fright. Usually such occurrences happen at night when one hears a sudden, unexpected noise. While commonly the noise is believed to come from a coyote, there is a small element of animism in the belief that it is sometimes made by a cadejo, a nocturnal imaginary animal who is believed to be the devil's helper. Additionally there are a number of beliefs about the adverse effect of aires, winds or breezes. In this construct, it is believed that aire has somehow entered the organism at the affected part, causing bodily aches. While these three concepts are still prevalent, they are being usurped by more modern concepts. There is, however, a continuing, poor understanding of disease etiology and the interrelationship of poor sanitary conditions and disease transmission.

Campesinos are aware of syndromes or symptoms of diverse ailments but find difficulty in conveying this illness to health professionals. Cough, malnutrtion and diarrhea are so common as to often be regarded not as symptoms of illness but rather as a routine part of life. Thus, children are often not perceived as ill when they actually are; this is observed often in health clinics in which the large percentage of children are first seen only after they are gravely ill. The seriousness of an illness seems to be judged by duration, with a minimum of three days suffering required before medical help is sought.

Traditional self-medication revolves around the use of numerous home remedies without consulting either traditional or modern medical personnel. Common first-aid treatment for wounds and gashes, frequent among males in the rural areas, is to wash them out with kerosene or cover them with animal manure; in other instances leaves and salivas may be pressed over the wound. With regard to the more long-term illnesses, both special diets and local plants are used.

Adoption of special diets commonly complements use of medications for specific illnesses. The concept of the inherent qualities of food is very much part of Salvadorean culture today. Foods are categorized as having "hot or "cold" qualities, conditions which are not necessarily descriptive of temperature, but rather of inherent properties which harmonize or violate certain bodily functions, thereby maintaining or disturbing the equilibrium of the body. Because it is perceived that illness upsets this essential equilibrium, the ingestion of the proper food, be it "hot" or "cold," is important for re-establishment of good health.

Foods given up most commonly are those labeled as "cold". The tabcos appear to be most dramatic in the case of illness of a child. In addition to the cessation of bathing, numerous dietary changes occur according to the specific illness. In the case of diarrhea, the most prevalent illness in rural areas, both water and milk are reduced in quantity, the latter often dropped entirely. Raw foods such as fruits and nuts are also withdrawn.

Herbs are used in one of four different ways depending on the specific illness: drunken in the form of tea; boiled and used as an external bath; ground and used as an external ointment; or dissolved and used as a rinse. There is, however, among rural people a growing skepticism about the efficacy of these home cures. Overall, it appears that the principal motivation for extensive use of home remedies as the first line of defense in the most remote rural areas is due principally to the distance from the canton to the nearest pharmacy or public health clinic. However, the preference of the rural population for store-bought medicines is definite and pervasive.

Overall, the campesino can be largely viewed as a "health strategist" exploiting a combination of traditional and modern services to successfully resolve his health problems.[23] Anthropological research in El Salvador in the 1960's estimated that the prevalent sequence of health management by the typical campesino was as follows: (1) home treatment; (2) treatment by curanderos (curers); (3) utilization of the pharmacy; and (4) contact with the modern deliverers of health care.[24] The study of Harrison outlines the following sequence: (1) the pharmacy; (2) the clinic; (3) the hospital; (4) the curandero.[25] Thus, there is a noticeable trend toward increased utilization of the modern health care provider.

In the past inaccessibility of health facilities precluded adequate formal medical attention for the majority of rural residents; rural families had to resort to home remedies or curanderos for treatment of illness. Substantial expansion of the health system, particularly over the past Five Year Plan period, has placed some level of health facility within the reach of most families. Nevertheless, as the studies indicate, people tend to continue to seek medical assistance from family and friends first.

Decisions as to which type of service to use are apparently based primarily on the individual's perception of the gravity of a given ailment. The economic factor weights heavily when illness precludes one's working; it also directly determines whether the care of a private physician will be sought. What is important from a planning standpoint is that "where the quality of social relations between practitioner or institution and client is high, the economic, temporal, and geographical factors are noticeably discounted."[26]

There is a noticeable continuing reticence on the part of rural people to use public health facilities even when geographically and economically accessible.

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23 -Ibid., p. 62

24 -Harrison, op. cit., pp. 65-66

25 -Ibid.,

26 -Ibid.

Contributing to the negative impressions of the existing formal medical care system are the numerous unsatisfactory personal and familial encounters with health units. For example, long traveling time to the health unit coupled with long waiting lines often discourage return visits. Further, most health posts other than hospitals are not open late Saturday and Sunday when most campesinos seek care in conjuction with their trips to the town market. Also, the discontinuity in care as health personnel turn over rapidly in rural areas creates a constant social barrier between the average rural resident and the trained health professionals. Once the decision is made to consult with the formal medical system, there is a bias to use a hospital even if it is more distant than a health post because one can, thus, be assured of a physician's attention; special curative powers are attributed to a physician that are often not accorded either to other health professionals or paramedical personnel.

The existing health system is maternal and child health oriented and dominated. Throughout all levels of care, men appear to be neglected. The Uluazapa study highlighted this discrepancy in utilization patterns between men and women. With the exception of the pharmacy, there is a noted tendency for men to use all types of health services less than women do. The disparities are greatest with regard to health posts and the curanderos, narrowing with private doctors and Ministry of Health facilities and injectionists. The underlying causes of this utilization pattern of men appear to be: (a) health post hours of consulting are not conducive to male visitation, given their job schedules; (b) a more prevalent scientific skepticism with regard to efficacy of care of traditional healers; (c) hospitals are much more easily accessible to men who are already highly mobile in their labor and do not have child care responsibilities; and (d) a greater tendency among men to ignore non-incapacitating illnesses.

Although the typical orientation of the campesino toward health problems is basically curative, nevertheless a certain level of conviction exists that many common illnesses can be avoided, although men tend to have a more positive outlook than women.27 Traditionally people have sought to maintain good health through continuous use of amulets, the balancing of intake of hot and cold foods, etc. There is a body of preventive folk-medicine consisting largely of taboos imposed at certain points in time such as during menstruation or after childbirth which are not associated with illness, per se, but rather at avoiding sickness. These preventive concepts of the traditional system are being slowly abandoned; they have not, however, generally been replaced with certain key preventive concepts of modern medicine, especially among the older community members. The institution of prenatal control visits in the local health clinics, vaccination programs, and the diverse health campaigns for dental health, diarrheas stimulate a family sense of responsability for one's own well-being and health among the rural populace. Nevertheless, cam-

27 -Harrison, op. cit.

pesinos still will require substantial health education if the gap between traditional beliefs and modern medical knowledge is to be successfully bridged.

5. Community Organization

Throughout rural El Salvador, community ties appear to be weak.28 Unlike other Central American "closed corporate" Indian societies in which communal control over at least part of the land supply is common, the rural areas of El Salvador are marked by their highly individualized land tenure pattern. Thus the stronger community bonds and more formalized types of locally generated power structures prevalent in communal societies are strikingly absent.

The rural family tends to be highly self-sufficient from a goods as well as basic needs standpoint. Except for the somewhat frequent pattern of extended families through having daughters-in-law live on the same land (although most commonly in their own houses), the nuclear family structure is the norm. There are no effective social barriers to entering a given community, and land purchase makes one an "insider." Other than kinship ties, however, important for inheritance purposes as mentioned earlier, there is little solidarity among the various families living in a rural community.

Importantly, the canton itself is a somewhat arbitrary administrative unit officially designated by the National Government. It does not importantly tend to be a center of identification and personal loyalty. Rather the true functional residential units are the smaller caseríos and even in them loyalty to kin rather than to the community at large appears to prevail.29 The authorities in the rural cantones, although usually long-standing residents, are nevertheless appointed to their positions by the mayor of the nearby town rather than elected through a local community process. Given this rather artificial nature of the canton, it would probably be fruit- social organizations could emerge in rural El Salvador.

The caserío usually contains from six to two dozen houses in some sort of proximity to each other. As noted in a study of four caseríos in the Central Region, typically these households represent a cluster of patrilineally related persons. Sons will bring their

28 -The absence of a sense of community throughout El Salvador's urban and rural areas has been documented by a number of studies including: Alistair White, El Salvador: Allan LeBaron, et.al., Investigation of The Social and Economic Aspects of a Land Tenure and Production Program in El Salvador, San Salvador, September, 1975, (mimeographed).

29 -Murray, op. cit., p.8

wives into their father's house and then build a separate house within a few years on the same property. Over the years, a grouping of relatives emerges with each household living in a separate house, but maintaining close functional bonds between them.

Thus, groups that already interact in rural areas are those that are united by kinship rather than neighborhood. In such a setting, the fomenting of cooperative relationships among non-related families is extremely difficult. In fact no precedent for mutual aid and reciprocal work really exists. Families (non-kin) do not typically assist one another in construction of a house, clearing or cultivating land. Successful "community development" has been largely limited to those activities which are of clear benefit to each participating family such as road, market, and church construction.

In the most recent study of rural cantones, analysis indicated that efforts to organize and mobilize local community action have succeeded to the degree that the local political and economic leadership were involved and supported the project. In the building and repair of a rope bridge, local authorities were responsible for mobilizing and delegating work to community members. With regard to the formation of a cooperative to purchase new agricultural inputs, particularly fertilizer, the lead was taken by the most wealthy families in the town with the others following after the innovations proved successful. In all these settings, the important element was that authority was delegated; thus, attempts to generate democratic elections for identifying leaders for local community action may prove entirely ineffective.30

Studies in urban areas have indicated that the nuclear family is the most prevalent pattern as well.31 Further, as in the rural areas, participation in community-oriented activities is low. More than half (56%) of the family heads of household living in low-income housing in Santa Ana did not participate in any organization and of those who were active, most belonged to a church; relatively few had had any experience in community to organize for resolving its own problems.32 The vast majority felt that any improvement in their economic and social situation would be dependent on better education and thus employment opportunities or a raise in salary, but not from self or community instituted actions.

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30 -Murray, op. cit., pp. 226-227; p.229.

31 -FSDVM, Estudio Socio-Económico de Santa Ana.

32 -Ibid, pp. 141 and 152

Table I.A-6

PERCENTAGE OF HOUSES WITH SELECTED

CHARACTERISTICS IN URBAN AND RURAL EL SALVADOR, 1971

Characteristic	Urban	Rural	National Total
Construction material:			
Bajareque (mud and cane)	34.6	26.5	30.5
Adobe	27.5	31.1	28.4
Concrete/bricks	31.8	8.7	20.3
Wood	4.3	11.0	7.7
Straw/grass	1.3	15.7	8.5
Floors: other (tin, cardboard)	2.3	7.0	4.7
Dirt	25.7	84.3	55.0
Cement block	55.7	6.6	31.2
Ownership			
Private	46.0	57.1	51.6
Rented	43.2	5.0	24.1
Electricity	83.8	14.4	49.1
Cooking material			
Firewood (leña)	46.5	96.5	71.5
Propane gas	26.5	0.7	13.6
Housing category			
Ranche (Bamboo, Palm, etc)	3.4	30.0	16.7
Shack (choza)	3.0	0.9	2.0
Water source private	38.9	3.5	21.2
Domestic connection public	27.3	2.0	14.7

Table I.A-8 (Cont'd)

Characteristic	Urban	Rural	National Total
Standpipe outside house	20.2	9.9	15.1
Well	1.5	11.0	6.3
private	2.2	24.8	13.5
shared			
Rainwater			
River ~~otro~~	9.8	48.8	29.3
Natural spring			
Bathing areas			
private	38.8	4.4	21.4
public	29.9	3.1	16.5
Sanitary facility			
None	12.5	79.0	45.8
Private toilet	29.0	0.	14.5
Shared toilet	10.0	0.	5.0
Septic tank	20.8	5.8	13.3
Latrines	27.7	15.2	21.4
Refrigerators	0.6	0.	0.3
Radios	39.8	44.2	42.0
Television	0.7	0.	0.4
None of 3 above items	33.0	54.0	43.5
Iron electric	20.5	1.2	10.8
Sewing machines	6.0	8.3	7.2

Source: "Resultados Sobre La Vivienda," Encuesta de Hogares, Abril-Julio, 1975.

Data on appliances available in households are from the Censo Poblacional III, Poblacion IV, Vivienda, 1971.

PART II ANALYSIS

B. HEALTH STATUS

The current overall health status of the Salvadorean population is difficult to assess given the weak national health data collection system. Determination of the precise nature and extent of mortality is hampered by the medical certification of only one-third of all deaths and the fact that more than one-fourth (28.4%) were due to ill-defined diseases. Age-specific morbidity is likewise difficult to measure due to irregular use of medical facilities. More is known about the effects of specific diseases on mortality and morbidity and is discussed in the third part of this section.

Mortality

Estimates of mortality in El Salvador vary significantly between diverse organizations reporting such statistics but generally it is recognized that crude death rates have declined only marginally over the last decade. Trends have indicated a decrease from 9.2 deaths per 1000 population in 1968.[1] to official estimates of 7.9 and 7.8 per 1000 population in 1971 and 1975 respectively, as outlined in Table 1.

Comparative data on the primary cause of mortality for all age groups for 1970 and 1975 are outlined in Table 2. The two leading causes, enteritis and other diarrheal diseases and accidents and other acts of violence, have maintained their position over the six year period.

As is the case with mortality, estimates of average life expectancy in El Salvador are highly contradictory. While PAHO has estimated life expectancy at birth to be 62.6 years, recent official estimates of average life span are 59.1 years with a projected life expectancy of 61.9 years by 1980.

Existing studies have indicated some variation in life expectancy rates according to sex and place of residence. A 1976 study of the department of La Paz indicated a life expectancy of 51 years for females and 48 years for males.2 While these rates are considerably lower than the national estimate, no data are available on sex differentials for other departments. Further regional variations in life expectancy were noted by the 1976 Encuesta Nacional.....

1 -Pan American Health Organization

2 -Robert N. Hill, F.L. Trowbridge, and Leo Morris, "Fertility and Mortality in El Salvador" (paper presented at the seventh meeting of Scuthern Regional Demographic Group; New Orleans, Lousiana, October 28-29, 1976), P.1. (Mimeographed)

TABLE 1

MORTALITY RATES FOR EL SALVADOR, 1971-1975

YEARS	MORTALITY	
	Number	Rates*
1971	28,722	7.9
1972	32,383	8.6
1973	31,365	8.4
1974	30,494	7.8
1975	31,386	7.8

SOURCE: Ministry of Public Health and Social Assistance, Memoria 1975-1976 (El Salvador: n.p., 1976) p.9.

Rates per 1000 people.

TABLE 2

Primary Cause of Mortality-Structure of Mortality
1970 and 1975

Order of Priority	Causes (a)	1970 Number	1970 Percentage	1975 Number	1975 Percentage
1	Enteritis and other diarrheal diseases	6,262	17.8	4,339	14.0
2	Accidents and Acts of Violence	2,627	7.6	3,645	11.0
3	Other digestive diseases	2,345	6.7	785	2.4
4	Bronchitis, Emphysema and other similar diseases	1,261	3.6	1,322	4.0
5	Pneumonia and Bronchopneumonia	1,004	2.9	1,054	3.3
6	Dysentery and Amebiasis	990	2.8	80	0.2
7	Influenza	744	2.1	424	1.3
8	Malignant Tumors	708	2.0	780	2.4
9	Cerebral Vascular disease	606	1.7	679	2.1
10	Avitaminoses and other similar diseases	567	1.6	561	1.7
11	Anemias	—	—	537	1.6
--	Ill-defined disease	10,379	29.6	9,090	28.4
--	Other causes	7,636	21.7	8,680	27.0
	TOTAL	35,129*	100.0	31,986**	99.4

SOURCE: Ministry of Public Health and Social Assistance, Department of Health Statistics, Anuarios Estadisticos 1970, Bulletin No. 4. (El Salvador: n.p., 1970)

(a) Corresponds to a list of 150 causes from the 8th Revision of the WHO International Classification of Diseases (1967).

* Total number of deaths medically certified is 35.3%

** Dirección General de Estadisticas y Censos.

Table 3

Rates of Infant Mortality for El Salvador, 1971-1975

Years	Total (El Salvador)		REGIONS									
			Western		Central		Metropolitan		Para Central		Eastern	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1971	8,093	52.4	2,284	69.1	1,320	63.3	1,959	65.9	1,049	39.7	1,481	33.4
1972	8,950	58.3	2,414	73.5	1,410	69.4	2,100	69.1	1,299	49.5	1,736	39.4
1973	9,194	19.1(?)	2,620	78.7	1,432	69.5	2,125	68.1	1,208	45.2	1,809	41.3
1974	8,493	53.7	2,492	74.2	1,294	61.7	2,217	69.3	997	37.2	1,493	33.3
1975	9,363	58.2	2,748	80.1	1,489	69.3	2,324	72.0	1,118	40.7	1,684	37.2

Source: Ministry of Public Health and Social Assistance, Department of Health Statistics, Salud Pública en Cifras, No. 8 (El Salvador: n.p., 1976), Table 8, p.10.

* Rates per 1000 live births

de Fecundidad de El Salvador with rates of 47 years in the coastal region, 49 years in the hill region and 54 years in the mountainous region of the country which includes La Paz Department.

While these indicators reflect official estimates, several independent studies on small geographic areas or local communities indicate that the actual infant mortality rate may be strikingly underestimated. A recently completed study on the health sector revealed that infant mortality may be as high as 120 per 1000 live births in the rural areas and 85 per 1000 live births in the urban areas.3 These rates are consistent with PAHO-sponsored study on child mortality conducted in 1976 in the municipalities of San Salvador, Apopa, Nejapa and Quezaltepeque. Overall infant mortality rates were found to be 81.7 in San Salvador and 120 per 1000 live births in the three rural municipalities.4 A recent anthropological study of one rural area in El Salvador confirmed the tendency to await registration of birth until the infant has lived at least 15 days. Consequently substantial numbers of infant deaths are never reported.5 The Government has instituted a series of measures to improve birth registration including in some regions the issuance of fines for failure to register births at the local mayor's offices as well as follow-up to local midwives to ascertain the number of births attended each month. Nevertheless, it can be assumed that many births and deaths continue to escape the data collection system.

Even using the official infant mortality rate as a basis for analysis, the existing level of infant deaths in El Salvador is three to four times greater than those in the United States and among the highest in the Central American region.

As outlined in Table 3, significant variations in infant mortality rates exist between the five health regions of the country. Infant mortality is approximately twice as high in the Western region as in the Eastern or Paracentral regions of the country. While these differences may be at least partially attributed to varying quality of reporting between Departments, nevertheless several studies corroborate differential infant mortality rates between distinct geographic areas of the country.

Mortality of children under five years of age is a serious health problem throughout the country representing a significant

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3 Ministry of Public Health and Social Assistance, Resumen del Diagnostico del Sector Salud (El Salvador: n.p., November,1976), P.1.

4 World Health Organization, Pan American Health Organization, Pan American Sanitary Bureau, Patterns of Mortality in Childhood: Report of the Inter-American Investigation in Childhood, by Ruth Rice Puffer and Carlos V. Serrano, Scientific Publication No.262 (Washington, D.C.: Pan American Health Organization,1973) Table 15,P.59.

5 Gerald Murray, Traditional and Modern Strategies of Health Care Delivery Among Peasants of El Salvador. p. 140. See Appendex E of the Assessment.

TABLE 4

Proportional Mortality for Children Under 5 Years
1971 - 1975

Years	PROPORTIONAL MORTALITY		
	Total	5 Years	Percentage
1971	28,722	14,175	49.4
1972	32,383	13,946	43.1
1973	31,865	12,946	40.6
1974	30,560	11,760	39.1
1975	39,986	——	—

SOURCE: Ministry of Public Health and Social Assistance, Memoria 1975-76 (El Salvador: n.p. 1976) p. 9.

Table 5

Rates and Percentages of Age-Specific Deaths of El Salvador
1970 - 1975

Age	1970		1971		1972		1973		1974		1975	
	Rates[a/]	Percentage	Rates[a/]	Percentage	Rates[a/]	Percentage	Rates[a/]	Percentage	Rates[a/]	Percentage	Rates[a/]	Percentage
< 1 year	66.6	26.9	52.4	28.2	58.3	28.0	59.1	28.8	53.5	27.7	58.2	29.3
1 - 4	11.1	16.9	7.8	14.2	9.6	15.0	8.8	14.8	5.9	10.8	--	--
5 - 14	2.5	6.9	1.6	5.6	1.9	6.0	1.7	5.5	1.3	4.7	--	--
15 or Older	9.2	49.3	7.5	52.0	8.2	51.0	8.1	50.9	8.3	56.8	-	--
TOTAL[a/]	9.9	100.0	7.9	100.0	8.6	100.0	8.3	100.0	7.8	100.0	7.5	100.0

Source: Dirección General de Estadística y Censos

a/Excludes disabilities of Salvadorean residents in foreign countries.

proportion of total deaths throughout the 1970s. (See Table 4 & 5) While the greatest risk is among infants less than one year of age, for this age cohort as a whole the PAHO study indicated an age-specific mortality rate of 13.2 per 1000 persons. Further, significant variations exist between children in rural and urban areas with mortality rates of 26.8 per 1000 children under five years of age in the rural areas surveyed or more than three times greater than the rate found in the urban municipality of San Salvador of 8.0 per 1000.

Tables 6 and 7, from a PAHO study, provide a comprehensive listing of the principal and associated causes of death in children under five years of age in the studied population over the 1968 - 1970 period. With the exception of communicable diseases, which have been substantially reduced in recent years with massive vaccination campaigns, this pattern of mortality can be considered fairly representative of the current situation in El Salvador. As noted in the Tables, while infectious and parasitic diseases and perinatal causes were the two leading causes of death in both urban and rural areas, nutritional deficiencies were the next highest cause in rural areas whereas pneumonia and influenza ranked third in the urban municipality. This differential can be directly linked to the environmental condition of these distinct geographic areas, that is, the low average food intake among the rural poor and the overcrowded, poor housing conditions of the urban poor children.

Examining the principal and associated causes of infant mortality by distinct age groups within this cohort, the PAHO study revealed the following: among infants less than seven days of age, the major cause of mortality was perinatal complications, particularly difficulties during labor. Among neonatal deaths in infants 7 to 27 days of age, diarrheal disease was the primary cause of mortality.

Several studies have indicated a seasonal pattern to infant and child mortality with the early months of the wet season being those of highest risk in this age group. The onset of the rainy season and the concurrent maturation of several different types of fruits which are commonly unwashed and peeled by the children with their teeth are major contributing factors to this mortality profile. The most prevalent diseases, diarrheal and parasitic infections and respiratory illnesses, are particularly common throughout the May through July period.6

High maternal mortality, currently estimated to be about 0.9 per 1000 live births, is a continuing health problem in El Salvador

6 - Seasonal variations in morbidity/mortality levels were noted by Hill et al. in their study of La Paz Department and by Gerald Murray in an anthropological study of a rural area.

TABLE 6

Number of Deaths for Children Under 5 Years by Cause for the Rural Municipalities in El Salvador, 1968-70

Cause	Underlying cause						Associated cause					
	Under 5 years	Infant deaths			1 year	2-4 years	Under 5 years	Infant deaths			1 year	2-4 years
		Total	Under 28 days	28 days-11 mos.				Total	Under 28 days	28 days-11 mos.		
All causes	1082	648	155	493	217	217	1916	142	222	519	231	445
Infective and parasitic diseases	711	416	91	255	158	137	162	124	22	92	112	146
Amebiasis ... 006	22	9	-	9	6	7	-	-	-	-	-	-
Diarrheal disease ... 009	559	337	27	310	115	107	48	28	8	20	15	45
Other intestinal infectious diseases ... 000-005,007,008	9	4	-	4	1	1	3	-	-	-	-	3
Tuberculosis ... 010-019	3	-	-	-	1	2	5	-	-	-	2	2
Diphtheria ... 032	5	-	-	-	2	-	-	-	-	-	-	-
Whooping cough ... 033	17	8	-	8	8	1	-	2	-	2	-	-
Tetanus ... 037	29	29	28	1	-	-	-	-	-	-	-	-
Septicemia ... 038	8	8	-	8	-	-	22	9	11	3	1	3
Measles ... 055	51	16	-	16	21	14	1	-	-	-	-	1
Congenital syphilis ... 090	-	-	-	-	-	-	-	-	-	-	-	-
Mycoses ... 112	2	2	2	-	-	-	12	8	1	7	3	3
Poliomyelitis ... 135-139	4	1	-	1	-	3	14	12	-	12	12	19
Other ... Rest of 000-136	5	2	-	2	1	2	5	1	-	1	1	1
Malignant neoplasms ... 140-239	-	-	-	-	-	-	-	-	-	-	-	-
Neoplasms, other ... 210-239	1	-	-	-	-	1	-	-	-	-	-	-
Nutritional deficiency ...	88	13	-	13	25	30	419	185	7	178	122	112
Vitamin deficiency ... 260-264	-	-	-	-	-	-	1	1	-	1	-	-
Protein malnutrition ... 267	77	8	-	8	19	30	102	9	-	9	35	59
Nutritional marasmus ... 268	9	3	-	3	6	-	32	22	-	22	23	4
Other ... 269	2	2	-	2	-	-	284	155	7	148	64	45
Endocrine and metabolic diseases ... 240-258,270-279	-	-	-	-	-	-	-	-	-	-	-	-
Deficiency anemias ... 280,281	-	-	-	-	-	-	1	-	-	-	1	-
Other diseases of blood and blood-forming organs ... 282-289	1	-	-	-	-	1	17	3	-	3	2	12
Inflammatory diseases of central nervous system ... 320-324	7	4	-	4	-	3	9	6	4	4	1	-
Other diseases of nervous system and sense organs ... 310-315,330-389	3	1	-	1	2	2	8	4	1	3	2	-
Diseases of circulatory system ... 390-458	-	-	-	-	-	-	12	3	-	3	4	5
Pneumonia and influenza ... 470-486	66	32	17	15	13	4	215	103	16	89	62	50
Other diseases of respiratory system ... 460-466,490-519	37	26	1	25	7	4	42	30	3	27	5	7
Diseases of digestive system ... 520-577	3	3	1	2	-	-	43	17	3	14	12	14
Diseases of genito-urinary system ... 580-629	4	2	2	-	-	2	8	5	-	5	2	1
Diseases of skin and subcutaneous tissue ... 680-709	3	2	1	1	1	-	22	12	3	10	2	7
Diseases of musculoskeletal system ... 710-738	1	-	-	-	-	1	-	-	-	-	-	-
Congenital anomalies ...	29	24	15	9	2	3	23	18	-	11	2	3
Nervous system ... 740-742	19	15	11	4	1	-	4	-	2	2	-	-
Circulatory system ... 746,747	9	5	2	3	-	3	9	8	2	6	-	1
Respiratory system ... 748	-	-	-	-	-	-	-	-	-	-	-	-
Digestive system ... 749-751	2	2	1	1	-	-	2	2	-	2	-	1
Genito-urinary system ... 752,753	-	-	-	-	-	-	-	-	-	-	-	-
Musculoskeletal system ... 754-756	2	2	1	1	-	-	2	2	2	-	-	-
Down's disease ... 759.3	1	-	-	-	1	-	4	2	1	1	2	-
Other anomalies ... 744,745, 757,758, Rest of 759	-	-	-	-	-	-	1	-	-	-	-	1
Certain perinatal causes ... 760-778	94	94	94	-	-	-	135	129	123	6	-	-
Symptoms ... 780-789	8	5	1	4	2	1	449	322	54	278	94	49
Sudden death ... 795	-	-	-	-	-	-	-	-	-	-	-	-
Other ill-defined conditions ... 790-792,796	13	5	2	3	5	3	-	-	-	-	-	-
External causes ... E800-E999	11	1	-	1	5	5	5	2	-	2	2	1

TABLE 6-a

Death Rates for Children Under 5 Years by Cause for the Rural Municipalities in El Salvador, 1968-70

Cause	Underlying cause: Under 5 years	Infant deaths: Total	Under 28 days	28 days-11 mos.	1 year	2-4 years	Associated cause: Under 5 years	Infant deaths: Total	Under 28 days	28 days-11 mos.	1 year	2-4 years
All causes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Infective and parasitic diseases	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Amoebiasis 006	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diarrheal disease 009	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-
Other intestinal infectious diseases 000-003,007,008	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tuberculosis 010	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	[illegible]
Diphtheria 032	[illegible]	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Whooping cough 033	[illegible]	-	-	-	[illegible]	-	-	-	-	-	-	-
Tetanus 037	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-
Septicemia 038	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-	-
Measles 055	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cerebrita, syphilis 090	-	-	-	[illegible]	[illegible]	-	-	-	-	-	-	-
Meningitis 320	[illegible]	[illegible]	-	-	-	-	-	-	-	-	-	-
Poliomyelitis 045-048	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-	-	-
Other ... Rest of 000-139	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Malignant neoplasms 140-209	-	-	-	-	-	-	-	-	-	-	-	-
Neoplasms, other 210-239	-	-	-	-	-	-	-	-	-	-	-	-
Nutritional deficiency	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vitamin deficiency 260-264	-	-	-	-	-	-	-	-	-	-	-	-
Protein malnutrition 267	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	-	-
Nutritional marasmus 268	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Other 269	[illegible]	[illegible]	-	[illegible]	[illegible]	-	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Endocrine and metabolic diseases 240-258,270-279	-	-	-	-	-	-	-	-	-	-	-	-
Deficiency anemias 280,281	-	-	-	-	-	-	-	-	-	-	-	-
Other diseases of blood and blood-forming organs 282-289	-	-	-	-	-	[illegible]	-	-	-	-	[illegible]	-
Inflammatory diseases of central nervous system 320-324	[illegible]	[illegible]	-	[illegible]	-	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Other diseases of nervous system and sense organs 310-313,330-389	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-
Diseases of circulatory system 390-458	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-
Pneumonia and influenza 470-486	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Other diseases of respiratory system 460-466,490-519	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of digestive system 520-577	[illegible]	[illegible]	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of genito-urinary system 580-629	[illegible]	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of skin and subcutaneous tissue 680-709	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Diseases of musculoskeletal system 710-738	[illegible]	-	-	-	-	[illegible]	-	-	-	-	-	-
Congenital anomalies	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nervous system 740-742	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Circulatory system 746,747	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Respiratory system 748	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
Digestive system 749-751	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-	-
Genito-urinary system 752,753	-	-	-	-	-	-	[illegible]	[illegible]	-	[illegible]	-	[illegible]
Musculoskeletal system 754-756	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-	-
Down's disease 759.2	[illegible]	-	-	-	-	-	[illegible]	[illegible]	[illegible]	-	-	-
Other anomalies 744,745, 757,758, Rest of 759	-	-	-	-	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-
Certain perinatal causes 760-778	[illegible]	[illegible]	[illegible]	-	-	-	[illegible]	-	-	-	-	[illegible]
Symptoms 780-789	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Sudden death 795	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other ill-defined conditions 790-792,796	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-
External causes 800-E999	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]

TABLE 7

Number of Deaths for Children Under 5 Years by Cause for the San Salvador Municipality, 1968-75

Cause	Underlying cause						Associated cause					
	Under 5 years	Infant deaths			1 year	1-4 years	Under 5 years	Infant deaths			1 year	1-4 years
		Total	Under 28 days	28 days-11 mon.				Total	Under 28 days	28 days-11 mon.		
All causes	2738	2096	722	1372	298	246	5007	3658	1222	2436	417	432
Infective and parasitic diseases	1384	1148	161	987	276	100	938	235	37	198	129	124
Amebiasis 006	53	28	-	28	20	-	10	-	-	-	-	-
Diarrhoeal disease 009	1243	961	125	836	224	55	293	141	28	113	17	13
Other intestinal infectious diseases 000-005,007,008	34	28	-	28	3	3	21	9	1	8	9	3
Tuberculosis 010-019	7	3	-	3	-	4	1	1	-	1	1	9
Diphtheria 032	19	1	-	1	3	13	-	-	-	-	-	-
Whooping cough 033	13	8	-	8	4	1	1	1	-	1	1	1
Tetanus 037	17	17	16	1	-	-	-	-	-	-	-	-
Septicemia 038	31	31	25	6	-	-	122	99	68	31	12	8
Measles 055	127	46	1	45	55	26	1	-	-	1	1	1
Zoonotical syphilis 090	6	5	4	1	-	-	1	1	-	1	1	1
Meningitis 112	3	3	1	2	-	-	47	18	10	28	12	1
Helminthiases 120-129	10	-	-	-	2	8	127	19	1	18	22	32
Other Rest of 000-136	12	6	2	4	1	5	1	-	-	1	1	1
Malignant neoplasms 140-209	3	-	-	-	2	1	-	-	-	-	-	1
Neoplasms, other 210-239	-	-	-	-	-	-	-	-	-	-	-	-
Nutritional deficiency	31	29	-	29	44	18	927	545	22	523	218	161
Vitamin deficiency 260-266	-	-	-	-	-	-	-	-	-	-	-	-
Protein malnutrition 267	33	9	-	9	22	15	115	14	-	14	31	59
Nutritional marasmus 268	36	18	-	18	15	3	202	128	2	126	33	35
Other 269	2	2	-	2	-	-	610	426	20	406	152	69
Endocrine and metabolic diseases 240-258,270-279	4	1	-	1	2	1	2	1	1	2	-	-
Deficiency anemias 280,281	-	-	-	-	-	-	-	-	-	-	-	-
Other diseases of blood and blood-forming organs 282-289	2	1	-	1	-	1	28	14	3	11	11	14
Inflammatory diseases of central nervous system 320-324	19	14	2	12	4	1	36	24	9	15	5	2
Other diseases of nervous system and sense organs 310-315,330-389	16	6	-	6	9	4	29	24	10	14	4	2
Diseases of circulatory system 390-458	-	-	-	-	-	-	32	30	-	30	15	2
Pneumonia and influenza 470-486	223	194	47	147	18	11	737	552	184	368	127	93
Other diseases of respiratory system 460-466,490-519	118	89	4	85	23	6	72	48	2	46	19	9
Diseases of digestive system 520-577	8	4	1	3	2	2	136	101	20	81	24	11
Diseases of genito-urinary system 580-629	-	-	-	-	-	-	26	13	1	12	9	4
Diseases of skin and subcutaneous tissue 680-709	11	9	4	5	1	1	37	29	7	22	5	3
Diseases of musculoskeletal system 710-738	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies	109	32	17	15	4	9	49	42	31	11	-	3
Nervous system 740-743	35	32	23	9	1	2	13	11	9	2	1	1
Circulatory system 746,747	26	20	13	17	1	5	24	22	7	15	1	2
Respiratory system 748	1	-	-	-	1	-	1	1	1	-	-	-
Digestive system 749-751	11	10	10	10	-	1	1	1	1	-	-	-
Genito-urinary system 752,753	1	1	-	1	-	-	5	5	2	3	2	-
Musculoskeletal system 754-756	2	2	-	2	-	-	5	5	-	5	-	-
Down's disease 759.3	2	1	-	1	-	-	4	4	4	-	-	-
Other anomalies 744,745, 757,758, Rest of 759	2	2	1	1	1	1	15	15	4	11	-	-
Certain perinatal causes 760-779	446	446	443	3	-	-	-	-	-	-	-	-
Symptoms 780-789	3	3	1	2	-	-	824	824	622	202	-	-
Sudden death 795	12	11	3	8	1	-	1214	938	65	873	213	63
Other ill-defined conditions 790-792,796	37	26	7	19	9	12	-	-	-	-	-	-
External causes E800-E999	35	11	2	9	6	18	16	12	3	9	1	3

TABLE 7-a

Death Rates for Children Under 5 Years by Cause for the San Salvador Municipality, 1968-70

Cause	Underlying cause						Associated cause					
	Under 5 years	Infant deaths			1 year	2-4 years	Under 5 years	Infant deaths			1 year	2-4 years
		Total	Under 28 days	28 days-11 mo.				Total	Under 28 days	28 days-11 mo.		
All causes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Infective and parasitic diseases	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Smallpox	[illegible]	[illegible]		-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diarrheal disease	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other intestinal infectious diseases	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tuberculosis	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diphtheria	[illegible]	[illegible]		-	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Whooping cough	[illegible]	[illegible]		-	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-
Tetanus	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Septicemia	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-
Measles	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Complications of pregnancy	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-
Meningitis	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-
Malnutrition	[illegible]	[illegible]		[illegible]	[illegible]	-	-	-	-	-	-	-
Other [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Malignant neoplasms	[illegible]	-	-	-	-	[illegible]	[illegible]	-	-	-	-	[illegible]
Neoplasms, other	[illegible]	-	-	-	-	-	-	-	-	-	-	-
Nutritional deficiency	[illegible]	[illegible]		-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vitamin deficiency	-	-	-	-	-	-	-	-	-	-	-	-
Protein malnutrition	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Infantile marasmus	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]
Other	[illegible]	[illegible]	-	-	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endocrine and metabolic diseases	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	-	-
Deficiency anemias	-	-	-	-	-	-	-	-	-	-	-	-
Other diseases of blood and blood-forming organs	[illegible]	[illegible]	-	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Inflammatory diseases of the central nervous system	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other diseases of nervous system and sense organs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of circulatory system	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Pneumonia and influenza	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other diseases of respiratory system	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of digestive system	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of genito-urinary system	-	-	-	-	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of skin and subcutaneous tissue	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Diseases of musculoskeletal system	-	-	-	-	-	-	-	-	-	-	-	-
Congenital anomalies	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nervous system	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Circulatory system	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Respiratory system	[illegible]	-	-	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Digestive system	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-
Genito-urinary system	[illegible]	[illegible]	-	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Musculoskeletal system	[illegible]	[illegible]	-	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Down's disease	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-
Other anomalies	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-	-	-
Other perinatal causes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Trauma	[illegible]	[illegible]	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Infant death	[illegible]	[illegible]	[illegible]	[illegible]	-	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other ill-defined conditions	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-	-	-	-	-
External causes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

with only minimal reduction over the 1970s as highlighted in Table 8. The declines in maternal deaths in the Metropolitan region over the period can be largely attributed to the expanded maternal health programs which have sought to enroll pregnant women in prenatal care clinics, coupled with the larger percentage of urban women who deliver at medical facilities than their rural counterparts. The majority of rural women receive little if any prenatal care despite the fact that their health situation is more precarious than that of women in urban areas and further, most births are attended by untrained midwives. As a result, they remain at higher risk of complications of delivery for which midwives are unprepared.

The generally poor maternal health and nutritional status is also a direct cause of the high rate or premature births throughout the country, many of which result in either stillbirths or neonatal deaths. Over the 1971 to 1975 period, stillbirths respresented approximately three percent of all births in El Salvador according to official estimates. Actual rates can be assumed to be significantly higher given extensive under-reporting. Further, while as highlighted in Table 9 the reported rate has been declining, the 7.9 stillbirths per 1000 live births in 1975, the latest year for which data are available, indicates a continuing serious risk associated with pregnancy.

Morbidity

Data on age-specific morbidity for El Salvador is limited to 1971 information derived from reports on hospital discharges and consultations for the health facilities of the MOH only. Since many rural residents use these facilities irregularly if at all, they are not entirely representative of the target population. Nevertheless, they do provide some basis for determining the morbidity profile. Variations in the morbidity patterns in 1971 are highlighted in Tables 10 and 11. The three causes of hospitalization for all age groups in 1971 were maternal deliveries, diarrheal diseases and abortions. Conversely, the primary causes of outpatient consultations for all ages in MOH health facilities were diarrheal diseases, dental diseases and intestinal parasitic diseases.

In contrast, MOH 1975 data, as outlined in Tables 12 and 13, suggest that while the two major reasons for outpatient consultations at MOH facilities, dental disease and enteritis and other diarrheal disease, remained in top position, they had switched ranks. Respiratory infections had increased in prevalance. Table 13 indicated that with regard to hospital visits in 1975, genital-urinary related illnesses also were principal reasons for seeking medical care.

MOH records for 1976 indicate more than 50% of reported morbidity is due to enteritis and other diarrheal disease, followed by respiratory infections and malaria.

TABLE 8

Rates of Maternal Mortality for El Salvador,
1971 - 1975

Years	Total	REGIONS				
		Western	Central	Metropolitan	Para-Central	Eastern
1971	1.0	1.2	0.8	1.1	0.9	1.0
1972	1.2	1.1	1.3	0.9	1.2	1.3
1973	1.0	1.4	1.0	0.6	1.0	0.8
1974	0.9	1.2	1.1	0.8	0.5	0.9
1975	-	-	-	-	-	-

SOURCE: Ministry of Public Health and Social Assistance, Department of Health Statistics, Salud Pública en Cifras, No. 8 (El Salvador: n.p., 1976), Table 5, p. 8.

* Rates per 1000 live births.

TABLE 9

Stillbirths* in El Salvador 1971-1975

Year	Total, El Salvador		Regions									
			Western		Central		Metropolitan		Para-Central		Eastern	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1971	1,409	9.1	263	7.9	143	6.8	629	21.1	157	5.9	217	4.8
1972	1,425	9.3	290	8.8	198	9.7	580	19.1	131	5.0	226	5.1
1973	1,430	9.2	287	8.6	202	9.8	598	19.1	113	4.2	230	5.2
1974	1,397	8.8	264	7.8	196	9.3	593	18.5	129	5.0	215	4.7
1975	1,277	7.9	272	7.9	137	6.4	559	17.3	106	3.8	203	4.5

SOURCE: Department of Health Statistics, Ministry of Public Health and Social Assistance, Salud Pública en Cifras, No. 8 (El Salvador, n.p., 1976), Table 7, p. 10.

* Rates per 1000 live births.

TABLE 10

Ranking o.
Three Major Reasons of Hospitalization*
by Age Group, 1971

Age Groups	Deli-veries	Diar-rhea	Abor-tions	Bron-chopneu-monia	Imma-turity	Abscess Cellu-litis	Other Malnu-trition
All Ages	1	2	3	-	-	-	-
Below 1 Year	-	1	-	2	3	-	-
1-4 Years	-	1	-	3	-	-	2
5-14 Years	-	1	-	-	-	3	2

TABLE 11

Ranking of
Three Major Reasons for Outpatient Visits*
by Age Group, 1971

Age Groups	Diarr-hea	Dental Diseases	Bronchi-tis	Intestinal Parasi-tosis	Rhino-pharyn-gitis
All Ages	1	2	-	3	-
Below 1 Year	1	-	2	-	3
1-4 Years	1	-	2	-	3
5-14 Years	3	1	-	2	-

SOURCE: Ministry of Public Health and Social Assistance.

* Consultation outpatient visits and hospitalization in Ministry of Public Health facilities.

TABLE 12

Rates of Regional Distribution of the Major Courses of Outpatient Visits*, 1975

Type of Disease (By Priority)	Regional Rates of Outpatient Visits (per 100,000 population)				
	Western	Central	Metropolitan	Para-Central	Eastern
1) Dental diseases	5081.2	3675.7	6858.3	3763.0	2781.0
2) Enteritis and other diarrheal diseases	2818.7	2763.11	6059.8	2622.4	2874.3
3) Respiratory Infections	2545.8	1697.6	7274.4	2621.4	2481.7

TABLE 13

Regional Distribution of the Major Causes of Hospitalization*, 1975

Type of Disease (By Priority)	Regional Rates of Hospitalization (per 100,000 population)				
	Western	Central	Metropolitan	Para-Central	Eastern
1) Maternal deliveries (without mention of complications)	10,218	2,944	13,856	5,512	7,804
2) Enteritis & other diarrheal diseases	4,062	846	4,522	1,996	3,230
3) Other diseases of the genital urinary areas	2,314	668	2,366	1,264	2,572

SOURCE: Ministry of Public Health and Social Assistance.

Data from La Paz Department clinic records in 1976, operated in collaboration with the Central American Research Station (CARS)/ Center for Disease Control, corroborate this general pattern of morbidity with major illnesses attended, by rank: (1) respiratory infections, (2) gastro-intestinal diseases and (3) parasitic diseases (including malaria and amebiasis).

As noted in Tables 12 and Table 13, in 1975 the Metropolitan and Western regions had the highest outpatient and hospitalization rates for all types of diseases. While in the Metropolitan region this is due to the fact that it has 20.6 percent of the total national population, the low patient utilization in the Eastern region is even more striking when viewed in light of the fact that it is the most heavily populated and among the poorest of the five regions. Visit rate differentials may reflect therefore not only varying morbidity prevalences but importantly distinct regional health facility utilization patterns. These in turn may be at least partially explained by variable accessibility to facilities between regions. Additionally and importantly facilities and demand for health services are highly skewed toward the Metropolitan area, and therefore many persons from other regions are actually included in the Metropolitan statistics.

An anthropological study of a rural area in the Chalatenango Department of El Salvador suggests differential morbidity rates in adults and children among the distinct socioeconomic groups. As highlighted in Tables 15 and 16 the percentage of households reporting the most prevalent illnesses are consistently greater among the higher socioeconomic groups than the lower ones. Furthermore, the study points out a relative uniformity in deficient hygenic practices among all socioeconomic groups so that one may assume that all groups are equally vulnerable to disease. Therefore reported differences in morbidity and mortality are probably not due to an actual lower incidence of illness among poorer groups as the data may imply but rather due to a greater tendency of the higher economic groups to perceive the problems as actual illness than their poorer neighbors.*

* Health attitudes and practices of the target population were discussed previously in Part II.A.

TABLE 15

Patterns of Morbidity by Economic Group in Adults

Illness	Percentage of Households (Reporting Specific Adult Illness) By Economic Group			
	I (Highest)	II	III	IV (Lowest)
Body Aches	100%	94%	95%	88%
Colds	100%	94%	89%	88%
Headaches	100%	88%	95%	83%
Fever	79%	75%	74%	71%
Parasites	43%	38%	58%	46%
Diarrhea	64%	31%	42%	38%

SOURCE: Gerald F. Murray, Traditional and Modern Strategies of Health Care Delivery Among Peasants of El Salvador (consultant report for the Agency for International Development), (El Salvador: n.p., 1977), Table VII-5, p. 145.

TABLE 16

Patterns of Morbidity by Economic Group in Children

Illness	Percentage of Households (Reporting Specific Child Illness) By Economic Group			
	I (Highest)	II	III	IV (Lowest)
Body Aches	43%	63%	53%	46%
Colds	100%	88%	74%	79%
Headaches	64%	69%	53%	42%
Fever	93%	81%	74%	63%
Parasites	64%	56%	53%	54%
Diarrhea	79%	69%	63%	63%

SOURCE: Gerald F. Murray, Traditional and Modern Strategies of Health Care Delivery Among Peasants of El Salvador (consultant report for the Agency for International Development), (El Salvador: n.p., 1977) Table VII-6, p.146

TABLE 17

Leading Causes of Infecticus and Parasitic Disease

1 9 7 6

	No. of Cases	% of total Morbidity
1. Enteritis and other diarrheal diseases	251,365	53.9
2. Respiratory Diseases	82,706	18.4
3. Malaria	80,861	18.0
4. Syphilis	6,770	1.5
5. Measles	5,903	1.3
6. Gonorrhea	4,025	0.9
7. Pulmonary Tuberculosis	2,883	0.6
8. Infectious Hepatitis	2,628	0.6

SOURCE: Ministry of Health Memoria 1976-1977.

Economic and Social Impact of Total Morbidity

The adverse impact of the excessive level of morbidity, most of which is from preventable disease, can be measured not only in terms of individual well being but also by its detrimental effect on the society as a whole.

Data from a labor force survey conducted in 1975 under the auspices of the Ministry of Planning and Coordination of Economic and Social Development provide some measure of the social impact of total morbidity on the working population.

More than 95% of the absenteeism due to illness in males in rural areas occurred in agricultural laborers. Forty-five percent of illness in rural women similarly occurred to agricultural laborers. These figures imply sizeable economic losses in terms of income for the worker and loss of productivity. Loss of total production output can be assumed to be enormous, although the precise extent of such losses has not been calculated.

While these data highlight the high economic cost of illness in El Salvador, it effects a high social cost as well. A survey on the possible impact of absenteeism in school children on their academic performance done under the auspices of the Ministry of Education in December 1975 revealed that out of a total of 112,315 school children surveyed in grades 1, 3, 5, 6, 8 and 9 almost half (46.8%) were missing school during the month due to illness. Although in the urban areas the percentage of children absent was higher than in the rural areas, 52% and 40% respectively, it is important to note that rural children were absent for more days than their urban counterparts. A greater percentage of children missed school in the lower grades than in the higher grades. Overall a high percentage of children in all grades ranging from 63.5 to 88% was absent for 1-5 days during the month. The resultant decreased opportunity for learning among the school age population reduces the chance for many children to attain the basic skills essential for obtaining viable jobs and maximizing their own potential as well as their contribution to society.

Specific Diseases*

Diarrheal Diseases

Diarrheal diseases constitute the major cause of both morbidity and mortality in El Salvador. Data from the Ministry of Public Health show that rates of notified cases of diarrheal disease, excluding

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* Malaria is discussed in Part II.D.3.

dysenteries, on a national level per 100,000 persons were 2,174.9 in 1963, 3,167.8 in 1968, and 3,024.5 in 1973. 7 Rates for dysenteries were slightly higher over the same period except for a drastic increase in 1970 when it rose to 6,237.9 due to an epidemic of shigellosis (paratyphoid).8 Seasonal data collected over a three year period between 1971-1973 show a peak of diarrheal disease prevalence in June and a low in December.

Death rates from diarrheal diseases were 50.0 per 100,000 persons in 1967, rising to 176.5 in 1970 (probably in relation to the epidemic of shigellosis mentioned previously) but decreased to 113.5 in 1971.9 Proportional mortality by age collected over a five-year period (1967-1971) by the MOH indicates that infants are most affected (37.3%), followed by young children aged 1-4 years (28.7%) and older adults aged 50 (17.8%).10 A sex difference was observed over the same time period—54.1% of diarrheal deaths occurred in females, but only 45.9% in males.11 In infants the peak of mortality from diarrheal disease occurs in the fifth month in the rural areas, but earlier, in the third month, in urban areas. Total mortality from diarrheal disease in children ages 1-4 years was three times as high in rural areas as in urban areas.

Data from 1975 provided by CARS for various health units in five regions and 14 departments, show that of all persons affected by diarrheal diseases, one-third (32.3%) are infants. The lowest percentage distribution among infants was found in Sonsonate department (27.5%), the highest in La Union and Morazán departments (40.4%). The 1-4 year old children represented 20.7% of all cases nationally with the lowest incidence in Chalatenango department (17.2%) and the highest in Morazán department (26.3%).

Among the major factors causing this high prevalence of diarrheal disease throughout the five regions are a very high level of contamination generally and an almost complete absence of safe water and sanitation in the rural areas in which most people reside.12 In view of this recognized direct linkage between sanitation and diarrheas, the Ministry of Public Health has started a massive control campaign focused particularly at young children. Early diagnosis and treatment are the principal means to be used in this campaign together with environmental sanitation and education of the family to bring about complementary behavioral changes essential to prevention of future cases.

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7 Ministry of Public Health and Social Assistance, Programa de Control de las Diarreas de los Niños Menores de 2 Años de Edad, Por Medio de Tratamiento y Educación Para 1976, (El Salvador: n.p., 1975), Table 4, p. 3a.

8 -Ibid., Table 2, p. 36.

9 -Ibid., Table 4, p. 46.

10-Ibid., Table 5, p. 5a.

11-Ibid., Table 6, p. 5b.

12-See the environmental sanitation section of this report.

Parasitic Diseases

Intestinal parasites are the second highest cause of diagnosed morbidity from infectious diseases. Results of laboratory examinations of stools in 1970 showed that of 169,542 stool examinations, 73.1% were positive for parasites. Among the positive stools, as in many tropical countries ascaris (37.8%) and hookworm (22.5%) were most prevalent with 39.7% other parasites.13 Among those who had hookworm 7.1% had more than 2,000 eggs per gram of stool, a severe infestation level causing serious anemia and possibly death.14 In general morbidity from these parasites has increased between 1967 and 1975.

INCAP data on parasitic disease prevalences by age showed the highest percentage of ascaris, trichuris and hookworm (in that order of magnitude) occur in the age groups 5-14 years.15 Prevalences were generally higher in the rural areas. A fairly high prevalence of Entamoeba histolytica (up to 31% in the age group 25-34 years) was noted as was Giardia lamblia (up to 29% in children aged 1-4 years).16 The intensity of two of the major infestations was generally light; the principal exception was ascaris where the majority of cases were moderately severe producing between 1,000 and 9,900 eggs per gram of stool.17

In an attempt to address this serious health problem, the MOH has launched a campaign of control of intestinal parasites in school children grades 1-3. Specific objectives are to diminish the human reservoir of the three major parasites through treatment of 500,000 school children in the first three grades with the antiparasitic drug Mebindazole (one tablet a day for two days).18

Chagas Disease

Recent studies by CDC on the epidemiology of Trypanosoma cruzi, the parasite causing Chagas disease in El Salvador, have shown that there is a potential problem in areas with altitudes between 160m and 100m. Positive vectors for trypanosomes were found with increasing frequency. No clinical cases of the disease have been described,

13 -Ministry of Public Health and Social Assistance, Division of Epidemiology, Programa de Control del Parasitismo Intestinal Para 1977. (El Salvador: n.p., 1976), p. 1-2.
14 -Ibid., p.2.
15 -Institute of Nutrition of Central American and Panama, Regional Summary of Nutrition Evaluation of the Population of Central America and Panama 1965-67 (Washington, D.C.: Department of Health, Education and Welfare, 1971). Study was based on, 1974 stool examinations.
16 -Ibid.
17 -Ibid.
18 -Ministry of Public Health and Social Assistance, Programa de Control de Parasitismo Intestinal Para 1977, p. 3.

however. 19

Infectious Diseases of Childhood

Bacterial and viral disease cause a high percentage of morbidity and mortality in young children. The following table shows the changes which have taken place between 1972 and 1975 in the morbidity resulting from these diseases.

TABLE 19

Major Bacterial Disease Cases Per Year, El Salvador

Disease	Cases By Year 1972	1973	1974	1975	Decrease during 1972-1975
Measles	9,936	5,015	469	511	97.5%
Whooping cough	4,231	1,578	951	1,675	60.4%
Diphtheria	91	40	14	4	95.4%
Tetanus	188	156	163	143	23.9%

SOURCE: Ministerio de Salud Publica y Assistencia Social, Departamento de Estadisticas de Salud, Anuario: Salud Publica en Cifras, 1976. San Salvador, 1977, p. 32.

In 1973 the Ministry of Public Health started a multiple vaccination campaign composed of two cycles; the first cycle included measles vaccine, DPT (triple vaccine against diphtheria, whooping cough, and tetanus) and oral polio vaccine; and the second cycle included BCG (antituberculosis vaccine, DPT and TOPV (antipolio vaccine).20

19 -Rafael A. Cecillos, McWilson Warren, Donald P. Wilton, Geoffrey M. Jeffery and Mauricio Sauerbrey, "Estudio Epidemiologico del Trypanosoma Cruzi en El Salvador," Revista del Instituto de Investigacines Médicas, Vol. 5, No. 2, 1976, 119.

20 -Phillip L. Landrigan, Eduardo Navarro Rivas, and Donald L. Eddins, "Epidemiologic Assessment of a Nationwide Multiple Antigen Vaccine Campaign," Journal of Tropical Pediatrics, Vol. 20, June 1974, P. 135.

From viewing Table 19 , it is apparent that the measles vaccine has been very effective. The diphtheria vaccine has also had a marked effect, but the whooping cough vaccine has been less effective.

A objective assessment of the effectiveness of the vaccination campaign was done by a CDC team, through measuring the antibodies against measles before and after the first cycle and by determining the BCG scar rate after the second cycle. Prior to the immunization campaign, measles antibodies were found in 50% of urban children by age 15 months and in half of rural children by age 28 months.

Measles antibody prevalence was increased by the campaign in 16-20 months old children from 58.7% to 87.3%.21 BCG scar prevalence increased from 18.1% to 72.6%.22 The CDC team recommended that future campaigns should focus on children 9-24 months of age and should concentrate on urban areas.

According to the latest information from the Epidemiology Division, measles is on the increase again (as in the United States). Additionally, the yearly goals of the campaign were not met (80% of all infants and 30% of all children aged 2-4 years to be vaccinated). Many children are no longer in the age cohort for effective vaccination and are therefore unprotected and at risk of illness.

There are reported increases in other childhood infectious diseases as well. According to CDC the reasons for the reported increase in cases of whooping cough in El Salvador are: new cases among older children not covered by vaccination and incorrect clinical diagnosis which leads to children with other disease being erroneously included in pertussis statistics. Tetanus in El Salvador continues to decline except for neonatal tetanus, which can be directly related to waning prenatal vaccinations. The MOH goal is to vaccinate 50% of all pregnant women against tetanus and tuberculosis but this goal has not been reached.

Tuberculosis, a major chronic bacterial infectious disease, has shown a rapid decline as a cause of mortality between 1941 and 1955 and a further, although slower decrease between 1955 and 1973 to a level of about 1,000 per 100,000 (1%).23 Mortality data on different age groups show that the decline was much more rapid in children and younger adults than in older adults (45 years and older).24 Morbidity data for the period 1965-1972 demonstrate a similar overall decline in annual incidence, but with a distinct age differential: a more rapid decrease in the older adults from 290 to 200 cases per 100,000 persons than in the younger adults (from 170 to 120).25 Children

21 -Ibid., p. 139.
22 -Ibid.,
23 -Salvador Pacheco, "Programa Nacional de Control de Tuberculosis de El Salvador," Salud Publica de Mexico, Vol. XVIII, No.1, January-February, 1976, p. 182.
24 -Ibid., p. 184.
25 -Ibid.

aged 5-14 stayed at about the same level over this seven year period while young children showed a marked decline from 138 to 59. 26 Overall morbidity continues to decrease according to the most recent information available (1975).

The Ministry of Public Health carried out a vaccination campaign with BCG vaccine in 1977 with the goal of covering 80% of all children under one year and 80% of all children seven years old. 27

According to information provided by the Ministry of Agriculture, bovine tuberculosis is also a problem. The average percentage of positive reactors in a testing program of 115,896 animals was 0.8% over a five year period (1971-1976). 28

Venereal Diseases

According to MOH statistics, the incidence of syphilis has apparently decreased by 75% from 757.8 cases per 100,000 population in 1950 to 184.0/100,000 in 1975. (See Table 20) These official estimates must be viewed with caution, however, since it is conceded that many cases are not reported to public health officials but rather are self-treated or treated by a private physician. Of the total number of cases, 33% are believed to be primary and secondary syphilis and two-thirds (67%) other forms (including congenital). Primary and secondary syphilis is frequently observed in adolescents and reaches a maximum prevalence in young adults (aged 20-29 years).

Gonorrhea showed a marked decrease between 1950 and 1954 from 267.3 to 149.1/100,000 population. After 1954 the decrease has been much slower with rates of 103.5 in 1964 and 103.8 in 1975. It appears that the gonorrhea case rate has been stable for the past 11 years or more. In fact it is most likely, in view of these low rates, that underreporting is even more widespread than for syphilis. The third key venereal disease, lymphogranuloma venereum showed a morbidity rate decline from 66.0 per 100,000 population in 1950 to 20.4 in 1954. The rate rose to 71.7 per 100,000 in 1964 and fell to 60.5 per 100,000 in 1975.

Dental Diseases

Dental and periodontal disease constitute an important part of the morbidity picture in the country. An epidemiological investigation of dental caries in 5,668 school children was made under the auspices of the Dental Division of the Ministry of Public Health in 1974. The sample was a one percent random sample of the perma-

26 -Ibid.
27 -Ministry of Public Health and Social Assistance.
28 -Ibid.

TABLE 20

CASES OF SYPHILIS, 1971 - 75

CASES	YEARS 1971	1972	1973	1974	1975
Total	9,296	9,709	9,772	7,694	7,527
Congenital Syphilis	70	79	66	70	48
Syphilis Early (Symptomatic)	3,900	3,935	3,943	3,964	3,518
1-Primary	2,121	2,271	2,397	2,514	2,729
2-Secondary	779	664	566	472	789
Latent Syphilis	3,055	3,096	3,070	2,145	2,344
Cardiovascular Syphilis	6	3	3	8	--
Syphilis of the Nervous System	1	-	1	3	--
Other Forms of Syphilis (Late Symptomatic)	101	94	99	48	--
Syphilis (Late Latent)	2,130	1,996	1,792	1,676	1,617
Other Forms of Syphilis and those not Specified	1,033	1,306	1,[illegible]	1,[illegible]	1,[illegible]

Source: Ministry of Public Health and Social Assistance, Department of Health Statistics, Salud Publica en Cifras, No. 6 (El Salvador: n.p., 1976), Table 76, p. 19.

nent teeth of 4,559 urban and 1,109 rural children registered in grades 1-6 in the day schools. The overall mean caries rate for the seven year old children was 1.3 while the 14 year olds had a rate of 6.6. The mean DMF rate (defective, missing and filled teeth) was 1.5 and 7.4 respectively. Girls had higher rates than boys for both rates: (1) mean caries rates of 1.7 compared to 1.3 and (2) DMF rates of 8.3 compared to 6.6. This may be due in part to the fact that girls have more teeth than boys at each year of this age cohort.

Overall 88% of the school children examined were affected by dental caries--86% of the boys and 90% of the girls. There were significant regional differences with the lowest DMF rate in San Salvador (3.3) and the highest rates in Santiago Texaquangos and Zacatecoluca (4.9). At the same time, the number of children who had fillings was negligible in Santiago, Texaquangos, Panchimalco, San Miguel and Zacatecoluca, a reflection of the virtual absence of dentists in those places.

These data corroborate the dental health situation found in an earlier 1965-67 INCAP Nutrition Survey which showed distribution of DMF rates for all age groups by sex and geographic place of residence. As one right expect the DMF rates of secondary teeth increase with age from 0 in the youngest age group to 25.1 in rural males at ages 70- and to 18.0 in urban males of the same age. In female cohorts the rates were 26.6 in rural and 26.7 in urban females. In a special subgroup of the population, pregnant and lactating women age 30-39 years in the rural areas, the DMF rates were 21.3 and 20.1 respectively. However, DMF rates of primary teeth also show a significant increase with age. In rural males ages 0-4 and 5-9 the rate increases were 4.4 to 7.9 and in urban males the rates were 2.5 to 4.7. In rural females the increase was smaller from 4.4 to 6.9, but in urban females it was larger from 1.4 to 4.2. No data on periodontal diseases are available.

A preventive program using topical fluoridation was started in 1974 under the auspices of the Ministry of Health. All school children in grades 1-4 (ages 7-11 years) receive treatment with a two percent sodium fluoride solution; for an eight month period they wash their mouth twice a week in school under the supervision of their teacher. A total of six thousand children were given this treatment, 76.5% of the rural and 50% of the urban school children. It is important to note that since 60 percent of all children aged 7-11 years attend school, such a program can be expected to have a substantial impact on the caries problem. A completed evaluation demostrated a decrease in the percentage of children with caries from 87% to 44%; however, the results have been questioned on the grounds that the study sample groups were not comparable. Another evaluation of comparable samples is planned.

Rabies

In comparison with all other countries in Central America, El Salvador in 1976 exhibited the highest death rate from rabies. An average of 16,320 persons are bitten each year in El Salvador by wild and domesticated animals.29 It appears that the rural population is most susceptible to contact with diseased animals, particularly stray dogs.30 An average of 30,000 persons initiate antirabies inoculation each year.31

During the period 1969-1972, all of Latin America averaged 283 cases of rabies per year. El Salvador averaged 32 cases annually.32 Additionally, in this period there were a total of 28 deaths from rabies in El Salvador.33 The United States, Guatemala, Panama, Colombia, Costa Rica, and Honduras during the same period, reported lower death rates of 6, 0, 0, 0, 4, 1, respectively.34

The rabies problem in El Salvador could basically be controlled if the municipal ordinances and sanitation codes were enforced by the local governments. Vaccination of stray dogs would significantly reduce the disease incidence. Reportedly, the rabies control program of the Salvadorean municipal governments consists mainly of: providing medical assistance to persons who have been attacked; producing antirabies vaccine; and maintaining an adequate supply of antirabies serum.35 Table 21 outlines the Ministry of Public Health projections for the future incidence of rabies and possible control measures. Although complete information on the MOH program to reduce the source of rabies is not available, an additional component should be a structured health education program; specifically, a program which would inform the public of the health hazards of rabies. The health education program would also outline prevention measures

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29 -Ministry of Public Health and Social Assistance, Primera Aproximation Para El Plan Quinquenal de Desarrollo Economico y Social Sector Salud, 1978-1982, March 1977, p.24.

30 -Ibid.

31 -Parasitic Diseases and Veterinary Public Health Division, Bureau of Epidemiology, Center for Disease Control.

32 -World Health Organization, Pan American Health Organization, Health Conditions in the Americas, 1969-1972, Scientific Publication No. 287, (Washington,D.C.: Pan American Health Organization, 1974), p. 54.

33 -Ibid., p.106.

34 -Ibid., pp. 101,102,107,108,112,116.

35 -Ministry of Public Health and Social Assistance, Primera Aproximation Para El Plan Quinquenal de Desarrollo Economico y Social Sector Salud, p.24.

Projected Case Rate for El Salvador's Rabies Control Program, 1978-1982

Order of Priority	Program of Activities	Years				
		1978	1979	1980	1981	1982
1	Medical assistance for a projected number of rabies cases (with morbidity rates at an average of 407 per 100,000 persons)	18,908	19,536	20,182	20,846	21,325
2	Antirabies vaccine applied to 50% of the projected number of rabies cases	9,454	9,768	10,091	10,423	10,663
3	Number of vaccine dosages applied at an average rate of 20 dosages per person	189,080	195,360	201,820	208,460	213,260

Source: Ministry of Public Health and Social Assistance, Primera Aproximation Para El Plan Quinquenal de Desarrollo Economico y Social Sector Salud, 1978-1982, March 1977, p. 25

to help the individual avoid attack from wild and domesticated animals. Several methods of animal population control such as inexpensive contraceptive methods for animals would decrease the number of stray domesticated animals, thus reducing the number of possible rabies carriers.

Alcoholism

The seriousness of the alcoholism problem in El Salvador is recognized by the MOH, and indeed during the recent political campaign, implementation of a program to combat alcoholism was part of the official platform. The concept that alcoholism is a disease is frequently referred to and seems to be gaining some acceptance. Consideration is being given to alcoholism as well as alcohol abuse in terms of loss of life, time, dignity, family burdens, anti-social acts and costs to individuals and to society.

Several factors in El Salvador suggest that the percentage of deaths from alcoholism is equal to or greater than in the U.S. For example, deaths from alcoholism usually occur after age 20 in the U.S., but in El Salvador an estimated 50% of these deaths occur before age 20. For death from cirrhosis of the liver 3/4 are medically certified. For the less specific diagnosis of alcoholism less than 50% are medically certified.

According to the 1975 MOH statistics, 3.67% of all first visits to outpatient facilities in that year were due to alcoholism. (See Table 22) with the greatest number of cases occurring in the Metropolitan region. There appears to be a greater treatment of the consequences of alcoholism in the outpatient facilities than in the hospitals. These figures do not however, include the greater number of other medical problems associated with alcoholism.

There is a National Council on Alcoholism composed of prominent persons from different professional backgrounds. Alcoholics Anonymous (AA) claims more than 800 chapters with a total of 35,000 members including groups in the most remote areas. Even if these figures are exaggerated by 100% El Salvador would still be the leading country for AA in the world.

While this large counseling network exists, at present, treatment for alcoholism with recognized detoxification facilities is available to the poorest groups only in two hospitals: the Psychiatric Hospitals of the MOH and the ISSS,both of which are in the metropolitan area of San Salvador. In recent years, alcoholics have been placed on separate wards from other admissions. Some private clinics are available as well but their cost generally precludes their use by all but the wealthiest.

Table 22

Hospital and Outpatient Visits for Cirrhosis
in MOH Facilities, 1975

Region	Outpatient Visits: Total Visits per Region		Outpatient Visits: Total Consultations		Outpatient Visits: Rate per 100,000 persons	Hospital Visits: Total Visits per Region		Hospital Visits: Average Length of Stay (days)
	Number	Rate	Total	First Visits		Number	Rate	
Occidental	378	50.7				228	13.2	
Central	204	45.6				56	11.3	
Metropolitan	828	116.2				212	18.3	
Para Central	222	37.0				120	11.6	
Oriental	186	19.2				136	10.3	
Total			1,815	930	26.7			13.7

Source: Jacob Brody, Consultant report for Agency for International Development.

Patients are almost never referred to the publicly financed services from other hospitals or even by the police; instead they are brought, usually unwillingly, by their families. Alcoholics who are sick with cirrhosis or other disease are treated in general hospitals and discharged without further referral.

The limited availability of treatment is compounded by the fact that the ISSS can only serve a special group of about five percent of the population consisting of certain groups of workers and their families. It is noteworthy that among these, approximately three out of four admissions to the ISSS mental hospitals are for alcoholism or about 100 persons per month. Patients are kept for about four days and then discharged to work. Continued therapy after initial detoxification is strictly along AA lines although voluntary follow-up is apparently fairly effective. The ISSS Alcohol Center has an outreach program in more than 20 large commercial firms in which lectures about alcoholism are given to managers and staff and programs of rehabilitation from AA have been instituted.

The Hospital of Psychiatry of the MOH is located in Soyapango, about ten miles from the city of San Salvador. With the exception of the ISSS hospital, this hospital is the single psychiatric referral center in El Salvador. It has a 900 bed capacity. Recently 45 beds in three separate wards have been designated for the treatment of alcoholism. Two of the wards are men's wards; the third is for women. The typical client is a male brought by his family. He returns to his job when discharged five to ten days later. ("skid-row" alcoholics are not seen.) Very little therapy or follow-up is done. There have been a few cases of patients who return to the Out-Patient Department (OPD) but it is rare for anyone to have more than one hospitalization in the Alcohol Ward. During the first six months of 1976 there were 1,749 patients seen in the OPD of which more than half (897) were alcoholics. Hospital discharges during this period were 2,615 which included 898 alcoholics.

It is not customary for rural people to seek medical attention for alcoholics unless they have some other illness or advanced cases of cirrhosis. Five to ten cirrhotics in hepatic coma are seen per month in the typical health posts and units. Regular alcoholics are not treated and no referrals for alcoholism treatment are made in San Salvador.

Key Problems

Until recently there has been no focal point in the Government for problems related to alcohol abuse. This has lead to numerous problems which hamper effective control measures:

(1) Available data on alcoholics and alcohol abusers are

not collected and utilized to evaluate the health and social effects, trends and costs to individuals and society so that effective programs can be implemented;

(2) Communication among the various official agencies which deal with alcohol is limited; this precludes a coordinated attack;

(3) Limited treatment is even more serious given the fact that the principal facility, the MOH psychiatric hospital, is not centrally located and is thus inaccessible to many;

(4) Rehabilitation and follow-up are not well-developed so that prevention is hindered;

(5) Community relations and knowledge of available services are not developed; and

(6) There is no regulation of liquor sales.

Alcoholism, however, has been recognized by the GOES as a priority program and a National Alcohol Program is being implemented by a high level national commission.

II. ANALYSIS

C. INFRASTRUCTURE

1. Ministry of Public Health and Social Assistance.

The following sections describe the basic organization, facilities and administration of the two key providers as well as assessing briefly their major strengths and weaknesses. Planned reforms in their structure by the National Government as well as identification of continuing needs to improve the health of their distinct subgroups of the population are also delineated.

a Overview of The Ministry's Organization Structure

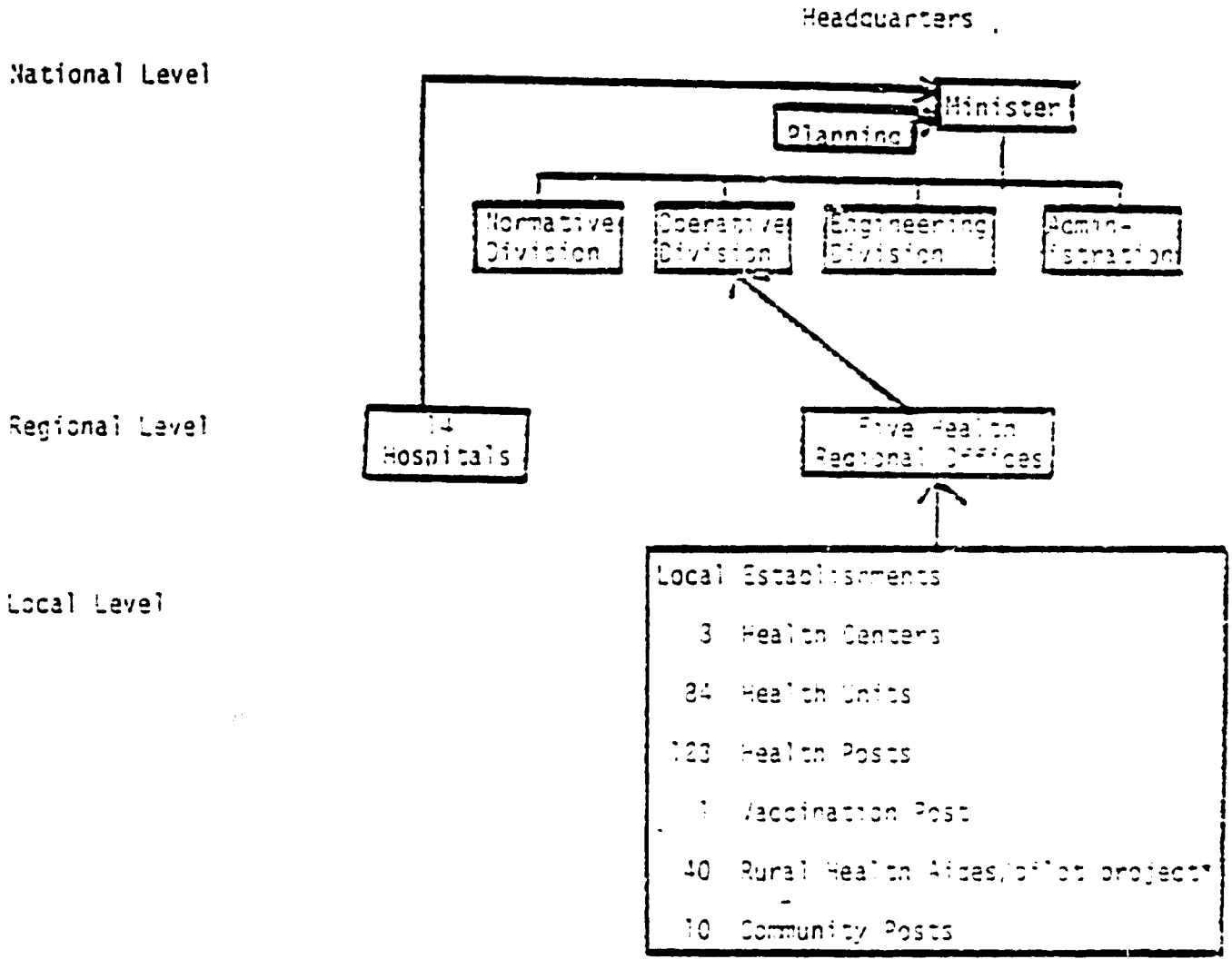
Administratively the Ministry of Public Health and Social Assistance, as depicted in figure 1, is divided into three levels.[1] At the local level, are the numerous health centers, health units, and health posts that deliver services; all are administratively dependent on the next level represented by on of the five regional offices. These regional offices are in turn responsible to the MOH's central administrative headquarters. The country's fourteen hospitals, although from an organization viewpoint part of the National Health System, are autonomous and thus independent of the regional offices; administratively they report directly to the Vice-Minister's office.

The structure has two major problems. First, the autonomy of the hospitals results in an inability to implement effectively a national health services referral system since hospital operational activities are not coordinated with the other levels of service. Further, to the extent that the hospitals secure one-third of the Ministry's budget yet operate independently of it, the MOH has little administrative control over a large portion of its total resources. In addition to the severe drain on available finances the hospitals compete with the regional offices for human and physical resources as well.

[1] This report draws heavily from the documents published by the Ministry. These reports are much to the Ministry's credit, since they represent a frank and open discussion of the most important problem in the public health system, especially regarding administrative activities. Two reports merit special commendation: "Informe del Ministerio de Salud Publica y Asistencia Social de El Salvador," XIII Seminario Regional sobre administración de los Servicios de Salud. Hermosillo-Sonora, México. 6-10 Diciembre 1976 and "Resumen del Diagnostico del Sector Salud" Ministerio de Salud Publica y Asistencia Social, Noviembre 1976. Another important document, a set of nineteen reports, is the administrative evaluation and recommendations made by Bustamante and Associates, in 1975-1978 as part of an Inter-American Development Bank loan program. These reports provide some evaluation of the Ministry's administrative infrastructure, and offer suggestions for solving the identified problems.

Figure 1

Organizational Structure of the
Ministry of Health



[1]As of January 1977.

*These aides are part of a pilot project funded by AID, which is designed to lead to full institutionalization of this lowest level of health care.

Furthermore the fact that the health centers, units, and posts are all responsible directly to the regional office creates a large administrative burden at the region level that could be relieved by assigning each health unit and health post to a health center for administrative support.

(1) National Organization Structure

The organizational chart for the Ministry at the National level is presented in figure 2. Five bureaus are responsible to the Minister through the Director General: the Normative Division, the Operative Division, the Engineering Division, the Administrative Division, and the Planning Division.

The Normative Bureau has a technical focus, and produces the policies, norms, and procedures for the Ministry. It is subdivided into five principal programmatic areas as outlined in Figure 2. Most heavily staffed and funded among these is the Division of Maternal Child Health and Family Planning, (MCH/FP) which has been assigned responsibility for the Rural Health aide activity.

The Operative Bureau, is responsible for the Ministry's operational programs, including the activities of the five regional offices, as well as the malaria program, the national health laboratory, and direction of the supervisory groups. This organizational distinction between the Normative and Operative Division has presented a problem for the proposed rural health delivery system scheme. Although the Maternal Child Helath department of the Normative Division is strong and well qualified to assume primary responsibility for the program, its effectiveness in this role is impeded by the absence of a staff for MCH/FP) at the regional level. While in theory the Operative and Normative Division should operate in complementary fashion in support of rural health delivery and especially the Aides project, in actuality such coordination has been difficult.

In the 1973 Administrative Reform the MOH created an Administrative Bureau, on the same level as the Health and Engineering Bureau representing a major organizational change, since previously each technical division had its own administrative department. Two additional departments were established in 1976, the Office of Organization and Methods, and a Data Processing Department as a means of centralizing all data processing activities of the Ministry. Thus the three main departments involved in information collection and analysis the Statistics Department of the Planning Division, the Epidemiology Department, and the Accounting Department would all have their data processed by this new department. The inability of the Ministry to secure access to a computer has been the prime impediment to operationalizing this Department. An Office of Internal Audit has also been created and recently begun functioning.

Another change made several years ago was to create a Planning Bureau by upgrading the Planning Department to a staff position reporting directly to the Director General. Despite this improvement, planning personnel have been given responsibility for so many other activities that they no longer have time for planning activities. This work load makes it impossible for a small staff of four professionals to monitor adequately or influence the preparation of the annual operational plans or budgets.

In general, the Ministry has made significant progress in improving its national level organizational structure through an administrative reform campagin that is still in process. The Ministry itself concluded in a December 1976 report that the organizational structure is characterized by multiple administrative fact which reduce the effectiveness fo the Ministry.2 In addition to structural difficulties, several administrative problems exist at the national level. These are analyzed below.

Administrative Training

The lack of formalized training for health administrators in El Salvador has resulted in a serious void in personnel with the technical expertise essential for the diverse administrative tasks of the MOH. The deficiencies in administrative skills are not due to lack of interest in this area as highlighted by a 1975 survey of Ministry employees.3 That survey found that 82 employees wanted to take a course in general administration, and 61 wanted to take a course in personnel administration. No educational system exists currently, however, to meet this expressed need.

The Ministry's Escuela de Capacitación Sanitaria, The National Health Training School trains statisticians, sanitation inspectors, and provides special courses in distinct programmatic areas. No program, however, exists to train health administrators at any level. The lack of Government-sponsored administrative training is even more serious in view of the fact that the National University offers no program in public administration either. All curriculum in administration is concentrated in the Faculty of Business Administration. Even if there were not a great disparity between administrative concepts geared toward the profit oriented private business sector and those important for public sector activities, given the broad salary differentials between the two sectors it is highly unlikely that such students could be attracted to public service. Further, the Faculty has clearly resisted any attempts to develop a health administration program.

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2 -M.S.P. "Plan de Desarrollo Económico y Social 1973-1977. Evaluación del Sector Salud." 1976, pp. 19-20

3 -Bustamante Study, 1976.

An attempt is being made to address this problem with PAHO assistance. In June, 1977 PAHO carried out a 5 week "Health Systems Administration Course." The curriculum included systems theory, administration theory, economics, statistics, planning, methods of health programming, budgeting techniques, personnel administration, and institutional administration and was directed toward the top-level personnel (physician directors.)

Two other administration courses were conducted by the MOH in 1977 including one in Administrative Supervision and another in System Analysis and Programming, (30 participants, 360 class hours).

These courses are however, basically one-time efforts that do not create a permanent health administration capability in the MOH.

Supervision

The Operative Division of the Ministry has a supervision department that is responsible for supervisory activities related to the regional offices and hospitals. Given the autonomy of these hospitals as well as that of regional offices it is apparent that this supervision from the national level has not been adequate to promote either control or motivation.

Drug and Supply Management

The Ministry's system for purchasing, storing, and distributing drugs (medicines) and other supplies historically has been plagued by problems linked to poor management. In the Ministry's 1976 evaluation, the problems are succinctly summarized: the process is long and inadequate, and there is too much independent purchasing.4

Drug purchases are not standardized throughout the levels of service. The hospitals often exercise their option to make their own purchases because the process is considerably expedited. This results, however, in a significant financial drain given the relatively high prices paid for these purchases; the hospitals do not buy the volume and thus do not receive the quantity discounts that the Ministry received. On the other hand, the health centers, units, and posts must receive their drugs and supplies from the national level of the Ministry. Although this system takes advantage of the lower prices due to quantity purchasing, an average of nine months is required to fill a request made at the institutional level.5 Much of this delay results from the requirement that the Ministry's Purchasing Committee needs the approval of the Finance Ministry if the purchase price exceeds ₡ 2,500 colones (US $1,000).

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4 -M.S.P. "Informe del Ministerio de Salud Publica y Asistencia Social." XIII Seminario Regional sobre Administración de los servicios de Salud. Hermosillo-Sonora, México. 6-10 Diciembre 1976, p.23.
5 -Ibid., p. 22.

The need for institutionalizing a system for the organization, control and distribution of inventories is obvious. An analysis of the inventory control measures used in several Ministry of Health facilities highlighted the existing system's deficiencies.6 Storage space is inefficiently used and inventory cards for specific commoditites are changed needlessly at the end of each year. Differing perceptions of what information is necessary in order for the administrative office of the MOH to close the annual books results in submission of non-standardized and non-comparable data between facilities. Many storerooms maintain large quantities of drugs which are no longer usable, their "life" having already expired. The problem of balancing supply and demand is compounded by the intermittent nature of most facilities' inventory process; thus, many supply shortages are only noticed when inventories are completely depleted. Periodic absences of essential medicines are common at all facility levels throughout the country. Further, the situation is complicated by the lack of a mechanism for interchanging goods between storerooms as need arises.

On the other hand, many supplies build up on shelves due to lack of demand and/or oversupply: poor recordkeeping compounds the problem since often available supplies cannot be rapidly located. In those institutions in which record systems are maintained, the use of complex forms results in delays of up to three to five years for rectifying inventory errors. Security of warehouses is also poor.

The Ministry has attempted to redress at least some of them in its program of administrative reform, primarily by strengthening its national-level Supplies Department. It has written an "Organization and Procedures Manual" for drug and supplies management. Further, some of the hospitals are now depending on Supplies Department to effect some of their purchases, in order to take advantage of the lower prices. The legal bases have been established to redress the imbalances in specific commodities by permitting the transfer of drugs and supplies between hospitals and the national level of the Ministry, and between different hospitals. Moreover the Ministry has established one large storage center in the San Salvador area, although at present this storage center is primarily concerned with construction materials.7

As part of their assistance provided in the Inter-American Development Bank project, the Bustamante group prepared a detailed inventory and reporting system for drugs and supplies management. The next step should be to develop a training course based on this manual, and provide this course to the supplies management personnel at the national, regional, and institutional levels. The Five Year Health Plan outlines as one of its objectives the training of personnel in charge of the supply system.

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6 -Bustamante study, 1976.

7 -M.S.P. "Informe del Ministerio de Salud Publica y Asistencia Social." XIII Seminario Regional sobre Administracion de los servicios de Salud. Hermosillo-Sonora, Mexico. 6-10 Diciembre 1976, pp. 27-30.

One of the principal deficiencies remaining in the Ministry's strategy for improving drugs and supplies management is its over-centralization. A more fruitful strategy would be to decentralize a major part of supplies management tasks to the regional office level.

Weak Transportation Management and Maintenance.

The Ministry's system for distributing transportation services and maintaining or repairing the vehicles is marked by poor management. The Ministry's response to these problems has been to consolidate the responsibility for transportation services into one office at the national level (in the Administrative Division). The Bustamante studies concluded that even with this organizational change, many problems still exist that can be traced to the lack of coordination between this Transportation Office and the various sections of the Ministry's national level. Continuing problems include lack of a preventive maintenance program for the vehicles. The programming of transportation services is usually done on a day-to-day basis; further, the only person authorized to release vehicles for use is the Director of Administrative Service. Thus, in his absence, vehicles remain unutilized awaiting formal authorization. Additionally, the absence of cost data on expenditures for transportation, repairs, etc. renders it virtually impossible to make effective decisions on when to purchase new vehicles or invest in the repair of older ones.

(2) The Regional Structure

A major reorganization of the Ministry of Health occurred in 1964 in which the previous Directorate General of Sanitation and the Directorate General of Hospitals were merged into one office — a Director General of Health. The new Directorate maintained the then existing division of the country into four health regions. Only one major modification made in the ensuing years. In 1968, the Department of San Salvador was separated from the Central Region and became the Metropolitan region.

While significant variations exist in the size of population for which services are to be provided, as noted above, the population of each region is sufficient to justify a regionalized health structure headed by a regional hospital. As presently defined, however, the geographic divisions of the regions preclude efficient health services administration and delivery. This is most apparent in the Central and Oriental Regions. In the Cental Region, traversing the region requires the crossing of two other health regions, the Metropolitan and Paracentral. In the Oriental Region, mobility essential for adequate administrative control is constrained not only by the geographic expanse of the area but also the fact that the transportation systems in this region are not as well developed as those in other parts of the country. In its 1975 administrative study of the Ministry of Health, the Bustamante group estimated that the decentralization of this Orientla Region into its four departments would result in considerable resource savings. Overall it

Figure 4

Regional Organization of

Ministry of Health

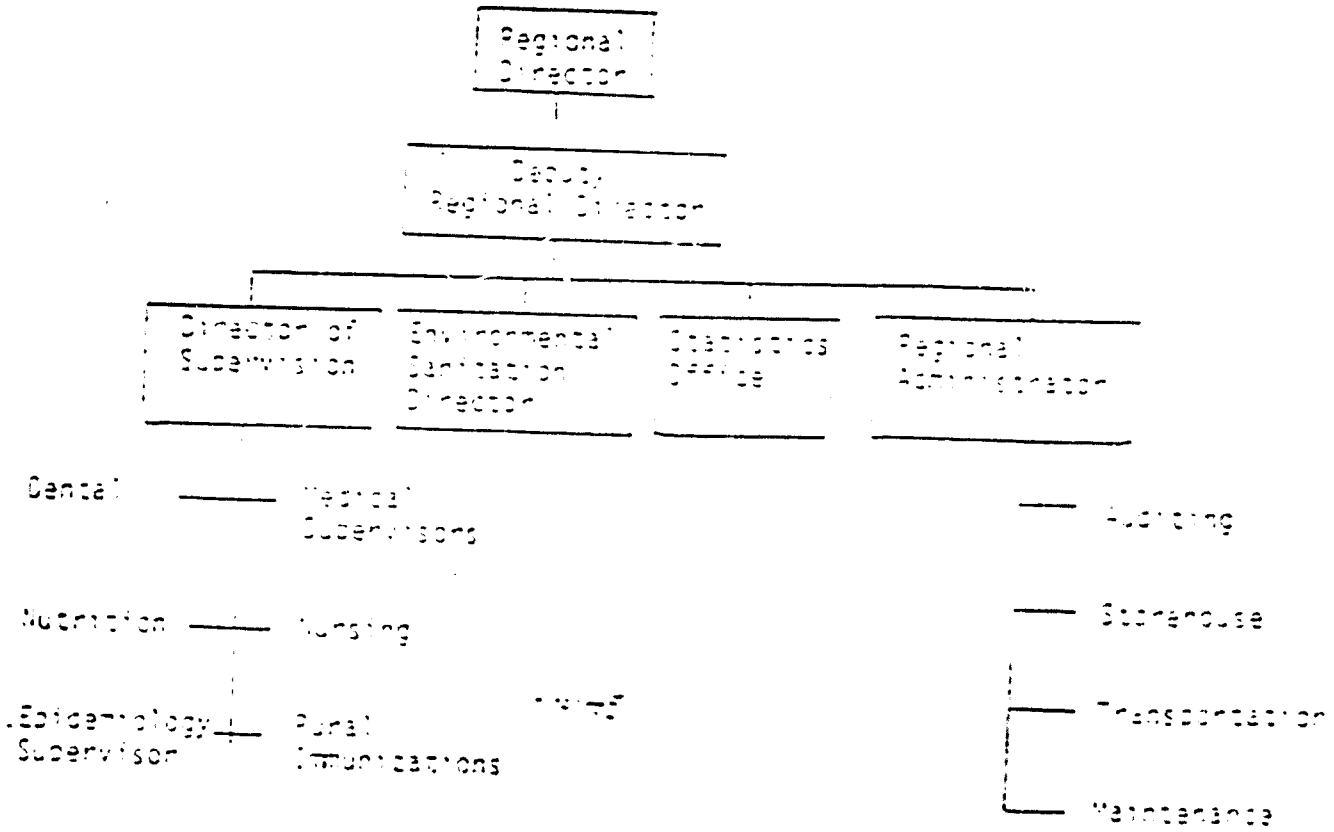


Table 1 outlines the basic administrative divisions of the regions of the Ministry of Health; and in Figure 3 the actual geographic boundaries of the five health regions are delineated.

TABLE 1

Region	Headquarter	Departments Covered by Given Region	Estimated Population 1977*
Occidental	Santa Ana	Ahuachapán, Santa Ana & Sonsonate	926,555
Central	Santa Tecla	Chalatenango & La Libertad	570,433
Metropolitan	San Salvador	San Salvador	1,002.352
Paracentral	San Vicente	Cuscatlán, Cabañas San Vicente, La Paz	762,360
Oriental	San Miguel	Usulután & San Miguel, Morazán & La Unión	1,234,465

SOURCE: *Ministry of Public Health and Social Assistance, Department of Statistics.

was estimated that an additional 100,000 to 160,000 physician consultations per year could be provided given the savings in physician travel time alone; and further, it was projected that transportation costs for provision of logistical support and supervision as well as direct patient care would be reduced by about US $13,600 per year.8

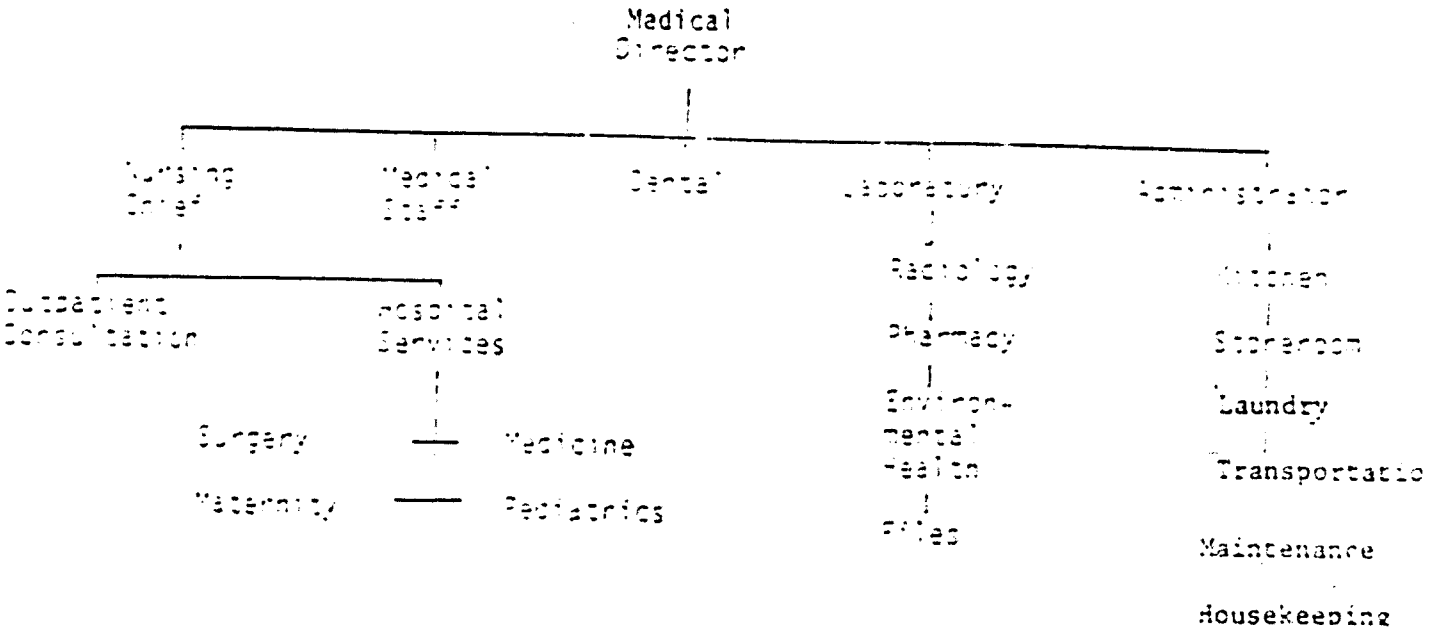
Each regional office is administratively organized as outlined in Figure 4. Such an organizational design is in theory a most effective one. From an administrative standpoint, however, the absence of trained health administrators at this most important level of the delivery system has an adverse impact on regional health opetations.

Each health region is headed by a Regional Director who is physician specializing in public health, who is assisted by a Deputy who is also a physician, and an administrator. None of the five regional administrators has had any formal training in health administra-

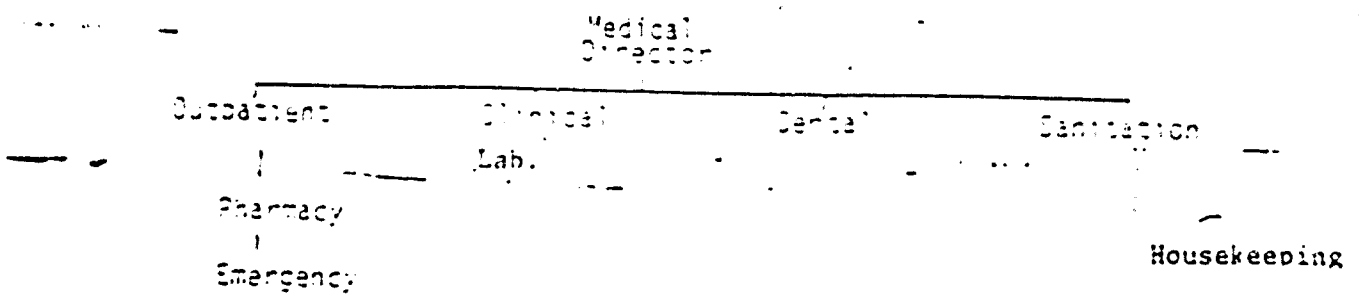
8 -El Salvador, Plan de Desarrollo Económico Social 1973-1977, pp. IIA-1--IIA-8.

Figure 5

Health Center -- Functional Organization Chart



Health Unit Organization Chart



Health Post Organization Chart

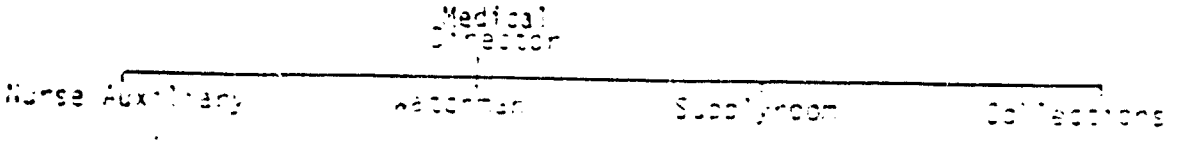
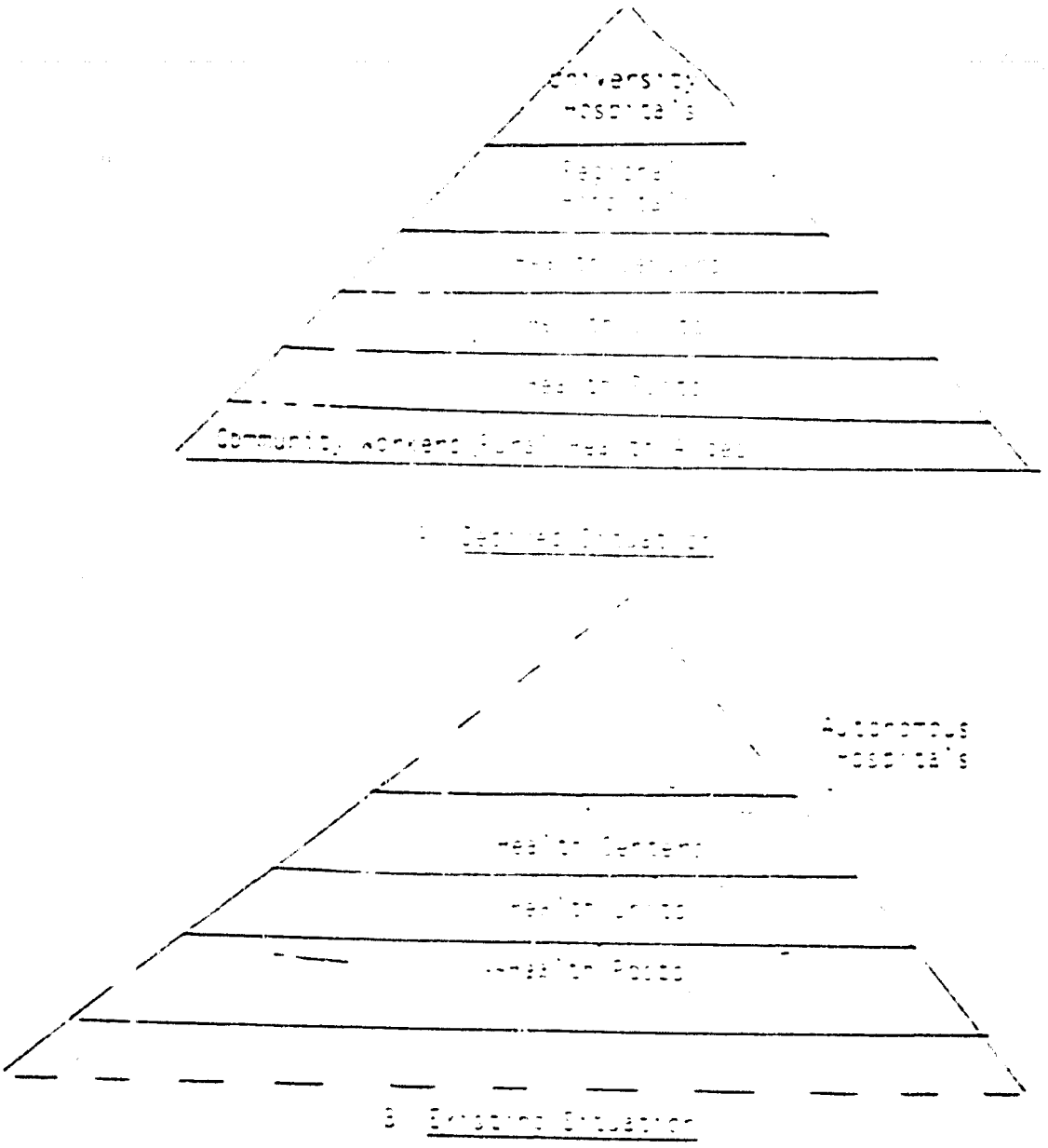


Figure 6

Organization of a Regional Health System



tion. This lack of administrative training is especially serious because the administrator has primary responsibility for numerous functions which are critical to supporting the regional health system. As Chief of Transport, he is in charge of all regional vehicles and drivers; in addition he must supervise the staff of mechanics and maintenance personnel who are responsible for maintenance of all regional equipment ranging from automobiles to sophisticated medical equipment. His support is crucial for operation of the mobile health units and management of all regional storage areas as well.

The organizational structure of the health center, health units, and health posts is shown in Figure 5. Only the health center, which is really a small community hospital (40-60 beds), has an administrator; the administrative activities in the health units and posts must be performed by the medical director.

While organizationally the distinct levels of care in El Salvador are adequate, it is in the crucial interaction between these levels of service delivery that the system is strikingly deficient. Figure 6 depicts the regional health system structure from designed and actual viewpoint. The bottom of the system is missing while the top is functioning essentially outside of the system. Further those levels which comprise the existing system are exclusively institutionally focused. At the lowest levels (health posts, units, and centers) community outreach activities are virtually nonexistent; rather people are expected to come to the institution to receive services, even when they are such community-oriented services as health education and immunizations.[9] The Ministry's environmental sanitation program is the principal exception to this institutional focus, in this program the <u>inspectors</u> work in the distinct communities for which they are responsible and are based at the health center or unit.

The problem at the top of the system is the autonomy of the hospitals. From the regional health system point of view, this autonomy is an obstacle to the efficient referral of patients from the lower-level institutions. It also means that the hospitals do not provide much of the administrative support (supplies and supervision, for example) needed for effective service delivery at the level of the health center, health posts, and health units.

The Ministry recognized these problems. In its most recent self diagnosis of the health system, among the principal problems stated were the absence of a definition of levels of care, failure to integrate health services, and poor institutional coordination.[10] The Ministry has an explicit strategy in its new Five Year Plan to give greater attention to the regionalization of the Ministry's services and the decentralization of their administration.[11] A new

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9 -The pilot rural health aide project seeks to refresh this gap. See Rural Health Penetration Program

10 -Ministerio de Salud Publica y Asistencia Social, "Resumen del Diagnostico del Sector de Salud," Noviembre, 1976.

11 -Ibid., p. 9. See Health Planning Section.

directive given to the technical committee preparing the new Five Year Health Plan was to develop, in conjunction with the Regional Office Directors, a referral system, which would permit the flow of patients between the distinct levels of care of the Ministry's health institutions. The Resulting Plan does define various levels of care, population catchment areas, and the functions of each institution in terms of these levels and areas.

Moreover progress has been made in improving the infrastructure for support of Rural Heath Services. The establishment of the Operative Services Division at the national level was a useful in providing a focus of responsibility for coordination of the regional activities. Furthermore, the Ministry views the centralization of its transportation and purchasing systems as providing more efficient support to the lower levels in the system. The degree of efficiency achieved has not been evaluated.

The success of any effort to expand the national health delivery system to the largely unserved rural poor population is integrally tied, however, to the strength of the administrative infrastructure. Severe deficiencies coninue to exist in the present administrative support provided by the regional offices to the health centers, units, and posts, which thus impede the effective implementation of the Rural Penetration Program. The key weaknesses of the system at the regional level include:

1. - Planning and Budgeting

Each regional office annually prepares an "operational plan" for the coming year. These plans appear to be more administrative than analytical in nature, and do not represent assessments of the population's health needs, and the services and resources required to meet these needs. Given the present staffing patterns of the regional offices, there is probably little time for long-range planning. Day-to-day administrative concerns are continually overbearing. The regional offices do not have planners and administrators who are adequately prepared to develop meaningful health plans.

The regional offices prepare annual budgets, but they are traditional line item budgets. The real budget decisions are made at the national level with little information on which to judge the comparative merits of the budget increases proposed and to reconcile limited resources with priority needs.

It should be noted that in the last year, the MOH, with PAHO assistance, has taken major steps toward adoption of a programming budget system. The Ministry's initiative in this area is, however, still constrained by the national budgeting process which is based on line item forecasting.

2. - Information System

The Ministry's data forms are sent from the health centers, units, and posts to the regional level statistics office, which tabulates tthe data for the region and forwards the results to the Ministry. The Ministry has developed a "Record System" for the Rural Penetration Program that is primarily concerned with the rural health aides part of this program. While this system has the potential to provide rapid feedback for both control and planning its basic weakness is that it is a reporting system only for the lowest level, the rural health aide. Complementary reports should be designed for the other levels of health facilities at the regional and national level. The regional reports should provide aggregated data which will be useful not only to the national level for planning and policy formulation but important for feedback to the supervisors and from the distinct service levels directly to the rural health aide.

3. - Personnel Management

The Ministry's own diagnosis of its administrative problem concludes that a major problem area is its poor system of personnel selection and placement. Its administrative reform seems to have made some progress in this area, but primarily at the national level.

The autonomy of the hospitals results in each having its own policies and procedures. Each hospital recruits, contracts, and places its own personnel. The situation is abetted by the lack of uniformity in personnel management throughout the system.

Conversely, the regional office level remains largely dependent on the national level for hiring and placing as well as continuing training existing personnel. Few regional training programs exist, and none exists in the administrative area.

4. - Supervision

Supervision of not only technical but also administrative activities of health center, subunits, and posts is weak despite the fact that this responsibility is a major function of the Ministry's five regional offices. As outlined in the regional office organizational chart in Figure 4, the Director of Supervision is in charge of a professional corps of doctors, nurses, dentists, and nutritionist who are to oversee the operations of the health centers, health posts, health units and mobile teams. Lack of motivation and shortages of transportation to cover the widely dispersed facilities are primary underlying causes for poor supervisory performance. (See Rural Penetration Section for discussion of supervision of rural health aide program.)

5. - Logistical Issues

If the Ministry's Rural Penetration Program is to succeed, major improvements will have to be made in the drug and supplies system. The community workers must receive timely logistical support, especially in terms of the regular delivery of drugs and expendable supplies. This in turn depends on sufficient funds being allocated by the Ministry to permit purchasing the drugs and supplies needed by the rural health aides. Several changes appear necessary. As the focal point for distribution of drugs and supplies, the health post or unit, must develop a storage and distribution system that permits strict control over disbursements; periodic inventories must be conducted so that re-stocking occurs in an opportune manner. Setting up such systems requires physical improvements in the storerooms, a card system for disbursement control and rapid inventories and identification of shortages; concomitantly skills of the current personnel working in these storerooms must be upgraded. At the regional level, the poor transportation management is perhaps best indicated by the observation in the Bustamante study that the administrator at the Regional Office spends an estimated 40% of his time dealing with transportation problems. A framework for a system for programming, controlling and maintaining transport services has been developed by the Bustamante group and might serve as the basis for conducting a taining program.

(3) Physical Infrastructure

The emphasis of the last Five Year Health Plan 1973-1977 on the extension of health coverage has resulted in the institution of a broad infrastructure for delivery of services. The present MOH network includes 240 distinct facilities spanning five health regions and dispersed among 209 of the nation's 261 municipalities.15 Some level of facility is now within 10 kilometers of 80% of the population.16 (See Figure 7).

As noted in Table 2 while significant growth in the number of health establishments occurred throughout the country over the Plan Period, gains have been particularly striking in the Central and Oriental Regions.

The significant level of capital investment in the sector, dicussed in detail in Sention II.E., GOES Financial Resources, has been financed not only from the National budget but also by substantial external funding, most importantly through a US $15 million loan from the Inter-american Development Bank. In order to implement and monitor the loan fully, the Ministry created a new Division, that of Improvement of Health Services. In addition to the extensive construction activities, this Division also has been responsible for overseeing the projects to enlarge existing facilities and for operationalizing new mobile units

16 -Diagnostico del Secotr de Salud, op. cit.

Table II.E-2

Distribution of Health Care
Establishments of the Ministry of Health by Regions
as of January 1, 1977

Establisiments		Total	Regions				
			Occidental	Central	Metroplt.	Paracntrl.	Orient.
Hospitals		14	3	2	5	2	2
Health Centers		8	2	-	-	3	3
Health Units		84	19	7	20	12	20
Health Posts		123	17	30	4	28	46
Vaccination Posts		1	-	-	1	-	-
Community Posts		10			10		
Totals	1977	240	41	39	40	45	71
	1975	207	38	39	30	38	62
	1973	186	36	29	31	37	53
Percentage change 1973 - 1977		29.0%	13.9%	34,5	29.0%	21.6%	34.0

Source: Department of Health Statistics, MOH

which have provided medical attention for the first time to 11 of the nation's most marginal comunities.

Overall, this expansion in the number of health facilities has brought Government health services to large portions of the population who were unserved just a few years ago. Data on population coverage by MOH facilities by region for 1977 are not available. Nevertheless, examining 1975 coverage, as aoutlined in Table 3 below, in light of the fact that 209 rather than 173 municipalities are now served by the system, the positive impact of this infrastructure investment on enhancing accessibility of care is clear. At the same time, the striking regional variations in access to health services which emerge in the 1975 profile below have been significantly reduced by further extension of services over the 1976-1977 period.

Table 3

Population Coverage by MOH Health System, 1975

		REGIONS				
	Total	Occ.	Central	Metro.	Paracent.	Orient.
Total Municipalities	261	41	55	19	59	87
Municipalities with at least one MOH facility	173	26	36	19	35	57
Percentage of Municip. Coverage	66.3	63.4	65.4	100.0	59.3	65.5
Percentage of Population Accessible to Health Services of MOH	88.1	91.0	85.0	99.0	84.4	81.6

SOURCE: Anuario, Salud Publica en Cifras, 1976. El Salvador. Departamento de Estadisticas de Salud, Ministerio de Salud Publica y Asistencia Social. Cuadro 17, p. 20

Nevertheless, accessibility is a continuing problem. While many persons may now have a facility within five kilometers of their residence, in access terms this distance represents a trip of between two and two and one-half hours on foot; and such travel is particularly difficult if

accompanied by small children or very sick adults who must be carried. In such a setting, two factors stand out: first, the nature of much of the illness could clearly be handled by paraprofessional health personnel; and second, continued concentration on facilities construction does not appear to be cost-effective amidst pressing health needs, particularly those for preventive-oriented activities. Therefore, what is most needed to fill the major gap in health care for the rural populace is a community based, paramedical worker to serve as the initial entry point of the family to, and formal link between the community and, the health delivery system.

2. - Salvadorean Social Security Institute (ISSS)

The Salvadorean Social Security Institute is an autonomous agency which is responsible for the planning, management, and administration of the Salvadorean social insurance system. The Institute is supervised by a board of twelve directors, which includes the Minister of Labor, representatives of other ministries, the Director of Social Insurance, and representatives of management, labor, and other professional groups.

The Social Security systems provides workers and their families with insurance against illness, common accidents, work-related accidents, work-related illness, maternity, disability, old age, death, and involuntary termination of employment.

The resources for the financing of health acre in the social security system come from tripartite contributions by workers, employers, and government funds. The total contribution, which represents ten percent of the basic salary, is charged as follows:

Insured Person	2.50% of earnings
Employers	6.25% of payroll
Government	1.25% of earnings

A separate contribution is required for old age, disability, death benefits in the following amounts:

Insured Person	1% of earnings
Employers	2% of payroll
Government	1% of earnings

Approximately 5.6 percent of the total Salvadorean population is covered by the social security health benefits system. Health services are provided for 200,353 workers and 85,951 dependents (wife or companion and children under six months of age). In addition, 206,294 workers and 618,882 dependents (including children under 16) are covered for other categories of risk. Coverage includes employees of firms with less than five workers, employees who earn less than US $280 a month and agricultural, domestic, and temporary or seasonal employees. Coverage is being extended gradually. As of 1973, 261 municipalities, including the geographical areas of San Salvador have been incorporated.

There is no minimum qualifying period for workers currently employed. Cash sickness benefits are payable in the amount of 75% of average earnings received during the first three of the last four months. The minimum benefit is one colon per day (U.S. $0.40¢). Maternity benefits equal to 75 percent of earnings (as above) are payable to employed women for up to 12 weeks, 6 weeks before and 6 weeks after birth. Employed women are also eligible to receive free milk for up to 12 weeks, and a layette. The dependent wife of and insured worker is eligible to receive pre- and post-natal care, a milk allowance, and a layette.

Benefits are also available to unemployed workers who have been participants in the system for at least eight weeks during the three previous months or, in the case of maternity benefits, for at least 26 weeks during the last 12 months before confinement. Medical benefits include all medical services which are available to patients through the facilities of the ISSS such as medical and surgical care, hospitalization, drugs, alboratory, x-ray services, maternity care, dental care, and dental appliances.

Medical care activities during 1975 included the following services:

	Total Activities	Ratio of Activities	
		Per Insured Worker	Per Beneficiary (incl. dependents)
Consultations			
Medical	744,102	4.48	3.13
Dental	123,957	.75	.52
Prescription of Drugs	1,923,502	11.57	8.10
Lab Exams	410,776	2.47	1.73
X-rays	117,445	0.71	.49
Wound Dressings	47,657	0.29	.20
Hospital Days of Care	178,929	1.08	.75

Health services are provided through a network of seven urban clinics and one hospital (in San Salvador). It is estimated that as much as thirty percent of public sector outpatient services and ten percent of hospital and other services are provided by the ISSS.

The investment program of the ISSS for 1977 amounts to US.$5.6 million, a thirty percent increase over 1976.

A four volume document which analyzes the functions of the ISSS has been developed by the National Health Comission.

As a percursor to the new Five Year Plan (1978-82), some of the conclusions drawn form the analysis of the ISSS were:

1.- The lack of an effective planning system, which is aggravated by the lack of intra-sectorial coordination with the national level, has been the main obstacle to the incorporation of planning of ISSS with the national health planning.

2.- The Social Security laws do not respond to the economic and social realities of the country; they were promulgated 23 years ago and they have not been substantially amended.

3.- The structure, organization and functioning of ISSS are conditioned by these old laws of social security which indicated that they are not responsive to present and future needs.

4.- The coverage of health care has little impact on National health status because it is protecting a "privileged group" within the sub-secotr of the economically active population (13% approximately).

5.- The ISSS is an instituiton of social security that must be recognized by the political, social nad economic leaders of the country, because this system is being under-utilized given its potential and the existing level of development of the country.

The social security system as it is now organized, does not reach the AID target population. Unless reforms are instituted, the ISSS will continue to serve a very limited sector of the population. The impact of even the expanded health services on the health status of the Salvadorean people will therefore be very limited.

3. - Other Health Services

The following section briefly outlines the other public sector entities which are engaged in health, health-related, and social welfare activities in support of the national goal of enhanced social and economic development.

a) Procuraduría General de Pobres

Established by Article 97 of the Constitution, this juridical body is ultimately responsible for protection of minors in cases of abandonment, imminent danger, risk, or non-compliance with support quotas, and

for dealing with infractions of the law by minors. Its dependencies are the special courts for minors (Juzgados Primero y Segundo Tutelar de Menores) and auxiliary agencies, all in urban areas. It can intern minors as appropriate and fine or jail parents in violation of the law.

b) (FOCCO) Salvadorean Institute for Fomenting Cooperatives now called DIDECO - Direction for Community Development

In accordance with its legal responsibility, FOCCO's primary purpose is to promote the establishment of cooperative systems for agricultural production among the rural population. To further this goal, it is to engage in special projects in support of activities of other institutions. It's total budget is derived from the General Fund of the National Government.

c) Institute for Urban Housing

The Institute supports investment in housing construction, community service works, urbanization, and land purchases. Housing is provided for the families of scarce and average resources. Health needs, comfort and economy are important considerations in the development of the Institutes's programs. The total budget of the Institute in 1976 was U.S. $10.8 million.

d) Municipal Development

The Department of Municipal Relations in the Ministry of the Interior is responsible for the provision of technical and administrative assistance to municipalities for activities which promote economic and social development.

One of it's primary functions is the coordination of public and private efforts in community development with the activities of the municipality. To complement this program, training courses in administration and management are offered to municipal leaders.

4. - Information System

Each health organization in El Salvador, both public and private, has its own system of data collection, tabulation, and utilization and storage. There is no standardization of information collected by these entities, and no exchange of information except upon special request. Because the Ministry of Health provides services to more people than any other organization, the majority of the data available in the country is produced by MOH facilities. However, because of under-utilization of MOH facilities, especially in rural areas, and because of suspected under-reporting of mortality data, health statistics are not reliable. There has been no national household health survey to provide any idea of actual morbidity of the population, although inclusion of morbidity/mortality information is contemplated in a national household survey planned for 1978.

Each year the Bureau of Census and Statistics of the Ministry of Economy publishes a Statistical yearbook of Demography and Health; data for this Yearbook is provided by public institutions (MOE, ISSS, Military Hospital and ANTEL Hospital). Data from private hospitals and private physicians are not included, however, a fact which further limits complete understanding of actual morbidity/mortality levels in the country.

A. Ministry of Health Information Systems

In the 1975 Annual Public Health Statistics published by the Department of Statistics of the Ministry of Health, it is stated: "By participating in the improvement of statistics, one is supporting the socio-economic development of the country."1 The need for improvement in the information system of the MOH has been recognized, and several studies pertaining to data collection and tabulation of necessary administrative, family planning and nutrition information have been made. These include:

Bustamante Company, a Mexican firm that did a complete study of the Ministry, including data collection and evaluation of the statistical and administrative divisions as a part of an IDB loan their report with recommendations was presented to the MOH in January 1977, but no action has been taken to date.

A Study By CARS/AID was done for the purpose of improving interpretation of malnutrition incidence; recommendations were made to change data collection of age/weight information in the daily work sheet of the outpatient clinics to facilitate accurate nutrition status reporting. Utilization of the forms began in January 1977, and a study is presently being conducted to determine porper data recording.

A Study By A Team From The U.S. Census Bureau, to design a computerized system for family planning. Officials in the MOH have rejected the proposed system as too ambitious.

A Population Council/CDC/Bureau of Census team studied alternative approaches to data collection and processing, defining minimum data needs, for the MCH/FP program. MCH/FP has accepted the ideas proposeed by the group for a semi-mechanized system of computation. United Nations (UNFPA) has agreed to finance the training of statistical personnel for the program.

The different divisions of the MOH responsible for gathering and processing information include the following:

Administrative Financial management in the Ministry is handled by the Accounting Department and the Finance Deaprtment — two separate units of the Administrative Division with similar functions. Financial information is inadequate because health establishments within the MOH porvide no information as to expenditure for operational costs, and hospitals have an autonomous, redimentary system of accounting, generally including only budgetary control. Accounting manuals are

not available; budget preparation and execution are done according to directives issued by the Ministry of Finance and the General Accounting Office. Construction work is regulated by the applicable provisions of the Procurement Laq on Public Works.

A new Data Processing Department was established in 1976 as a means of centralizing the data processing of the Accounting Epidemiological, and Statistics/Planning Departments. This department was established to reduce duplication of efforts in tabulation and analysis of MOH data, and expedite data for planning purposes. It recently became functional by borrowing computer time daily from the Ministry of Finance.

The Administrative Division is responsible for data on operational and program budget systems, including construction costs of health establishments, inventories, payroll and control of debts to issuing institutions.

Epidemiology Division

The Epidemiology Division is responsible for collecting and publishing data on communicable disease incidence and informing MOH officials of possible country-wide epidemics for necessary preventive or disease control programs.

The Division receives weekly age-specific data on morbidity and mortality of communicable disease from each (240) health establishments of the MOH, each (34) establishment of the ISSS, and each (20) establishment of ISTA. Information is also requested from private physicians, a very small percentage of whom actually collaborate. These are tabulated manually in the National Epidemiology Office, analyzed, and published weekly, thereby providing a constant trend of communicable disease activity in the country.

A month summary of this weekly data is published by the National Office of Epidemiology and returned to all of the establishments; it is also sent to the Statistical Division of the MOH and private physicians in the country as a means of increasing awareness of possible epidemics or outbreaks. Programs in disease control and prevention are formulated by the Epidemiological Division.

National Office of Statistics

The National Office of Statistics is responsible for maintaining the Health Statistics system of the MOH and providing the statistical coverage of the entire health sector. Although the National Director feels that all health programs should be incorporated into one central collection bank, the backlog of data from the regional health facilities alone is such that it is not feasible to assume more responsibility without proper equipment and methods of handling additional data; at the beginning of 1976, data from 1972 through 1975 were still stored for future processing.

About 25 different types of information are tabulated monthly by the Statistical Division, approximately one-fifth of which is maternal child health data. Morbidity information, which accounts for approximately 10% of the total monthly data flow of the MOH is the only data mechanically tabulated at present.

Equipment available in the MOH fro mechanical tabulation of data include two keypunch machines, one verifier, and one coder. In the past, computer time has been borrowed from different governmental organizations (Census and ISSS) for tabulation, although borrowing computer time proved unsatisfactory. Investment in mechanical equipment is essential if available data are to be utilized in the evaluation and planning of national health programs.

Funds were made available by AID through the Nutrition Surveillance Study of CARS in 1976 to process the backlong of data from 1974 to 1976. AID continues to support data processing while the Nutrition Surveillance Study is under way. Discussions have been held by the MOH about the need for mini-computer capable of handling administrative data. There is little interest in computerization by the Director of the Division, who claims that MOH data are not processed manually in a timely fashion for utilization in program planning because of friction between institutions. As noted, earlier, however, the MOH recently signed an agreement with the Education Ministry for utilization of their computer in another attempt at borrowing time.

The lack of trained statistical manpower is serious. Although statistical auxiliaries preferably have a high school education, many have only a 9th grade diploma. Groups of auxiliaries have received an eight-week course in general statistics and hospital archives under the auspices of the Division of Statistics in the National Health Training School Personnel with this additional training hold supervisory positions in hospitals, health centers, and health units. Because there is no university program in health statistics, the sole source of higher education in this field is an international fellowship program funded through the MOH. However, such long-term training grants are seldom available; one person recently completed statistical studies in Costa Rica, the first scholarship recipient since 1974. At present the MOH employs 117 statistical auxiliaries, 47 auxiliaries who have completed additional training, and only 26 statisticians with higher training; in the 14 hospitals supported by the MOH there are only six university educated statisticians. Until 1972 yearly training courses were held by the MOH; after several years of inactivity, the program was reinstated in 1976 when 30 participants from the ISSS, Military Hospital, MOH, and the Rehabilitation Center were trained as statistical auxiliaries. It is hoped this program will continue as a means of addressing the statistically trained manpower gap; however, the situation is further handicapped by the high turnover due to both the poor salary scales and concomitant lack of advancement opportunities in the MOH. Existing staff are not efficiently utilized; much duplication of effort occurs such as concurrent manual tabulation of epidemiological data by 1) the Regional

Office, 2) the Epidemiological Division of the MOH, and 3) the National Statistical Office of the MOH.

In the past year, however, significant progress has been made in instituting a more timely data base through ongoing tabualtion. Technical and financial assistance from CDC and AID have served as a catalyst to "catch up" on information processing from its previously common three to four year time lag.

Recommendations

1. Technical assistance for the Statistical Department is necessary to determine data needs, suggestions of methodology for obtaining and recording data in the most efficient manner, and recommendations of hardware needed for processing data to provide timely, concise summaries for planning purposes.

2. Assistance to determine hardware needs for the MOH and Financial assistance for purchase of equipment to allow the Data Processing Department and Statistical Division Departments to serve their purposes as the data processing centers for essential MOH data. The need for some type of computer is recognized, shown by the various, attempts to borrow computer time from other institutions.

3. On-the-job training would be required to train personnel in proper management of the hardware.

4. Additional intersectoral and refresher course should be provided for training statistical auxiliaries needed at the local and regional levels.

5. Additional scholarships should be provided for university graduates in health statistics, personnel especially needed at the National and Regional level and in hospitals.

6. Some incentive such as salary increase or advancement opportunity should be provided to retain University graduates and MOH trained statisticians.

7. Norms should be outlined from the national office for the information flow system of the rural health aide, and the division to be responsible for logistical and supervisory support for data collection.

PART II ANALYSES

D. KEY SUBSECTOR ANALYSIS

1. Environmental Sanitation

El Salvador is beginning to undergo increased industrial and agricultural growth. The consequence of this industrial and agricultural growth, however, with few enforced controls on the practices of industry and agriculture has been the creation of large scale problems of environmental sanitation and pollution, and the state of health for the majority of the people of El Salvador is in fact worsening.

Inadequate and unsafe water supply and waste disposal as well as poor food sanitation in both urban and rural areas can be directly linked to the 125,000 cases of infectious diarrhea, the 112,000 cases of intestinal parasites, and the 13,000 cases of amoebic dysentery or nonspecific dysentery reported in 1975; 1/ many more cases go unreported in rural areas because of very limited access to health facilities. Most importantly, the number one cause of death in El Salvador consistently is intestinal disease.

Historically, the GOES has made very small per capita investments in water supply and distribution and sewage disposal and treatment 2/ and has been almost inactive in providing hygiene education for the general public.

The overuse and flagrant misuse of pesticides, besides leading to potentially hazardous residues in all segments of the ecosystem, is directly responsible for 9022 reported cases of pesticide intoxication 3/ and for numerous kills of fish and other marine organisms. In addition, the alarming increase in the incidence of malaria since 1973 can at least partially be attributed to the development of pesticide resistance by the mosquitos that carry the disease.

With the development of industry and increased mechanization, another area of concern, that of worker safety, surfaces. The rapidly increasing number of industrial accidents (approaching 12,000 in 1976) makes it obvious that not much attention has been focused on this area.

Agencies with Environmental Health Responsibilities:

1. National Administration of Water Supply and Sewerage (ANDA)

1/ Memoria 75-76 MOH, República de El Salvador, Page 10.

2/ El Salvador Water Supply and Sewage Sector Memorandum, Page 6. WHO/IBRD/PAHO, Jan/77.

3/ Data obtained from Ministry of Public Health and Social Assistance, March 1977.

ANDA is responsible for all phases of water supply and waste water disposal in 261 urban communities throughout El Salvador.

2. Ministry of Public Health and Social Assistance (MOH)

Responsible for development and operation of the overall health delivery system for El Salvador, the MOH's environmental health activities are primarily performed by the Divisions of (1) Rural Water Supply, (2) Engineering and Architecture, (3) Environmental Sanitation, (4) Malaria, and (5) Central Laboratory, and by the 5 Regional Health Offices.

The Rural Water Supply and Engineering Divisions plan and execute the construction of individual household connections and community standpipes throughout El Salvador.

The Environmental Sanitation Division conducts training programs in food hygiene and environmental pollution, supervises rural latrinization, and coordinates sanitation inspections in food establishments, hospitals, and government facilities.

The Malaria Division is responsible for the control of malaria through out the country.

The Central Laboratory Division performs bacteriological and chemical analysis of samples collected by MOH inspectors. The laboratory also has limited capability to identify air and water pollution problems using sanitary engineering tests.

3. Ministry of Labor (MOL)

The Ministry of Labor operates the Department of Labor Statistics and the Department of Industrial Hygiene and Safety. These two services inspect working conditions, take air and water samples, and gather and publish useful labor statistics.

4. Ministry of Agriculture (MAG)

Through its agricultural extension agents and its Department of Agricultural Defense (DDA), MAG attempts to control and supervise use of pesticides throughout the country. MAG also operates the Agricultural Technology Research Center (CENTA). This laboratory can perform residue analyses, both organic and trace metal, in water, tissue, foodstuffs, etc. Modern, research-quality equipment for gas, liquid, thin layer and column chromatography and for infrared, ultraviolect-visible, and atomic absorption spectroscopy is available.

5. Municipalities

The 261 municipalities operate refuse collection and disposal services including disposal of infectious wastes from hospitals and health centers.

Specific Environmental Health Sectors

1. Water Supply

A. Urban Water Supply

The National Administration of Water Supply and Sewage (ANDA) and the various municipalities are responsible for urban water supply in El Salvador, where "urban" is defined generally as "a community of more than 2,000 inhabitants." On the basis of this definition, El Salvador is about 40% urban.

ANDA's total investment planned in 1977 for water and sewage was less than $4.0 million, representing an annual investment in water supply and sewage disposal of less than about $1 per capital. In this very densely populated country there is an history of low investment in water supply and sewage disposal, which is reflected by high morbidity and mortality rates directly associated with water-borne diseases.

Data on the availability of water and sewer service in urban areas are presented in Table 1. Although one-half of the urban population receives its water from household connections, the quality of service is uneven. In discussions with various professionals in the SSMA, ANDA was severely criticized for slow service, and poor maintenance and repair of commercial and residential installations, as well as for ineffective planning for future water and sewer system demands. ANDA has full capability for primary planning, design, and construction of water supply systems as well as their operation and maintenance but suffers from a lack of engineering manpower4/ to meet the needs of 1.6 million people in 261 urban communities spread out over 8,000 square miles.

As a GOES agency, ANDA has considerable difficulty in hiring and keeping qualified professionals. Industrial salaries are 2-3 times those offered by GOES. As a result, the design and operation staff is young, and ANDA is able to keep them only long enough to allow them to get some experience. Also, ANDA competes with the MOH funds (both national and external) to supply rural areas with water. These rural programs address many communities but reach relatively few people. This splitting of the logistical base places too much of a drain on the country's professional resources. Moreover, the cost of water production operation, and maintenance is currently $0.10 /m^3 but ANDA has not raised the charges for its services from 0.04 /m^3 for several years.

The smaller municipalities do not have the fiscal or professional resources to operate their own water systems. Legally all municipalities that were operating their own systems were supposed to turn the systems over the ANDA in 1976.

4/ Annex #8, ANDA, 1976 Diagnosis by PAHO, November 1976.

TABLE 1

URBAN POPULATION SERVED BY ANDA IN 1975

Department	Urban Population		WATER SERVICE Population Served			Population with Connections			SEWER SERVICE Population with Connections		
	No. 1/	Inhabitants	No.	Inhabitants	%	Connections	Inhabitants	%	No. Connects.	Inhabitants	%
huachapán	12	46,972	9	44,623	95	3,230	22,610	48	3	1,920	13,440	29
anta Ana	13	162,221	11	161,572	99.6	11,607	81,249	50	5	9,800	68,600	42
halatenango	33	53,309	9	18,125	34	1,221	8,547	16	2	590	4,130	8
onsonate	16	97,721	10	92,835	95	6,087	42,609	44	9	4,802	33,614	34
a Libertad	22	110,934	10	88,115	79	7,421	48,180	43	6	5,372	37,604	34
Salvador	19	641,791	17	639,866	99.7	63,431	444,500	69	14	49,905	349,335	54
[illegible]	16	47,768	8	38,356	80	2,308	16,156	34	3	1,370	9,590	20
[illegible]	21	59,895	15	49,114	82	3,053	21,371	36	5	1,302	9,114	15
[illegible]	9	24,990	4	19,492	78	1,389	9,723	39	2	610	4,270	17
Vicente	13	50,621	9	41,228	81	2,711	18,977	37	3	1,619	13,333	26
sulután	23	87,202	16	64,565	74	4,905	34,335	39	7	3,056	21,392	25
San Miguel	20	126,721	9	100,1[illegible]0	79	5,941	41.587	33	2	4,280	29,960	24
Morazán	26	33,289	3	14,980	45	785	5,495	17	1	320	2,240	7
La Unión	18	57,657	6	32,288	56	1,410	9,900	7	1	429	3,003	5
Total ANDA			136	1,424,971	89.0*	115,499	805,239	50.3*	63	85,375	599,625	37.5*
Self-Service			81	113,972	7.1*	5,251	39,756	2.5*	12	715	4,955	0.3*
Total Sector	261	1,601,091	217	1,538,943	96.1*	120,750	844,995	52.8*	75	86,090	604,580	37.8*

1/ Number of Urban Communities

* Percentage in relation to the total urban population.

Serious domestic, agricultural, and industrial pollution in the surface water bodies has forced ANDA to draw exclusively on groundwater sources. Presently the water demand is about 2.5-3.1 m^3/se. in the San Salvador Metropolitan area while the current production is from 1.9-2.1 m^3/sec. El Salvador, like most of the less developed countries, does not usually invest much money in meters. As a result, estimates of consumption are based on pump capacity, pump head, and period of pump operation. Depending on actual physical conditions, the data may be as far as 40-60% off. Furthermore, since ANDA cannot meet the existing water demand, demand also can only be estimated, not measured.5/

Because demand cannot be met, nearly all sections of the SSMA receive water intermittently, often only a few hours each day. Such long periods with no water in the pipe tremendously increase the risk of contamination of the water system and consequent spread of water-borne disease. The problem is further complicated by a growing influx into San Salvador of squatters who lack any form of reasonable sanitation facilities, and thus add to the contamination.

Water quality is not routinely measured in San Salvador or other areas of the country. Bacteriological analysis is sketchy, and chemical analysis does not take into account heavy metal contamination. Chlorination of the water is not continuous; often the concentration of chlorine is too low to have an effect on amoebic cysts or the enteric viruses. Officials of ANDA stated that imported chlorine (none is produced locally) is too costly to use continuously in the amounts needed.

The industrial sector usually develops its own water supplies by drilling company wells No figures were available on the quantity that industry is mining from the groundwater daily. ANDA and MOH officials indicated that most of the industries do not recycle their water.

Field geo-hydrological surveys mapping ground water tables, recharge capacities, and underground storage indicated in a 1972 survey that by 1990 groundwater mining will be unable to meet the needs of San Salvador and that additional water for the SSMA will have to be developed from the surface water in the Rio Lempa system.6/ This will likely be an expensive proposition since the surface waters are extremely polluted with domestic agricultural, and industrial wastes, including pesticides and heavy metals, and this pollution continues unchecked at the present time.

In 1976 Interamerican Development Bank (BID) announced a $30 million loan to GOES at 3% for 40 years for the development of the Zona Norte Project. With the GOES contributing an additional $12.6 million, this project will attempt to provide an increase of approximately 2 m^3/sec of water to the SSMA in order to meet the anticipated water demand of 4.2 m^3/sec by 1980.

5/ ANDA Diagnóstico, PAHO, November 1976, pp. 49-50

6/ Improving and Increasing the Water Supply of San Salvador, Project Zona Norte 1st Stage, Wallace, Evans and Partners, 1972.

BID is already working with GOES on a stage 2 project (to be implemented in 1979-80) to increase water production for the SSMA by another 2.0-2.2 m^3/sec. ANDA is seeking international support for a large waste water collection system and a wastewater treatment plant.

Recommendations. Urban Water Supply.

1. Recommend that the GOES and external lending institutions significantly augment the projected 1978-82 investment in urban water supply from $42.6 million to $92.00 million. Emphasis should be placed on improving existing water supply production and distribution systems in the major urban communities.

2. Recommend that ANDA decision makers be made aware of the technical alternatives through seminars, etc., before selecting the technology to meet specific ANDA needs. There are many examples of the aplication of U.S. and European high technology to LDC problems that could have been resolved with simpler systems requiring minimal upkeep.

3. Recommend that ANDA increase its tariff rate from the present $0.4/$m^3$ to $0.10/$m^3$ immediately to meet costs of capital investment and costs of operation and maintenance.

4. Recommend that a chlorine production facility be developed through a small business grant or loan. The facility would produce various forms of low cost chlorine that could be used in water purification, in laundry bleaching powders, in chemical synthesis, etc. Imported chlorine costs from $0.90 - $1.00 per pound. Locally produced chlorine would cost from $0.20-$0.35 per pound.

5. Recommend that good leak detection, repair, and mapping programs be initiated immediately to reduce losses from the systems.

6. Recommend that the question of how to lure sanitary, mechanical, civil, and electrical engineers into ANDA service be throughly researched. Possible alternatives to direct hiring by ANDA are (1) assignment of technically qualified personnel from the Peace Corps to ANDA operations; (2) use of international loans to augment engineers' salaries by $5,000/year for a period of five years so as to be competitive with industry; (3) training of selected civil engineers in sanitary or hydraulic engineering.

B. Rural Water Supply

ANDA, the MOH and the international lending institutions BID and CIDA are continuing to assist El Salvador in development of its rural water supply in El Salvador, where "rural" is defined as "a community having between 300 and 2,000 inhabitants". According to MOH engineers, approximately 800 of the some 2,200 rural communities have access to safe and adequate water

supply (either house connections or public standpipes); however, none of these systems has desinfection components. About 70% of the existing systems have been built since 1970, indicating the relatively recent interest in this sector.

Although ANDA generally has been involved in urban water systems, it has made some effort in the rural water sector. Since 1978 ANDA has invested $3.52 million in some 200 rural water systems and as of 1975 was operating and maintaining the systems of 33 rural communities having about 50,000 inhabitants.

Historically, the MOH has been involved in the development of rural water systems through its Rural Water Supply Division and its Engineering Division. For such development the MOH has four engineers, three secretaries, six draftsmen, five area engineers and seventy water system inspectors. Most of the labor for construction and pipe laying is done by the members of the communities themselves. Only the more technical aspect of pump alignment, electrical connections, and storage tank construction are subcontracted.

Over the period 1972-1976, the MOH and BID pooled their resources to construct 102 rural water systems. BID loaned $1.56 million and MOH contributed $1.50 million. These systems were constructed using extensive self-help and resulted in a benefit to 72,000 people at a per capita cost of $41.97. 6,931 household connections were made at an average cost per family of $440.7/

The majority of the MOH/BID projects provide for house connections rather than central standpipes even through many of the communities are quite dispersed, adding to the expense of the pipe and labor for excavation. Transportation into many of the rural communities is difficult, making movement of construction materials costly and time-consuming. In spite of the very high per capita costs, both BID and MOH feel that past experience solidly shows that where there are individual house connections, the operational agency can collect sufficient tariff monies or user fees to bring about almost 90% auto-financing of the water system. There is a monthly charge of $1.20 per family or house connection if the system has a pump, whereas if the system operates by gravity, the monthly charge is $0.80.

With the goal of providing water for 60% of the rural population by 1982, the MOH Rural Water Supply Division plans to invest a total of $15.1 million in rural water projects. Of this sum $9.1 million in loans from BID and CIDA is earmarked for the development and construction of systems having primarily individual household connections; about 142,000 people in 165 rural communities will be affected by this segment. The continuing MOH program of providing standpipes at public wells will reach another 400,000

7/ MOH, Introduction of Water into the Rural Area, Final Report, BID loan 324/SF-ES, 25 August 1976., Page 8.

people in 300 rural communities at a cost of $6.0 million. A well will not be drilled in a particular community unless the community has access to the electrical power needed to operate the pumps.

ANDA officials has also planned investment in rural water projects during the period 1978-1982. Although no firm data have been obtained about the size of the projected program, based on past history, an annual investment of $0.6-$1.2 million in rural water projects is expected, involving perhaps 30 communities per year.

Recommendations for Rural Water Sector

1. Recommend that in conjunction with the development of a rural water project in a community, water-seal latrines be made available and that before the family can receive a house connection the water-seal latrine must be satisfactorily in place.

2. Recommend that external funding sources reinforce the MOH program so that individual household connections can be provided instead of wells with public standpipes.

3. Recommend that a detailed assessment be carried out for development of a workable revenue-gathering scheme that can be implemented throughout El Salvador. Rate structures, methods of collection, methods of developing a rotating maintenance fund, and other topics ought to be discussed and tried.

4. Recommend that the MOH and the Ministry of Education immediately initiate educational TV programs oriented toward water and food hygiene, sanitation, first aid, safety, etc.

5. Recommend that the MOH and ANDA augment existing staff of sanitary hydraulic, mechanical, and electrical engineers.

C. Sewage Disposal (Urban)

The total amount invested for improvement of sewage disposal in urban areas by ANDA, the sole agency charged with this task, came to only $1.88 million during the years 1973-1976. ANDA has not in the past made major investments in water-borne systems of sewage disposal or wastewater treatment plants; in fact, there is effectively no treatment of wastewaters from domestic, agricultural, or industrial sources in all of El Salvador. (Technical assistance in wastewater treatment was requested on several occasions by MOH and ANDA personnel during this assessment trip). As a result, most of the sewage is disposed of directly into the water courses, and during the day season the rivers leaving the SSMA are little more than raw sewage.

Coffee and sugar cane processing plants dump wastes into receiving streams with Biological Oxygen Demands (BOD) of 25,000 to 40,000 mg/l while a typical domestic sewage has a BOD of about 300 mg/l. It is not surprising,

then, that MOH and University researchers have been able to show that during much of the year there is almost no dissolved oxygen in the streams from the time that they leave the SSMA at least until they reach the Cerrón Grande region. In addition, several tanneries are dumping large amounts of chromium into the streams, and chromium is known to cause sterilization in higher organisms.

Through 1975 ANDA had installed 86,000 individual sewer connections throughout El Salvador, serving 604,000 people (Table 1, p.6). About 38% of the urban population has direct access to sewer systems, while essentially none of the rural population has access to sewer systems.

At present water-borne disposal systems exist in 76 of the 261 municipalities in El Salvador, but only 10 of these systems are described by ANDA as adequate. By 1982 ANDA hopes to have sewers in 119 urban communities with adequate systems in 54 of them.

ANDA has planned several projects in urban sewage disposal for the period of 1978-1982. These improvements call for a projected investment of about $38.6 million, $30 million of which ANDA hopes to secure through loans. Specific projects include:

(1) expansion of the San Salvador sewer system ($13.1 million);

(2) introduction of sanitary sewerage into 40 urban communities ($2.6 million);

(3) feasibility study for water treatment and wastewater treatment plants ($0.4 million);

(4) construction of a consolidated sewage treatment plant for SSMA ($17.0 million);

(5) improvement of 19 urban collection systems and construction of 17 wastewater treatment plants ($5.5 million).

The rapid growth of the urban population, the failure to demand cleanup of industrial wastewaters, and the history of meager investment in sewage disposal has already resulted in severe pollution of the surface water bodies and some groundwater. One or more of these trends must be reversed quickly if El Salvador is to avoid the loss of its lakes and rivers.

Recommendations for Urban Water Disposal

1. Recommend that industries be forewarned that by 1982 they will have to reduce the concentration of organics and solids in their wastewaters to reasonable level that will be enforced by the GOES.

2. Recommend that the monthly sewarage tariff for all individual connections be increased immediately by 50% with another increase of 50% in two years. This will place the burden of funding the sewerage expansion on the middle and upper middle classes and allow for expansion of services to lower income groups.

3. Recommend technical assistance to provide information on various alternatives in materials and construction practices for sewer systems development, including a workshop on the selection of appropriate technology to meet the specific needs of El Salvador.

4. Recommend that El Salvador explore other avenues of waste disposal. Several dozens of non-sewered waste disposal devices have come on the market in the last four years, and some of them may offer a more economical alternative to costly expansion of sewer systems. Considerable information is available in AID/W if interest is generated.

D. Rural Latrinization

The MOH Division of Environmental Sanitation (DSA) operates the only sewage disposal program aimed at the rural areas of El Salvador. The latrine coverage within rural communities varies from 2% to 30%, based on estimates of officials of the DSA, with no concerted attempt to emplace latrines in communities already having access to water or in areas with high rates of intestinal diseases.

DSA officers estimate that 130,000 rural families currently have latrines, but conversatons with other officials indicate that the number of families having latrines may be as low as 55,000. There is agreement that from 350,000 to 425,000 extra disposal devices are needed in the rural areas for 95-100% family coverage.

The personnel of the DSA include 30 regional and local supervisors and 197 inspectors. The 197 inspectors are expected to spend 1/3 of their time working on rural latrinization. Salaries of inspectors are so low that the MOH cannot retain qualified personnel; at $160 per month, the inspectors get some experience and then go to work for industry, creating a continual void of experience at the working level. There does not seem to be a full-time project manager to work out day-to-day problems and to coordinate the efforts of MOH, other ministries, private volunteer organizations, and international assistance organizations. With only fourteen jeeps at its disposal the failure to provide adequate transportation for the inspectors has thus far been a major roadblock to the success of the program.

The budget of the rural latrinization program for the period 1977-1982 is projected at $500,000 annually, with the GOES contributing $200,000 of this amount each year. The GOES is requesting $200,000 per year from international sources and $100,000 per year from the communities involved. The latrines will be sold to the rural families at $4 per unit and then installed by the families themselves.

Recommendations for Rural Latrinization

1. Recommend that MOH design a campaign in cooperation with CONAPLAN and the Ministry of Educaton to publicize the existence of the rural latri-

nization program and the effect it can have on the health of the rural family, including a component of hygiene education.

2. Recommend that rural latrinization be focused first on those rural communities that already have rural water systems and that have the highest incidence of diarrhea and intestinal parasite diseases.

3. Recommend that at least 1 full-time project manager be assigned the responsibility for solving logistical problems and for coordinating MOH/DSA project efforts with other agencies.

4. Recommend that MOH raise the salaries of sanitation inspectors so that people with field experience can be retained.

5. Recommend purchase of 200 motor scooters appropriate for sanitation inspectors. These will enable MOH personnel to increase tenfold their impact on the areas of latrinization and food hygiene inspection. Approximate cost would be about $220,000. Maintenance facilities for motor scooters already exist in the SSMA.

6. Recommend that the current latrine design be modified to provide for a water-seal system (J-Tube or other type).

E Solid Waste (Refuse) Disposal

The programs for solid waste disposal (SWD) in El Salvador are developed by each municipal government operating independently. In the rural areas no SWD programs exist, nor are any being planned or envisioned. MOH officials estimated that nearly 1,500 tons of urban refuse and 800 tons of rural refuse are generated daily in El Salvador.

The SSMA has an excellent planning staff and operates numerous modern pack-more and multiple unit container vehicles in the SSMA. The sanitary landfills are well operated, and heavy machinery is available to initiate volume reduction, daily cover, and trench development. The collection and landfill crews appear well-trained. They regularly serve about 560,000 people in the SSMA. The municipality of San Salvador is investing funds as necessary to keep up with SWD demands for services. The SWD program is strong and is recognized as a high priority item in controlling the public health.

In the eight other major urban areas, the collection vehicles are usually large stake-bed trucks or dump trucks; no sanitary landfill equipment or operations exist; there generally is open dumping with intermittent burning and the crews are largely part-time untrained personnel working in non-continuously funded programs. With extremely limited resources municipal governments provide intermittent service for 30 to 60% of their populations. Furthermore, there does not seem to be any sound plan for improvement of SDW services.

The major need in SWD, looking at the country as a whole is heavy equipment to carry out proper disposal, once the waste is collected. Urban centers over 20,000 population should have continuous need for a D-6 bulldozer to work a sanitary landfill.

The MOH also is not satisfactorily approaching the problem of disposal of infectious wastes from hospitals and health centers. Reasonable public health practice requires incineration of infectious wastes; these wastes include: used hypodermic needles, placentas, tissue and body parts, support waste from infectious disease wards, etc. Currently only one hospital in El Salvador is using its incinerator, and there are no teams properly trained or equipped to handle problems of hospital waste disposal. Thus, the bulk of this infectious waste is going directly into the regular refuse pile for pickup and disposal at the sanitary landfill or open dump.

Recommendations for Solid Waste Disposal

1. Recommend provision of 6 to 9 D-6 bulldozers for use in sanitary landfill operations and general development of sanitary services. These bulldozers would be used essentially full time to operate sanitary landfill operations at Santa Ana, Ahuachapán, San Miguel, Cojutepeque, San Vicente, Usulután, Zacatecoluca, Chalatenango, and Sonsonate. The cost would be from $420,000 to $680,000, depending on equipment selected. If time permitted, the equipment could also be used in community development projects.

2. Recommend $680,000-$830,000 for 14-18 pack-more or multiple unit collection vehicles to be used in the above mentioned municipalities.

3. Recommend that a continuing education program or series of comprehensive workshops on SWD be presented to the municipal supervisors of the SWD facilities. The SSMA operation could be used as the working model.

4. Recommend that an overall plan be developed for dealing with infectious wastes from hospitals.

F. Biocides and the Environment

The uncontrolled, excessive use of insecticides (better described as biocides) in El Salvador with the resultant impact on human and other forms of life has created a number of problems, some of which are approaching critical proportions, and none of which can continue unaddressed.

Although no industrial plants synthesize insecticides in El Salvador, there are two sites where insecticides can be formulated from imported active ingredients. The data in Table 2 show the quantities (in kg) of the most important insecticides imported, including the relative amounts of each insecticide on a percentage basis and the average amount imported each year. 8/

The very heavy reliance on three specific insecticides stands out: Parathion, 9/ (47.8 of all insecticides imported), toxaphene, (24.2%), and DDT, (14.6%). Parathion is classified as highly toxic, both dermally and orally (a single drop in the eye can be fatal); however, it does not persist

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8/ Derived from the official records of MAG, Dep. of Agricultural Defense May/77

9/ Both the methyl and ethyl esters are used about equally.

in the environment more than a few days. Both toxaphene and DDT are moderately toxic when taken orally and relatively non-toxic when applied dermally, but both are quite persistent in the environment, and DDT especially has been observed to be concentrated through the food chain.

The principal cotton growing region of El Salvador is the relatively narrow coastal plain running approximately east to west. In Table 3 the amount of area devoted to cotton cultivation[10]/ beginning with the 1968-69 growing season is given and is further broken partially according to Department. The average area sown with cotton for this period occupied 104,360 Mz. (73,052 Ha. or 731 Km^2); cotton lands in three departments Usulután, La Paz, and San Miguel, account for about 79% of that total. During each of the last nine years, every square kilometer of cotton land has been sprayed with an average of 6,750 kg. of insecticides!

With pesticides that are readily available from local merchants throughout El Salvador, the cotton farmers have their plants sprayed an average of 20-25 times during the months of September, October, and November and to a lesser degree in December; about 90% of the area sprayed is sprayed from airplanes. Adherence to recommended dosages is often not observed, and furthermore, the farmer cannot really be sure of what he is buying because there is reportedly much mislabeling and misrepresentation occurring.

The following examples have been documented, illustrating some of these adverse effects:

Elevated levels of chlorinated hydrocarbons such as DDT have been observed in cotton plant parts.[11]/ Cattle are allowed to forage on the cotton stalks after the harvest. This practice has had an effect on El Saldor's beef exports to the U.S. Since the beginning of this trade in 1972, more than 2,250,000 lbs. of beef have been rejected by theUSDA [12]/ because of DDT residues were too high (10-12 ppm) to meet U.S. standards; about half of this beef was rejected in 1976 and was reportedly shipped back to El Salvador to be marketed here and in Central America. El Salvador exports about 20% of its beef; failure to find a market for its beef could have some serious economic effects.

The destruction of large quantities of aquatic life in the important estuary, Bahía de Jiquilisco, and at the marine research station near the Río Lempa 13/ threatens to sharply curtail, if not completely wreck, the fish and shrimp industry of El Salvador. Both of these sites are in the heart of the cotton growing area.

Recent studies 14/ have revealed elevated levels of DDT and, during

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10/ Derived from the official records of MAG, Dep.of Agricultural Defense May/77.

11/ José Vicente Vilanova (CENTA), Personal Communication, March 1977.

12/ HmM. Steinmetz (USDA), Personal Communication, April 1977.

13/ Peter Phillips (Peace Corps), Personal communication, February 1977.

TABLE 2

Insecticides Imported by El Salvador

1968-1976

Total of Insecticides

(Active Ingredients Only) 55,405,218 kg

Imported 1968-1976

Individual Insecticides	kg	% of Total	9-Year Avg.in/kg/yr
Parationes	26,486,121	47.8	2,942,902
Toxafeno	13,426,484	24.2	1,491,832
DDT	8,090,376	14.6	87[illegible],931
Azodrín	959.011	1.7	106,557
Tamarón	870,558	1.6	96,729
Endrín	661,606	1.2	73,512
Baygón	658,936	1.2	73.215
Clorodimeform	572,691	1.0	63,632
Malatión	487,683	0.9	54,187
Dipterex	445,727	0.8	49,525
Volatón	369,154	0.7	4[illegible],017
Cygard	304,193	0.6	33,799
Endosulfán	290,664	0.5	32,296
Aldrín	282,061	0.5	31,340
Phosvel	261,195	0.5	29,074
Total	54,166,460	97,8	6,018,496
Others	1,238,758	2.2	

Source: Derived from official record of MAG, Department of Agriculture Protection, March, 1977

TABLE 3

Manzanas of Cotton Land by Depto.

Year	68/69	69/70	70/71	71/72	72/73	73/74	74/75	75/76
Total Manzanas	72,800	79,880	89,250	103,750	121,800	135,800	125,900	105,700
Departamento								
Usulután	23,800	25,280	29,030	38,600	38,095	43,080	37,753	40,853
La Paz	19,380	21,070	23,160	25,550	29,635	30,987	30,076	27,218
San Miguel	13,400	15,450	17,580	19,450	25,590	32,036	31,411	19,740
% of Cotton Land in these Deptos.	77.7	77.3	78.4	80.5	76.6	78.1	78.8	83.1

TABLE 4

Reported Cases of Pesticide Intoxication by Departamento

Year	1972	1973	1974	1975	1976	1972-76	% of Cases
Total of Reported Cases	2974	1643	1427	1481	1497	9022	
Departamento							
Usulután	1230	267	385	457	333	2672	(25.6%)
La Paz	1352	638	598	398	690	3676	(40.7%)
San Miguel	01	384	166	118	141	809	(9.0%)
% of Cases in these Deptos.	86.9%	78.5%	80.5%	65.8%	77.7%		(79.3%)

the height of the spraying season, of parathion in samples of water from Bahía de Jiquilisco and from rivers flowing into it and in samples of fish, shrimp, mollusks, sediments and human blood.

Other results 15/ from milk samples taken from cows grazing near sprayed areas showed chlorinated hydrocarbon residues of about 8ppm and organophosphate residues of 1ppm, while samples of coffee bean husks from coffee processing facilities contained 0.04 ppm of chlorinated hydrocarbon residues, after processing.

In the Departamento de Usulután the average concentration of DDT in the lactate of 19 women was observed 16/ to be 0.33 ppm; the concentration of DDT in the milk of women from some 20 other countries has ranged from 0.05 ppm to 0.25 ppm. thus giving the women of Usulután a somewhat dubious distinction.

The number of cases of malaria 17/ has increased 2.5-fold from about 35,000 in 1973 to a record number of more than 83,000 in 1976. An important contributing factor to this marked increase is the development by the mosquitos of resistance to the insecticides such as DDT and Baygon (propoxur) that have been used to control mosquito populations.

Perhaps the most immediate and obvious consequence of insecticide misuse and/or overuse is human intoxication or death. Although few deaths have been reported as being due to insecticide exposure, El Salvador reported a minimum of 9,0222 insecticide poisoning cases in the hospitals of El Salvador over a period of five years from 1971-1976 and likely more went unreported.

Legislation already exists in this country, establishing a structure for accomplishing just such ends 18/ and for regulating the use of pesticides on cotton 19/, the principal pesticide consuming crop. Although the legal apparatus exists, the implementation and enforcement of and compliance with this legislation has at best been inadequate.

Briefly, Decreto No.315 mandates to MAG and its dependent agencies the authority to dictate whatever measures are necessary including banning the distribution of a given substance so that use of pesticides does not damage people, animals, and crops or contaminate the environment.

The Department of Agricultural Defense (DDA) is given the responsibility of seeing that all pesticides to be sold and used in the country

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14/ Jorge López (ICAITI) Personal communication, April 1977.

15/ Vicente Vilanova (CENTA) Personal communication, March 1977.

16/ Carlota Aguilar, (Universidad Nacional) Thesis, November 1976

17/ Malaria Division, MOH, Personal Communication, May 1977

18/ Decreto No. 315, Mayo de 1973.

19/ Decreto No. 95, Enero de 1977.

TABLE 5

Reported Cases of Pesticide Intoxication by Month

YEAR	Jan	Feb	March	April	May	June	July	Augs.	Sept.	Oct.	Nov.	Dec.	Total*	Official Total**
1972	24	34	23	16	78	52	53	107	394	738	952	503	2974	2860
1973	94	48	65	56	76	92	71	76	199	417	308	141	1643	1301
1974	46	27	29	31	34	74	69	32	170	439	207	264	1427	1331
1975	78	48	33	59	65	126	206	119	125	294	195	133	1481	1454
1976	70	29	33	30	48	82	64	62	245	292	252	290	1497	1365

* Totals calculated from official records, MSP y AS, Division of Epidemiology, March 1977

** Official totals in publications of MSPyAS

are tested for efficacy and safety and are properly registered. Registration of a given substance is granted for a period of 3 years (renewable) and can be cancelled for just cause.

The crop owner is to report to DDA at the end of each month what pesticides and how much of each he has used and when and where he has used them and is subject to a fine of ₡100 to ₡1,000 for failure to do so. To date this section of law, has not been enforced.

MAG and MOH jointly are to determine the maximum residual tolerances of pesticides for human food. Up to the present no research projects to determine such tolerances have been completed. Generally, the tolerances established by FAO-OMS are used for guidelines but do not have the force of law nor are they adhere. to.

A new law, Decreto No.95, regulating cotton cultivation, went into effect in January 1977. This law, among other things, prohibits the sowing of cotton within a certain distance of lakes, rivers, hospitals, houses, pasture lands, etc. This provision (also part of the previous law regulating cotton cultivation) is not adequately enforced.

Decreto No. 95 also provides that cotton stalks are to be destroyed after the harvest and not used for cattle forage. This provision (also a part of the previous law) has not been enforced.

Also, all pilots are required to report to MAG all pertinent information about every aerial pesticide spraying that they carry out (what, where, when, how much, for whom, etc.). Previous reporting has been done solely on a voluntary basis. At this time an adequate mechanism to enforce compliance with this provision apparently does not exist.

CENTA (Centro Nacional de Tecnología Agropecuaria) is the government agency charged with, among other responsibilities, the monitoring of the environment and of agricultural products, both on a routine basis and from a research standpoint. Although the amount of modern equipment available to discharge this responsibility appears adequate to support a much larger program, with existing personnel only 3-5 samples daily were analyzed in the last year. This kind of productivity is hardly capable of supporting a minimal research program, let alone monitoring environmental contamination and agricultural products on a routine basis. With the expanded laboratory facilities at San Andrés, now opened, the amount of analytical instrumentation capability will be almost doubled. The problem does not appear to be one of antiquated, inadequate equipment and facilities, but rather not enough qualified, trained people to operate the equipment that exists.

Recommendations for Pesticide Management

1. Recommend that all registered importers be required to account for

the disposition of their stocks, down to the individual consumer, subject, of course, to government inspection of their records.

2. Recommend that more widespread use of integrated control of pests be developed to significantly decrease pesticide consumption. Recent reports[20/] indicate that by making better use of the cotton pests' natural enemies coupled with other sound agricultural practices (integrated pest control) the number of applications and amount of pesticide used can be reduced from 30-50%. Yields, when compared to "traditionally" treated cotton, were actually observed to increase.

3. Recommend that the use of pesticides be regulated (and discouraged) by levying an appropriate tax on them, thus forcing the cotton farmer to more seriously consider how much pesticide he can afford to use.

4. Recommend an in-depth, long-term program for training local personnel including instrument-repair technicians to monitor local biosphere contamination. The two pesticide workshops sponsored by AID in 1973-1974 have apparently failed to take hold.

5. Recommend that every effort should be made to coordinate some projects, perhaps in environmental contamination studies, with interested persons in the National University.

6. Recommend that the process of educating the pesticide user through extension agents and/or the Cotton Cooperative be examined.

G. Occupational Health, Industrial Hygiene, and Safety

The only program in this area in El Salvador is operated by the Department of Industrial Hygiene and Safety within the Ministry of Labor (MOL). The Department has two sections: (1) occupational health and safety/accidents, (2) industrial hygiene engineering.

The department has one physician and two engineers with experience in occupational health (OH) and industrial hygiene (IH), two secretaries, and sixteen inspectors (10 in OH and 6 in IH). The annual operating budget is about $100,000 per year. The department is authorized to use four vehicles full-time out of a total Ministry of Labor motor pool of 28 vehicles. The Ministry of Labor has poorly equipped testing laboratory containing, rudimentary, antiquated equipment, some of it donated by AID in the late 50's-early 60's era.

This inadequately staffed department with a miniscule budget and completely inadequate transportation attempts to inspect working conditions, locate hazards and investigate accidents in over 4,000 industrial and

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20/ Progress Report of ICAITI, April 1975.

manufacturing facilities. In addition, it monitors potential problems arising from the handling of pesticides on over 2,500 cotton farms and over 800 sugar farms and checks all agricultural processing centers for occupational hazards.

The department publishes leaflets dealing with occupational health, industrial hygiene, and safety, including handling of pesticides, but the distribution of the leaflets is extremely limited. The director of the department said that industrial managers do not want the leaflets distributed because the workers will "think" they are working in an unsafe place.

Salaries for MOL employees are too low to keep qualified, experienced personnel. As soon as an inspector gets two or three years of experience, he can double his salary by working on specific industry programs.

Currently the MOL is not using educational TV programming to deliver occupational health and safety messages to workers, nor is there any coordination with the Ministry of Public Health on occupational health problems.

MOL can suggest that modifications be made to correct hazardous situations but has no authority to fine or close down the offender for failure to comply within a reasonable length of time. In the several processing plants that an investigator visited, there was literally no provision for worker safety or health. Statistics 21/ show that the number of industrial accidents reported has dramatically increased from 7,000 in 1971 to 12,000 in 1976. Over 60% of the accidents in El Salvador occurred in the SSMA. Almost 65% of all accidents in El Salvador occur in the manufacturing and the construction sectors.

The number of the industrial accidents is probably larger than documented because of economic incentives do not report an accident. If a manufacturer is warned by MOL, IH or OH staff that a safety or health hazard exists and subsequently one of his people gets hurt by the hazard, then the owner of the plant has to pay the hospitalization and social security for the duration of the injury. Therefore, accident reporting is discouraged by the owners.

The MOL/IH and OH will receive only a 6% annual increase in funding for the period 1978-1982; as a result, no additional staff positions are planned. Logistics support can only worsen because two of the four available vehicles are to be transferred within the MOL.

Clearly, worker safety has not held sufficient priority to warrant much attention, and the overall prognosis is that service to the work force will significantly decrease unless international funding is secured.

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21 / Estadísticas del Trabajo, Ministerio de Trabajo, 1975

Recommendations in Occupational Health

1. Recommend that the annual budget be increased to $3.7 million by 1980 in incremented steps of $1.2 million per year for three years in order to have a sizeable impact on worker safety and health in El Salvador.

2. Recommend that MOL increase the number of trained inspectors to 160 by 1980 in incremented steps of 50 per year. Substantial technical and financial assistance is needed to upgrade existing vocational training in occupational health and safety to a semi-professional level.

3. Recommend that a loan or grant be made available to MOL for the purchase of at least 135 motor scooters and 6 jeep-type vehicles to accomodate the anticipated workload of this increased staff.

4. Recommend that the MOL more fully utilize TV and radio facilities for broadcasting OH and safety tips.

5. Recommend that a larger OH/IH laboratory be constructed.

6. Recommend modernization of the testing laboratory for OH/IH testing and survey instruments. This laboratory equipment will cost about $160,000. The annual operating cost of about $30,000 per year would be paid by MOL.

7. Recommend that the Medical School expand course offerings in industrial hygiene and occupational health to provide physicians with background in industrial medicine.

H <u>Food Sanitation and Inspection</u>

Another function of the DSA of the MOH is to monitor sanitary practices in regard to food handling. Although there was no time to study this area in depth, its importance and impact on the morbidity and mortality resulting from intestinal causes should not be underestimated.

The 197 inspectors who are charged with this responsibility have no authority to dispose of contaminated food, levy fines, or close down establishments, even if grossly unsanitary conditions are found. With such limitations, these inspectors serve only as information gatherers and have little or no influence on food sanitation practices in El Salvador.

The potential effect of food sanitation practices on general public health is great enough that a closer look at this area should be made.

PART II ANALYSIS

D. KEY SUB-SECTOR ANALYZED

2. Malaria

a) The Situation

In spite of a 210% increase in the GOES budget for malaria control over the past five years, malaria continues to be a major health problem in El Salvador. The number of malaria cases has been rising steadily for past four years to a record of 83,290 confirmed cases in 1976.1 At this confirmed rate, one Salvadoran in fifty suffered from malaria that year, in addition to serving as a carrier of infection for vectors to transmit the disease to other humans.

Approximately 3.8 million Salvadorans live in areas where malaria is endemic or hyper-endemic. Since malaria is a rural disease, and exposure to it increases as the quality of housing decreases, the primary victims are the rural poor. In fact, the rural poor account for more than 90% of all reported cases. Whereas the vast majority of people in El Salvador do recover, malaria is one of the principal public health problems facing economic and social development.

Since 1919 efforts have been made to control malaria and mosquitos in this country with varying degrees of success and failure. In the early years the attack was directed mainly toward control of the vector mosquitos at their source.2 With the introduction of DDT in 1957, which initially appeared to promise eradication, emphasis shifted toward the control of adult mosquitos by the semi-annual spraying of the walls of all the houses in the malarious area. Some success in interrupting malaria transmission seemed to be achieved between 1957 and 1965 (See Table 1). During this period AID and UNICEF assistance to the malaria program was, however, reduced and subsequently terminated.

A sharp increase in malaria cases in 1965 to 1967 prompted an AID loan to provide prophylactic drug treatment every 14 days for the people in the malarious area. Despite the use of a potent, new insecticide called Proposur, the traditional techniques of house spraying and periodic drug treatment failed to bring malaria under control. The number of malaria cases steadily climbed to its 1976 record level. Map 1 illustrates the areas where efforts to control malaria were carried out in the 1976 campaign.

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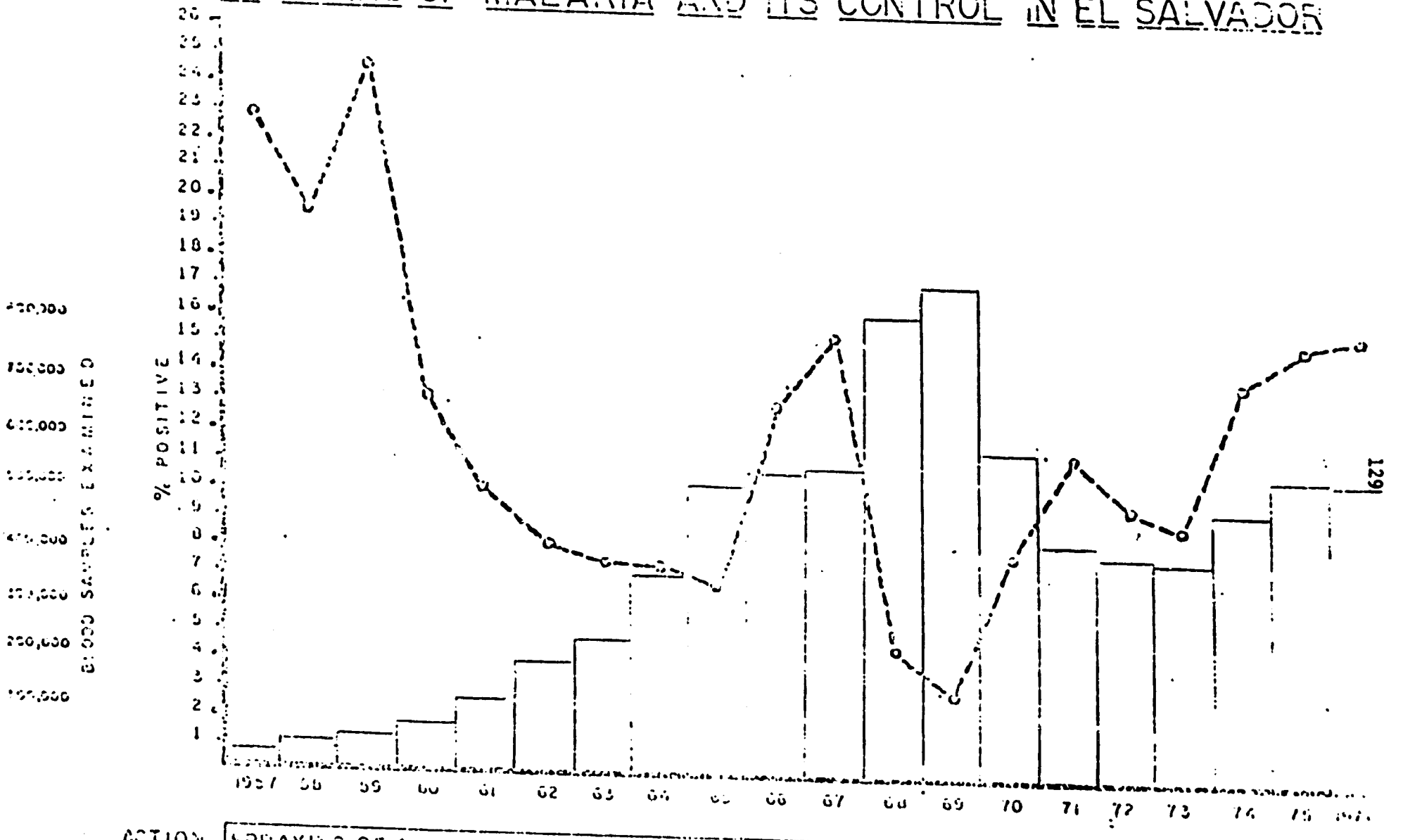
1 Primera aproximación, El Plan Quinquenal de Desarrollo Económico y Social, Sector Salud, 1978-1982. Ministerio de Salud Pública y Asistencia Social, Marzo 1977, p. 29.

2 Valdivieso, J. Alfonso, The Struggle Against Malaria: Phase 1-Up to 1946, read at the 2nd National Health Congress of El Salvador (1950).

20 YEARS OF MALARIA AND ITS CONTROL IN EL SALVADOR



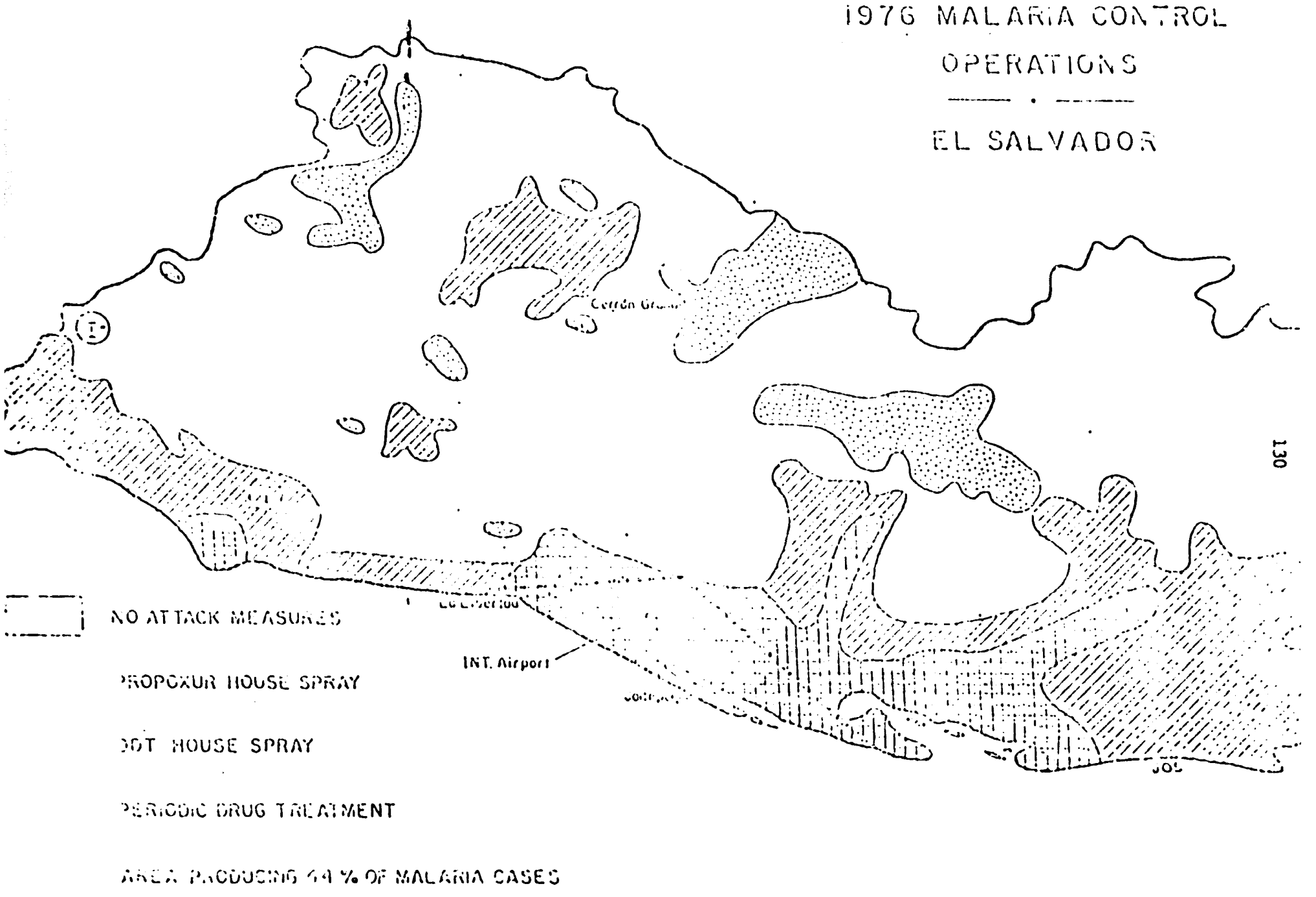
ACTION TAKEN

SPRAYING OF ALL HOUSES IN MALARIOUS AREA WITH DDT EVERY SIX MONTHS.

ADMINISTRATION OF DRUGS EVERY 14 DAYS TO ENTIRE POPULATION OF MALARIOUS AREA

SOME AREAS SPRAY WITH DDT, OTHER WITH PROPOXUR. DRUGS PROVIDED IN SOME AREAS EVERY 14 DAYS, IN OTHER EVERY 21 DAYS, OTHER AREAS NOT DRUG TREATED.

MAP 1


1976 MALARIA CONTROL
OPERATIONS
EL SALVADOR
INT. Airport
NO ATTACK MEASURES
PROPOXUR HOUSE SPRAY
DDT HOUSE SPRAY
PERIODIC DRUG TREATMENT
AREA PRODUCING 44 % OF MALARIA CASES

Many factors can be cited as having contributed to the failure to bring malaria under control. For example, the mosquito vector developed a high level of resistance to the residual pesticides that have been used against it. A widespread refusal appeared among the populace to participate in mass medication programs, apparently because of adverse physical reaction to certain of the drugs used early in the program.

Also those responsible for the control program simply lost their zeal because of the continued failures of their efforts. The latter factor is further compounded by the realization that the mosquito vector species in this part of Central America prefer animal hosts to man and prefer to feed out-of-doors in the early evening thus raising the question of whether the concept of residual wall spraying is capable of interrupting malaria transmission.

El Salvador has embarked recently upon a major program of economic development aimed at improving agricultural potential, attracting tourists, and creating opportunities for industrial and mercantile expansion. Irrigation projects, development of coastal tourist areas, improved accessibility to El Salvador through the new International Cuscatlán Airport, and the opening of the new Cerrón Grande hydroelectric dam and reservoir all enhance the potential to increase greatly the incidence of malaria. Because the malaria problem has reached crisis proportions and threatens to interrupt achieving the goals of development, the new GOES administration has indicated that malaria control is a top priority.

As noted, for the past 20 years the GOES malaria control campaign has concentrated efforts on the use of residual insecticides on the walls of dwellings or treatment of persons with anti-malaria drugs. The application of these single method approaches reflected the early optimism and thinking of most that this disease could be eradicated or brought under control quickly. As has been noted, these methods have not satisfactorily controlled malaria. Unless more effective measures can be substituted, malaria incidence will probably continue at unacceptably high levels.

The reduction of malaria in El Salvador to the point where it is no longer a serious public health problem is feasible by practicing integrated malaria control. This approach, while not new, has been neglected in countries dedicated to the application of single methodologies directed at eradication. The techniques used in integrated control are well developed, and knowledge and experience exist to be applied to the problem, making it possible to avoid repetition of mistakes made by others in the past.

Integrated malaria control, a blend of the disciplines of epidemiology, entomology, parasitology, and vector control, involves proper planning, organization, and implementation of the following five elements:

1. disease surveillance - identification and characterization of disease transmission in both time and space.

2. vector surveillance - identification and measurement of vector populations that pose a threat of disease transmission.

3. vector suppression - selection and application of proven control measures in areas of active transmission, including methodologies such as basic sanitation, drainage, manipulation of the environment, and chemical and biological methods.

4. parasite attack - direct control of specific forms of the etiological agent through selective or mass medication programs.

5. evaluation - determination of the effectiveness of the control methods applied.

Application of this approach is more involved than use of single control methodologies, taking longer to obtain coverage of all malarious areas of the country. The advantage, however, is that selective application of the proper tools at the proper time with special emphasis on basic techniques in water management can effect permanent reduction or elimination of the offending vector populations. The elements described, except for those pertaining to surveillance and control of the disease and parasite respectively, follow closely the basic requirements applicable to general mosquito control as presented in the following paragraphs.

b) Basic Principles of Mosquito Control

The objective of mosquito control is simply to aid and abet hostile factors inherent in the environment to reduce the target populations of mosquitos. There are three basic methods of accomplishing this end. These are, in descending order of efficiency; source reduction, larvaciding, and adulticiding.

Since mosquitos require water for their larval development, sources can range from a water-filled tin can to impoundments such as a reservoir behind a hydroelectric dam. The most efficient and permanent method of controlling mosquito populations is to deny them these sources. This can be accomplished by removing the water alltogether or by changing the character of the water to make it uninhabitable to the larvae, Examples of the latter practice include changing the salinity of the water, clearing of the emergent vegetation around which larvae hide from their enemies, or manipulation of the water level.

If the source itself cannot be eliminated as such, or until such time as it can, other methods may be employed. For example, introduction or encouragement of mosquito-eating fish species is a standard practice in some areas. Techniques of introduction of mosquito-eating insects, mosquito-parasitizing nematodes, and larval growth-retarding hormones are techniques being perfected. Attacking the larvae with chemicals is the next best method since the population is confined to a small area. Such treatment should be applied only when and where larvae are found, not on a routine area-wide basis, and the sources should be rechecked after treatment in order to detect any errors in technique or development of resistance to insecticide. Use of larvacidal oils eliminated the problem of resistance and also gives a degree of control over the emergent vegetation. Until the mosquito emerges from the water it is harmless to man, and when concentrated in relatively small areas from which there is no escape, larval populations may be attacked and reduced relatively easily and cheaply. Once on the wing, the adults disperse rapidly over wide areas and their control becomes more difficult.

The final basic method of control to be mentioned is adulticiding, accomplished by dispersal of microscopic droplets of insecticide on 5-10 mph breezes. These droplets kill the flying or resting adult mosquitos with which they come in contact. The mosquitos, which could have been killed with a few drops of oil on a square foot of water, require the treatment of several square miles with adulticide, and the machinery required to produce these fine droplets is expensive.

For any specific area, an assessment must be made to determine which of these methods, or what combination will be most effective. The first step is to locate and identify the mosquito sources. Plotting them on topographical maps will usually reveal the potential for source reduction or drainage and the most logical approach to accomplishing it. If this is not immediately feasible or cannot be scheduled for current action, clearing of emergent and floating vegetation will deny the larvae cover and make them easy prey to existing or introduced predators. These practices will reduce the area of larval habitat, thus minimizing the need for insecticide use.

A continuing census of adult and larval mosquito populations must be maintained in order to signal the areas needing attention and will also serve as a means to evaluate the results of treatment. A continuing health education program is also essential to secure the cooperation of the public and to reduce the numbers of man-made mosquito sources.

c) Specific Problems in Control of Malaria Vectors

Based upon existing epidemiological data and on-site vector source investigations, the bulk of El Salvador's malaria vectors are

produced in the coastal plains, in brackish-water lagoons and marches, fresh-water swamps created by natural and irrigation water run-off, and low spots in the river beds which hold water throughout the dry season. Upland sources include natural swamps in the river valleys, irrigation structures and tailings, man-made reservoirs, and drainage water expected to be produced by large development projects such as the new international airport.

The brackish lagoon and salt-marsh problem is a familiar one, requiring technical assistance and resources for solution. The water in such sources can be managed so as to maintain sufficient salinity in the lagoons to eliminate mosquito production, with a water level maintained which will drain off the adjacent fresh-water swamps. This practice reclaims agricultural land, protects the mangroves and other natural salt-marsh flora and fauna, and minimizes or eliminated the use of insecticides. Systems for this type of control are used commonly for mosquito control along the eastern seaboard of the United States.

There exists a good network of natural drainage channels in the country with the bulk of the tremendous wet-season reainfull running off readily to the sea. However, during the dry season this run-off water dwindles to a trickle, leaving ponds and swamps in adjacent areas. The solution is a deepening and cleaning small water courses, and construction of drains from the adjacent ponds and swamps to them. Such work must be repeated annually but will be easier after the first few years as newly-dug drains become established waterways. Examples of specific problems associated with developmental projects in El Salvador are discussed below:

Cerrón Grande Hydroelectric Project. The reservoir behind the recently completed Cerrón Grande Dam, now filling for the first time, threatens to become a major source of mosquitos and subsequently malaria transmission if steps are not taken to correct the problems. Mosquito control on this reservoir will require a full-time team of workers with specialized equipment to repair the damage already done by insufficient consideration of mosquito control in the planning stages for the reservoir. From this point, the later these control efforts begin, the more difficult and costly it will be.

Specifically, the reservoir area should be de-forested to eliminate the dead trees emerging from the surface which provide food and floating vegetation traps as harborage for mosquito larvae, and the banks of the reservoir need to be steepened to discourage the growth of emergent vegetation. The dangling roots of the widely proliferating water hyacinth and other floating vegetation also make ideal habitats for mosquito larvae and will require special control procedures.

Untreated sewage from San Salvador and all of the towns between it and the reservoir, as well as the wastes of a growing industrial complex in that strip, have resulted in extensive pollution of the

water of the upper half of the impoundment. Unless this situation is corrected at its source, there will soon be not enough oxygen left to support food, game, or mosquito-eating fish, while the air-breathing mosquito larvae will thrive in this highly nutritious culture medium.

Cuscatlán International Airport. This ambitious project, already under construction, includes an excellent general drainage scheme in its design. Unfortunately, this design extends only to the airport boundary at the southeast corner. Low mosquito populations must be maintained in order to protect the passengers and employees of the airport, the inhabitants of the surrounding agricultural area, and for international quarantine purposes. To meet this target, a constant vigilance should be maintatined to detect and treat or eliminate sources in and surrounding the airport, and a scheme should be implemented to pick up the drainage waters at the fence and lead them to some natural outlet. As with Cerrón Grande, a team with specialized equipment will be required for assignment full time to the airport complex.

Irrigation Districts. Five extensive irrigation districts, sponsored by the Ministry of Agriculture, are in varying stages of development or operation. These have great mosquito production potential if adequate drainage and good water management are not provided. Personnel will be required for these projects during the irrigation season in order to identify and treat temporary sources following each water application; financial assistance should be sought from the Ministry of Agriculture or the landowners for permanent drainage structure installations.

Tourist Areas. The clients and workers of the developing tourist industry will require protection from malaria. The national income which foreign tourists represent and the large investments already made are funds which the country cannot afford to lose.

The Jaltepeque tourist project includes a plan and budget for an intensive private mosquito control program, which, while basically sound, relies somewhat heavily on frequent application of unspecified insecticides.

The GOES plans for development of the old port of La Libertad and surrounding coastal areas are apparently geared towards the less wealthy Salvadorans rather than towards vacationing foreigners. The former, including many of the urban poor who might otherwise not be exposed to malaria, as well as the local fishermen and farmers, are entitled to equal protection from malaria. Source management programs in this area should also improve estuary fishing and protect the mangroves and the related shrimp hatchery.

Each of the special projects discussed above is profit-making, or at least self-supporting with malaria problems created by their operation. These projects could benefit both operationally and financially by participation in the national program for malaria control Funds should be included in their operating budgets for transfer to use in the national program of the MOH.

Current Situation. The GOES has recognized the seriousness of the sharp increases in malaria cases over the past four years, and the indications that the mosquito population serving as vectors for this parasite are now largely resistant to tradicional pesticides. Until recently, the MOH, which is the principal agency involved in the National Malaria Program, based their program on post-factocontrol of mosquito populations, ie. after they had left the larval stage and become adults. The spraying of interior house walls with residual effect insecticides has been the linchpin of the Ministry's control operations in which the principal insecticides used have been DDT and Propoxur. In addition, the MOH undertakes prophylactic drug treatment of human populations residing in malarious regions.

Under the new GOES administration, the MOH has recently broadened its approach to malaria control, deemphasizing these traditional means in favor of the development of action-oriented preventive programs. This process has begun with the broad collection of operationalized epidemiological data on malaria as a basis for a deeper understanding of the peculiar contextual conditions promoting its spread in different areas of the country.

The MOH is presently conducting a study of the entire situation which will be completed by mid-summer 1978, and serve as the basis for a revised national malaria control plan.

Toward this effort the MOH is receiving technical assistance from several other donor agencies. The Pan American Health Organization (PAHO) is increasing its collaboration with the MOH under its revised malaria strategy, and is providing full-time assistance in vector control and water management. Short-term courses are also being offered in simple techniques of malaria control.

The Central American Research Station (CARS) of the Center for Disease Control of the U.S. Department of Health, Education and Welfare, is providing both operational advice to MOH as well as engaging in operational research in disease surveillance, malaria control and evaluation. USAID provides administrative support to CARS, including guidance in programming.

Finally, the U.S. Department of Agriculture (USDA) is engaged in research on means of genetic and biological control of mosquito populations for eventual application in malaria control programs. The genetic research, undertaken at the USDA station located at Santa Tecla, involves the raising and release of large numbers of

sterilized male mosquitos. This program at present is scheduled for phase-out in late 1978 with termination of USDA support.

The Inter-American Development Bank (IDB) is not currently participating in the malaria program.

PART II ANALYSIS

D. KEY SUB-SECTORS ANALYSES

3. Health Education

Although Health Education is identified as a major area of concern in the Ministry of Health's Five Year Plan (1978-82), there is no defined strategy or plan of action provide. The Plan does express, however, the necessity for the coordination of health education efforts by all Governmental and private organizations working in the community. (See Chart I listing major health education activities in El Salvador).

The efforts of the Ministry of Health are rendered ineffective by inadequately trained and motivated staff, shortages of materials and equipment (e.g. projectors, films, posters), a lack of scheduling and coordination between health education and other health activities, and the absence of institutionalized programs to involve the community in efforts to improve its general health status.

Health education activities are planned at the national level by the Health Education Division of the MOH. This Division is responsible for the design, preparation, and dissemination of health education materials, the instruction of MOH personnel in the techniques of health education, and the supervision of regional health educators. The MOH budget provides a staff of one director, twelve health educators, and clerical support. In addition the MCH/FP Division of the MOH has two health educators, and the Malaria Division, one.

There is, however, no direct relationship between the work of the MCH/FP Division health educators and the Health Education Division.

The budget for the Health Education Division represents 0.5 percent of the total MOH budget. Because the health education budget is part of the general administrative budget, requests for additional funds must be approved by the Administrative Division. Requests are apparently quite often delayed or denied due to other budgetary priorities of the Ministry. No separate funds are provided for health education needs, and no funds are allocated for either radio or TV announcements.

At the regional level there are eleven positions for health educators which are distributed as follows:

Metropolitan region	3
Oriental region	2*
Occidental region	2*
Central region	2
Paracentral region	2

* indicates one position is currently vacant
SOURCE: Ministry of Health, March, 1977

The regional health educators are primarily social workers with no special training in health education or public health. They are, however, more highly educated than personnel in the Health Education Division making their supervision by the central staff difficult. The University is planning a four year program for health educators which will meet the long-term needs of the country; however, the immediate need is for intermediate level training of the present staff to improve the implementation of ongoing programs.

At the local level, health education is considered to be the responsibility of every member of the health team - physician, nurse, auxiliary nurse, health educator, sanitarian, and rural health aide. In reality the training of the professional staff has rarely included instruction in the value and methods of health education. Their delivery of this service is therefore subject to wide variation. The graduate nurses generally conduct the majority of health education activities with little input from other staff members. Further with low facility utilization rates by the rural populace, many persons are not reached by existing programs. Implementation of the pilot rural health aides project has thus been important in moving education from the facility into the community. Nevertheless, several constraints to the institution of an effective public health oriented education program remain.

The shortage of audio-visual equipment and printed materials and the failure of the staff to perceive the interest of their relatively uneducated clients in health education limit both the quantity and quality of health education which is actually disseminated. A survey by secondary students in their home areas (the "Audiencia" survey, part of the USAID Education Sector Analysis) and an anthropologist's investigations in El Salvador[1] indicated the strong interest of the Salvadorean people in more health education. The lack of materials and staff trained in

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[1] Harrison, Polly F., The Social and Cultural Context of Health Delivery in Rural El Salvador, p. 63.

Chart 1

Health Education Activities in El Salvador 1976
(exclusive of MOH Activities)

Organization	Activity	Target Group
Ministry of Agriculture (CENTRA - research and extention service)	family planning, nutrition, hygiene, home improvement, etc.	farmers and their families
Institute for Social Security (ISSS)	accident prevention, first aid, industrial safety, family planning	factory employees
Ministry of Education	health oral hygiene sex education	5th and 6th grades primary students high schools
FOCCO	home improvement, latrinization family planning	community program
Union Comunal Salvadoreña	first aid, midwifery, environmental sanitation, nutrition, family planning	women's groups rural cooperative groups
Asociacion Demografica Salvadoreña	family planning, via TV and radio spot announcements	country wide

Source: USAID, El Salvador

appropriate delivery of health information precludes effectively meeting this widely perceived need.

Nevertheless, the Ministry of Health has conducted a series of annual health education campaigns which focus on a unique topic each year. The National Vaccination Campaign in 1973 was initiated in cooperation with the Epidemiological Division of the MOH. The campaign emphasized the importance of the DPT and measles vaccines. A definite decrease in mortality and morbidity was documented; however, waning public interest in the past few years has led to decreased vaccination and a slight rise in the incidence of certain communicable diseases. In 1974, an Oral Hygiene campaign provided training to teachers in methods of dental care and the application of the flouride-wash. Biweekly toothbrushing in the schools and a routine examination by a dentist have been instrumental in decreasing the incidence of dental caries in school age children.

The 1975 Parasite Control Campaign never fully materialized and was modified in cooperation with the Division of Environmental Sanitation to become 1977 Diarrheal Campaign. Pamphlets were designed, a videotape on preventive measures prepared, and a program to administer the antiparasitic medication mebendazole to primary school children put in operation. The capaign did not, however, reach one of the most vulnerable population groups (children under six), and its penetration in rural areas will be limited as much by the raltively lower school attendance rates as by the large number of rural children geographically inaccessible to primary school.

The most active health education campaign in El Salvador has been in family planning. Financial assistance for supplies, video tapes, printed matter, and audio visual equipment are all readily available, and a text has been drafted to be used in the training of midwives. In contrast to the situation of the Health Education Division of the MOH there is good coordination of the activities of this program between the MOH and other organizations working in the rural areas.

In addition to the MOH, there are several other organizations in El Salvador in both public and private sectors which are implementing health education programs of their own. Listed in Chart 1. In addition to these activities, a pilot project in the Eastern region coordinates the development activities of the MOH, MOE, FOCCO, Banco de Fomento Agropecuario, and several international organizations. It appears to be successful and may serve as a model for the coordination of health education activities throughout the country.

Conclusions

Field investigations in El Salvador have revealed a need for health education which is directed to certain problems. Programs must be designed to aid the campesino to understand the cause and effect of diseases, to recognize certain symptoms and understand their importance, to treat illnesses in an appropriate and consistent manner, and to seek treatment on a timely basis.[2] The educational level of the average Salvadorean (2.8 years of scholing for the average woman and 3.5 years for the average man according to oner rural survey)[3] must be taken into account at the same time that recognition is given to the existing basic intelligence and practical ability to deal with a difficult environment. Those traditional strategies of preventive and curative medicine which are beneficial must be identified and reinforced in health education programs while ideally those which are harmful should be replaced by practices which will also have a positive impact on health status.[4]

The social distance which separates health personnel from the communities they serve must be minimized through the training of health personnel in health education techniques and the increased direct involvement of health personnel in their communities.

The resources which are devoted to health education must be increased and their use expanded to reach a greater number of people. The educational television facilities of the MOE, radio and commercial education. Health education programs in health facilities should be scheduled to attract the largest possible audience (men apparently prefer evening sessions while women prefer the afternoon).[5]

Administrative reforms will be necessary if an expanded health education program is to operate effectively. The budget of the Health Education Division of the MOH should be separated from the Administrative Division of the MOH to permit greater freedom of operation. The personnel resources of the Division must be increased and supervisory techniques strengthened if Division personnel are to continue to monitor the program activities in the field.

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[2] Ibid., p. 63

[3] Ibid., p. 21

[4] Ibid., p. 70

[5] Ibid., p. 96

Part II Analysis

D. KEY SUB-SECTORS ANALYZED

4. Nutrition

Recent studies by INCAP, CARS/CDC and others have ranked El Salvador, along with such countries as Haiti and Bangladesh, among the countries most seriously affected by malnutrition. At least 74% of the children under five show signs of protein-calorie malnutrition (PCM) with 22% showing severe PCM, and numerous others suffering from avitaminosis and anemia. When taking into consideration the high infant mortality rate (generally regarded as an indirect indicator of nutritional status in LDC's), it is apparent that there is a serious need to address the nutrition problem which particularly affects the rural areas.

Unfortunately, the obstacles barring progress in this area are diverse and well-entrenched. The average worker, particularly in the rural areas, simply does not earn enough to cover the cost of adequately feeding his family and also pay for housing, clothing and other basic necessities. Although the situation varies some according to the region, 1976 data show that the income of more than half the rural families is less than $80 a month. Further increasing the problem is the high population growth rate (3.3%), the government's inability to effect significant changes in land tenure, and income distribution and the lack of marketing infrastructure to support improved food distribution. These major obstacles compound the traditional problems of low educational level of the poor, cultural barriers to good nutrition such as poor infant feeding patterns, high morbidity rates and inadequate community health services.

To the extent that nutrition is one of the most important determinants of health status of a population, the widespread prevalence of malnutrition in El Salvador demands priority attention in any presentation of a health profile of the poor majority. The severity of the nutritional problem can be ascertained through analysis of three key indicators: dietary intake, biochemical and anthropometric measurements. In El Salvador, each strikingly reveals an essentially precarious nutritional situation for the vast majority of the populace.

a. Dietary Intake

Assessing current dietary intake is difficult since the last consumption data on a national sample was that collected in a 1965 INCAP survey. In addition, dietary data is very difficult to collect and is subject to large errors both in collection and analysis. However, on a population basis it can serve as a qualitative indicator of general dietary patterns and adequacy of intake. Average nutrient consumption in 1965 varied widely between distinct geographic regions of the country but was deficient overall, particularly with regard to calories. The large differential in the actual consumption of calories, protein and other nutrients between areas as shown on Table 1, dramatically demonstrates the greater nutritional risk of the rural populace as compared to the urban cohorts.

TABLE 1

AVERAGE PER CAPITA DAILY NUTRIENT INTAKE IN 1965 AND COMPARISON WITH AVERAGE DAILY REQUIREMENTS

Daily Nutrient Intake[1]	Rural Areas	Percentage of persons surveyed falling below 75% of adequacy.	Urban Areas
Calories	2146.00	20%	2209.00
Total Protein (g)	67.90	12%	69.90
Animal Protein (g)	17.30		28.30
Fat (g)	39.30		69.40
Carbohydrate (g)	396.00		338.00
Calcium (mg)	1092.00		865.00
Phosphorus (mg)	1341.00		1232.00
Iron (mg)	11.60		13.30
Vitamin A (I.U.)	893.00	95%	3050.00
Thiamine (mg)	1.06		0.99
Riboflavin (mg)	0.78	64%	1.08
Niacin (mg)	12.00		12.10
Ascorbic Acid (mg)	36.00		91.00
Daily Nutrient Requirements[2]			
Calories	2341.00		2383.00
Proteins (g)	48.77		50.22

SOURCES: (1) INCAP Nutrition Survey of Central America and Panama, 1965-1967
(2) AID Nutrition Assessment, May, 1977 as calculated by 1971 age/sex composition of population and 1973 FAO/WHO recommendations.

Overall, as noted, the diet of the urban people was more adequate in most nutrients than the diet of the rural people. The differential is particularly important from the standpoint of well-being when coupled with the disproportionate share of morbidity and mortality also concentrated in the rural populace.

Age specific dietary intake data for the one to five years cohort of rural children, the most vulnerable subgroup of the population in health, indicated that similar inadequacies exist. Except for protein, calcium, and thiamine, the average intake of all other essential nutrients especially Vitamin A (72%) was below recommended levels throughout the one to three years age group. These findings were corroborated by a 1976 consumption survey conducted (as outlined in Table 2) by CARS which revealed significant variations in dietary intake between the three principal geographic areas in La Paz Department.

TABLE 2

PERCENT ADEQUACY OF SELECTED NUTRIENTS BY REGIONS FOR AGES 1-4 COMBINED IN LA PAZ DEPARTMENT - 1976

REGION	Number of Children Surveyed	Calories	Protein	Retinol
		Percentage of Recommended Intake Actually Consumed		
Mountains	76	62	113	34
Hills	54	65	121	38
Coast	64	54	96	37
All Regions	194	60	110	36

SOURCE: Preliminary Table from U.S. Public Health Service, Center for Disease Control, Central America Research Station, 1976 La Paz study.

b. Biochemical Measurements

To the extent that biochemical measurements are objective indicators of nutritional well-being, data from the INCAP 1965 survey, the latest for which such information is available (presented in Table 3) again highlight the nutritionally poor condition of a majority of the population.

TABLE 3

BIOCHEMICAL MEASUREMENTS

Parameters	Percentage of Persons Studied with low and deficient test levels.
Plasma albumin	5
Plasma Vitamin A (male)	31
Plasma Vitamin A (female)	14
Urinary Rifoblavin (male)	26
Urinary Rifoblavin (female)	24
Hemogloblin	12
Transferrin saturation	30
Serum folate	49
Serum Vitamin B-12	20
Serum amino acid ratio	6

SOURCE: INCAP Nutrition Survey of Central America and Panama, 1965-1967.

These findings can be largely attributed to the dietary inadequacies of the population combined with the high incidence of infectious and parasitic disease and physiological stress from repeated pregnancy and lactation in women. The net result is the presence of widespread nutritionally-related diseases.

Iron Deficiency Anemia

Analysis of hemoglobin values (general test for anemia) by age and sex reveal that male adolescents had the highest percentage of low levels (42%) followed by pregnant and lactating women (40%). For transferrin saturation, a sensitive indicator of iron deficiency anemia, 60% or more of the pregnant women, 38% of the lactating women, 40% of male children aged one to three years, and 35% of women between 18 and 64 years of age had low values. The high prevalence of iron deficiency anemia in these groups, particularly among the rural people can be directly linked to the low availability of iron in a predominantly cereal-based diet. This dietary deficiency is exacerbated by frequent infections and parasitic infestations. Chronic blood loss in women of child-bearing age and losses through perspiration are also contributing factors.

Protein Deficiency

The total number of children aged zero to nine years estimated to be suffering from protein deficiency in 1965-1967 was 80,000. Prevalence as ascertained solely through clinical signs is substantially lower indicating a significant underestimation of the actual level of protein deficiency in the country. Protein deficiency is particularly serious since it causes the initiation of a vicious cycle of increased vulnerability to disease which in turn raises both protein and calorie deficits, the ultimate impact of which is often death.

Plasma albumin and the amino acid ratio (ratio of non-essential to essential amino acids) are indicators of protein deficiency. The percentage of low and deficient plasma albumin values was 5.9% in the rural and 3.0% in the urban areas. The percentage of children with high amino acid ratios (a ratio above 3.0 indicates protein deficiency) is shown below:

	Age Groups			
	RURAL		URBAN	
	0-4 years	5-9 years	0-4 years	5-9 years
Percentage of Cohort with values > 3	6%	11%	9%	10%

Vitamin A Deficiency

The following table indicates that vitamin A deficiency is unquestionably a serious nutritional problem in El Salvador:

	RURAL		URBAN	
	Percentage of persons with low* measures.	Percentage of persons with deficient ** measures.	Percentage of persons with low* measures.	Percentage of persons with deficient ** measures
Percentage of Serum Vitamin A	21.3	1.4	13.8	1.0

* Low percentage = 10-19mcg/100ml

** Deficient percentage = less than 10 mcg/100ml.

In 1965 the prevalence of Vitamin A deficiency was more than 50% greater in the rural than in the urban areas. Further correlating rural area data with a "low", "medium" and "high" socio-economic group index, the Vitamin A levels were found to have a direct positive relationship with socio-economic level; as income fell so did the Vitamin A level. Deficiencies were concentrated in children under ten years of age and, within this group, were most prevalent in boys.

According to the recent 1976 INCAP Functional Classification of Nutritional Problems, a cross-sectional study of 420 families residing in the three ecological zones of El Salvador, the situation with regard to Vitamin A deficiency has worsened over the past decade. Among a total of 849 children surveyed, aged one to six years, 4.7% had deficient serum Vitamin A levels and 28.6% had low values. The situation among lactating women also was found to have deteriorated with 89.5% of the breast milk samples having less than the 49 mcg/ml of Vitamin A necessary to be adequate for the breastfed child. If the 1976 INCAP data is extrapolated to the total population of rural children aged one to six years (700,000), there are 32,900 children at high risk and 200,200 children at moderate risk of serious Vitamin A deficiency. Although the prevalence of clinical lesions of the eyes, the product of this deficiency, was rare (three cases in 1,934 children examined), it would nevertheless represent 29 cases per 10,000 children of either partial or total blindness.

Riboflavin and Other Vitamin Deficiencies

The prevalence of findings of "low" and "deficient" urinary riboflavin values were much greater in the rural areas(28.1%) than in urban areas (8.7%) corresponding to the differences in intakes reported earlier. The red blood cell riboflavin concentrations confirmed by clinical examination showed 54.7% of the rural people with low and deficient values in contrast to only five percent of the urban people with low values. The INCAP Study indicated that the age-sex groups affected most severely were girls age 7-9 years (55%); boys age 0-3 years (50%); and boys age 13-14 (42%).

The satisfactory urinary excretion values for thiamine and niacin found in the surveyed group reflect adequate intakes of these two B vitamins. Overall plasma ascorbic acid values were also satisfactory although there was a low percentage of acceptable values in the rural areas corresponding to a lower intake of fruits and vegetables.

Iodine Deficiency

Endemic goiter has been a major health problem the primary cause of which is most likely primary or dietary iodine deficiency rather than secondary or conditioned deficiency. The 1965-1967 INCAP Survey revealed the median excretion of iodine in the urine was 22 mcg per person-day, with prevalence rates of goiters of 48% (40% in males and 54% in females) for the country as a whole. Grade II and III goiters (large goiters) were found in eight percent of males and twenty percent of females surveyed; children and adolescents were particularly affected with prevalences of between 60 and 67% with rates decreasing rapidly in men to about 20% at age 40, but remaining fairly constant in women at about 60%.

In an attempt to redress this problem, legislation for the iodization of all salt for human consumption was adopted in 1961 and formally implemented in 1967. According to law all salt used for human consumption was to contain 6.7 - 10 mg of iodine per kilogram of salt. A joint study by INCAP and the Nutrition Division of the Ministry of Health conducted in 1973 showed a decrease in the prevalence of goiters of 50%; consequently the required amount of iodine for fortification of salt was lowered to 3.4 - 5 mg/kg. of salt. A resurvey of the prevalence of goiter should be undertaken within a few years to assess whether the current level of fortification is adequately meeting needs.

c. Anthropometric Measurements

Anthropometric comparisons as measurements of growth in preschool children are principal indicators of nutritional status; particularly of protein-calorie adequacy. Recent, 1976 data, for 7,000 children age 6-59 months exist from two major studies: 1) The INCAP Functional Classification, conducted from May to August 1976, which provided the majority of the current data; and 2) a subset of the INCAP study collected by the CDC-CARS research station in La Paz Department over the Janury-February 1976 period. When compared to an earlier 1965 INCAP Nutritional Survey, the 1976 data provide a basis for analysis of trends

in nutritional status. As highlighted below, only marginal improvements have occurred over the 11 year period. In addition, with large increases in population the actual number of children with protein-calorie (PCM) malnutrition has increased rather than decreased. INCAP estimated that in 1976 close to 156,000 Salvadoreun children from six months to five years of age, suffered from acute malnutrition, while an additional 371,000 suffered from a chronic lack of food.

Height for Age

The height for age measure which reflects relatively long term nutrient intake is commonly used as an indicator of chronic malnutrition. A definite improvement from 1965 to 1976 in the prevalence of chronic malnutrition in children under five years of age is noted below. Inspite of this improvement 74% of the children are still chronically malnourished.

Survey Year	No. of Children Surveyed	Percentage of Standard Height Achieved for Given Age		
		95% and over	94%-85%	Less than 85%
1965	505	19.0	65.5	15.4
1976	787	26.9	64.0	9.0

Weight for Age

Weight for age measurements are sensitive to short-term acute changes in nutritional status as well as to long term deficiencies. Because of their high sensitivity as a precursor of severe malnutrition, they are particularly useful for identifying high risk children for whom specific interventions must be targeted.

As revealed in the Gomez measure, which ranks nutritional status by comparing the child's weight for age with a standard, some improvement over the 11 year period is apparent. Nevertheless, the fact that in 1976 three out of four children were malnourished with one out of five suffering severe second or third degree malnutrition dramatically highlights the severity of protein-calorie malnutrition.

Survey Year	No. of children Surveyed	Percentage of Children Falling into Specific Weight/Age Groups according to the Gomez Scale.			
		Normal	First Degree Malnutrition	Second Degree 1/Malnutrition	Third Degree 2/Malnutrition
1965	523	21.8	50.5	24.5	3.2
1976	787	25.6	52.3	19.8	2.3

1/ 75-89% of standard weight for age
2/ 60-74% of normal weight for age
3/ Below 60% of standard.

The definite, although slight improvement in the prevalence of third degree malnutrition is noteworthy from a health resource standpoint since these seriously undernourished children usually require hospitalization for treatment. Differences in degrees of malnourishement between children in urban communities of less than 10,000 and rural communites were found to be insignificant.

Weight for Height

Weight for height measurements are particularly useful in assessing the prevalence of acute malnutrition since they are not biased by age and provide a good picture of proportional growth. They are, however, strongly influenced by short term changes in diet and disease states particularly diarrhea and vomiting and thus demonstrate the effect of the vicious cycle between morbidity and malnutrition on the growth of preschool children.

Survey Year	No. of Children Surveyed	Percentage of Standard Weight for Height			
		100 & more	99-90%	89-80%	Less than 80%
1965	505	40.4	42.8	13.7	3.2
1976	787	23.4	49.8	24.1	2.7

As shown above there has not been an improvement in this measure particularly when the groups 89-80% and less than 80% are considered together.

This finding is in contradiction to the statistically significant improvement in height for age and the minor, although not significant, improvement in weight for age.

The 1976 INCAP survey reflects the prevalence of malnutrition as measured by weight for height at the time of the study May to August. Supplementary data collected by CDC-CARS, through analysis of the 1975-1976 La Paz clinic records of approximately 350 children, highlight important seasonal variations in the incidence of malnutrition as determined by weight for height. This variation closely follows the pattern of diarrheal disease which peaks in May, June and July, months coinciding with the INCAP study. Less seasonal variation in rates of malnutrition was demonstrated by the other two anthropometric measures--height for age and weight for age. Thus the contradiction may be due to a continuing high incidence of diarrheal disease and acute malnutrition caused by the combination of marginal food resources and diarrheal disease while there has been some improvement in the overall chronic malnutrition as reflected in height for age data. The weight for age data is influenced by both chronic and acute malnutrition and would therefore be expected to show unclear or insignificant improvement.

Although the INCAP data reflect average nutritional status for the country as a whole, important regional variations occur in the data when further disaggregated (Table 4). To provide a more viable basis for nutritional analysis, INCAP in 1976 developed a functional classification scheme which divides the country into five major socio-economic areas based on differences in the agricultural patterns as defined in Chart 1. In summary, given data limitations for comparative analysis as noted in Table 4, the study indicated that serious malnutrition occurs with the highest frequency in marginal agricultural areas and in the coffee regions.

National data was disaggregated into Departments to identify more precisely the geographic location of the most seriously malnourished children. As indicated in Table 5 those Departments in predominantly marginal agricultural regions had the highest rates of malnutrition. However, it is important to note that due to overlapping of some Departments into several of the functional classifications established by INCAP, the definite association between ecological zone and malnutrition is somewhat obscured by this further disaggregation.

d. Summary

The principal nutritional problem in the country is a lack of calories with at least 20% of the entire population showing deficient intakes and 74% of the preschool children suffering marginal to severe deficiencies of both calories and protein. These lacks are caused primarily by poor economic conditions resulting in insufficient food at the family level. The negative effect of inadequate or marginal consumption of food is compounded by poor sanitary and living conditions which cause a high incidence of disease, increasing both calorie and protein requirements and losses.

Deficiencies of vitamin A and riboflavin are the next most important nutritional problems closely followed by anemias caused by iron and folate deficiencies. These deficiencies are demostrated by both inadequate dietary

TABLE 4

NUTRITIONAL STATUS - EL SALVADOR

INCAP Functional Classification Region	Percent of Standard Weight for Height			
	>100%	90-100%	80-90%	<80%
Northern Marginal	28.7	45.8	22.9	2.6
Central Marginal	34.6	44.3	18.8	2.3
Urban Slums	37.0	46.3	15.3	1.3
Coffee	41.9	43.2	12.8	2.1
Intensive	51.0	36.8	11.0	1.1
INCAP Functional Classification Region	**Percent of Standard Height for Age**			
	>95%	90-95%	85-90%	<85%
Northern Marginal	23.5	36.8	28.8	10.8
Central Marginal	16.9	36.8	30.8	15.4
Urban Slums	29.7	37.0	23.9	9.5
Coffee	16.5	31.6	31.8	20.0
Intensive	26.0	40.4	23.6	9.9
INCAP Functional Classification Region	**Percent of Standard Weight for Age**			
	>90%	75-90%	60-75%	<60%
Northern Marginal	23.5	53.8	21.0	1.7
Central Marginal	24.2	59.8	22.5	2.4
Urban Slums	33.6	51.1	14.0	1.3
Coffee	23.1	54.3	20.4	2.2
Intensive	37.1	48.8	12.5	1.5

SOURCE: Preliminary results from INCAP Functional Classification Survey, 1976.

NOTE: Due to seasonal variations in rates of malnutrition, as discussed, data from the intensive region cannot be compared with that of the other four regions since it was collected in a different season.

CHART 1

CRITERIA FOR FUNCTIONAL CLASSIFICATION OF AGRICULTURAL AREAS

Urban region:	27.3% of the total population. Includes any Canton or center with 10,000 persons or more reported in the 1976 malaria population census.
Coffee region:	12.6% of the total population. Includes municipios where at least 1/3 of total land was used for coffee or where 2/3 of the land was used and the percentage of land for coffee exceeded the percentage used for other cash crops.
Intensive region:	15% of the total population. Includes municipios where at least 1/3 of the total land was used for other cash crops (cane, cotton, etc.) or where more than 2/3 of the total land was used and the percentage of land utilized for other cash crops exceeds the percentage used for coffee.
Marginal region:	45.0% of the total population. Included municipios where less than 2/3 of the land was used for agriculture except those cases where 1/3 or more of the land was utilized for either coffee or other cash crops. The marginal region was further divided into a northern and central marginal region for some analyses.

Table 5

Nutritional Status: Percent by Department

Department	Percent of Standard Weight for Age				Percent of Standard Weight for Height		Percent of Standard Height for Age			
	>90	90-75	75-60	<60	>90	<90	>95	90-95	85-90	<85
Ahuachapan	25.2	52.7	20.5	[illegible]	79.5	20.5	18.1	35.2	30.4	16.[illegible]
Santa Ana	28.1	52.6	17.5	1.75	82.9	16.9	23.2	34.7	27.8	14.[illegible]
Sonsonate	29.2	52	17	1.7	82.8	17	23.1	35.8	27.4	13.6
Chalatenango	23.6	52.8	21.5	2	76.4	23.5	23.5	36.8	28.8	10.8
La Libertad	27.2	52.2	18.6	1.85	80.9	18.9	20.6	36	28.6	14.5
San Salvador	31.4	51.5	15.6	1.5	82.1	17.7	27	36.6	25.4	11
Cuscatlan	25.3	52.5	20.3	1.9	77.6	22.3	18.9	36.9	29.7	14.5
La Paz	31.1	50.5	16.2	1.67	83.2	16.7	22.6	38.5	26.5	12.3
Cabanas	23.6	52.8	21.5	2	76.4	23.5	23.5	36.8	28.8	10.8
San Vicente	25.6	52.4	20.1	1.87	78	21.8	19	36.8	29.6	14.5
Usulutan	31	51	16.1	1.78	84.3	15.5	22.4	37.4	26.8	13.1
San Miguel	28.9	51.4	17.6	1.86	82.1	17.7	20.5	37.2	28	14
Morazan	25.7	52.2	20.1	1.95	78	21.8	23.8	37.3	28	11
La Union	24.6	52.4	20.8	1.95	76.9	22.9	18.3	36.8	30	14.7
TOTAL	26.4	52	19.3	1.8	83.84	16.1	23.4	36.6	27.45	12.54

Source: Taken from preliminary results of INCAP Functional Classification Study - 1976. These values were calculated taking into account the portion in each classification by Department. Published in U.S. Agency for International Development, Office of Nutrition, Nutrition Assessment Report for El Salvador (a consultant report by Community Systems Foundation), p. 37, figure 4. Washington, D.C.: n.p., 1 May 1977.

intakes and biochemical measurements. When severe, these inadequacies result in blindness (Vitamin A) and general debility affecting a person's capacity to work, his mental state and general health. Iodine deficiencies resulting in goiter, still exist despite significant improvements accomplished through the iodization of salt.

The highest incidence of nutritional problems occur in the marginal agricultural regions, characterized by subsistance farm families, and in the coffee growing regions. The problems, however, are generally widespread throughout the country, and no region is free from high levels of severe malnutrition.

e. GOES Response to Nutrition Problem to Date

Prior to 1976 nutrition interventions were generally limited to those under the direction of the Ministry of Health, emphasizing Maternal Child Health. Rehabilitation of malnourished children and Title II food distribution in cooperation with Catholic Relief Services (CRS) and CARITAS have been the most important programs. In addition, some initial attempts at nutrition education have been made through health centers and in cooperation with home educators in the Agricultural Extension Division. Other related MOH activities have included training of food service personnel for hospital and institutional facilities, vaccination campaigns, disease control and sanitation improvement programs.

In addition, two nutritionally related food for work projects, one in community development and the other in promotion of basic grains production, are being implemented through cooperation between the World Food Program and the Ministries of Interior and Agriculture respectively.

Although the treatment of malnutrition is within its jurisdiction the MOH could not be expected to control, as no single state agency could, the major causes of the country's food and nutritional problems. Attempts were made in the early 1970's to create a national food and nutrition planning unit but these met with little success.

Early in 1976, however, a former Minister of Health with more than thirty years experience in the nutrition field in El Salvador became nutrition advisor to the Minister of Planning and began drafting a multisectoral National Food and Nutrition Plan with the help of a Nutrition Planner from the New Transcentury Foundation. In March 1977, a Nutrition Unit was formed in the Ministry of Planning, and the first task of the Unit was the development of the First National Food and Nutrition Seminar held in September 1977. From this multisectoral seminar and prior work by the Nutrition Unit, a National Food and Nutrition Program was developed which was incorporated into the Five Year Plan (19780-1982). The Program emphasizes the following target areas:

a. Increasing availability of basic foods for internal consumption;
b. Commercialization of basic foods;
c. Industrialization of enriched tortilla flour;
d. Food and nutrition education;

e. Health programs affecting food and nutrition;
f. Assistance through direct feeding programs.

A mutisectoral executive committee and coordinating office for the National Food and Nutrition Program have been established in the Ministry of Planning. These bodies will be responsible for execution of the National Program, planning and coordination of effective food and nutrition interventions and making recommendations on program policy and proposed legislation affecting the country's food availability and nutritional status.

Part II Analysis

D. KEY SUB-SECTOR ANALYSES

5. Family Planning

a. Background

El Salvador is a country in the midst of demographic transition: it has achieved the low mortality rates characteristic of a modernizing country while still maintaining traditionally high natural birth rates. During the second half of this century the crude death rate has declined dramatically, but the crude birth rate has undergone little change. This difference has led to El Salvador's "population explosion."

Whereas in 1930 the population of the country was 1,856,000, by mid 1977 an estimated 4.5 1/ million people were occupying the 8,260 square miles of land of El Salvador, already making it one of the most densely populated countries in the Western Hemisphere with 531 persons per square mile.

It is predicted that at the current rate of natural growth (estimated at 3.3% in 1977) the population of El Salvador will double by the year 2000, meaning that 8.8 million people will be crowded into this already overcrowded country.

Emigration stimulated by population pressure has become an increasingly important factor influencing the relations of El Salvador with other nations, particularly with Honduras, with the United States and, to a lesser degree, with the other nations of Central America. A recent study 2/ commissioned by the Interamerican Development Bank, comments that tremendous population growth is severely testing the political, social and economic order in Central America, especially in El Salvador, which presently has little idle land and where erosion, soil exhaustion, and current agricultural practices are diminishing the prospects of improved production yields.

Realizing that efforts to improve the socio-economic conditions of the country are hampered by the high population growth rate, the GOES has launched an aggressive policy of population control and since 1966 has spent $7,372,000 to pursue this end; about 70% of this money has been committed since 1974. USAID/El Salvador supports the GOES efforts to design and implement programs that will result in a rapid decline of the population growth rate. Between 1966 and the present, USAID/El Salvador has contributed $5,600,000 in bilateral funding to the family planning program to assist the GOES and selected private organizations in delivering services and in dramatizing the adverse effects of rapid population growth on social and economic development.

1/ Ministry of Health Annual Report, 1977

2/ Robert W. Fox and Jerrold W. Hugget, Demographic Growth in Central America, IDB Report, Washington, D.C. 1977

Although data indicate a decrease in the crude birth rate from a high of 48.7 in the 1960-1964 period to 40.2 in 1976, which can be attributed in great part to the family planning program, the decline becomes less significant when two other factors are taken into account. The first of these is the previously mentioned decline in the mortality rate from 15.0 in the earlier period to an officially estimated 7.8 today. Second is the fact that due to the increasing number of women in the reproductive age groups -- a trend which will continue given the nearly half of the population is under 15 years of age -- the absolute number of births each year is increasing.

Thus, unless there is a substantial decline in the total fertility rate, (the number of children per fertile-age woman at completion of child bearing) from an estimated 5.9 - 6.1 in the 1970-1972 period, a higher crude birth rate and thus an accelerating rate of population growth can be expected.

b. Present Program

In 1974 the GOES announced an Integrated Population Policy, one of the eight goals of which was "to modify the population dynamic." The program was assigned for implementation to the GOES National Population Commission which until very recently was located in the Ministry of Planning.

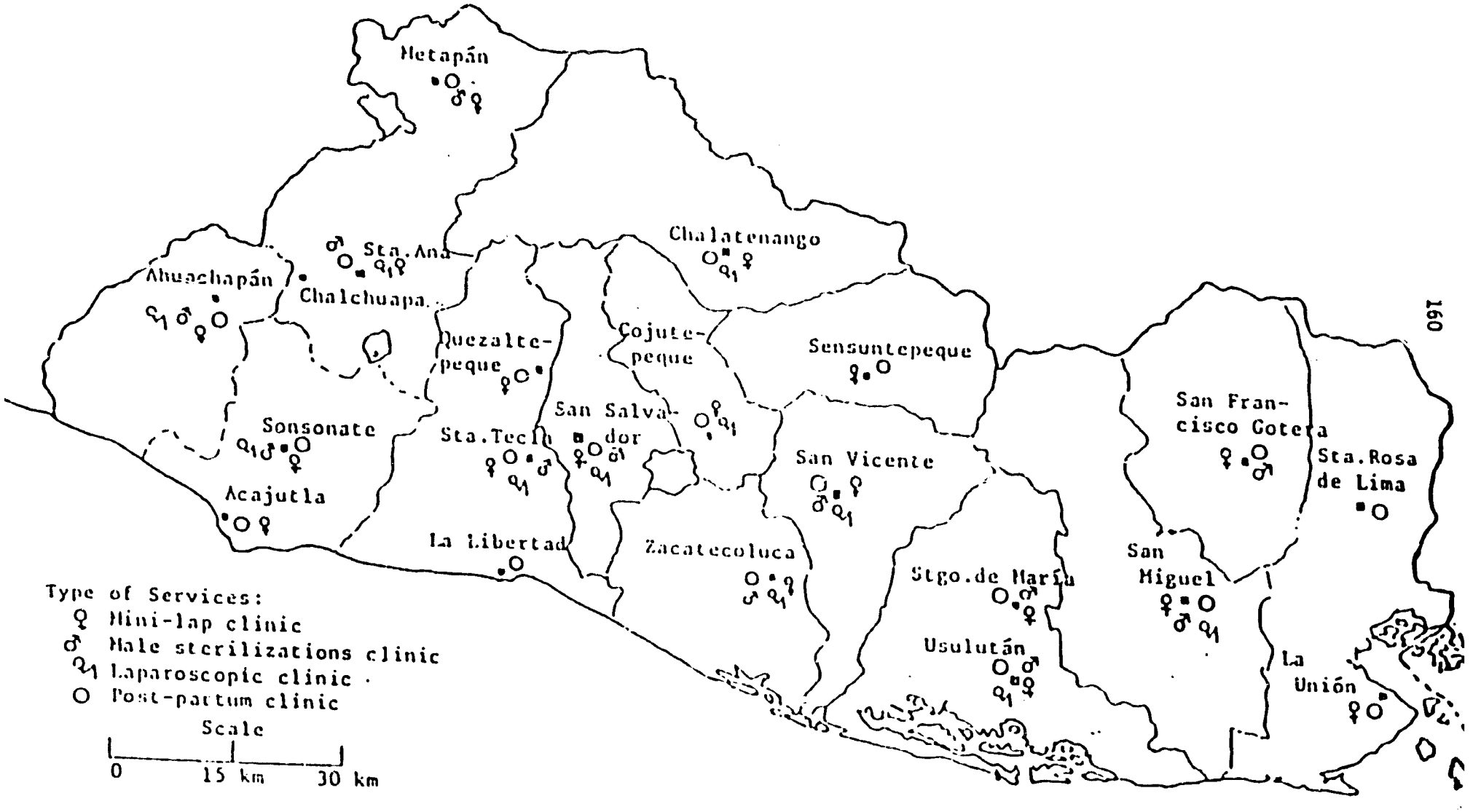
In late 1977 the Commission was transferred to the Ministry of the Presidency, which is directed by the Vice-President. The executing arm of the Commission is the Population Technical Committee on which is represented the Ministry of Planning as well as the three service institutions in the official family planning program, the Ministry of Health, the Social Security Institute (ISSS) and the Salvadorean Demographic Association. The Commission is taking an increasingly active role in coordinating the family planning programs of the three institutions and has the potential of providing technical advice to the Government on a variety of policies that could affect the demographic situation.

To review briefly the history of the program, from 1963 to 1968, all public family Planning services were provided by the SDA. The MOH began active participation in the program in 1969 and by 1971 was offering family planning services in all five health regions. By mid-1977, 90% of the MOH's 231 facilities were providing such services. Since the MOH has primary responsibility for delivery of health services to rural areas and 80% of the total population expects health care from this service, it is considered to be the most important agency for the delivery of family planning services.

The ISSS, which serves approximately 5% of the population, has 34 well-equipped clinics and hospitals and focuses on groups such as factory workers and school teachers in urban areas and medium-sized regional towns.

MAP 1

LOCATION OF STERILIZATION CLINICS
(by December 1977)



EL SALVADOR, CENTRAL AMERICA

With the increasing involvement of the MOH and the ISSS in family planning activities, the SDA, the Salvadorean affiliate of the IPPF, has substantially reduced its clinical services in family planning. Although it still maintains three clinics, SDA now concentrates on training and research and evaluation activities while providing the public with family planning information through the mass media. A major campaign will shortly be launched by the SDA to increase the use of condoms and oral contraceptives by the rural populace through the subsidized sale of these items to distributors and commercial outlets. Financing, technical assistance, and publicity are provided to SDA for the activity by an AID contractor, Development Associates, Inc.

A system of sterilization clinics widely dispersed throughout the country (See Map 1) has been created, equipped, staffed by physicians and paramedical personnel, trained with assistance from international organizations and central AID funding. All three of the public sector service institutions have instituted procedures to ensure informed and voluntary consent for the operation, which is available to any man or woman within very liberal guidelines as to spousal consent, number of children, and age.

Whereas the private sector (pharmacies and private physicians) was estimated in 1975 to be source of services for approximately one-fifth of all active users, analysis of the results of the fertility survey conducted in November 1976 as a part of the National Manpower Survey, as well as a contraceptive prevalence survey to be conducted in July 1978, is likely to show an increase in contraceptive use from this source.

c. Government Plans and Objectives

The goals set by the GOES Health Sector for the 5 year period, 1977-1982, are found in Table 1. By 1982 the GOES estimates that 29% of the women of fertile age (15-44 years) will be active users of effective contraceptive methods obtained from the public sector.

To achieve these goals, these three agencies, under the overall program direction provided by the National Population Commission, are engaged in a coordination program to promote family planning information and services through mass media campaigns, a commercialization program, a variety of training programs, and coordinated development efforts in other sectors such as education and women's development. Training programs for physicians, especially in sterilization techniques are carried out by all three institutions, while the MOH and ISSS train graduate and auxiliary nurses as well. Training of outreach workers such as malaria collaborators, village midwives, and rural health aides is carried out under the direction of the Ministry of Health, while the Salvadorean Demographic Association has collaborated in sponsoring seminars on population and family planning for leaders, agricultural extension agents and home economists, campesinos, and others. Responsibility for the commercialization and the mass media publicity campaign has been assigned to the SDA.

TABLE I

FAMILY PLANNING GOALS FOR THE HEALTH SECTOR

	ACTIVES						
	1976	1977	1978	1979	1980	1981	1982
Female Population 15-44 years old	874,713	906,343	936,342	975,712	1,009,452	1,046,562	1,085,043
% Active Coverage	13.08	15.04	17.72	20.58	23.21	26.76	29.24
ACTIVE USERS (ALL METHODS)							
Ministry of Health	92,659	109,918	134,411	163,398	195,160	228,295	258,444
I.S.S.S.	10,982	13,312	16,093	19,349	23,227	28,139	32,422
A. D. S.	10,763	13,047	15,457	18,048	20,857	23,620	26,404
HEALTH SECTOR TOTAL	114,404*	136,277*	165,961*	200,765*	239,244*	280,054*	317,270*
PERCENTAGE OF USERS OF EACH METHOD							
I U D	15.23	15.58	16.51	17.54	18.62	19.40	19.31
ORAL CONTRACEPTIVES	50.33	48.80	46.58	45.33	43.41	42.23	41.41
OTHERS	7.65	6.90	6.77	6.93	7.22	7.62	8.28
STERILIZATION (FEMALE)	25.53	25.32	27.22	27.60	28.32	28.44	28.64
STERILIZATION (MALE)	1.26	3.42	2.92	2.61	2.44	2.32	2.36

* Total does not include women who seek contraception services from the private sector, i.e., family doctors, pharmacies, etc.

SOURCE: Ministerio de Salud Pública, Instituto Salvadoreña del Seguro Social, y Asociación Demográfica Salvadoreña, "Programa para la Implementación de la Política Integral de Población" Enero 1977, p.33.

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TABLE 2

New Admissions by Year and Method of Contraception
El Salvador: 1966-1976
(in thousands)

Year	Method of Contraception[1]				
	IUD	Orals	Sterilizations[2]	Other	Total
1966	4.8	1.2	-	0.1	6.1
1967	8.2	2.0	-	0.1	10.3
1968	7.6	6.6	-	0.1	14.4
1969	6.1	19.1	-	0.4	25.7
1970	4.1	24.2	-	0.6	29.0
1971	5.0	29.6	-	1.5	36.1
1972	7.4	26.9	0.4	2.1	36.8
1973	6.8	19.5	4.6	0.9	31.7
1974	7.6	24.3	5.7	3.7	41.3
1975	6.7	22.0	12.3	2.1	43.1
1976[3]	8.2	24.9	14.3	4.1	51.5

[1]Numbers for each method do not always add to country total because of rounding
[2]Sterilizations not reported until late 1972
[3]Preliminary data

TABLE 3

ESTIMATED NUMBER OF PREGNANCIES AVOIDED AMONG ACTIVE CONTRACEPTIVE USERS BY AGE OF USER AND EXPECTED METHOD OF TERMINATION 1975

AGE	LIVE BIRTHS (1)	STILL BIRTHS	ABORTIONS	TOTAL
15-19	483	5	52	540
20-24	4,092	34	338	4,464
25-29	8,482	54	772	9,308
30-34	7,167	76	618	7,861
35-39	4,213	44	372	4,629
40-44	856	8	92	3,956
45-49	136	2	21	159
TOTAL	25,429	223	2,265	27,917

Sources and Methods of Computation: The results were obtained assuming that active contraceptive users have zero pregnancy rate. Number of users from FESAL-75.

Life birth rates and still birth rates estimated from data in Anuario Estadistico, 1973.

Abortion rates estimated from data in Montreal T. etc., Review of Hospitalized Abortion Data, El Salvador. Tables 9, 10 and 26, U.S. Department of Health, Education and Welfare, September, 1975, (mimeo).

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TABLE 4

DEATHS AVOIDED AS A CONSEQUENCE OF FAMILY PLANNING SERVICES 1975

Death Rate per 100,000 Live Births [1]	89.3
Number of Live Births [2]	25,429
Number of Deaths Avoided	23

Sources:
1 CDC Report, October 25, 1977, L. Morris; preliminary figure.
2 Live Births, Table 3

TABLE 5

COMPARISON OF HOSPITAL DAYS USED AND HOSPITAL DAYS AVOIDED BY CONTRACEPTION IN MOH AND ISSS
1975

Number of days avoided	33,496
Number of days used	1,548,252
Percent avoided of used	2.16

SOURCE: For MOH, estimates from data Anuario Estadístico, 1973, Page 240, and MOH Memoria, 1975-76, Page 23
For ISSS Estadísticas, 1975, Page 25

Although the program has been only somewhat successful in promoting modern non-permanent means of contraception, there has been much greater acceptance of surgical contraception, reflecting the fact that women are focusing on termination of childbearing rather than on child spacing. In fact, sterilization is the predominant method chosen to limit family size. As of mid-1977, 79,401 voluntary sterilizations had been performed (including approximately 4,000 male sterilizations), an increase of more than 26,000 in less than two years. This total constitutes nearly 52% of all Family Planning acceptors.

While in terms of demographic impact, the emphasis on sterilization is correct, especially if women are encouraged to seek it early in the reproductive years, the potential health impact of family planning is greatly reduced if the woman is having children too rapidly and, thus, too close together, or if she waits until her fourth, fifth or sixth child to seek help.

e. Target Group Identification

Emphasis to data has focused on women between the ages of 20 to 30, the optimum time for a woman to bear children. Indeed, a very high proportion (70.5%) of birth were to women up to 30 years of age. However, a large proportion (65.1%) of program resources have been used among low fertility women, i.e. those 30 years and older. This distribution is, in part, the result of the high proportion (44%) of sterilizations of the total case load in 1975 (55,100 of the 124,000 contraceptive users), and the fact that this procedure is most attractive to higher parity older women.

A strong case can be argued that other subgroups of the population have not been targeted by the program to receive the special attention that they merit. This is particularly true, for instance, of women less than 19 years of age. They are physiologically too young to withstand the vigorous demands of pregnancy. Many young rural women find themselves playing the mother role at a very early age: among non-single women, the largest proportion of pregnancies was found in the 15-19 age group. However, 44% of this group who were not pregnant did not want any more children, and for women 20-29, the proportion not wanting additional children increased to 60%.

The detrimental impact of adolescent fertility upon the health and nutritional status of women and their children has yet to be studied in the El Salvador context; yet the effects of early pregnancy are almost certainly negative. At any rate the fear of pregnancy and/or the desire not to have a child is indicated by the fact that in 1975, abortion surpassed sterilization as the most utilized method of contraception; there were 8,000 cases reported by the hospitals and an estimated 15-20,000 unreported cases in comparison to 15,000 sterilizations. The highest number of abortions (27%) were performed on rural married women of low educational level, many of whom were young.

Another group to whom attention has been lacking is that of rural men. Their active support and/or participation has been shown to be essential in the Salvadorean setting where rural women are unlikely to use effective means of contraception without obtaining their permission.

Rural areas are characterized by the highest birth rates and the lowest prevalence of contraceptive use in El Salvador; they are also home for 60% of the population. Unfortunately, reaching the rural poor with family planning has been difficult and demand for its services low. Rural areas are essentially non-modern if judged by the traditional socio-economic indicators: low educational level and attendant low literacy rate, lack of potable water and facilities for sewage disposal, poor access to and low utilization of modern health facilities, and difficulty of access to electricity and modern communications systems. Partly as a result of these conditions, family planning does not rank high on the scale of "felt needs" of the rural poor; and some theorists maintian that before it can become one, living conditions must be improved. In addition, family planning methods are often perceived either as health hazards or simply as procedures to terminate fertility. Finally, there is little comprehension of the temporary nature of most family planning methods.

RECOMMENDATIONS

1. The mass media should be utilized to inform and educate the public, especially concentrating on reaching men and young women between 15 and 29, and people living in rural areas. Messages on radio and television and in movie theaters aimed at the level of understanding of rural audiences should challenge the tradition of early and multiple pregnancies and educate on the consequences of such pregnancies.

2. The impersonal messages of the mass media should be reinforced by personal contacts with the agents of rural change, such as the rural health aides, sanitation inspectors, and agricultural home economists, who are involved in development programs that stimulate the hopes and ambitions of the participants for improved living conditions and who can motivate people toward family planning. Special emphasis should be placed on the idea that family planning services are a means to space children and to reduce family size rather than just the means to terminate fertility, a belief held by many people.

3. Supplies of temporary contraceptives that are trusted by the users, are within their economic means, and can be obtained from known and personally familiar sources, must be made available. The potential effect of selling condoms and oral contraceptives at subsidized prices through pharmacies and small shops is obvious, as is the potential of anonymous, coin-operated machines dispensing condoms at low cost.

4. The general use of oral contraceptives should be promoted. In the more industrialized countries, where exacerbating factors such as smoking and obesity are much more prevalent than in El Salvador, the observed fatality rate from use of oral contraceptives is 20 per 100,000 users. For women under 35, the group for whom pill use is recommended, the rate drops to 5 per 100,000. Considering that the maternity mortality rate in El Salvador is at least 39.3 per 100,000 live births, it would seem that giving birth is considerably more dangerous than taking the pill and that the MCH should be encouraged to distribute liberally oral contraceptives, even without other supportive actions such as testing for cancer or general physical examinations.

5. Injectable contraceptives should be more widely tested in El Salvador. The high discontinuation rate of oral contraceptive use and the continuing, low demand for utilization of condoms, combined with the psychological drawbacks of sterilization, indicate that less conventional contraceptive methods should be tried. Given the cultural acceptability in El Salvador of the concept of injections, more projects such as those being conducted by SDA with young women on cotton and coffee plantations should be undertaken utilizing medically proven injectable contraceptives.

PART II ANALYSES

E. GOES COMMITMENT TO HEALTH

1. The GOES Five Year Development Plan 1978-1982

The GOES Development Plan for 1978-1982 is entitled "Bienestar para Todos" or Wellbeing for Everyone. While its objectives emphasize social development, it is, in terms of investment, heavily weighted toward the productive sector (42.9%) and infrastructure development (40.4%) rather than social development (11.4%) or public administration (4.9%). Health investment over the plan period is budgeted at 4.9%, a slight decrease from that in the earlier plan (5.2%) reflecting completion of the largest proportion of the health infrastructure expansion under the IDB loan, discussed in Part III, Other Donors. Investment in the Health Sector over the Plan period totals 237.4 million colones as shown below or almost $95 million dollars.

INVESTMENT PROJECTS IN THE HEALTH SECTOR - 1978-1982

(In millions of colones in 1975)

PROJECT	COST
Posts, units, clinics and hospitals	163.5
expansion of health facilities	31.5
Potable water in the rural zones	36.0
Other projects	6.4
TOTAL	237.4

SOURCE: Ministry of Planning.

A more accurate assessment of GOES commitment to health under the Plan can be gained by examining activities proposed for the Sector. Such a review indicates that of the Plan's 52 Strategic Programs (unranked), six are directly related to the Health Sector while another eleven are indirectly related. The six include:

The National Integrated Population Program
The National Food and Nutrition Program
Environmental Sanitation
Mental Health, including Alcoholism

Modernization and Extension of Coverage of Health Facilities and Services.
Occupational Health and Hygiene

The eleven programs with less direct but important relationships to the Sector include:

Integrated Development of the Northern Zone
Production of Basic Grains
Improved Use of Water Resources
Adult Education
Extension and Modernization of Social Security
Promotion and Support of the Family and Youth
Employment Program for Low Income Families
Rural Housing
Urban Housing
Science and Technology
International Technical Cooperation.

Four of the six Strategic Areas discussed below are particularly relevant for the AID Health Sector Strategy.

First among these is the GOES effort to Modernize and Extend the Coverage of Health Facilities and Health Services which embodies the Rural Penetration Program. The Rural Penetration Program, which is the nucleus of the GOES's attempt "to bring health services within the reach of all inhabitants of the country in a continuing and efficient form to reduce morbidity and mortality of the population" is being implemented through the Rural Health Aide activity as well as programs to train rural midwives and female health care workers.

The GOES commitment in water supply and waste disposal is embodied in the Environmental Sanitation Program. Nonetheless the table on the previous page reflects the relatively lower priority accorded to environmental area in terms of investment than to the expansion of health facilities.

The Plan's Strategic Program in Population moves beyond previous GOES policy statements in this area by citing a demographic goal, i.e., to reduce the natural rate of population increase from 3.3 to 2.97 by 1982, rather than merely contraceptive prevalence targets. To that end the program includes activities in family planning, population education, migration and massive communication, but does not address the need for programs or policies in other sectors that could affect or influence fertility.

Finally, the GOES strategic program in Food and Nutrition, represents a major upgrading of GOES activities based on a multisectoral approach to improve nutritional status. Activities include nutrition education, health programs designed to result in improved use of food consumed, and food production, distribution and supplementation measures.

Whereas the Plan seeks to address the broad needs in the health sector, it does not, in the end, provide a clear listing of priorities to be followed in allocating resources to them. It does, however, provide a framework against which an AID strategy can be developed.

E. GOES COMMITMENT TO HEALTH

2. GOES FINANCIAL RESOURCES

The GOES commitment to the Health Sector as evidenced solely by the budget of the Ministry of Health is impressive. Its 1978 allocation of US$59.5 million represents 11.9% of the total general GOES budget, a proportion which exceeds that of most other Latin American countries. Assuming a population coverage of 3.8 million or 85% of the total Salvadorean population, the per capita expenditure by the MOH alone is US$16, three times as high as that of Nicaragua.

Moreover, the Budget of the Ministry of Health has increased significantly over the 1965 to 1977 period. While in current prices the total appropriation was augmented to almost 5.2 times the 1965 level, the assigned budget has increased more than 178% over the interim period discounting for inflation (See Tables 1-3 at the end of this Section).

The most notable gain has been in the area of investment expenditures. This substantial growth in appropriations reflects the Goverment's strong commitment to expansion of the physical infrastructure of the national health delivery system over the past two planning periods. The high level of investment was further supported by substantial external funding through loans. In 1965 AID signed a US$700,000 loan with the Government of El Salvador for the building of rural health units and posts. The German Government signed a US$2.8 million loan in 1966 for construction of three major hospitals in the cities of Zacatecoluca, Usulután, and Chalatenango. The major external financing to the sector, however, has been that provided by the US $15 million loan for extension of the health services network by the Interamerican Development Bank.

The GOES-MOH budget approved for 1978 contains appropriation increases amounting to US$8.2 million or 16.0% over the 1977 budgetary level. The major increases will be in the operating budget expenditures; capital investment will actually decrease from the 1977 level as the major portion of the physical facilities constructed under the initial phase of the Rural Penetration Program to extend the health system to unserved rural residents draws to completion.

Regional distribution of GOES financial resources is skewed towards the metropolitan area of San Salvador, although less so than in the past (See Table 4). Although the pattern is logical in view of the fact that the majority of patients from all parts of the country seem to prefer to seek services in the capital, it essentially perpetuates the imbalance in resource distribution by not permitting necessary improvements of rural services to make them more attractive to the rural populace.

More than one third of the Ministry's budget is allocated for coordination and financing of official autonomous institutions. These include the nation's fourteen hospitals, the Red Cross, the Consejo Superior de Salud and the Institute for Rehabilitation to the Disabled. (See Table 5). For each the Government continues to be the major source of financing, contributing US$20.2 million through direct transfer payments from the Ministry of Health. This substantial transfer significantly reduces actual monies available to the Ministry for its own programs. Further, despite the fact that disbursements of these transfer payments are accountable to the MOH, the autonomous hospitals are lax in fulfilling this obligation. General financial control by the Ministry is weak, resulting in inefficient expenditure of a large part of these funds. (See Health Infrastructure Part II C.)

Outside of transfers to autonomous institutions (34%), the balance of the MOH's budget is alloted to salaries (18%) and purchases of machinery and equipment (6.8%), or together more than half of the Ministry's total expenditure. (See Table 6)

On a programmatic basis, including the substantial transfers noted above, the budgeted expenditures highlight the Ministry's priorities over 1978. (See Table 7). Extension of the health system accounts for 14% expenditures, exceeded only by expenditures on administration and health services delivery. Furthermore, such large investments in the physical infrastructure of the health system have been consistent throughout the 1973-77 Plan period as noted previously. Despite the current Plan's stated goal of increasing preventive health activities with special emphasis on improving the environmental sanitation conditions in the rural areas, actual allocations to this important area have been strikingly deficient. Programs for introduction of potable water in rural areas and latrine installation together represented less than four percent of projected expenditures for 1977; thus, continued low coverage of the rural population with these vital services which are integrally related to health status is inevitable.

Analysing the MOH budget only, however, significantly underestimates total Government support to the Health Sector since several other Ministries also provide health and/or health related services to distinct subgroups of the population. The Ministry of Labor has been appropriated US$461,000 for its occupational health and safety program. Further, aggregate Governmental expenditures on health would be markedly higher if data were available on the annual expenditures of the Ministry of Defense for provision of health care to the Armed Forces and their dependents.

Additionally, substantial Government funding is provided for medical & health professional education in El Salvador. The Faculty of Medicine, Nursing, etc., of the National University are virtually operated through budgetary allocations from the Ministry of Education. Moreover, there is no direct recuperation of this investment in development of human resources for the health sector since even the social service year required for graduation from these programs is a salaried position.

Given the data limitations and examining just the disaggregated information from the 1978 assigned budget which is available, the National Government's direct financial support to health services and related infrastructure programs will exceed US$84 million or about 17% of the total national budget this year.

As outlined in Table 8, any composite picture of the Government total financial commitment to the social sector as a whole would have to include the substantial projected expenditures on child protection and housing programs, most of which are focused on the urban marginal population. Together these two broad categories of allocations amount to US$8.9 million in 1978. To the extent that these activities complement if not support those directly related to health, they can be expected to have a positive impact on helping to improve the overall quality of life of the poor majority.

2. HEALTH RELATED EXPENDITURES BY SOME AUTONOMOUS AGENCIES

Examining total national health expenditures in the public sector, it is important to note that three key autonomous institutions also provide health or health-related services to subgroups of the population. Most important of these is the National Administration for Aqueducts and Sewage Systems (ANDA) which has an assigned 1978 budget of $17.4 million for its urban-concentrated potable water and sewage disposal programs (See Table 9). In addition, the Social Security Institute is responsible for health care for 6% of the population at an annual expense of approximately $17 million. (See Table 10), and the National Administration of Telecommunications (ANTEL) provides an estimated $1.2 million worth of health care to its employees.

3. PRIVATE SECTOR EXPENDITURES

Little information is available on private sector health expenditures, although there are several indications that such expenditures represent a significant part of total sector's activity. The pharmacy is a key and often principal health care provider particularly in the rural areas. Although officially such areas contain 60% of the total population, given the limitations of these administrative classifications as discussed earlier, the truly "rural" population which is thus

largely dependent on pharmacies is substantially larger. For the urban areas, data available from a household survey (for the Metropolitan area) on family expenditures for distinct categories of goods and services indicate that the acquisition of health care is a major cost category.

Indigenous health workers including midwives (parteras), curanderos, and practitioners exist within almost all local communities throughout the country and complement the work of pharmacists. They too receive a fee for service.

2. SOURCES OF FINANCING

a. The Ministry of Public Health

The Government of El Salvador's budget is the primary source of health sector financing. Its tax revenues are supplemented by the National Lottery with provides approximately 10% of the MOH budget.

The National Lottery of Beneficence has as its sole stated purpose the generation of funds to assist the Government in financing the public health and social assistance services it provides to its citizens. During the 1973 Fiscal Year several structural and programmatic changes were made in the Lottery to improve and expand participation. Greater possibilities of winning through larger numbers of actual contests and increased number of winning combinations have been introduced in an attempt to raise consumer interest and sales, thereby augmenting revenues for the General Fund. Overall in 1973 it was expected that the Lottery would generate US $4.6 million in revenues for the General Fund.

In addition to the general budget for the Ministry, several distinct autonomous institutions including the national hospitals also have their own sources of revenue generated by patient contributions, grants from the private sector, etc.

This self-financing mechanism is commonly referred to throughout the sector's distinct facility levels as the "patronato." As originally designed, it included a board of trustees elected by the community for an indefinite period who through monthly meetings and in conjunction with the local facility's medical director , had primary responsibility for financial and administrative decisions. The principal source of money for the "patronato" fund was the fee for service charged each patient for care rendered; small amounts were also collected from the sale of prescribed medicines. These fees of $1 in rural and $2 in urban health facilities (collected only from those able to pay) are placed into a special account for the exclusive use of the facility itself. Revenues from patient services were often supplemented by monies received from distinct fundraising activities by local community members.

The vast majority of these boards, however, have disbanded due to lack of community interest, mismanagement of funds and/or disagreement between health personnel and trustees on administrative matters and setting of priorities for use of available funds. In many cases, given the voluntary nature of the patient contribution coupled with low levels, the fund has almost disappeared.

The patronato is generally used to bridge the gap between available resources and individual facility needs at a given point in time. Most commonly it is utilized for purchase of essential drugs and equipment which are out of stock locally and not within the facilities' general budgetary limitations or not available from the regional office due to shortages, etc. Additionally it provides funding for salaries of cleaning and maintenance personnel and supplies. Its importance is significantly diminished, however, by its generally modest size; accounts of US$100 or less after six months of collection are not uncommon and thus preclude large scale investments or long term planning for more costly equipment such as dental chairs, expansion of unit, etc. It remains basically an emergency slush fund to meet specific short-terms needs of the community from which its monies have been generated.

b. Social Security Institute (ISSS)

In sharp contrast to the financing of the Ministry of Health, the Social Security Institute is largely self-supporting. Of the projected US $17 million expenditures on provision of health services to its members and their wives or companions, little is derived from financial support from the Central Budget. Rather the high level of revenue has permitted the ISSS consistenly to maintain a substantial reserve for contingencies. The major source of revenues is from contributions from members and their employers. This capacity to generate its needed revenues from its own sources can be considered a primary underlying cause of the reportedly high level of services afforded to its constituents.

3. BUDGETING

Due to the technique used by the GOES in formulating its national budget, each Ministry has generally been left to define its own priorities without regard to overall programs and resources being allotted in other sectors. Efficiency and effectiveness analysis of the previous year's budget to determine the degree of attainment of existing program goals or areas for potential cost reductions are lacking at both the Ministerial and the National level. The ultimate result of the budgetary precess, therefore, in the Health Sector, is a tendancy toward increasing budgetary requirements without concomitant improvements in the overall health status of El Salvador's populace.

With PAHO assistance, the mInistry is presently trying to institute new planning processes which could serve as the basis for program rather than line item budgeting. To the extent that such a process is accepted at the National level, and involves input from regional as well as central levels of the Ministry, there is a reason to expect that future allocations of funds to meet program and health needs will improve.

TABLE 1

EL SALVADOR: Assigned Budget of the Ministry of Health and Social Assistance
(In Millions of U.S. Dollars at Current Prices)

	Operating Budget	Current Transfers	Investment	Capital Transfers	Total	Total
1965	4.3	5.1	0.6		10.0	10.2
1966	4.7	6.4	1.6	0.1	12.8	13.1
1967	5.3	6.8	1.3	0.1	13.5	13.7
1968	6.3	7.9	0.7		14.9	15.2
1969	6.1	7.5	1.8		15.4	15.8
1970	5.6	8.2	2.0		15.8	14.6
1971	5.7	9.1	2.1	0.1	17.0	17.0
1972	6.0	9.3	1.2		16.5	15.5
1973	9.1	11.0	1.9		22.0	16.7
1974	10.7	13.4	2.2		26.3	17.3
1975	14.4	14.1	6.2		34.7	22.3
1976	17.8	16.0	10.7		44.5	21.0
1977	21.6	17.9	11.2	0.6	51.3	28.2
1978	24.0	20.2	14.9	0.4	59.5	

SOURCE: Ministry of Finance; "Informe Complementario Constitucional sobre la Hacienda Pública (1965-1977)

Official Newspaper, December 23, 1977 (1978)

(a) At Constant 1971 Prices

TABLE 2

EL SALVADOR: Utilized Budget of the Ministry of Health and Social Assistance
(In Millions of U.S. Dollars at Current Prices)

	Operating Budget	Current Transfers	Investment	Capital Transfers	Total	Total (a)	Utilized Budget as Percent of Assigned Budget
1965	4.2	5.0	0.6		9.8	10.0	98.0
1966	4.5	6.5	0.8	0.1	11.9	12.1	92.3
1967	4.9	6.8	1.1	0.1	12.9	13.1	95.6
1968	5.8	7.8	0.7		14.3	14.6	95.3
1969	5.9	7.5	1.8		15.2	15.5	98.1
1970	5.3	8.2	2.0		15.5	14.3	97.9
1971	5.5	9.1	2.1	0.1	16.8	16.8	98.8
1972	5.9	9.3	1.3		16.5	15.5	100.0
1973	8.8	10.8	1.5		21.1	15.9	95.2
1974	10.6	13.4	2.1		26.1	17.2	99.4
1975	14.4	14.1	6.1		34.6	22.3	100.0
1976	17.7	16.0	10.6		44.3	20.9	99.5
1977	21.4	17.9	10.9	0.6	50.8	27.9	98.9

SOURCE: Ministry of Finance; Informe Complementario Constitucional sobre la Hacienda Pública

(a) At Constant 1971 Prices

TABLE 3

EL SALVADOR: Assigned and Utilized Budget Indexes of the Ministry of Health and Social Assistance (Base - 1965)

	ASSIGNED BUDGET INDEX		UTILIZED BUDGET INDEX	
	At Current Price	At Constant 1971 Price	At Current Price	At Constant 1971 Price
1965	100.0	100.0	100.0	100.0
1966	128.0	128.4	121.4	121.0
1967	135.0	134.3	131.6	131.0
1968	149.0	149.0	145.9	145.0
1969	154.0	154.9	155.1	155.0
1970	158.0	143.1	158.2	143.0
1971	170.0	166.7	171.4	168.0
1972	165.0	152.0	168.4	155.0
1973	220.0	163.7	215.3	159.0
1974	263.0	169.6	166.3	172.0
1975	347.0	218.6	353.1	223.0
1976	445.0	205.9	452.0	209.0
1977	513.0	276.5	518.4	279.0
1978	595.0			

NOTE: Calculated from Data of the Ministry of Finance "Informe Complementario Constitucional sobre La Hacienda Pública."

TABLE 4

Comparison of Population and
Public Health Sector Expenditures in El Salvador by Region
for 1971 and 1977

Region	1971 (1) Poulation		(2) Percentage Distribution of Expenditures	1977 (1) Population		Distribution of Public Health Expenditures
	#	%		#	%	
Occidental	742,583	21.0	17.8	926,555	20.6	15.0
Central	456,135	12.9	5.3	570,433	12.7	15.0
Metropolitan	730,394	20.6	56.6	1,002,352	22.3	30.0
Paracentral	623,068	17.6	8.9	762,360	16.9	15.0
Oriental	988,330	27.9	11.4	1,234,465	27.5	25.0
T O T A L	3,541,510	100.0	100.0	4,496,165	100.0	100.0

SOURCE:

(1) Anuario No. 8, Salud Publica en Cifras, 1975, Departamento de Estadisticas de Salud, MOH

(2) IDB Loan Document, 5 March 1974

(3) Población Estimada para 1977, por Municipios, Areas y Años de Edad, Ministerio de Salud Pública y Asistencia Social, Departamento de Estadisticas de Salud

(4) Estimates by USAID Mission, El Salvador

TABLE 5

MINISTRY OF PUBLIC HEALTH AND SOCIAL

ASSISTANCE BUDGET FOR PROGRAM

COORDINATION AND FINANCING OF OFFICIAL AUTONOMUOUS INSTITUTIONS*

Institution	Budgetary Allocation in U.S. $	Percentage of this Category of Expenditure
Subventions: 1/		
Hospitals (14 national)	18,722,220	93.0
Salvadorean Red Cross	156,080	0.8
High Council of Public Health	139,948	0.7
Salvadorean Institute for Rehabilitation of Handicapped (ISRI)	1,095,364	5.4
Subtotal	20,112,612	99.9
Subsidies: 2/		
Salvadorean Red Cross	3,200	0.0
National League Against Cancer	12,000	0.1
National Nursing Association	520	0.0
Subtotal	15,720	0.1
T O T A L	20,128,332	100.0

1/ Subventions represent financial support from the Ministry of Public Health for which the institution is accountable. That is the Ministry must be informed of the disbursement by program area and no changes of allocations from one expenditure category to the other can be made without prior approval of the MOH.

2/ Subsidies are direct grants from the MOH which the institutions can utilize as they determine appropriate; no accounting of expenditures to the MOH is required.

Includes financiang of both administrative and operational expenses.

SOURCE: Ley de Presupuesto General, Diario Oficial, 23 de Diciembre de 1977.

TABLE II. C - 6

EL SALVADOR: Details of Programs and General Expenses of the Ministry of Health and Social Assistance 1978
(In Thousands of U.S. Dollars)

		0 a	0 b	1	2	3	4	5	6	7	Total	%
1.01	Superior Administration	143.0	15.9	12.0	3.3	-	-	-	1.0	-	176.1	0.1
1.02	Administrative General Services	407.1	515.5	143.9	8,688.5	902.0	-	-	0.6	-	10,657.6	17.9
1.03	Health Services Planning	440.4	44.1	35.3	68.7	-	-	-	-	-	588.5	1.0
1.04	Health Engineering	262.0	41.2	2.4	74.6	-	-	-	-	-	380.2	0.6
1.05	Normative Services	275.1	14.4	1.6		-	-	-	-	-	291.1	0.5
1.06	Operative Health Services	9,164.8	2,794.2	163.8	676.3	-	-	-	2.9	-	12,822.0	21.5
2.01	Coordination and Financing of Official Autonom Inst.	-	-	-	-	-	-	-	20,224.9	-	20,224.9	34.0
3.01	Extension of the Health Services Network (BID Project)	-	260.0	475.4	20.0	2,460.0		5,124.6	-	-	8,340.0	14.0
3.02	Constr., Enlargmte. and Improv. of Building	-	172.0	192.0	204.0	42.0	-	1,390.0	-	-	2,000.0	3.4
3.03	Intrd. of Pbl. water in rural areas (Prj. BID-CIDA)		280.0	80.0	490.0	200.0	-	-	-	-	1,050.0	1.8
3.04	Intrd. of Pbl. water in rural areas		280.0	40.0	320.0	160.0	-	-	-	-	800.0	1.3
3.05	Latrine Installation		72.0	-	148.0	80.0	-	-	-	-	300.0	0.5
3.06	Functioning of Invest. Programs	68.3	154.8	-	12.0	3.5	-	-	1.3	-	240.0	0.4
3.07	Coordination of Communal Development San Miguel-Morazán Program	-	27.0	-	16.0	-	-	-	-		40.0	0.1
3.08	Construction and Equipment of the Maintenance and Training Center	-	33.6	0.9	383.6	208.0	-	165.8	-	-	800.0	1.3
3.09	Construction and Equipment of the Sonsonate' Hospital	-		140.0		-	100.0	-	-	-	240.0	0.4
3.10	Construction and Equipment of the peripheric health units.	-	-	-	-	-	-	160.0	-	-	160.0	0.3
4.01	Salvadorean Institute for Rehabilitation of the Disabled	-		-	-	-	-	-	-	400.0	400.0	0.7
	TOTAL	10,761.6	4,699.7	1,295.4	11,127.0	4,055.6	100.0	6,860.4	20,230.7	400.0	59,510.4	100.0
	PERCENTAGES	18.1	7.9	2.2	18.7	6.8	[illegible]	11.5	34.0	0.7	100.0	

SOURCE: Official Newspaper, December 21, 1977

TABLE 6 (Con't)

LEGEND FOR BUDGET CATEGORIES

0	Personal Services
0a	Permanent salaries
0b	Other Personal Services
1	Non-Personal Services
2	Materials and supplies
3	Machinery and equipment
4	Land, Buildings, and existing equipment
5	Constructions and Improvements by Contract
6	Current transfers
7	Capital transfers
8	Financing Disbursements
9	Special Operations

TABLE 7

El Salvador: Details of Programs and Financing of the Ministry of Health and Social Assistance 1976
(In U.S. Dollars)

		General Fund	External Loans	TOTAL	%
	Operating Programs and Current Transfers	45,140,364	-	45,140,364	75.8
3.01	Extension of the Health Services Network (BID Project).	7,244,056	1,095,944	8,340,000	14.0
3.02	Constructions, Enlargement and Improvements of Buildings	2,000,000	-	2,000,000	3.4
3.03	Introduction of Potable Water in Rural Areas (Project BID-CIDA)	350,000	700,000	1,050,000	1.8
3.04	Introduction of Potable Water in Rural Areas	800,000	-	800,000	1.3
3.05	Latrine Installation	300,000	-	300,000	0.5
3.06	Functioning of Invest. Programs	240,000	-	240,000	0.4
3.07	Coordination of Communal Development San Miguel-Morazán Program	40,000	-	40,000	0.1
3.08	Construction and Equipment of the Maintenance and Training Center	800,000	-	800,000	1.3
3.09	Construction and Equipment of the Sonsonate' Hospital	240,000	-	240,000	0.4
3.10	Construction and Equip. of the peripheric health units.	160,000	-	160,000	0.3
4.01	Salvadorean Institute for Rehabilitation of the Disable	400,000	-	400,000	0.7
	T O T A L	57,714,420	1,795,944	59,510,364	100.0
	Percentages	97.0	3.0	100.0	

SOURCE: Official Newspaper, December 23, 1977.

TABLE 3

NATIONAL GOVERNMENT ALLOCATIONS

TO SOCIAL SECTOR ACTIVITIES

EL SALVADOR, 1978 ASSIGNED BUDGET

Ministry	Program	Budget Allocation in U.S. $
Economy	Fondo Social para la Vivienda (financial support for projects resolving urban housing problems)	2,000,000
Public Works	Coordination and Financing of Institutions for Housing Development (operating budget support)	188,000
	Institute for Urban Housing (special budget transfer for Investment Program)	4,000,000
	Salvadorean Foundation for Development and Minimum Housing (FSDVM)	340,000
Justice	Protection of minors against abuse, locating mendicants or abandoned children	159,556
	Coordination and Financing of Institutions for Child Protection (support to social assistance agencies such as Guarderias Infantiles, Sociedades, etc.)	1,650,808
Education	Protection of Children -- Hogar del Niño	423,940
	Villas Infantiles (substitute homes providing for nutritional educational and supervision needs and vocational training)	122,600
	TOTAL U.S. $	8,885,004

SOURCE: Ley de Presupuesto, Diario Oficial, 23 de diciembre de 1977.

TABLE 10

EL SALVADOR: Details of General Expenses of the Salvadorean Social Security Institute - 1978
(In Thousands U.S. Dollars)

	0-a	0-b	1	2	3	4	5	6	8	Total	Percent
1.01 Superior Administration	123	101	33	14				46		318	0.7
1.02 Administrative General Services	1,342	477	352	293	136	-	-	192	-	2,791	5.8
1.03 Technical Services	320	126	10	10	2			50	-	567	1.2
1.04 Pensions Administration	793	193	28	65	19	-	-	113	-	1,210	2.5
1.05 Health Services	7,314	2,031	894	5,099	720	-	-	1,067	-	17,124	35.7
2.01 Pecuniary Services	-	-	-	-	-	-	-	8,784	-	8,748	18.3
3.01 Constructions, Medical Installations and Others	-	-	-	-	704	269	3,990	-	-	4,963	10.4
3.04 Procurement of Furnishings	-	-	-	-	-	-	-	-	12,190	12,190	25.4
TOTAL (1)	9,941	2,927	1,317	5,480	1,581	269	3,990	10,253	12,190	47,948	100.0
Percentages	20.7	6.1	2.8	11.4	3.3	0.6	8.3	21.4	25.4	100.0	
Emergency and Technical Reserve (2)										1,132	
TOTAL (3) = (1) + (2)										49,080	

SOURCE: OFFICIAL NEWSPAPER, DECEMBER 23, 1977

TABLE 9

EL SALVADOR: Details of Programs and General Expenses of the National Administration of Aqueducts and Sewage, 1978

(In U.S. Dollars)

	9-a	9-b	1	2	3	4	5	6	8	Total	Percent
1.01 Central Administration	1,326,112	260,248	399,680	154,204	152,668			173,192		2,466,104	14.2
1.02 Technical Services	336,924	28,500	53,640	255,296	354,000			51,840		1,120,000	6.4
1.03 Water Production and Distribution and Drainage	2,186,500	758,988	2,205,480	1,269,680	930,022	80,000		359,280		8,280,000	47.6
1.04 Outside Works			-	-	-	-	4	-	-	4	
3.01 Constructions, Enlargements and Improvements of the Aqueducts and Sewage System	280,468	733,424	73,376	2,548,812	298,228	133,012	32	108,680		4,176,032	24.0
5.01 Payment of Debts and Interest			823,720				-	-	540,280	1,364,000	7.8
TOTAL	4,130,004	1,821,160	4,055,496	4,227,992	1,734,968	213,012	36	692,992	540,280	17,396,150	100.0
Percentage	23.7	10.5	23.3	24.3	9.9	1.2		4.0	3.1	100.0	

SOURCE: Official Newspaper, December 23, 1977

PART II ANALYSIS

E. KEY SUB-SECTOR ANALYSES

3. Rural Penetration

In an attempt to bring key Government services to the door of the campesino, the Government of El Salvador has instituted throughout several principal Ministries a series of outreach programs targeted directly at the rural poor. The Ministry of Agriculture has an active rural extension program under way, and the quasi-government group, Organization for Community Development (DIDECO), formerly FOCCO, is currently involved in numerous rural community development projects throughout El Salvador.

Amidst continued excessive morbidity and mortality, particularly in the rural areas, the Government began to focus increasing attention on the severe maldistribution of the nation's trained health personnel and the serious underutilization of existing health facilities among the rural population. These factors have served as the major impetus for the Government, through its Ministry of Public Health and Social Assistance (MOH), to develop a Rural Penetration Program, a primary component of which is the development of a cadre of new community-based health personnel -- the rural health aides. Since the direction of the current Rural Penetration Program is inherently a product of the careful analysis of the pilot projects in this area which have been undertaken since 1975, a review of their design and outcome is critical to understanding the rationale for the present program design.

a. Experimental Program: San Miguel

As the initial antecedent to the current rural health aide program, the GOES, with support from UNICEF, undertook a pilot project in September 1975 to train and employ 20 rural leaders selected from each of 20 cantones in the San Miguel Department. The two health posts and one health unit of the MOH in the area of operation were to be the service sites for channeling the anticipated increase in demand for health care generated by the leaders.

The first group of candidates were selected by their local municipalities' military and/or civilian authorities, rather than the cantones' residents, based on the following basic requirements:

- that the person be resident in the canton to be served;
- that the candidate have a minimum education of sixth grade or at least ability to read and write;
- that the individual be able to work essentially full-time in this capacity (given a 30 hour workweek); and,
- that the individual want to conduct activities related to maternal child health and family planning.

In the pre-selection fo candidates phse, minicipality officials were requested to identify three potential leaders for each canton. Candidates were then interviewed by personnel of the Oriental Region to determine the final participants in this pilot group.

Toward the goal of improved health status, each leader was to perform the following functions: a) conduct interviews during home visits to residents in their immediate vicinity to inform them of the rural leaders program and identify potential candidates for MOH health and family planning services; b) disseminate health information via person-to-person talks on child care, personal hygiene and family planning; c) organize special interest subgroups (e.g. mothers or malnourished children, pregnant and lactating women, etc.) for group discussions; d) identify practicing local midwives and encourage their coordinated work with MOH health facilities; e)collaborate with existing organized community groups to foment concern for methods in which their activities could support improved health status for mothers and children; and f) refer cases to the local health service units.

An evaluation of the performance of this group of rural health leaders conducted during the first trimester of work (November 1975-January 1976) revealed that the accomplishment of goals for educational/promotional activities was generally satisfactory, particularly with regard to home visits. Conduct, however, of the two other integral components of the educational program -- health talks and group discussions was not as effective as anticipated. It was apparent that the leaders preferred one-to-one educational encounters rather than speaking before larger groups.

The program did, as anticipated, lead to an increased demand for health services among the served population with a 24 percent increase in referrals to health posts including request for medical consultations, prenatal and well-child visits; increased utilization of contraceptive pills; and augmented population coverage with vaccines. The evaluation highlighted critical weakness in the curriculum. The emphasis on didactic, theoretical training, resulted in little practical experience in actual development of the inter-personal skills, e.g. interviewing, public speaking, and leading group discussion essential for transferring this new knowledge to the population.

Lack of commitment and ability to generate credibility in their work were the major constraints to the effective institution of this rural leader program. Since the vast majority of leaders were political appointments, their role in the community was perceived as largely political. This image was abetted by the extremely brief two-week orientation to health problems and their resolution which further undermined their credibility as health personnel.

b. Development of a Prototype Rural Health Delivery System

A continuing desire on the part of the Government to address the health needs of the rural majority led to a basic rethinking of the Rural Penetration Program design in early 1976 based on the experience from the rural leaders experiment. For the first time the concept of an integrated rural health delivery system emerged. Rather than concentrating solely on the creation of a corps of community based workers, critical linkages between these aides, other formal and traditional health care providers, and the national health system as a whole of which they were a part were identified and explored for program implications.

Toward the development of a prototype system suitable for national replication which addresses itself to the major health problems of the rural population, the Government adopted a three-pronged approach to rural health delivery: 1) extension of the primary care role of graduate nurses to that of nurse practitioner; 2) the formalized training of traditional rural midwives with a view toward institutionalizing their activities as a component of the formal health system; and 3) development of a cadre of community-based rural health aides.

c. Expanded Role for Nurses

The nurse "rationalization" program of the Ministry of Health was formally initiated in April 1976 with the commencement of a two-month specialized training program for seven graduate nurses working in MOH facilities.1 The curriculum was focused on the area of maternal child health and family planning with a view toward development of new skills in medical history taking, conduct of physical examinations, prenatal and post-partum care, family planning services and screening for breast and uterine cancer. Upon completion of the training, five of the new nurse practitioners were assigned to rural districts where they were given direct responsibility for assisting auxiliary nurses at health posts in screening of patients, identifying those in actual need of more advanced medical care during the mobile team visit.

Overall, sufficient satisfaction with the work of the pilot group has been generated to justify the institutionalization of this component of the Rural Penetration Program. A March 1977 evaluation by the MOH of this initial class of nurse practitioners and interviews with them has led to the Government decision to lengthen the training period in order to broaden the curriculum content to include material on distinct areas of health care which

1 -The training, jointly funded by AID and U.N. Fund for Population Activities, was conducted at the National Health Training School with practical complementary work in various health units of the MOH in San Salvador. Six regional supervisors also attended the course.

the nurses perceived as important to the successful fulfillment of these new roles. Thirty-four nurses have been trained in the program to date under which a total of ninety will be trained by the end of 1978.

The need for aggressive expansion of duties beyond that of the traditional nurse role is evident throughout El Salvador. The adverse impact of the existing physician maldistribution with low rural coverage (thereby reducing the ability of the rural facilities to respond adequately to the health needs of the population) remains a strong rationale in itself for the creation of an alternative key health care provider in the rural setting. The problem of serious shortages of trained personnel in rural areas is exasperated by the inefficient use of the those personnel who are currently working in these facilities. As confirmed in a recent sociocultural study of an area in the Central health region, physicians commonly perform tasks such as administrative functions, record-keeping, treatment of minor illnesses, etc., which could more efficiently be delegated to a nurse; the nurses in turn tend to undertake activities such as initial screening of patients, filing of medical records, etc., which should be assigned to the auxiliary nurse.2 The net result is that the already part-time nature of physician coverage during which hours patients can receive medical consultations is further diminished. Thus, the creation of a core of well-trained nurses to release the highly paid physician from care of the less seriously ill patients for treatment of those at highest risk makes both sound health and economic sense.

The potential constraint to expansion of the program and its full implementation has, however, been identified — that of the general preference of nurses, as with physicians, for urban employment. The successful long-term implementation of this rural focused program, therefore, appears to be tied to the ability of the MOH to adopt broad changes in their personnel incentive system which will attract health professionals such as the nurse-practitioner to rural service.

d. Upgrading Midwives Skills

In view of the real maternal/infant care problems in rural areas coupled with the major role midwives play in delivery, the MOH is beginning a program to upgrade the technical skills of 400 midwives through a pilot training project. Rural health aides are to identify those midwives in their local area and refer them to the nearby health post for training.

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2 -Polly Harrison, The Socio-Cultural Context of Health in Rural El Salvador, 1977.

Integrating the midwives into the rural health team is to be encouraged by offering them regular logistical support for the supplies needed in home delivery, back-up for difficult cases, and education in proper obstetrical techniques, and in family planning.

e. The Rural Health Aide Component

The Rural Health Aide (RHA) program is the pivotal component of the Government's Rural Penetration Program to extend services to the rural, largely unserved areas of El Salvador. To this end, the RHA program element focuses on the training and placement of community based polyvalent paraprofessional workers through two major activities: the design and implementation of standardized training program relevant to the community health needs and anticipated functions of the aide; and development of the health system's operational, management and administrative and evaluative capacity to provide care to the rural population.

Within the broad overall goal of the Program to reduce morbidity and mortality in the target population, the RHA is to be the vehicle for increasing the contact rate between the populace and the formal health system, from the existing low rural average of 0.25 consultations per person per year or one visit every four years.

Specifically, through their referrals, the RHAs will reduce the currently low utilization rates of existing rural based MOH facilities, particularly health posts. Despite the fact that an extensive health network now exists with 123 posts widely dispersed nationwide, many rural people remain outside the formal health care delivery system. The new health worker, the RHA, will be the formal link between the community and the MOH health facilities providing an accessible and culturally compatible point of entry into the national health system.

Under the programs, the MOH in cooperation with the community from which the workers are to be chosen, incrementally selects, trains, and places cohorts of RHAs in selected areas throughout the country over the coming years. Concurrently, the MOH infrastructure will be expanded and strengthened to support this rural delivery system through the establishment of a formalized training program; an administrative network to employ the aides as well as dispense salaries and material; a supervisory and evaluation system to ensure quality of care; and an information system with which program impact on the health system can be effectively measured.

As the program has evolved from its initial pilot project, the rural health aide program now has a four-fold objective:

1) to increase the utilization of existing health services through a broader community knowledge of the need for and existence of care;

2) to improve the health status of the rural family through health education, latrinization, and family planning advice

3) to offer continuous and systematic health care including first aid, elimination of parasites, and to provide contraceptives to rural people within their own community; and

4) to improve the nutritional status of rural communities through provision of information on food preparation and child nutrition.

The administrative structure for the RHA Program is an integrated one spanning diverse normative and operative divisions of the Ministry of Health. While the MCH Division of the MOH's National level is responsible for setting the norms and standards for the program with input from the Medical and Dental Division of the National Office as well, the Division of Training and Development of Human Resources has responsibility for the actual conduct of training. Three Regional Offices, specifically through their sub-Directors, maintain responsibility for the daily operation of the RHA program and are ultimately responsible to the operating services at the Central level. Complementary technical and administrative inputs are provided by the Malaria Division, the Medical Division, the Health Education Division, the Division of Epidemiology and the National Health Training School. The strength of the MCH/FP Division which has the largest number of personnel and whose director is highly respected in the MOH, coupled with the fact that this area is the principal focus of the aide's work, have been primary arguments for MCH's leadership role in the Aide Program.

As a result of the first evaluation of the San Miguel experimental project, modifications were made in the candidate selection process. Rather than depending solely on the recommendations of municipal leadership, it was decided that health personnel would identify and evaluate the formal and natural community leaders through interviews with 10 to 15 inhabitants of a canton. These community leaders would then be asked to name possible candidates for the rural health aide position; those candidates who fill the basic requirements are then interviwed by the regional health personnel. While positions have remained open to both males and females age, restrictions were added with candidates required to be between 18 and 40 years of age.

As the Government has moved toward institutionalizing the rural health aide project beyond its pilot stage, criteria have been develop for selecting the communities in which the rural health aides would work, based on: 1) accessibility, distance between the community and the closest health facility, 2) population distribution, number of villages per canton and number of inhabitants relative to the geographical area; and 3) health facilities in the area with a view toward areas not served by other health institutions.

(1) Training and Placement

On the basis of the evaluation of the impact of the rural leaders Experimental project and other discussions within the MOH, an expanded sixweek curriculum was developed in conjunction with, and AID-financed, technical assistance for the training of Rural Health Aides. The essentially preventive functions were expanded from that of the previous rural eladers experimental project to include the provision of symptomatic treatment for minor illnesses in order to respond to the community's perceived need for curative care and thus to build credibility among the served population. Time allotted in the curriculum for diverse, proposed responsibilities was apportioned as follows: 1) promotional or health education - 50%; 2) direct health services - 30%; and 3) administrative responsibilities - 20%.

In August-September, 1976, under an AID grant project 40 men and women including some of the original health leaders were trained under this new curriculum as Rural Health Aides. These newly trained RHAs were distributed among three of the five health regions of the country as follows: Oriental-20; Central-10; and Paracentral-10.

(2) Program Phasing

The initial Government plans for extending the program throughout the rural areas of the country's five health regions and of the Salvadorean Comunal Union's settlements were based on placement of 1000 Aides in the field by 1980.*

In order to ensure that this personnel implementation schedule is met, an extensive training structure has been developed. Personnel are trained as close as possible to the areas which they are to serve so that they will remain tied to their local environment. This decentralized training plan is supported by development of a core of MOH "trainers" who receive their education at the National Health Training School in San Salvador.

To maximeze the effectiveness of supervision, supervisory health personnel in each region are required to attend the aide training sessions as well. In-house training on a biannual basis is provided as a follow-on to the initial core session following periodic performance evaluations of aides in order to identify areas of weakness in service delivery funsctions.

Because of the fact that aides are trained outside of their local cantones, the payment of subsistence costs during an expanded ten-week course was viewed as essential for attracting candidates. Supervisors required to attend the training session are similarly compensated. The training costs and initial salary costs of each new cohort trained annually are financed by AID, with each successive cohort.

*As explained below, placement of 1550 RHA's is now envisioned by 1982.

employed and salaried by the MOH, at the beginning of the calendar year following their training. As of January 1977, the MOH absorbed the salaries of the first cohort of 30 RHA's trained with AID monies in 1976.

In order to legitimize the role fo the rural health aide as a formal memeber of the health care team of the MOH, three light blue uniforms per year with a cap with insignia are provided to each. All aides are further equipped with back packs for carrying materials house to house, palstic ice chests, scissors, raincoats, medication and consumable medical products, and educational material for dissemination within the community.

(3) Delivery of Services

Upon initiation of the aide's work he conducts a census of the local population noting by household the age and sex of each residen and the general environmental conditions of the given house with regard to water supply source and presence of latrines. A map of the community is drawn with each house assigned a distinct number; commonly the number already stamped on the house by the malaria control program has been used for this purpose. From this universe of households, the RHA selects 100 houses within a given community for program focus with highest priority assigned to those households with the lowest socioeconomic status, and highest prevalence of preschool children (under five years of age) and women in their reproductive ages.

Basic health services provided directly to the household by the aide free of charge, include provision of antiparasitic medication every six months, and general care, as needed, for the following prevalent illnesses: diarrheas without vomiting, muscle pains, headaches, minor eye infections, treatment for minor traumatisms and first aid. In fulfillment of the family planning objectives of the program, the aide also distributes condoms and oral contraceptives to users in their community who have previously registered in MOH health facilities. The RHAs are allowed to charge a small fee for the administration of injections, retaining the income as a supplement to month to monthly salary.

(4) Supervision

With the fielding of the first 40 RHAs in the pilot stage of this proposed national program, supervisory guidelines were developed which have placed the aide under the direct supervision, from both a quality and quantity performance standpoint, of the Evaluators of the Malaria Program. The rationale for selection of the malaria evaluator as the supervisor for the aide was based on the fact that the malaria workers are already active and respected in the local cantones and could thus both travel into the remote areas to conduct

necessary supervision as well as imbue a sense of professionalism and stature to the new aide program.

In order to fulfill this additional role, 149 new positions were created. Thus, in contrast to original plans for each evaluator to be responsible for supervising 30 RHAs (through monthly visits to the local canton in which the aide resides and works), the evaluation led to a modified ratio of one evaluator to 10 RHAs. Supervision of the evaluators is in turn be carried out by the Field Assistants and District Chief of the Malaria Program and the corresponding MOH Regional Team which covers the given geographic area.

(5) Salary

The salary of the rual health aide is equal to the minumum wage paid to personnel of the Ministry of Health, currently approximately US $110 per month. This basic salary level can be supplemented by profits obatined from sales of contraceptives in the local community as discussed above. Each aide is provided with all the benefits, bonuses and vacations accorded to other MOH personnel. Some RHAs do have other jobs after the typical 7 a.m. to 4 p.m. workday to supplement further family income. But other employment opportunities in these rural areas are extremely carce with the typical worker earning at the bes US $3 per day as agricultural laborers during the four to five months per year when such work is available. Despite the aide's apparently high income level compated to that of the average rural family to whom his services are directed, this salary is commensurate with the type of work and educational attainment required relative to other community outreach workers, as highlighted in Table C-1.

(6) Governmental Program Evaluation and Modification

The Ministry of Health conducted an extensive evaluation of the first cohort phase of the formalized rural health aide program in January 1977. This evaluation, conducted in-house, generated a vast amount of information on all aspects of the rural health aide program. It has led to significant modification of the program design paricularly in the area of strengthening the infrastructure for delivering community-based services and in broadening the curriculum content of the aide training program. The aide training program was lengthened to ten weeks; supervisors were instructed to visit aides twice a month; and orientation courses for health facility personnel on the RHA program were held. Both the conduct of the evaluation and these ensuing changes are important indications of the firm continuing commitment of the Government to the Rural Penetration Program. Further these actions reinforce the credibility of the new Administration's public pronouncements of total support for the success of this key

TABLE II.C-1

EDUCATIONAL REQUIREMENTS AND SALARY LEVELS FOR RURAL EXTENSION WORKERS IN EL SALVADOR

Extension Type Workers	Education Required	
1 - Home Economist	A minimum of a high school degree is required. Some have obtained the elementary teacher's degree from the teacher's school located in San Andres, Alberto Masferrer. There is no formal Home Economist's School. When employed most receive short courses in administrative centers, (1) Santa Tecla, (2) Nueva Concepción (dormitory facilities), or take 2-3 day field trips. Also during the year, CENTA will hold short training sessions concerning particular subjects.	Starting salary US $144/month with experience US$162/month.
Agricultural Extensionists "Agrónomos"	Have a high school degree, plus 3 years in the National Agricultural School (ENA) located in San Andres. They are termed according to the classification system here as "Perito Agrónomo"-the agronomos who have graduated from the University (5 yrs.) are titled as "Ingeniero Agronómo". The BFA - Banco de Fomento Agropecuario, pays slightly higher salaries, and each "agrónomo" is provided with a jeep.	Starting salary US $190. Avg. salary US $240/month. The highest salaries those on contract basis - US $320/month.
Malaria Evaluators		US $140-$160/month
Malaria Collaborators		US $104
Malaria Chiefs		US $280

new programming direction within the health sector. Training of the second cohort which began in September 1977 reflected the results of the evaluation.

A two-part methodology was adopted for conduct fo the evaluation. A review of records was made of approximately 15,7000 visits made by 39 RHAs amidst an estimated 210,000 population over a two-to-three month period. Then questionnaries were used to obtain uniform information on program performance from 868 different individuals ranging from members of the community served by the aide, through the aides, to the support health facility staff at the local and regional level.

Analyzing composite information from the three regions in which aides are currently working, a curative-focused pattern of service delivery emerged. Of a total of 35,000 activities reviewed, 58 percent or more than half were classified as curative whereas just a little more than one third (37%) were health promotional; the balance were referrals.

Consistent with the findings of the original UNICEF project group, referrals led to an increased demand for health care among the served population. Overall for every 13 house visits made by an aide, or for every six activities provided by the RHA to the community, one referral resulted. But of those referred to the MOH facilities, less than half (47%) actually sought care at these facilities. (The impact on demand for care from traditional practitoners is not known but may explain at least part of this differential.)

While the reasons for the low number of effective referrals among all the studied regions must be further analyzed, at least four contributory factors were identified: 1) insufficient curriculum attention to identification of high risk individuals and methods of effective referral; 2) resistance by health post personnel in at least some documented cases to meeting the increased demand for care; 3) selection of some of the cantones for RHA coverage which are actually further from the closest health post than the 10 kilometer limit originally set, thus precluding many persons from actually obtaining care, even if it were desired; and 4) insufficient or inadequate supervision.

Comparing anticipated rates of visits, activities and referrals to actual figures from the three regions, the Oriental Region exceeded prior established levels for all three categories. In sharp contrast to the adjusted rates of the Central and Paracentral Regions, the average Oriental Region RHA performed 45.2 visits, 113 activities and 6.8 referrals per week.

Most importantly this Region had the highest percentage of promotional activities (45% of total), especially striking in view of the fact that the Central Region had 35% and the Paracentral

just 3% of activities categorized as promotional. The fact that several of the Oriental Region's RHAs had been in the original experimental project and thus previously worked in the community as leaders has been identified as a major underlying cause of consistently better performance by the Oriental group as a whole than their counterparts in the other two Regions.

Key Issues

(a) Acceptance and Technical Competence of This New Worker

While the evaluation demonstrated that the RHA has been widely accepted by the members of the community in which he/she works, resistance to this new health worker by the professional staff of the support health posts, particularly the auxiliary nurse, impeded their effective incorporation as a formal member of the health delivery system.

Direct observations by site visits revelaed that while some promotional activities were undertaken, communication skills were generally weak and characterized by rigid presentations and failure to identify priority subjects for educational focus.

Overall, the evaluation review highlighted the need for addition training to reinforce the knowledge of the RHA as well as the immediate necessity of instituting orientation programs for the auxiliary nurses at the health posts to promote their understanding of and collaboration with the new RHA program.

(b) RHA Interaction with the Traditional System.

The extensive traditional, "informal" health care system is a pervasive force in rural life which stands in direct competition to the newly instituted rural health community worker. Empirical data from the recent RHA evaluation confirmed the existence of competition for the same client, although not for the same precise services. Further, where competing providers exist, the preference for the informal practitioner is still strikingly apparent. This preference is attributed to the tangible services provided and the already established respect and reputation of these traditional practitioners is particularly evident in the more isolated, remote cantones which have had to envolve their own health care system to meet their daily needs.

In order to enhance the role of the RHA in these traditionally oriented communities, two broad strategies have been adopted: 1) the institutionalization, to the extent possible, of the existing traditional providers into the system. RHAs are to identify the midwives currently practicing in their communities and refer them to the local health post for both training and provision of free supplies for their work. In such a manner it is expected that the formal system will be able to exercise some quality control on the tradi-

tional providers work, and thus ensure their complementarity to the goals of the Rural Penetration Program; 2) the recruitment of traditional providers into the RHA program. To date several persons trained in the RHA program previously served as informal practitioners. The relationship of these "coverts" to other traditional workers in the same community is not yet clearly understood.

(e) Community Participation.

Community participation in the selection of RHAs is already an integral part of the program design. To facilitate the selection process, broaden the pool of potential candidates, and ensure community collaboration in this decision-making process, it has been recommended that a network of contacts be standardized throughout the rural areas.

The early 1977 evaluation of the ongoing RHA program in three regions was an important source of information on community experiences and preferences for types of health services to be delivered by the RHA. By order or priority, rural residents expressed desire for assistance by the RHA in the following not mutually exclusive areas: 1) illness (85%); 2) family planning services (32%); care of newborns and infants (24%); prenatal care (16%); postnatal care (12%); treatment of malnourished children (14%); and in case of accidents or during delivery (1%).

The major identified modes of care of the RHA reported by the community were consultations and medication dispensing. Within this framework, the community members interviewed expressed a strong desire to receive an improved variety and quantity of medications (61% of respondents); injections (17% of respondents); assistance with home births (6% of respondents). In response to these perceived needs, the RHA program is being modified to permit expanded immunizations and treatment by injection as well as augmentation of the latrinization program.

Despite the absence of cohesive communities and a spirit of group cooperation in El Salvador, the precedent does exist for generating community action programs when the outcome is perceived as clearly beneficial to each individual household. Thus it is apparent that a constituency for the rural health aide program must be developed. In such manner it is expected that the development of community-based structures, such as health committees, could be fomented to complement RHA services, particularly in the area of addressing environmental sanitation problems. Achievement of the augmented goals set for population coverage of the latrinization program, for example, would be clearly advanced by the existence of a framework for collaborative action.

(7) Program Size

With the beginning of the new Administration in Jul 1977, program size was adjusted from 1000 RHAs to 1550 RHAs to be placed in the communities by 1982 through incremental expansion of the trainning program as outlined in Table II.C-1. This phasing will permit the gradual expansion of training capacity taking into account the concomitant needs for adequantly trained teachers for the decentralized RHA trainnings programs; modifications in curriculum design as more information on RHA experience and performance is accumulated; the acquisition of educational materials; and the need in general for an expanded budget as costs of developing and implementing the RHA program increase.

Key Issues:

The two major issues confronting continuation of project RHA activities are those of adequate support and training for the aides, and the ability of the MOH to achieve targeted program coverage. In response to demands made upon them, the RHAs are currently providing more curative-oriented services than the preventive and educational role originally envisioned for them. Consequently, the training and support services which they require in order to perform effectively have also changed, In order for the system to prepare the RHA adequately for his/her intended responsibilities and to provide the support necessary, there needs to be greater integration of national and regional activities so that operational experiences can be effectively translated into improved program reforms.

The MOH target of training and palcing 1550 RHAs by 1982 has been questioned in light of the requisite training capacity, logistic, and supervisory support requirements, competing priorities and fiscal capacity of the Salvadorean government.

The following recommendations have been made by consultants to insure that these problems are adequately addressed:

(1) Establish a means of insuring sufficient logistic and technical support;

(2) Conduct health administration courses for regional directors and their deputies in order to develop managements skills;

(3) Institutionalize personnel incentives for the RHA through such means as competitive salaries, periodic regional meetings and seminars, and the development of a career ladder enabling some upward mobility.

PART II ANALYSES

E. GOES COMMITMENT TO HEALTH

4. Conclusions

In summary, a substantial commitment to the Health Sector is reflected by the Five Year Plan, budget allotments to the Sector and the GOES development of and support for the Rural Penetration Program. Moreover, the very high percentage of the MOH assigned budget consistently utilized indicates interest in the Sector at high GOES levels. Confirmation of this interest is evidenced as well by the seriousness with which the GOES has regarded its commitments made to international donors to absorb certain costs according to prearranged schedules. For example, under the RHA program, the GOES has absorbed, on schedule, salaries of each group of aides trained at the beginning of the year following their training. The United Nations and various other donors assisting the MOH in family planning have found the GOES to be similarly reliable in absorbing program costs on schedule.

A special commitment by the GOES to improving rural health services is demonstrated by the continuing effort made by the MOH to evaluate and improve the Rural Health Aide component of the Rural Penetration Program. To this end the GOES in the last year has (1) improved the RHA curriculum and training program, (2) experimented with different methods of aide selection, and (3) developed new supply and payment arrangements; evaluating changes in each carefully prior to further adjustment. The USAID regards the MOH process used in the further development of the program as strong evidence of GOES commitment to improving health services for the rural population.

In contrast to such positive indications of commitment is an unwillingness to establish clear-cut program priorities based on sound analysis of health needs and to make necessary structural changes and allocate resources on that basis. The lack of such a priority in the Five Year Plan is especially evident in the areas of environmental sanitation and health education, both crucial to improved health.

III. OTHER DONOR ACTIVITIES IN HEALTH

The Mission has been unable to get a clear picture of Other Donor Activity in the Health Sector. The GOES apparently does not maintain records of such assistance in a manner that permits comparison, nor do the donors, including AID, provide full accounting of the value of technical assistance provided. The focus of the Mission's review in this section, therefore, is on activities of the largest donors other than AID, that is, the Interamerican Development Bank and the Pan American Health Organization.

A. Interamerican Development Bank (IDB)

Of major help to the Ministry of Health in expanding its rural health services has been a fifteen million dollar loan initiated in 1974 from the IDB. The loan project, to which the MOH has contributed $5 million, has included construction of a regional hospital with nursing school and facilities for training of paramedical personnel, seven 70-bed health centers, 24 health units and 75 health posts. A follow-on project is in the planning stages under which an additional 39 facilities will be constructed, renovated or enlarged. Provided as a non-reimbursable part of the loan have been fellowships and technical assistance to Ministry personnel in performing an in-depth administrative study of the Ministry of Health. The study, carried out by a Mexican firm, Bustamante and Associates, is under review by the Ministry of Health.

The IDB has also been cooperating with the Ministry in a three phase rural water systems project. Under Phase I, the Bank provided $1.56 million to the project to develop systems in 103 communities over the 1972-76 period. Under Phase II of the project, to run from 1977-82, 135 additional communities are being provided with potable water at a cost of $8.3 million including 4.7 million from the IDB and $1.4 million from the Canadian International Development Agency. A feasibility study is on-going for the third phase of project to cover an additional 230 communities at an estimated total cost of $15 million of which IDB is planning to provide $12 million. At the conclusion of the project, nearly 450 communities will have been provided with safe water, leaving an estimated 800-1000 communities without reasonable access to safe water.

The IDB is also actively considering a large scale integrated community development project in the northwest area of the country in which a health and population component would be included.

B. Pan American Health Organization (PAHO)

PAHO's contribution to the Ministry of Health's program in 1978 is budgeted at nearly $450,000. The program is focused on two major areas: the development of health services and the development of human resources, both designed to strengthen these areas of the MOH's Five Year Plan. Under the first activity, PAHO is continuing to provide assistance to the Ministry in health planning. As a result of this assistance the Ministry is increasingly involving lower levels of the health systems in the planning, programming and budgeting cycles, and moving toward development of a program, rather than line item, budget.

PAHO is also supplying technical assistance in maintenance and supply, although no funding is provided for teaching or seminars in this area.

In its human resources activity, PAHO is providing assistance in training assistance especially to meet the needs of the programs designed to extend health coverage to rural areas. Specifically included are in-country training and seminars in health systems and statistics as well as funding for overseas training in related areas.

A third area in which PAHO and its regional office are assisting the GOES as well is environmental sanitation. On the basis of an assessment of the environmental health situation carried out by PAHO and the MOH in 1977, a Basic Rural Sanitarion Program has been designed to be implemented by the National Community Development Office (DIDECO) with assistance from the United Nations Development Program.

Finally, PAHO is assisting the MOH's malaria program, providing technical assistance and training (discussed more fully in the Malaria Section of the Assessment), and in epidemiology. In the latter areas, funding is provided for training of MOH personnel in management and control of diarrheas, as well as for epidemiology courses for regional health personnel.

c. Other Donors

Peace Corps initiated a Health Sector program in 1976 and today has 21 volunteers working in the Sector. Eighteen are providing assistance in health education, sanitation promotion and nutrition education. An additional 20 PCV's in health education will arrive in August 1978, and a strength of 20-35 will be maintained in this field over the next few years. In addition, 12 volunteers trained in hospital and/or equipment maintenance will begin work in February 1979, to be assigned to work at regional and local level facilities.

Other Donor Assistance in health outside that discussed above focuses primarily on provision of hospital equipment (Japan), specialized medical and training (Italy and Great Britain). The Government of Switzerland has recently agreed to provide technical assistance to the MOH in hospital maintenance, supplementing assistance in this area provided formerly by West Germany.

Finally, contributions from several other donors, UNDP, UNFPA, OXFAM, CIDA and IPPF as well as from AID in the population field have had a major effect as well in improving health services.

PART IV

THE AID HEALTH SECTOR STRATEGY[1]

A. MAJOR CONCLUSIONS DRAWN FROM THE ASSESSMENT

El Salvador's health picture as depicted in Table 1 of the Overview is a dismal one, especially in the face of a population growth rate that seems continually to outstrip progress made in extending the social infrastructure. Thus, despite the existence of a four-tiered health system that is currently providing some kind of health care within ten kilometers of 85% of the population, the infant mortality rate as well as the death rate from largely preventable diseases vividly reflects the fact that the health system is not adequately meeting the needs of a majority of the population.

Over the past five years, the GOES, and especially the Ministry of Health, have made and continue to make serious efforts to improve the national health system. Primary areas of attention have been:

1. administrative reform and reorganization focusing on greater integration of curative and preventive services, and
2. a series of programs called Rural Penetration, designed to extend and improve health services to the rural population.

Although organizational and administrative improvements have been realized by the Ministry, certain impediments continue to exist within the overall structure which prevent maximizing support to the integrated delivery and expansion of Rural Health Services. Given the critical inter-relationships between the two areas mentioned above, in that additional administrative reform and reorganization are required to support development of an effective rural health program, it is essential to continue placing emphasis concomitantly in both areas of activity.

Major problems include: (1) the autonomy of MOH hospitals which results in their independence form the MOH's administrative system and, to a lesser degree, from the technical referral system; (2) the heavy administrative burden placed on the regional level of the Ministry of Health by the fact that all lower levels of the Health system are administratively responsible to it; (3) the division of responsibility between the Normative and Operative Divisions of the Ministry for the Rural Penetration program; (4) the questionable centralization of supply and transportation authority.

In addition, particularly lacking seems to be designation of a limited number of program areas as priorities for which goals could

1 -Although the Health Sector is defined to include health, nutrition and population, the specifics of AID's strategy in Population are provided in the Population Strategy Paper and merely summarized in this section.

be established, personnel and monetary resources allocated, and activities planned in a manner that would better assure their achievement. Present programming and planning processes seem to layer programs and priorities, requiring continuing shifting of resources to meet short term needs of operational rather than long-term priorities. The Ministry's move to adopt a programming budget system should provide an improved basis for planning resource allocation, and thereby improve program effectiveness.

Environmental health conditions clearly emerge from the Assessment as the most serious set of health problems facing El Salvador. These problems reflect the inadequacy of water supplies, both in terms of quality and quantity; of means of waste disposal and latrinization; of pest and pesticide control; and especially important, of health education and habits of hygiene. These conditions are directly related to El Salvador's high morbidity and mortality rates as the result of diarrheas and parasitic diseases including malaria. Whereas it has been shown that the problem can be most directly affected by improved water supply, this measure alone, without latrinization, and even more important, without effective health education, is not cost-effective. Moreover, most diarrheal illness in children, the most vulnerable group, can be treated if recognized, and appropriate measures taken by the mother or, if necessary, in a health facility. Especially needed thus are means of increasing the health knowledge of the populace, of treating minor ills and of attracting rural patients to health services when needed. This suggests the need for a rural outreach program of community-based paramedical health workers who can serve as the entry point of rural families to MOH health services and as a formal link between the community and the health system. The MOH has embarked on the placement of 1550 such workers (140 in the field to date), but the Assessment emphasizes the need for improving those elements of the system which support the delivery of this type of rural health service.

The environmental health area has been one of fairly substantial interest on the part of other donors, including the Interamerican Development Bank and the Canadian International Development Agency. Moreover, the GOES, through both ANDA and the MOH, has made the development of rural water systems a sectoral priority. As is indicated by the Assessment, however, what is lacking to make these and future systems effective is overall sectoral planning that will (1) stimulate institutional and policy changes necessary to assure financial viability of the systems and their proper maintenance, and (2) encourage development of personnel policies that permit the attraction and retention of qualified personnel. Moreover, such planning is essential to assure that the provision of improved water is accompanied by concomitant programs of effective latrinization and health education.

Ministry efforts in health education to date have been weak, and there is little indication of effective plans to strengthen this area outside of those in family planning and the rural health aide program. The problem reflects a lack of attention to the subject in the curriculum of both medical and health training institutions. As importantly, the lack is indicative of the minimal success of the Health Sector to date in stimulating self-help and community participation to improve health status.

The potential impact of a strengthened national health education program has major implications for the nutritional status of the Salvadorean populace as well. Programs to date in supplementary feeding, nutrition education and food enrichment have been spotty, and inadequately managed. The recently established multisectoral National Food and Nutrition Program, which emphasizes nutrition planning, food and nutrition education activities, a restructuring of direct feeding programs, and the development of an enriched tortilla flour, may improve this situation.

The GOES has increasingly taken a problem-oriented view in the area of malaria control. The record increase in case load in 1976 as well as the GOES desire to develop key areas of the country where malaria is hyperendemic are stimulating a broad interministerial approach to the problem. Responsibility for development of an integrated malaria control program has been assigned to the Ministry of Health with advisory and training assistance from international donors.

Finally, El Salvador's population problem must be regarded as its greatest health problem as well as a leading constraint to development. GOES actions to date have reflected strong sectoral commitment, but until recently, again a lack of overall planning to strengthen the positive impact of development programs outside the health sector on fertility. Weaknesses in the health infrastructure, the delivery system, and the lack of community participation vitally affect the success of population and family planning efforts as well, making resolution of such problems essential to an ultimate slowing of the growth rate.

The GOES is increasingly taking action to integrate and coordinate health resources available from different elements of the health sector, including those of the Ministry of Health, Social Security, the military, and autonomous organizations such as ANTEL. Such cooperation is most advanced in the family planning area, largely because of the efforts of the National Population Commission and its Technical Committee, and the interest of AID and other donors in maximizing effectiveness of assistance in this area. The trend is spreading to the extent that the Social Security Institute is slowly

broadening its coverage to dependents of beneficiaries and, in certain cases, to other types of patients. The process is, however, in its earliest stages, and the Health Sector is characterized by a multitude of participants, serving with little coordination.

B. SUMMARY OF PROPOSED AID STRATEGY

The USAID Strategy for the Health Sector derives from (1) the assessed health needs of the rural Salvadorean populace, and (2) the Congressional Mandate that AID projects focus on the Rural Poor Majority. The Strategy is designed to assist the GOES alleviate or ameliorate the most serious health problems, conditions or habits that lessen the well-being and restrict the productivity of the majority of the Salvadorean populace. USAID has selected as the Health Sector Goal to assist the GOES in improving and extending rural health services. In view of the fact that the Ministry of Health is responsible for providing health care to an estimated 85% of the population, the Mission proposes to implement the above goal through a Sub-Goal, to assist the GOES in modifying the existing MOH health care system to produce a more effective integrated system of health services. Integration encompasses both the types of services to be delivered by the system, e.g., health, family planning, and nutrition, as well as the institutional means by which they are delivered. Integration thus implies bringing all components of MOH, including training, supervision, administration, and logistics, to bear effectively on health care, especially in rural areas, in a context of community self-help and participation.

The Mission's strategy toward achievement of its Sector Goal and Sub-Goal has five components:

1- to assist the GOES in developing a community-based rural health aide capable of providing basic health, nutrition, and family planning services, of referring high risk cases to clinic services, and of stimulating greater individual and community responsibility for health status;
2- to improve the GOES/MOH planning, management, supervisory, logistic (supply and transportation) and training systems, integrating them in an effective organizational framework to improve delivery of both outreach and clinic-based preventive and curative health services;
3- to develop the capacity of the GOES, both human and physical, to attack the two major rural health problems enteric disease, through programs in rural water supply, latrinization, health education; and malaria through collaborative action with other donors in vector control;
4- to help reduce the population growth rate, (a) by making information and services easily accessible and attractive to both the rural and urban populace, and (b) through development programs that encourage reduced family size;
5- to assist the GOES in improving the nutritional status of the Salvadorean populace through development of a national nutrition planning and program execution capacity.

USAID intends to implement this strategy through a series of projects and activities which are continuations and logical extensions of grant and loan activities which are on-going in FY 1978, proposed for FY '79, and new in FY '80 and beyond. In the near term, USAID will focus on assistance to the GOES's Rural Penetration Program, which contains three major elements--establishment of a cadre of rural health aides, incorporation of rural midwives into the rural health system, and training of female health care specialists (nurse practitioners).

Paralleling this effort, USAID is giving major emphasis to the analysis of the elements of the MOH system which directly support these rural health personnel and to the establishment of a management information system that promotes a continual basis for problem identification and problem resolution. Strong attention will be given to other improvements in the supporting structure such as planning, training, organization and administration, health education, and maintenance and supply. Once these institutional improvements are in place, USAID believes that the GOES will be in a position to undertake a large scale health sector loan program which will include (a) further extension and expansion of rural health services; (b) new initiatives in providing safe water, improved sanitation facilities, health education, vector control, family planning services, and improved nutrition; and (c) further improvement in the administrative and support structure in order to assure the establishment of an effective and integrated rural health delivery system. The details of how this basic strategy will be carried out, and the sub-sector and sector goals achieved, are explained in more detail under the following major sub-goal components:

1. Improving and Extending the Rural Health Aide Program
2. Improving the Supporting Health Structure
   a) Health Infrastructure
   b) Health Education
3. Improving Environmental Sanitation
4. Improving Malaria Control
5. Improving Nutritional Status
6. Improving Programs Designed to Reduce the Birth Rate

In pursuing its strategy, USAID is making a major effort to strengthen coordination and cooperation with other donors, an area which is increasingly important as the Mission activities in water supply and malaria control increase. Furthermore, the Mission's plans to encourage the GOES to strengthen its efforts to integrate the range of health resources available in El Salvador to improve national health care. Especially important in this respect will be efforts to increase coordination between training responsibilities of the Ministry of Education and service responsibilities of the Ministry of Health and other GOES institutions.

C. SUB-GOAL COMPONENTS OF THE AID STRATEGY

1. Improving and Extending the Rural Health Aide Program

Mission activities in expansion and improvement of the Rural Health Aide program focus on three problem areas discussed in the Assessment--supervision, data reporting requirements, and community participation.

a. Supervision

To date, the MOH has used malaria evaluators (supervisors of malaria volunteers) as supervisors of the RHAs because of their experience as field workers and the fact that they are known to the community. The evaluator receives the same training as the RHA in addition to some supervisory training. This means that the level of technical as opposed to administrative supervision which he can provide to the aide is minimal. To correct this weakness, the MOH has taken steps to link the RHA more closely to the health facilities and professional team working there. In addition, the Regional Offices have been urged to become more involved with the aides, visiting them often both to provide supervision and to increase the credibility of the aides as official parts of the formal health system.

Given the level of care to be provided by the aides, it has been determined that the technical supervision envisioned is adequate under this arrangement, especially if the relationship of the aide with health facility personnel is a continuing and supportive one. Nonetheless, the Mission is interested in assuring that such follow-up technical supervision be institutionalized. USAID strategy in this area is to work with the Ministry on the role of the Region in this respect to develop the plans, skills and logistic support (mainly transportation) necessary to assure a greater degree of positive supervision for the aides than can be provided by the malaria evaluator alone.

The choice of the malaria evaluator as the RHA supervisor also has implications for the malaria program which is being refocused by the MOH according to changing patterns in malaria incidence. The Ministry is currently engaged in discussions to determine the best use of its field personnel given priority needs for outreach work in both malaria and the delivery of rual health services. To resolve the problem, it is likely that in highly malarial areas, malaria evaluators will have fewer RHAs to supervise and an alternative source of supervision will be designated. USAID is working with the MOH to influence trial use of a group of experienced RHAs as supervisors for a limited number of aides in neighboring areas.

b. Data Requirements

At present the RHA is asked to collect a minimum amount of data from the community as a part of the original community census, and also to maintain a large quantity of records on activities, referrals, supply, medication, injection control, maps and workplans. Many of these requirements have been placed on the aides by the Regional Health Offices which seem merely to accumulate the data rather than use it for management or supervisory purposes.

USAID's strategy, to be implemented as a part of the Rural Health Aide grant (78), is to work with the MOH to develop a management information system that limits data gathering and recording by the Aide to that necessary for planning and evaluation, and management and control. A key part of this effort will be the development of plans for analysis and feedback of the information to the appropriate person or level for action. As a first step, USAID is working with the MOH/MCH Division to determine what data are required from the Aide to enable measurement of impact on the health system as well as levels of activity. To resolve the dual problem of insufficient data and excessive reporting, the Mission will try to stimulate greater cooperation and coordination between the central Normative Division (MCH) and the Regions, since it is at the latter level that an understanding of the problem and the function of data seem to be missing.

Finally, USAID plans to encourage the MOH to have trainees collect data in their own communities as a part of their training course. Such data could be used to analyze specific needs in their communities which could then be addressed in the training course.

c. Community Participation

Although community participation in health and family planning programs has been limited to date, USAID believes that with the increasing experience of both the aide and the community, such participation will be a natural outgrowth of the aide's work. The MCH Division has expressed interest in stimulating the aides to focus increased attention on community activities and views the latrinization campaign as a likely area in which such cooperation can be engendered. USAID is discussing with the MOH means of strengthening instruction in community development in the training period. USAID also plans to assist the MOH, under both the RHA grant and the Rural Health Improvement grant, to develop materials and instruction in the use of audio-visual materials to stimulate community interest and action. Finally, the Mission is seeking to encourage greater contact between the Peace Corps health volunteers, who have been trained in community development, and the RHAs and PVOs as a means of stimulating small scale community development projects with health impacts.

The Project Paper to be submitted shortly for the 78 Rural Health Aide Grant Project provides further details of Mission Strategy in this area.

2. Improving The Supporting Health Structure

a. Health Infrastructure

The Mission views a sound infrastructure as a basic underpinning of the ultimate goal of activities in the health sector, the improvement and extension of rural health service. To that end, the Mission proposes the following:

(1) Rural Health Delivery

(a) Under the FY '78 RHA Grant, provide technical assistance to the MOH to upgrade supervisory, logistic and transport systems to support the Rural Health Aide Program.

(b) Under the FY '79 Rural Health Improvement Grant, provide technical assistance in redesign of training, supervisory, administrative and logistic (equipment, supply and transportation) aspects of the national health system as it relates to delivery of an integrated package of health, population and nutrition services.

(c) Encourage the establishment of a review board within the Ministry of Health to be responsible for selection and regulation of the use of drugs and medications distributed within the MOH health delivery system. One of the functions of this board would be to select out any dangerous drugs and provide controls for the use of those known to have harmful side effects.

(d) Provide support for training in administration to mid-level MOH personnel, aimed especially at Regional Chiefs and their deputies and hospital administrators.

(2) Management Information System

(a) Under the RHA Grant, technical assistance will be provided to develop and implement a management information system that will permit the evaluation of both activity and impact of the RHA's on the health system. Under the Rural Health Improvement Grant, the Mission plans to assist the MOH in planning expansion of the system to cover the entire health system to allow data gathered to be used to improve planning and management. During this period, USAID will work with the MOH to determine the most cost effective means of data collection, storage and retrieval. This would include analysis of human resource requirements and availability of programming skills as well as of computer hardware which might be made a part of the FY 80 Rural Health Loan.

(b) Manpower Planning -- Under the FY 79 Rural Health Improvement Grant, provide technical assistance in manpower planning to meet program objectives, especially in terms of rural health needs. Such assistance would include analysis of needs, recruitment, incentive and career mobility policies of the MOH and the Civil Service.

(c) Budgetary Planning - USAID will work with PAHO and BID in encouraging MOH to include a system of program budgeting in its planning, to accompany the nationally required line item system if necessary. Technical assistance will be included in the FY 79 grant in this area if appropriate.

(d) Hospitals - Recognizing the need to focus its energies and resources toward rural health to the maximum extent possible, USAID's strategy in this area will be to:

(i) Include hospital administrators in any AID - funded training in administration to GOES/MOH personnel;

(ii) Encourage greater integration of hospitals into the national health system by pointing out implications for patient care, budgets, and administration of the present system;

(iii) Stimulate the GOES to establish a national hospital association, possibly through provision of consultant assistance contracts since improvement in these facilities outside the San Salvador area is an essential back-up element of an outreach rural health delivery service.

(iv) Work with PAHO and the Ministry to develop a series of equipment and facility maintenance courses. The courses would be designed to meet not only present needs but those that can be foreseen from the projected expansion of facilities which will result from a new loan expected from the Interamerican Development Bank.

(e) Human Resources -

(i) In its work with the Ministry of Health, USAID will encourage the MOH to increase its liaison with the Ministry of Education as a means of influencing change in the curriculum of the Faculty of Medicine to stimulate a greater recognition of (1) health needs, both preventive and curative, in rural areas; (2) the role and capabilities of other kinds of health personnel, i.e., nurse practitioners and rural health aides, in meeting those needs.

(ii) To encourage greater use of a potential and already accepted health resource in rural areas, USAID will

provide the MOH with assistance in development of short training courses to upgrade skills and knowledge of rural pharmacist assistants.

b. Health Education

The Assessment has identified four weaknesses of the MOH that inhibit the development and impact of health education programs. These weaknesses are: (1) the lack of coordination between programs that are delivering services and efforts in health education in both the public and private sector; (2) the administrative and financially weak health education division of the Ministry; (3) the shortage of materials and funds for mass media; and (4) the need for intermediate and short term training of health educators and members of the basic health team delivering services.

Despite the emphasis on health education throughout the Five Year Health Plan, the Mission believes there is in reality 1) little awareness of its potential for improving health status, and 2) a lack of knowledge of how to carry out effective health education. Thus although annual health and education campaigns have been generally effective in reaching their specific goals, their aim has been limited, both in technical scope and coverage. Health education is included as a part of most health training courses, but training in techniques for carrying it out, in communication, and in community development, are not part of these courses. Although efforts have been made to address these needs in the rural health aide course, the indication is that emphasis on and technical support for the role of these community workers in health education needs to be strengthened. USAID plans, therefore, to

(1) provide technical assistance and funds to the MOH to develop films and radio messages in health education to support the activities of the aide.

(2) encourage modification of the curriculum of the RHAs to include training in means of assessing community needs and in ways of involving the community members to respond to those needs.

(3) provide technical assistance to the MOH to analyze the health education content and teaching methodology of courses offered by the MOH National Health Training School as a basis for recommending curriculum changes and improved teaching techniques.

(4) explore with MAG, DIDECO, and the MOE the possibilities of using their extension agents and teachers as agents of change to support health education in rural areas.

(5) work with PVOs and Peace Corps volunteers to expand and coordinate their activities in conjunction with the MOH.

3. Improving Environmental Sanitation

The Mission's strategy in Environmental Sanitation responds to the Assessment in four areas: water supply, both rural and urban; waste disposal; insecticide control; and industrial hygiene.

a. Water supply

(1) Rural

This is a major area of emphasis for the Mission. USAID has already begun in-depth discussions with the GOES, BID, and ANDA to determine means in which AID resources and expertise can be used to upgrade this area critical to El Salvador's health situation. Immediate possibilities include development of OPG's to work in small water systems. Longer range prospects include a major input into the Ministry's rural water program to be implemented under a large scale Rural Health Loan. Taking into account that the Assessment has shown that a major share of the problems with existing water programs deal with the infrastructure financing, personnel turn-over, and system maintenance, AID plans to try to tie any loan in this area to measures to remedy these problems.

In view of the scope and depth of technical advice implied by this strategy and its intimate relationship to improvement in other aspects of environmental health usch as waste disposal, USAID will develop with the GOES a host-country contract with a sanitation/water supply specialist to advise on alternative courses of action and liaison with other donors.

Other activities AID plans to explore under this category will be a study or pilot projects to test the feasibility of using rainwater to meet personal needs for water in small rural communities. Although rainwater is stored for use mainly for agricultural purposes in rural areas, the majority of the rural populace relies on polluted surface waters in rivers and streams for these needs. In view of the fact that El Salvador has abundant rainwater, (data show that over the past 30 years the driest part of the country has averaged about 1.1 meters or 43 inches of rain, and the country-wide average is 1.8 meters or 70 inches) wider use of this free and safe source of water should be stimulated.

Lack of transportation has been a serious hindrance to the sanitation inspectors in performance of their work, especially in reaching many of the areas in which they are to promote latrinization. Although the rural health aide program will do much to improve the situation in the most remote communities, a means of transport for the inspectors is required for them to serve their own areas more effectively and to provide assistance and supervision of rural health aides in latrinization. AID is thus considering including in the Rural Health Loan funds for purchase of motor scooters to improve

their effectiveness of the inspectors in the whole range of their work.

Finally, the Mission will encourage the MOH to involve Peace Corps Volunteers in the latrinization program, helping the RHA's particularly in stimulating community participation.

(2) Urban

(a) Chlorination of water supplies is inconsistent at best; most of the water supply systems in the nation have no desinfection component whatsoever. Where chlorination is practiced, it is not continuous, and very often the concentration of chlorine is too low to destroy amoebic cysts or the enteric viruses. The reason given is that the imported chlorine which must be used because none is produced locally is too costly to be used continuously in the amount needed.

If a local chlorine production facility were developed through a small business loan from AID, various froms of low cost chlorine that could be used in water purification, laundry bleaching powders, chemical synthesis, etc., would be available. Whereas imported chlorine costs from $0.90-$1.15 per pound, locally produced chlorine should cost from $0.20-$0.53 per pound.

(b) It is estimated that as much as 9.6 m3/ sec or 30% of the water put into the distribution system in San Salvador is lost due to leakage. Although it would not be a substitute for developing other water resources, the reduction of this substantial loss would certainly alleviate the pressure on an already over extended water supply at a relatively minimal cost. By supporting an extensive mapping survey of urban water distribution including a program to provide better leak detention, leakage loss could be cut to 10% of the water put into the system or 0.2 m^3/sec, resulting in a net gain of available water of 0.4 m^3/sec. AID will assist the Ministry, if interested, in seeking other donor assistance in this area.

b. Domestic, Industrial and Agricultural Waste Disposal

USAID's strategy in this section is to present the findings and recommendations to the MOH, exploring their interest in receiving assistance from other Donors. Possibly assistance in certain aspects could be considered for funding under the Rural Health Loan.

(1) Reduction of the tremendous burden placed on the country's rivers and streams by current sewage and waste disposal practices is imperative for the public well-being. One approach would be to provide information on various alternatives in materials and construction techniques for sewer system development, perhaps through a workshop on the selection on appropriate technology for the specific needs of El Salvador. Furthermore, many non-sewered waste disposal devices have come on the market in recent years, and some of them may offer a more economical alternative to costly expansion of sewer systems. USAID plans to encourage the MOH to seek data in this area from AID's Health Office.

(2) Long-term technical assistance including the support of some pilot projects should be provided to develop low-cost approaches to industrial-agricultural wastewater treatment in at least the following areas: the processing of coffee, sugar cane, leather, and food. Assistance in training operators for wastewater treatment plants is also needed.

(3) While solid waste disposal seems fairly well under control in San Salvador, it constitutes a growing problem in the other urban areas where insufficient, organized effort is being expended to handle solid wastes and where sound plans for improvement of services seem to be lacking.

Urban centers over 20,000 population, such as Santa Ana, Ahuachapan San Miguel, Cojutepeque, San Vicente, Usulutan, Zacatecoluca, Chalatenango, and Sonsonate, have continuous need for a bulldozer to work a sanitary landfill. Since the heavy equipment to carry out proper disposal once the waste is collected does not exist in these communities, funds for the purchase of six to nine bulldozers to be used in such sanitary landfill operations might be obtained from a loan.

(4) To modernize the substandard collection vehicles currently in use in these other urban areas and to minimize the health hazards to trash collection workers, loan funds are needed to purchase fourteen to eighteen pack-more or multiple unit collection vehicles be made available.

(5) Using the San Salvador operation as a working model, a series of comprehensive workshop on solid waste disposal should be presented to the municipal supervisors of the facilities for solid waste disposal. Special technical assistance should be provided to train teams that will dispose of potentially infectious wastes from hospitals, a problem that is not presently being addressed.

c. Insecticides and the Environment

Any programs undertaken in this politically very sensitive area will have to be planned with great care, but it is obvious that pesticides are misused and over used to the detriment of the people and the environment. USAID plans to encourage the GOES, to strengthen its control of pesticide usage and reduced usage of pesticides with emphasis on safe use.

(1) A recent study in Central America indicates that by making better use of the cotton pest's natural enemies coupled with other sound agricultural practices (integrated pest control) the number of applications and amount of pesticide used can be reduced from 30-50%. Yields, when compared to "traditionally" treated cotton, were actually observed to increase.

A large project to promote and support the more widespread use of integrated pest control would serve to illustrate to more people the economic viability of this approach while pointing out a way to reduced pesticide consumption and a less disturbed environment. USAID will explore MOH and MAG interest in such a project.

(2) Two pesticide workshops were sponsored by AID in 1973-1974 with the aim of demonstrating modern methods for monitoring local biosphere contamination, but today there is still a decided lack of local personnel trained to carry out environmental monitoring. An in-depth, long-term program for training local personnel should be initiated and should include a program for training instrument repair technicians. USAID will encourage MOH participation in regional USAID sponsored pesticide seminars, and seek PAHO help in initiating local training.

d. Industrial Hygiene and Safety

Little has been done in this area of great need; moreover, the GOES has apparently decided that it is not a high priority area in the next five years. The Assessment findings may help the MOH seek other donor assistance in this area.

(1) To begin to handle a heavy load, the number of trained inspectors should be augmented from the current sixteen to at least one hundred and fifty. Substantial technical and financial assistance is required to upgrade existing vocational training in industrial hygienic and safety to a semi-professional level.

(2) To carry out such a program the MOH would need a loan for the purchase of motor scooters and jeep-type vehicles to accommodate the increased staff as well as funds to support the enlargement of the laboratory facility and the purchase of modern testing instruments.

4. Improving Malaria Control

The GOES has recognized the seriousness of the sharp increases in malaria cases over the past four years, and the indications that the mosquito population serving as vectors for this parasite are now largely resistant to traditional pesticides. Until recently the MOH, which is the principal agency involved in the National Malaria Program, based their program on post-facto control of mosquito populations, i.e., after they had left the larval stage and become adults.

Under the new GOES administration, the MOH has recently broadened its approach to malaria control, deemphasizing these traditional means in favor of the development of action-oriented preventive programs. The MOH is presently conducting a study of the entire situation which will be completed by mid-summer 1978, and serve as the basis for a revised national malaria control plan.

Toward this effort the MOH is receiving technical assistance from several other donor agencies including PAHO, CARS, and the Department of Agriculture.

USAID's strategy in malaria is to supplement the program of other groups, such as PAHO, in support of the MOH's new integrated malaria control program. Discussions with the MOH and the other donors have indicated the need for AID assistance in upgrading MOH capabilities in entomology and vector control. Both needs are closely related to AID efforts to improve rural health. The Mission plans, therefore, to program long term training in entomology under Rural Health Improvement grant as well as in-country short term training in vector control in cooperation with PAHO under that grant. In addition, the Mission will work with CARS on the development of observational travel to study successful vector control to begin in FY 79. USAID will attempt to secure IDB participation in that expanded program, especially in the provision of heavy equipment and commodities. If that is not possible, the Mission will consider inclusion of such assistance in the FY 80 Rural Health Improvement Loan. Mission efforts in this area will be supported by the addition of a personal services contract sanitation/water specialist to its staff.

5. Improving Nutritional Status

Recent studies by INCAP, CARS/CDC and others have ranked El Salvador, along with such countries as Haiti and Bangladesh, among the countries most seriously affected by malnutrition. At least 74% of the pre-school children under five show signs of protein-calorie malnutrition (PCM) and numerous others suffer from avitaminosis (particularly vitamin A and riboflavin) and anemia. When taking into consideration the high infant mortality rate (generally regarded as an indirect indicator of nutritional status in LDCs), it is apparent that there is a serious need to address the nutrition problem which affects particularly the rural areas.

Unfortunately, the obstacles barring progess in this area are diverse and well-entrenched. The average worker, particularly in the rural areas, simply does not earn enough to cover the cost of adequately feeding his family and also pay for housing, clothing and other basic necessitites. Although the situation varies some according to the region, 1976 data show that the income of more than half the rural families is less than $80 a month. Further increasing the problem is the high population growth rate (3.3%), the government's inability to effect significant changes in land tenure, and income distribution and the lack of marketing infrastructure to support improved food distribution. These major obstacles compound the traditional problems of low educational level of the poor, cultural barriers to good nutrition such as poor infant feeding patterns, high morbidity rates and inadequate community health services.

AID's primary contribution to date in nutrition activities has been the PL 480 program. Shortly, USAID will implement a $475,000 project designed to strengthen the institutional capability of GOES to field food and nutrition interventions on a continuing basis and to effect positive policy decisions affecting food availability and nutritional status. The project's goal of improving the nutritional status of low income families coincides with that of the National Food and Nutrition Program, although its resources are more narrowly focused than the Government's. Specifically, USAID would apply project funds in four of the six areas addressed by the GOES plan. The four are:

1. Planning, evaluation and management of applied nutrition interventions. This component will provide technical assistance to the Food and Nutrition Coordinating Office for developing a data base, surveillance system and evaluation guidelines necessary to carry out effective nutrition planning.

2. Development and coordination of multisectoral nutrition education. USAID will support the establishment of a sub-committee on food and nutrition education which would bring together the diverse agencies now providing these services in order to develop a more coherent strategy. The subcommittee would oversee development of public messages and multi-media programs to influence dietary behavior patterns and nutritional status.

3. Rationalization and coordination of supplementary feeding programs. El Salvador has many agencies and donors active in this area, resulting in a patchwork of efforts. USAID will assist GOES efforts, through a technical subcommittee, to coordinate these activities through development of a centralized GOES system.

4. Industrialization of fortified tortilla flour. AID will provide technical assistance for the subcommittee responsible for executing this project.

USAID expects its work and that of the GOES in these four areas to result in identification of further areas for joint AID/GOES interventions. Of special interest to the agency is encouragement of multisectoral coordination of current and future nutrition related activities.

6. Improving Programs Designed to Reduce the Birth Rate

USAID's population program in El Salvador is based on a combination of family planning programs to increase contraceptive prevalence and development programs which are expected to encourage family planning and reduction of desired family size. These programs will be directed toward groups with actual or potential high fertility including rural males; rural females, especially younger women; adolescents; and marginal urban groups. Rural males have been selected for special emphasis given their key role pointed out in both the Harrison and Murray studies in determining contraceptive practices and living conditions of their spouses.

The strategy to reach these groups is discussed more fully in the Population Strategy Paper. A brief resume of the major elements as they relate to the health sector is relevant here. Service programs with concomitant information programs remain the central focus of the program. The existing service program, which, with the exception of the Rural Penetration Program, is health facility-based, is being strengthened through a commercial retail sales program, and upgrading of existing community distribution activities. These include a program to train rural midwives and rural health aides to dispense oral contraceptives after checking a potential client for contra-indications.

Key to the success of both the commercialization and community distribution program is liberalization of regulations which require that a woman have a pelvic exam and pap smear before she is given initial cycles of orals. The Mission is working with the Ministry and the National Population Commission to this end.

A second aspect of services provision is improvement of clinic-based services. To reduce the costly over-dependence on the services of a physician in family planning, USAID is urging better use of the nurse practitioners, and improved team training of physicians, nurses and paramedical personnel to improve understanding and more efficient distribution of work. Efforts made as a part of the Rural Health Aide Grant to improve rural health delivery, especially in terms of administration and logistic and transportation support, will have a direct bearing on the success of family planning as well, including support for provision of voluntary sterilization for both men and women.

Besides information and service provision, the Mission will place a new and major emphasis on what is broadly termed "policy". This involves a two-step effort designed first to assist the National Population Commission in development of capability to evaluate the operation, problems and effect of the current National Family Planning program as a basis for a second phase, revision of program goals. The first step will be implemented through a contraceptive prevalence survey to be carried out in late summer 1978 which will provide data on the effect of the program to date and point out problem areas.

On the basis of this information as well as analysis of existing data on fertility determinants, the Mission will increase its advisory efforts to the GOES in assessing the fertility impact of development policies in sectors other than health and in stimulating those which have a positive impact. Special focus to this end will be placed on the sectors of education, rural development, programs to improvement of the status of women, and possible small scale industrialization activities.

A P P E N D I C E S

INTRODUCTION

A. HEALTH INFRASTRUCTURE SUPPLEMENT

B. HUMAN RESOURCES

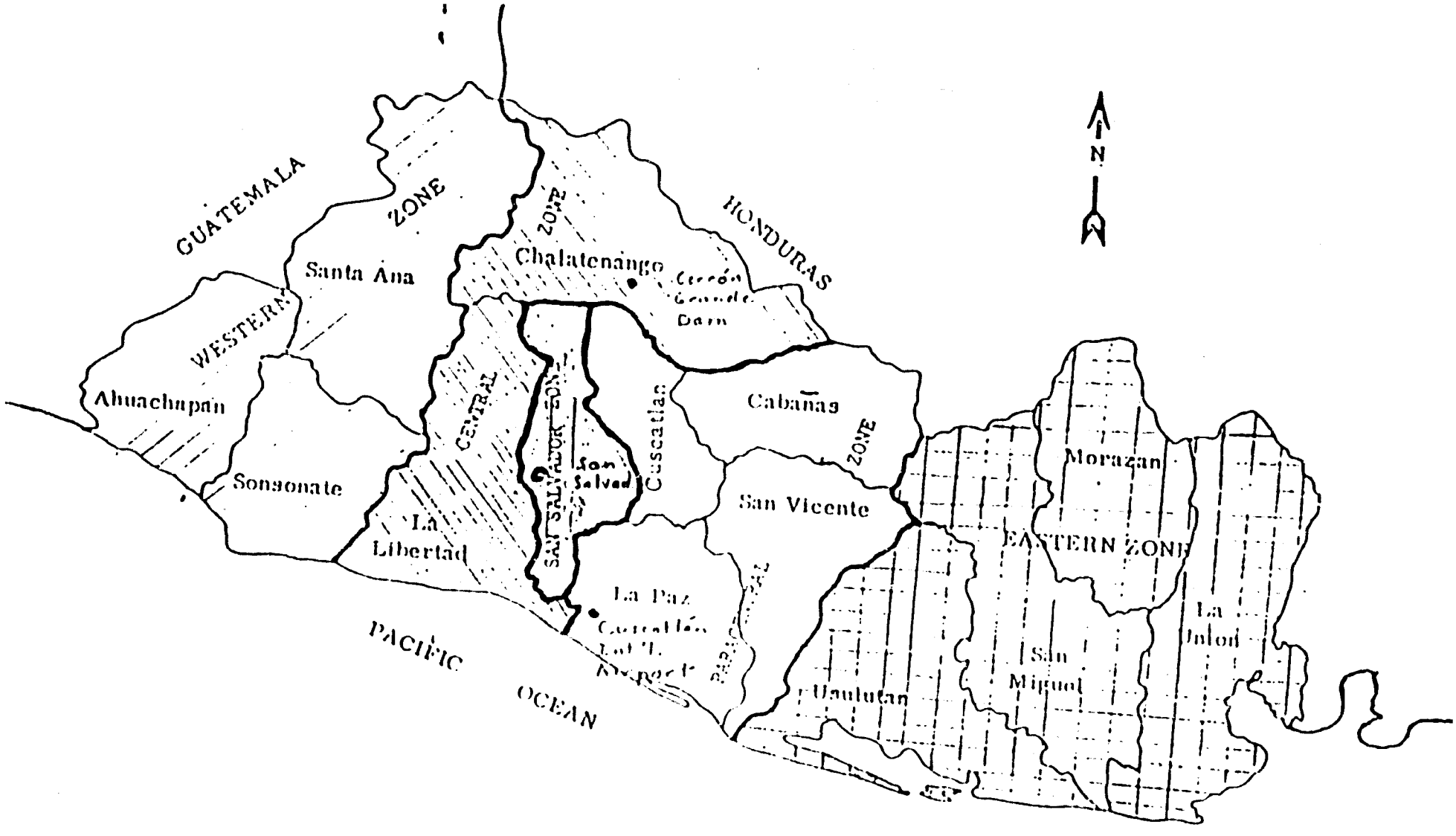
C. PRIVATE VOLUNTARY ORGANIZATIONS

D. THE SOCIAL AND CULTURAL CONTEXT OF HEALTH DELIVERY IN RURAL EL SALVADOR: by Polly Fortier Harrison.

E. TRADITIONAL AND MODERN STRATEGIES OF HEALTH CARE DELIVERY AMONG PEASANTS OF EL SALVADOR; by Gerald F. Murray

F. COMMON ABBREVIATIONS

G. ACKNOWLEDGEMENTS



FIVE HEALTH REGIONS OF EL SALVADOR

INTRODUCTION

Appendices A, B, and C are meant to serve as supplements to the Assessment. Each provides detailed information on aspects of the Health Sector discussed in general or from a different perspective in the Assessment.

Appendices D and E, by Doctors Polly Harrison and Gerald Murray are cited extensively throughout the Assessment and have provided much of the socio-cultural data for it.

Materials from these two sources as well as that from a sixth reference, "A Preliminary Policy Analysis of the Health Sector in El Salvador" by Dr. John Dennis Chasse, should be of great use to persons interested in the Health Sector in El Salvador. The latter reference has been particularly useful to Mission personnel involved in considering alternative courses of action for the Health Sector. It is cited as a reference rather than an Appendix in view of the more theoretical nature of its contents.

APPENDIX A. HEALTH INFRASTRUCTURE SUPPLEMENT

The Ministry's health delivery system can be classified according to four distinct levels of facility-based care: (1) the regional hospital; (2) the integrated hospital or health center; (3) the health unit; and (4) the health post. In addition, one-vaccination post and 10 community posts are operational. To date, the Ministry has not defined the distinct population group sizes or "catchment areas" to be served by distinct level of service.

THE HEALTH POST

The Post is the lowest level of attention available to the community in the existing institutionalized public health system design. The 123 posts widely dispersed throughout the five regions represent more than half of the total system's facilities. Each is permanently staffed by an auxiliary nurse supported by three other personnel: a watchman, a supply person and a fee collector. Posts are open five days a week from 7:30 a.m. to 3:00 p.m. Generally the auxiliary nurse lives in the community immediately surrounding the post during the work week; many, however, leave on the weekends to visit their families in the major urban centers and return on Monday morning.

In accordance with norms established at the national level each post provides outpatient consultations; and environmental sanitation services but not on a permanent, daily basis. Rather the auxiliary provides primary care for treatment of minor illnesses and first aid and makes referrals to higher levels of attention as necessary. Mobile medical teams comprised of a physician, a graduate nurse, a secretary and occassionally a sanitation inspector visit each post on regular routes once or twice per week to provide more comprehensive care to the local residents. The newly trained graduate nurses from the nurse practitioner rationalization program, a component of the Rural Penetration Program, have already joined some of the mobile teams and it is anticipated that within the next few years each team on the circuit will include one such person. The circuits of the distinct mobile units by region are delineated in Attachment 1 .

While the major focus of services provided at the Health Post are curative in nature, substantial preventively oriented activities are also an integral part of the program design. These include pre- and post-natal care, family planning services, vaccinations, some health education and, at at least some posts, some level of community outreach activities. The typical form of outreach is the house visit by the post's auxiliary nurse in the late afternoons after clinic hours. The preventive health component of post services is supported in the typical rural area by a system of avisos or announcements by the local cantones comandantes alerting the contiguous population to ongoing vaccination campaigns and other special health programs.

Auxiliary nurses must presently expend a considerable amount of time identifying and following-up those children who do not return for scheduled vaccinations. This outreach program solely for providing injections without complementary health education is a most costly mode of meeting immunization coverage goals. Further, the expense is compounded by the high rate of houses at which intended recipients are absent at the time of the auxiliary visit. Additionally, the total time available for home visits is seriously constrained by the fact that each Post has just one auxiliary and she is required to be in attendance at the clinic during the full work day even when the mobile team is visiting. A few cases of extensive community outreach including school visits and meetings with women's groups by the auxiliary have been identified but in each case such innovative approaches were due solely to the personal initiative of the person, not a formalized component of the Health Post program. However even in these communities, out-of-clinic contact between health personnel and the local populace has been limited to those residents of the municipality in which the Post is located itself and not, importantly, with the surrounding cantones population. Thus, unless the rural resident approaches the clinic on his own initiative, under the existing system design no contact with the formal medical care delivery system is made.

As noted in the Uluazapa study, patient loads at the Health Post are strikingly correlated with the pattern of mobile team visits with significant overutilization on the days when the team is present and underutilization when only the auxiliary nurse is in attendance. The net result is a most costly, inefficient allocation of resources to meet the community's health needs; reduced opportunities for quality medical care during team days exist given the heavy patient loads and, conversely, much unused time of auxiliaries occ on the other days during which the clinic is open. The situation highlights the need for instituting a screening mechanism which would distribute patients by the severity of their illnesses and limit medical consultations on the team days to those in actual need of more comprehensive care.

Another weakness of the existing Post is the inefficient allocation of staff time by skill level among the diverse functions. Doctors are commonly viewed treating patients for minor ailments more appropriately handled by a nurse and importantly reducing the physician's total time available for care of those persons really in need of his skills. At the same time, graduate nurses tend to handle administrative functions and control visits of persons in distinct programs such as prenatal and family planning services which could have been delegated to an auxiliary. The auxiliary in turn will be given responsibility for numerous chores necessitating in actuality the level of training of an aide. In addition, on the team visit day, the driver of the Regional Office vehicle which has transported them to the distinct Post remains completely idle; the rare exception to this is in those areas in which staff size exceeds the bare minimum to run the clinic itself, in which case he may be used to drive one of the auxiliary nurses to the community to conduct vaccinations, home visits, etc. This pattern of human resource utilization highlights the need to modify traditional staff roles if the health system is to be made truly responsive to the health needs of the population.

At the same time, the strong preference for care by physicians among the surveyed population indicates that a massive health education campaign will be required to change existing perceptions of the efficacy of care by different personnel types in the health system. And importantly, training of new levels of workers such as the rural health aides to redress the geographic distribution and sheer quantitative gaps in manpower levels throughout the sector will have to address these newly-created expectations and demands among the rural population especially for modern, physician-based care.

In addition to direct health care, many posts also have instituted a food supplement program for pre-school children, pregnant and lactating women.* Determination of eligibility is made by the attending physician, with actual distribution handled by the nurse. Food supplies for the program are principally flour which has largely been provided through U.S. PL-480 exchanges. Program continuance has been extremely susceptible to the vagaries of supply. It is not uncommon for mothers to arrive at the post for their weekly supplement only to find that no food is available. Storage is a major problem with the already limited storage area for medical supplies and pharmaceutical products further strained by the large bags of flour. Spoilage of sacks stored in moist, uncovered areas is common.

Program effectiveness has been hampered by the large number of malnourished children who never receive health services from the MOH system. Further, much evidence exists that malnutrition was seriously underdiagnosed and thus many children who did attend the health post and were actually in need of nutrient supplements were excluded from the program. The recently adopted modification of patient record forms to indicate age in precise number of years and months, and weight in pounds and ounces, thus, holds much potential for improving the diagnosis and thus, the treatment of widespread malnutrition in El Salvador.

The local pharmacy remains the major competitor to the Health Post, a serious nonrecognized problem among personnel of the public health facilities.[20] The basic underlying assumption by many of the rural populace is that the actual quality of health care is better at the pharmacy than at the post and thus is the more desirable alternative, economic resources permitting. Numerous reasons for this expressed preference for pharmacist rather than post care can be identified. First, the very youthful and transient composition of the typical post staff, including the mobile team members (most of whom are completing their social service year) erodes confidence in their capabilities among the rural populace. The typically older, locally known pharmacist has, in contrast, already proven his successful ability to diagnose and treat many illnesses in the community.

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*Other levels of care also provide food supplements, as available.

Second, the rotating nature of the physician services offered at the post results in an inavailability of direct physician care during the majority of the week. Given the limited capabilities of the auxiliary, the only permanent staff person, patients may feel there is little choice but to seek counsel from the pharmacist particularly on the more numerous days each week when no physician is present at the post.

Official quotas for physician care of six consultations per hour or 30 per day coupled with constantly unexpected emergencies, limit the actual number of patients seen. Thus it is not uncommon for persons to walk several miles only to find crowded waiting rooms and receive notification that they must return another day for care. Further, those who are admitted for care often must wait up to several hours.

The time-cost of receiving medical care at the local Health Post is, thus, very high with commonly half a day required from the time one arrives until one is seen by the physician in turn and leaves with a prescribed treatment.

Tardiness of physicians in arriving at a given post is frequent, abetted by the fact that many travel each day from the urban centers in which they live to the more remote rural areas in which posts are located. Others have been found to leave early. The net result is a substantially limited time available for a patient to receive a medical consultation.

The quota of seeing 30 patients per day encourages some physicians to rush through examinations to achieve their daily target and then leave early. In addition, rude treatment by medical personnel has been reported by rural residents in recent studies of the local health delivery system.[21] Other frequent complaints include failure of the physicians to explain the precise nature and causes of an illness for which treatment is sought and continuing communication barriers between patient and client. Of special note is a practice carried on in at least one major Department in which public service physicians will see private patients for a fee after their daily quota of 30 persons is met. Thus, many patients arrive for care only to find that the services which they had understood would be free are not available to them that day unless they are willing to pay a private consultation fee.

A recent study of rural residents highlighted several problems of the existing Health Post program which hamper its responsiveness to its population's own perceived needs. 1/ To the extent that such insights, if adopted into the program design, can be viewed as important vehicles for motivating patients to more effectively and efficiently use the existing health network, they are outlined below.

Throughout the surveyed population a pervasive demand for "better" care, not merely "more" care was noted. This improved care is viewed in terms of increased attention by medical staff at the post to patient identification and recognition, that is, a concerted effort to reduce the impersonality of the existing service design.

It is of note that when asked to rank clinic programs by their perceived value, the sampled group of women felt that medical consultations and vaccinations were the two priority services with maternal-child health programs ranking only third and just slightly ahead of supplementary feeding. Furthermore, men did not even mention maternal-child health among their listing of most valuable programs. 2/ The high drop-out rates in

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1/ Harrison, op. cit.

2/ Ibid.

maternal-child health programs, despite the fact that they directly affect the two subgroups of the population most at risk of excessive mortality and morbidity, can be directly attributed to these widely held health attitudes. Harrison has identified five factors which adversely impact on enrollment and/or continuation in maternal-child health programs. These include: 1) fearfulness and lack of knowledge on the program's benefits; 2) modesty and physical discomfort associated with gynecological examinations; 3) unawareness of need of attention e.g. failure to perceive problem as illness; 4) in at least some cases, lack of reinforcement on program value by existing authority figures in this area such as midwives; and 5) as has been noted, some actual resistance of rural women to accept the fact that they are pregnant. Further these socio-psychological factors appear to be more serious constraints to increased utilization of the system than obstacles of time e.g. conflicting responsibilities or economics.

All of these factors have served to alienate many rural residents from the existing public health system. However, despite a general level of dissatisfaction with the quality of care, a recent study indicates that for the poorest of the rural households, the Health Post remains a common mode of health care assistance. 3/

Available data indicate that the age composition and residence of patients utilizing the MOH Health Posts does not vary significantly from that of the population as a whole with half under 15 years of age and the majority from rural areas. 4/ There is, however, a significant sex bias among users. The Murray study corroborated the Harrison field survey findings that females use Health Post services significantly more than men. Examining patient records for adults only, that is persons over 15 years of age, Murray found that almost eight out of ten patient consultations were for females. This highly skewed distribution can be at least partially attributed to the fact that the Post offers selected female-oriented services including pre-natal control visits and family planning. However even when the data are controlled for this inherent bias, and analysis is directed toward curative consultations alone, the over-representation of women among the patient mix is evident.

The underlying causes of this pattern are not clearly documented. The Uluazapa study suggests that the conflict between the typical health posts' hours of operation and male working hours may be a key factor. 5/ Conversely the Murray study speculates that differential sex utilization patterns may be more closely linked to the dynamics of economic resource distribution among the rural family. Contrasting the costs of service provision by the two major competitor models in the rural areas--the Health Post and the Pharmacy--the former has minimum financial cost in terms of the standard $0.40 per consultation fee but high time costs in terms of the typically long waits for care. At the pharmacy, on the other hand, the actual time expended in receiving care is minimal but the

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3/ Murray, op. cit., p. 179.

4/ Murray, op. cit.

5/ Harrison, op. cit.

economic costs are significantly higher than that of the Post. Further the study indicated that the higher the economic status of the rural household, the higher the utilization of the pharmacy and the lower the utilization of the post. This pattern appears to be consistent with the widespread feeling that the pharmacy, despite its higher cost than public facilities, nevertheless provides superior health care. Additionally there is some evidence that among adults, males use the pharmacy more frequently for health management than do females, with the major variable available to explain this discrepancy that domestic income, particularly cash, tends to be produced and controlled by males. This predominance of men in the cash economy is abetted by the striking absence of cash earning opportunities for females in the rural areas. Overall then it can be surmised that different utilization patterns are not only a product of economic variation between households but importantly within them. 6/

Despite the almost equal distribution of consultations between children and adults, among children's visits to the Health Post, a recent study indicates that town children tend to be significantly overrepresented with seven out of ten town residents visits those of children while less than five out of ten rural patients at the post are children. 7/ The logistical problems of carrying a child to the town clinic from the many rural cantones from which the only available transportation is on foot may preclude the use of this lowest level of attention for many rural children; whereas it is more readily used for town children living in close proximity to the fixed service site. Given excessive morbidity and mortality in the rural pre-school age population, the vast portion of which is preventable, the adverse impact of non-utilization of existing curative and preventive health services is obvious. It is this apparent gap between need for care and accessibility of this vulnerable sub-group of the nation's population to existing health services which the Rural Penetration Program can importantly attempt to redress.

One possible vehicle for improving health post care is that adopted by the Oriental Region. An extensive manual highlighting the key signals of disease and appropriate methods of treatment has been developed by the regional health office's physicians and nurses. Disseminated to all auxiliaries working at each of the region's 46 health posts, the manual has become a potentially valuable tool for enhancing the diagnostic and patient care capabilities of this important personnel type who currently provides the majority of day-to-day health services to the population.

6/ Murray Op. cit. P. 163 - 170

7/ Murray Op. cit. P. 166

COMMUNITY POSTS

Ten mobile units were placed into operation in July 1973 in the Metropolitan area to provide community health services to the urban poor. By 1975, the activities of these units have increased substantially -- an estimated 37% -- from the 1973 level to include a total of 23,308 medical consultations, 20,246 of which were initial patient visits. In addition, nurses working in these units treated 128 persons, dispensed 23,000 prescriptions and administered 3400 injections.

HEALTH UNITS

Health Units are well distributed throughout the five health regions. In theory, each unit is directed by a full-time physician who is assisted by one to two other full-time doctors, five to ten graduate nurses, 10-12 auxiliary nurses, one lab technician, two to three sanitation inspectors, a dentist, a secretary/receptionist, a fee collector, and a cleaning person. However, in actuality, the human resource complement varies considerably between communities depending on the size of the facility itself and the actual resources available to the regional office to which the given unit is responsible. In fact the lack of standardization in resources and thus capability to perform the diverse functions with which a unit is charged is striking.

Each unit is to provide essentially the same types of services as the health post; outpatient consultations, prenatal care and care to infants and pre-school children; dental services, environmental sanitation, and health education. Additionally, the unit is responsible for specific epidemiological related tasks including: a) compilation of the epidemiological reports to be sent weekly to the regional office; b) handling of epidemics, as necessary; c) case-finding, treatment and control of venereal diseases, tuberculosis, leprosy, malaria, etc. and d) vaccinations.

Although these units do not have hospital beds per se, some do have a few para-hospital beds, that is for patients in transit to higher levels of care. The general physical layout of the unit is a long, one floor structure with the following rooms: a nurse's office to complete the medical records of daily patients; a consultation room in which the doctor is seated; a room for injections and treatment e.g. sutures, changing dressings, etc.; a laboratory for conducting basic diagnostic tests; a pharmacy in which drugs are dispensed; an archives room in which the medical records of all patients who have utilized the facility are located; and a storeroom. Additionally most have a fully equipped dental room manned by a dentist who is taking his social service year. In addition to the office of the sanitation inspector, the Oriental Region has integrated the local chief of the malaria program into the health unit team and he is seated in the unit structure as well.

HEALTH CENTERS OR INTEGRATED HOSPITALS

The Health Center as a level of attention is available in just three of the five health regions. In aggregate the eight centers have 550 beds with a variable bed complement per center of between 40 and 80 beds. The typical staffing pattern is: four to ten physicians, 10-15 nurses, two to three laboratory technicians, one to two dentists, 15-20 auxiliaries, three to five sanitation inspectors and three secretaries.

In accordance with norms established by the Normative Division of the Ministry of Health at the national level, each center is responsible

for providing the following types of services: outpatient consultations, hospitalizations, deliveries; prenatal care; infant and preschool children care; dental services; a series of epidemiological functions including compilation of the weekly epidemiological reports for the regional office, control of epidemics as needed, case-finding, treatment and control of contacts for venereal diseases, tuberculosis, leprosy, malaria and other communicable diseases and vaccination; environmental health and health education.

HOSPITALS

Introduction

The total hospital bed complement in El Salvador represents two beds per 1000 population distributed as follows: 88% in the Ministry of Public Health and Social Assistance's 14 hospitals and 8 health centers; 9% in the two hospitals of the Salvadorean Social Security Institute (ISSS); 3% distributed between the one hospital of the Ministry of Defense and that of the National Administration of Telecommunications (ANTEL); and 5% in the private sector.

The Ministry of Health's 14 hospitals are the primary providers of health care within the Government's health services system. Together these decentralized autonomous institutions have a total of 5,400 beds distributed by Region and specialization.
When the current Five Year Plan was formulated in 1978, a major goal was the complete regionalization of health services. Importantly, within this regionalization scheme, the hospital was to be an integral part of the national health system linked through referrals from the other levels of health service attention. In actuality, as noted in the administrative overview, the 14 national hospitals have remained essentially outside this regional structure with little if any interaction with the district health centers, units and posts which comprise the balance of the regional health infrastructure.

Available statistical information, while useful for planning purposes, provides little useful information on what is actually occurring within the Ministry hospitals with regard to both quantity and quality of care. Statistical tabulations on the availability of medical equipment in the diverse regional hospitals does not, for instance, indicate its condition or the capabilities of the staff to use them properly. Such insights can

only be gleaned from actual field visits and discussions. The following discussion draws on data gathered from such an approach while at the same time recognizes the importance of utilizing standards and norms appropriate to the resources, capabilities, culture and traditions of the nation's hospital system. 3/

Utilization

Hospitals are a major resource for both inpatient and outpatient consultations throughout El Salvador. In 1975, the latest year for which such information is available, the 14 national hospitals provided 744,821 medical consultations or .13 consultations per person covered in 1975. In addition, doctors attended 216,733 medical emergencies in the hospitals in that year.

3/ Analysis in this section is largely derived from the field trip report of Dr. Jose Gonzalez, American Hospital Association, "Review of Administrative Practices in Selected Hospitals in El Salvador," March 6-13, 1977.

TABLE 1

Bed Distribution in Hospitals and Health Centers of the Ministry of Public Health, El Salvador, 1975.

Establishments	Total	Medi-cine	Sur-gery	Pedi-atrics	Obst.	T.B.	Psychi-atry	Private Patient
Total	5942	1416	886	1126	666	761	904	184
Percentage Distribution		(23.8)	(14.9)	(19.0)	(11.2)	(12.8)	(15.2)	(3.1)
Sub-Total Hospital	5432	1218	809	1003	591	761	904	147
Santa Ana	839	252	131	184	93	159	--	20
Ahuachapan	224	53	40	63	27	31	--	10
Sonsonate	309	66	55	58	43	76	--	11
Santa Tecla	196	47	77	43	27	--	--	2
Chalatenango	109	29	30	37	12	--	--	2
Rosales San Salv	720	480	207	--	--	--	--	33
Maternidad	273	11	--	--	267	--	--	--
B. Bloom. San Salv.	404	--	--	404	--	--	--	--
Neumologia (Planes de Renderos)	495	--	--	--	--	495	--	--
Psiquiatrico S.S.	904	--	--	--	--	--	904	--
San Vicente	207	64	67	51	25	--	--	--
Zacatecoluca	212	42	46	64	20	--	--	40
Usulutan	235	64	66	59	28	--	--	18
San Miguel	300	110	90	40	49	--	--	11
Sub-Total Health Centers	510	197	77	123	75	--	--	37
Percentage Distribution		(38.8)	(15.1)	(24.1)	(14.7)			(7.3)
Metapan	47	20	5	14	6	--	--	2
Chalchuapa	50	30	--	10	--	--	--	10
Suchitoto	60	23	7	20	10	--	--	--
Cojutepeque	61	25	10	10	16	--	--	--
Sensuntepeque	80	29	17	19	12	--	--	3
Santiago De Maria	79	21	12	25	11	--	--	10
San Fco. Gotera	66	21	12	15	13	--	--	4
La Union	67	29	14	10	7	--	--	8

Source: Ministry of Public Health, Memoria 75-76.

As noted in Table 1, while the total number of admissions has increased over the 1971 to 1975 period, the discharges per inhabitant have remained relatively constant. Overall admissions have kept pace with population increase. The average length of stay for both acute and chronic illness decreased over the period as well. Occupancy rates varied considerably over the period but were higher for both acute and chronic patients in 1971 than they were in 1975. The reason for this variation is not easy to determine; however, it can be at least partially attributed to the fact that expansion of hospital facilities and beds was given a high priority over this period and may in fact have exceeded the actual need.

Examining the variations in occupancy rates for the 14 national hospitals in 1975, the percentage of occupancy varied significantly from a low of 59% at the Santa Teresa Hospital in Zacatecoluca to a high of 96.5% in San Juan de Dios Hospital in San Miguel. There is no apparent medical explanation for these varying utilization rates by region. The four specialty hospitals in the metropolitan region--the Bloom for children, the Maternity Hospital, the Neumology Hospital and the Psychiatric Hospital--all had high occupancy rates. It is noteworthy that the average length of stay in the Metropolitan Region was more than twice that prevalent in three of the other health regions and 50% higher than that of the Occidental Region, the region with the next highest average length of stay. This was due to the excessively long lengths of stay for the tuberculosis and psychiatric care.

The principal causes of hospitalization in 1970 and 1975 are contrasted in Table 2. As outlined, normal deliveries and complications of delivery continue to account for approximately one-fourth of all hospitalizations in the country. Admissions for enteric and other diarrheal diseases have decreased by one-third over this period but nevertheless are the second most common cause of hospitalization accounting for 8% of admissions in 1975 alone.

Examining overall hospital utilization in 1976, of a total of 533,773 hospital discharges of all reporting hospitals, 37% were for obstetrical care, 24% for pediatrics, 21% for medicine, 17% for surgery. And the percentages of occupancy were 83%, 85%, 77% and 85%, respectively, for the main hospital services. It is interesting that the obstetrical percentage of occupancy was low, if one considers that this service has the greatest demand of all hospital services combined.

The average patient length of stay was 9.1 days for medicine; 11.3 for surgery; 7.5 for pediatrics and three days for obstetrics. The bed turnover or yield per bed was 29 patients for medicine, 26 patients for surgery, 40 for pediatrics and 103 for obstetrics in 1976.

Examination of physician and dental services in hospitals on a contract with the Ministry of Health by Regions shows a total of 1072 physicians under contract, of which 26 work on a fulltime basis, 601 on a 2-hour daily basis and less than 100 work from 4-5 hours, corroborating the description of the medical care system as a part-time one.

TABLE 2

Hospitalization for Acute and Chronic Illnesses, 1971, 1973 and 1975
El Salvador

	1971		1973		1975[A]	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Indicator	169,193	9,634	135,495	8,785	196,747	9,329
Admissions	167,539	10,010	133,930	9,005	194,685	9,341
Discharges Bed Complement	3,923	1,948	4,230	1,694	4,344	1,678[B]
Occupancy Rate	83.2	93.4	69.9	94.3	78.9	85.9
Average Length of Stay	8.3	67.4	6.4	63.0	6.2	50.9
Bed turnover rate	43	5	43	5	45	5
Discharges per Inhabitant*	0.06		0.06		0.06	

A/ Includes 60 beds, 13 admissions and 13 discharges from health units.
B/ Includes 31 beds from the oncology service of the Maternity Hospital.

*Based on 85% of the total national population, that is, the population served by the MOH system.

TABLE 3

Comparison of Principal Causes of Hospitalization
in El Salvador, 1970 and 1975

Rank	Cause	1970 Number	1970 %	1975* Number	1975* %
1	Delivery without complications	32,776	18.8	40,334	20.6
2	Enteritis and other diarrheal diseases	21,461	12.3	14,656	7.5
3	Diverse complications of Pregnancy, Delivery and post-partum	11,278	6.5	9,622	4.9
4	Diverse diseases of the genitourinary tract	8,019	4.6	9,634	5.0
5	Abortion	7,562	4.4	8,342	4.3
6	Psychosis and diverse non-psychotic illnesses	7,247	4.2	--	--
7	Bacillary dysentery and Amebiasis	5,411	3.1	--	--
8	Avitaminosis	4,220	2.4	--	--
9	Tuberculosis	3,971	2.3	--	--
10	Pneumonia	3,460	2.0	8,772	4.5
11	Neurosis and other psychotic traumas	--	--	6,423	3.3
12	Lacerations and wounds (accidents and violent acts)	--	--	5,262	2.7
13	Cardiovascular diseases	--	--	4,608	2.3
14	Bronchitis, emphysema and asthma	--	--	3,696	1.9
	Other causes	68,441	39.4	84,298	43.0
	T O T A L	173,830	100.0	196,102	100.0

*Provisional figures

Source: Boletin No. 4, 1977: Salud Publica en Cifras Tabulaciones-Departamento de Estadisticas de Salud Ministerio de Salud Publica y Asistencia Social.

Overview of the Current Hospital Situation

An inspection of the hospitals and institutions operated by the Ministry of Health revealed a discouraging picture. Conditions are generally poor in the hospitals visited, but to a lesser degree in the newer institutions. The outlook would be bleak indeed, were it not for the discovery of some high examples of achievement in several institutions, especially those operated by the Social Security Institute.

Organization and Scope of Services

It was apparent that the institutions have not achieved any uniformity of administrative organization which sets forth the missions, goals, and responsibilities of the institutions. Staff organization charts and statements of overall policies were not available at any institution, although it was reported that these were prepared for the Oculután Hospital.

The role of local boards (patronatos) and their interest in the well-being of the institution varies greatly. It was stated that some boards make little attempt to collect local levies and some even overlook opportunities to gain the support of certain individuals or commercial establishments thereby reducing needed income for hospital operations. There are no provisions whatsoever to indoctrinate local board members to their responsibilities.

Administration

"Part-time" summarizes hospital administration throughout the nation. The direct executive officer at all hospitals is a physician who also has the privilege of attending private and indigent patients at the institution. With the exception of the director of Santa Ana Hospital who just completed a course in hospital administration in Mexico, the majority of the medical directors lack training in administration or generally are not sincerely interested in the management of the institution. Medical directors are assisted by sub-directors in the large institutions, but these individuals are even less qualified than their superiors.

Every hospital has a so-called administrator who is usally oriented toward accounting and record keeping and who does not appear to participate in the decision-making process.

All hospitals visited regularly compile statistical data for submission to the Ministry of Health in compliance with requirements of that office. This information is quite detailed and consists primarily of statistics on patient utilization, operations, injections, outpatient visits, lab and x-ray examinations and other routine information, classified monthly by sex. Such statistics are apparently rarely used for other than planning purposes at the national office. A review of the record system used to compile these reports leads to the conclusion that at best the data is inaccurate and misleading.. There seems to be little usage of this

information for managerial and control purposes.

Quality of Care

It would be absurd to attempt to apply sophisticated methods for the evaluation of patient care provided by these public hospitals of the Ministry of Health under prevailing conditions. Physicians are handicapped by lack of clinical resources and equipment; drugs and supplies are often minimal or lacking; diagnostic facilities are usually so meager and so unreliable that they provide little support in arriving at a diagnosis and establishing a basis for subsequent therapy; specialists are rarely available for consultation, except in a few of the large institutions; administration of general anesthetics is hazardous because of improper functioning of anesthesia equipment and accessories as reported in the Santa Ana Hospital; there is no organized effort to secure and perform autopsies and post-mortem examinations, except for medical legal purposes; and above all, there are no provisions for medical staff organization, for peer review of physician's activities, or for the establishment of committees to deal with such important matters as morbidity and mortality review, control of infections, credentials, tissue review to determine unnecessary and or incompetent surgery, and professional education.

Medical records are maintained at all institutions visited, from a mechanical gathering aspect, but there are no attempts to establish any standards of completion of accuracy or to utilize them as a tool to judge the quality of patient care provided at the institution. No form of medical audit could ever be conducted in the face of these findings.

I. Inpatient Care

There are two obvious levels of patient care provided at all hospitals. Indigent patients are housed in large, often crowded, open wards, with little attention paid to their privacy, dignity or comfort. Some beds sag or are in poor state of repair. Mattresses are often soiled or ripped and are rarely protected by covers. Bedside tables are often not available. In several institutions, beds actually touch each other. In the obstetrical services of most hospitals, one can observe two patients sharing one bed.

Pensionado patients enjoy preferential treatment. They are generally hospitalized in private rooms which also contain a cot for accompanying spouses or relatives. Such accommodations are generally reasonably attractive. Bed linens are in short supply as are also syringes.

Nurses stations are usually located in a corner or at the entrance of open wards. They rarely contain more than improvised medication tables and a chart rack, except for the facilities at the Usulután Hospital which are provided with satisfactory facilities and nursing equipment.

Much of the care provided can be best described as custodial. Few instances were observed of patients actually being treated by a physician or nurse, except for occasional intravenous infusion sets being administered.

2. Ambulatory Care

All of the institutions visited provide some form of outpatient and emergency care. Facilities and equipment were often limited, particularly for the treatment of emergency cases. Few emergency rooms contained readily available essentials such as oxygen, suction, position stretchers, resuscitators, defibrillators, and other life saving equipment. The newer hospitals such as Usulután contain adjunct facilities for the treatment of patients that inhaled pesticides, a common emergency treated in the local hospital. This facility consisted of a wash or shower area for decontamination of the patient. Usual treatment consists of injection of atropine and oral intake in large doses.

Outpatient departments are available at all hospitals, and these are facilities which seem overcrowded and disorganized, except for the screening of patients by the staff of the patronatos, whose main concern is the collection of consultation fees. Most of the patients do not visit their clinics on an appointment system. They are taken care by physicians on a first-come, first-served basis. There were unexplained absences of physicians at the time clinics were in operation, and long lines of patients waiting for the physician's arrival.

As reported earlier, there is no workable and effective system of patient referrals from other units of the health care system (health centers, posts, etc.).

Facilities and Equipment

Perhaps the most discouraging single finding is the universal lack of maintenance of equipment and facilities. In every hospital, regardless of its size or age, important items of equipment stand idle or are inoperable because of lack of spare parts or because of the inability of the staff to make minor adjustments or repairs.

With some notable exceptions as indicated by visits to the Social Security Hospital in San Salvador, the diagnostic ambulatory unit at Ilopango and San Miguel (ISSS), and the relatively new Usulután Hospital (even though it has marked deterioration), hospitals are obsolete, dilapidated, overcrowded, some unsanitary, lack many essentials to the physical comfort, safety and well-being of the patients. Maintenance of equipment and physical surrounding is fair. There are poorly organized efforts directed at preventive maintenance or inspection programs. Expensive equipment lies unused for long periods of time for lack of spare parts or inability of staff to perform minor repairs or adjustments.

On the other hand, the situation at Usulutan Hospital may be replicated when the San Miguel Hospital moves to its new facility. Its modern 12-bed intensive care unit is an integral part of the original construction design which represents an important, most needed type of service for patients in this large area. Unfortunately, this fully equipped, automated, monitorized intensive care unit has not been in operation due to total lack of know-how and methodology, as well as lack of trained technicians to operate this sophisticated facility. Not only has the result been a deprivation of an essential hospital service to its patients, but the equipment is deteriorating and being wasted thorough its lack of usage. This condition was recognized also in the survey of Bustamante and Associates which conducted an administrative study of hospitals of the Ministry of Health. In its conclusions on the diagnosis of the Usulután Hospital, the Bustamante Associates report concludes that the administration of the hospital is deficient in terms of planning, organization, accountability, coordination and control. This is due in large measure to the lack of administrative preparation of the executive level personnel; to the lack of organization and procedure manuals; to the lack of adequate supervision in this field, and to deficiencies in the selection and training of personnel.

The problems of organization, management and accountability of this hospital are similar to those in the rest of the country, and seem to stem most apparently from a lack of administrative planning. A modern hospital was planned and built with attention focused on its physical structure, to the virtual neglect of the planning of the administrative structure, and thus of capability to administer this hospital in an efficient manner. It is recognized that only four years after the inauguration of the hospital, the same structural and administrative problems typical of any hospital in the country are prevalent in terms of the physical plant, equipment, and installation, all of which are found to be in a definite state of deterioration.

A particularly vulnerable situation was found at the Santa Ana Hospital. This is a very large regional hospital operating in the second largest area of the country and has a bed complement of nearly 900 beds. The surgical load in the operating room staffed and equipped to handle from 25 to 30 major surgical operations daily, has been drastically reduced to less than 50% of its normal capacity due to poor condition of anesthesia machines and accessories. Most of the existing anesthesia machines are kept in functioning condition through cannibalizing of damaged units, resulting in an imperfect and dangerous condition for the administration of anesthetics during surgery. This situation was discussed at length with members of the surgical staff and both doctors and operating room personnel, and the situation was reported as critical in the local newspapers.

At Usulután Hospital, which occupies a physical plant which was built only four years ago by a German consortium of manufacturing companies and planning organizations (Hospitalia International), there are several major pieces of non-functioning equipment in the laundry, boiler plant, kitchen, laboratory, (all due to lack of maintenance), and which are producing serious disruption in the provision of services.

Proposed Changes in MOH to Strengthen Hospitals

It has been recognized that hospitals and health centers of the Ministry of Health function without a mechanism for proper coordination from the standpoint of regulations and standards promulgated at the national level. This functional gap in the organizational structure explains why many of the hospitals operate as autonomous institutions using their own judgement as to fulfillment of responsibilities and extent of compliance with any type of standards.

To obviate this situation, a position of coordinator of a unit of hospital affairs was recommended by PAHO, to serve as a liaison between the Dirección Superior de Salud Pública (see Figure 1) and programs directly concerned with hospital operations. Under this proposed organizational design, the coordinator would maintain liaison with the training institutions outside the Ministry: University, School of Nursing, Training unit of MOH and Bachilleratos de Salud; and on the other hand, it would establish working relationships with the distinct units of the Normative Divisions (health education, nursing, medical and dental care, epidemiology, maternal-child health, environmental sanitation,. As proposed, the coordinator, assisted by a technical staff, would begin work with hospitals in four general areas of endeavor:

1. Promotion and Coordination

2. Organization and Legislation

3. Administration

4. Medical Education, Training and Continued Education

Examples of promotion and coordination activities would include matters of general supervision, development of integration and regionalization plans, establishment of a hospital classifications system, and development of a national hospital association.

Under legislation and organization, efforts would be directed toward enacting laws and regulations affecting the detailed operation of hospitals, the development of procedure manuals, standards of care, regulations for individual departmental operation, etc.

Under administration, activities would be aimed at establishing guidelines for budgeting, procurement and supplies, construction, modernization, renovations and maintenance of physical plants and their equipment, and finally, rules and regulations would be established for monitoring and accreditation of medical residencies and internships and other hospital-based

educational programs, as well as establishing guidelines for research and scientific activities.

The proposed plan was discussed at a meeting with the former Vice-Minister of Health, and was found to be generally acceptable. It was agreed that the PAHO adviser would continue working on the identification of staffing patterns with the purpose of developing job specifications prior to establishing the staff positions.

In the discussion of this proposed organization chart, it was agreed by the Vice-Minister that a good synergistic approach to this plan would be the creation of a national hospital association, to begin to move quickly into the area of development of standards of hospital care and classification of hospitals.

A private sector group representing proprietary hospitals in the San Salvador area is already at work developing the idea of a national hospital association, and in fact, provisional bylaws, rules and regulations setting forth the purposes, objectives and types of hospital memberships have already been developed. It was concluded that the final responsibility for the creation of a national hospital association would be a primary responsibility of the MOH, which would encompass all hospitals of the public sector, with provisions for membership of hospitals of the private sector as well.

The former Vice-Minister agreed that his staff will further explore this idea toward the goal of instituting the necessary steps to develop the association. The possibility of a linkage with the International Hospital Federation, with the acceptance of an El Salvador Hospital Association as a class "A" member of the Federation, appears to be a prime impetus for mobilizing resources behind such an Association. Once this membership was established, the Federation would bein a position to coordinate efforts with the El Salvador Hospital Association toward the development of hospital training programs, scheduling seminars and other activities of value to hospitals, particularly during the developmental phase of the proposed hospital organization.

Importantly, hospitals are only one element in the total health care system of a nation. There is no debating that prevention of disease should, whenever possible, receive a higher priority than treatment of disease. However, El Salvador has maintained a traditional system in many parts of the nation and its citizens have looked to these institutions for care and treatment.

Hospitals not only provide patient care to patients, but they can also offer preventive services. With proper support and leadership, it is not unreasonable to expect that steps, feeble at first, can be taken in this direction. Only then, will Salvadorean hospitals assume a pivotal role in the nation's total health care system.

Given the unarticulated, uncoordinated operation of hospitals in El Salvador with duplication of efforts, which minimize coverage and dilute the quality of patient care, consideration may be given to move in the direction of development of institutional arrangements for health services delivery.

To this end the following recommendations are offered:

APPOINT A NATIONAL COMMISSION FOR THE IMPROVEMENT OF HOSPITAL CARE OF THE PEOPLE OF EL SALVADOR

Many of the problems which affect hospitals of the nation derive from the lack of norms or standards at the national level which tend to ensure a minimum acceptable level of care for hospitals. Many institutions lack essential services for the modern practice of medicine, such as electro-cardiography, post-anesthetic recovery, intensive care units, isotopes for treatment and diagnoses, facilities for autopsies and pathological examination, etc. While it is not expected that every hospital provide the full range of services (certainly not as complete in terms of standards as those of more developed nations), these services should be at the disposal of the people of El Salvador in a more accessible fashion than they are at the present time.

Therefore, it is recommended that a national commission made up of distinguished professionals and political and lay leaders, be established. As a basis for the improvement of hospital services throughout the nation, the commission could consider such topics as the minimum standards for hospitals of all types, sizes, and locations; the desirability of developing training programs for the administrative personnel of the hospitals whose physical plants are being replaced by modern and more complex facilities such as is being done at San Miguel. Possibly studies could be undertaken dealing with the development of new legislation to study the structure, organization and function of ISSS in order to adjust the medical care to the real present and future needs of the population, since it has been reported that the laws covering social security have not been modified since their inception in 1955. This new legislation could look into the strengthening of the organization, financing and staffing of patterns of care throughout the nation. It must be noted that similar commissions have been developed and have been instrumental in the raising of standards of hospital care in many other parts of the world.

Such a commission could be constituted in the following manner:

- Three representatives of the College of Medicine (one of which could be residing and practicing outside of the San Salvador area).

- One representative of the School of Medicine of the University of El Salvador.

- A person designated a coordinator of the Unit of Hospital Affairs

(as proposed by the PAHO in the organization chart for liaison with the Ministry of Health).

- A representative from the Nursing profession.

- Four representatives of the public at large (one of which should be from San Salvador, and three others from other departments of the nation).

The president should be selected by the authority which appoints this commission.

The commission could work with the personnel of the Normative Division and their associates; outside consultants could be required as additional resources. It is recommended that the commission meet at least once a month for a period of one year, and that all members receive an honorarium and travel expenses as necessary.

2. DEVELOP A NATIONAL HOSPITAL ASSOCIATION OF ALL TYPES OF HOSPITALS FROM EL SALVADOR AS A MEANS OF FOSTERING THE DEVELOPMENT OF STUDIES TENDING TO IMPROVE THE HOSPITAL CARE IN THE NATION.

The main objectives are: to coordinate activities among the different hospitals of the country with the view toward solving common problems in hospital care; to promote an interchange of ideas and experiences among persons or groups focusing on activities of impact to hospitals; to develop standards of care so that they may become standards of services for all hospitals; to effect changes toward improvement of planning, construction and administration of hospitals; and to enforce standards of service in order to assure the provision of hospital care of the highest quality.

This recommendation is particularly appropriate and necessary in view of the present organizational structure of the 14 hospitals operated by the Ministry of Health which function within the Ministry as autonomous institutions. The medical director who is a physician acting in a dual role of clinician as well as administrator, is usually lacking in formal training in hospital administration, is more interested in the continuing performance of clinical duties in the hospital, while neglecting administrative functions which affect the care of most of the patients in the hospital.

3. TRAIN AN INITIAL GROUP OF FIVE ADMINISTRATORS IN APPROPRIATE UNIVERSITIES IN OTHER LATIN AMERICAN NATIONS

One of the most obvious difficiencies noted in the operation of the public hospital system of the nation was the lack of trained hospital

administrators. Since it is not practical at this moment to recommend the assignment of a trained administrator to each hospital, a good beginning would be to provide a trained administrator to supervise the operation of hospitals on a regional basis. The distribution would follow the pattern of health regions, namely Occidental, Central, Metropolitan, Paracentral, and Oriental. At the beginning, such regional programs could be limited to the supervision and inspection of individual hospital activities, with the appropriate consultants and educational support provided as indicated. In the long run, it would be expected that such a program be expanded toward a scheme of regionalization with greater sophistication and scope.

It is also recommended that the individuals selected should be trained in Latin American universities, where the common language and the similarity of problems and tradition could expedite the period of training. On this point the universities and institutions of the U.S. should not be given consideration, because the emphasis being placed on students correspond to advanced systems and the acquisition of extraordinarily sophisticated techniques which have little application at present with the problems of El Salvador.

4. ESTABLISH IN-SERVICE TRAINING PROGRAMS UTILIZING EXISTING MANUALS OF THE AMERICAN HOSPITAL ASSOCIATION IN THE FIELDS OF HOUSEKEEPING AND MAINTENANCE, FOOD SERVICE, AUXILIARY NURSING AND WARD ADMINISTRATION.

A common finding was the lack of materials in Spanish for the orientation and training of sub-professionals. The American Hospital Association has developed excellent manuals for training of students and instructors on a wide range of hospital activities, eight of which have been translated and adapted to Spanish use. It is recommended that a series of actions be initiated to introduce these materials through the hospitals of the nation. These actions could include the organization of a series of seminars for high administrative personnel, using qualified faculty from the U.S. and Latin America, to begin training a cadre of nurses, housekeeping supervisors, food service supervisors, and ward administrators, using the above mentioned manuals as a visual aid.

LABORATORY SERVICES

The Ministry of Health has laboratories distributed throughout the regions, all of which are coordinated and responsible to the Central Laboratory in San Salvador. All local labs must requisition supplies directly from the Central Laboratory, not other regional labs; when time or other contraints preclude use of this direct procurement process, the Central Lab must be consulted for authorization to purchase supplies elsewhere.

As established by the MOH's Normative Procedures, all labs must perform at least 17 basic examinations. The average time for conduct of each specific

examination/test is clearly delineated in the Norms; thus, some measure by which to gauge the productivity of laboratory services is established although data collection and analysis is minimal. In 1975, the latest year for which data are available, MOH labs performed a total of 2.2 million examinations including, 2,194,806 clinical and 19,805 exams.

As required by law, all diagnoses made at laboratories of the diverse medical facilities of the MOH which indicate a probable serious epidemiological problem must be reported immediately to the Central Laboratory. Further, no lab is permitted to release information on local disease conditions without the express permission of the Central Laboratory.

Little information is available on the quality of lab services in general. However, field visits to numerous facilities by distinct Assessment members revealed a widespread lack of adequate supplies for lab work, and serious shortages of trained laboratory technicians to provide diagnostic support to medical personnel. In fact, in some facilities which had received significant quantities of modern, technologically sophisticated equipment, particularly those funded through external loans, much equipment remained idle because of the inability of existing staff to use it.

PATTERNS OF UTILIZATION OF SERVICES

Examining the broad range of alternative forms of health care available to the rural populace, as outlined in this paper, a recent intensive study of differential utilization among households in a rural canton highlighted the fact that the average rural family continues to rely heavily on those public sector and traditional providers who work and reside directly in their cantones -- the malaria collaborators, the local midwives, and importantly, the new level of health worker -- the Rural Health Aide -- who was instituted on a pilot basis in the surveyed community. After self-medication, the study revealed that the RHA was generally the first contact

point with the formal health delivery system for treatment of common illness, especially among the poorest families. In the case of more serious illness, the Health Post does play a major role with three out of four households in the surveyed group reportedly having used the town health post.[30] Most importantly, however, the basic perception and utilization of the Post among all age groups is for curative rather than preventive care.

Although all health posts are located in municipalities, their greater usage overall by canton than municipal residents can be explained by several factors. The Uluazapa study suggests that the real issue is one of limited alternative forms of care for the rural family. With the exception of the malaria worker who is trained only in that one disease, cantones lack professionally trained health workers, pharmacies and even the most minimal first aid care. Therefore the only options to obtain care are either self-treatment or use of local untrained personnel or to travel outside of the local community for medical assistance. And upon leaving the local area, the health post is the most readily available mode of health service delivery.

HEALTH SERVICE UTILIZATION RATES

In view of the extensive physical and human resources for delivery of health services by the Ministry of Health, actual utilization rates are strikingly low. In 1975 total service coverage represented only 0.5 medical outpatient consultations per person per year in the urban areas and 0.25 consultations per person per year in rural areas of the country. 9/ Average numbers of consultations by type for 1975 are outlined in Table 4.

Overall, utilization/coverage varied significantly not only between levels of attention but importantly between regions in essentially duplicate facilities providing the same type of services.

Despite the existence of distinct levels of care, as discussed in this section, referral mechanisms from lower to higher, more specialized, care facilities are generally weak. First, patients often by-pass local health facilities in favor of urban hospitals as their initial point of entry into the system, abetted by the mobility afforded by extensive transportation networks linking rural and key urban areas. Second, for those who do use the Post, patients are often referred directly to the hospital even though health units or centers could adequately meet the distinct patient care need. The problem of follow-on care is exacerbated by the fact that doctors at the local health post have no means to ascertain what happened to a patient referred to another facility unless that patient returns on his own initiative. For

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9/ Diagnostico de Salud. op. cit.

TABLE 4

Type of Consultation	Average Number of Consultations per Person Covered, 1975
Dental	
Enrolled	0.05
Consultations	0.07
Nurse Home Visits	0.01
Medical Consultations	0.48
Medical Emergencies	7.2 per 100 persons covered by the MOH
Total of all Services provided	0.65

Source: Data derived from diverse tables in the Ministry of Public Health, Anuario: Salud Publica en Afras, 1976, El Salvador.

referrals from higher levels of care downward to the community-based facilities e.g. for post-operative check-ups are virtually non-existent.

Maternal and child health are the most serious problems facing the health sector in El Salvador, as highlighted in the health status section of this study. Examining maternal/child care rendered in 1975, several important indications of the quality of coverage can be ascertained. First, of the 48,000 mothers enrolled in the prenatal program, just a little more than half (54%) were enrolled before the fifth month of pregnancy. Further, this represents little improvement over the 1971 situation in which these programs were able to attract 51% of those women enrolled prior to attainment of the fifth month.

Second, each woman enrolled received an average of 1.5 medical consultations and 1.23 control visits by nurses during her pregnancy as contrasted to 1.76 medical consultations and .86 control visits by nurses in 1971. The data thus indicate an increased trend toward utilization of nurses for routine prenatal visits, a more efficient mode of delivery given the already excessive demands on physician time. 10/

With regard to children less than two years of age and the most vulnerable subgroup of the population, the Ministry of Health programs were reaching only a small percentage of their target population. Throughout the five health regions just 46,000 children less than two years of age, 8000 of whom were less than one month of age were enrolled: the total estimated population in this group which the Ministry should have been serving was [illegible]. Further of those enrolled, each received an average of 1.47 medical consultations and 2.2 nurse control visits per year. 11/

Overall, examining the trends in outpatient consultations over the 1971 to 1975 period it is evident that both the average number of medical consultations and of all services provided to the covered population has remained fairly constant. In light of the substantial increases in facilities and manpower over the same period, only two explanations for this can be given. One, it is possible that the low utilization of services per unit decreased even further; or second, and more likely, population growth offset the increases in infrastructure so that in essence the health system was only able to maintain the existing level of coverage for the population.

10/ Anuario: Salud Publica en Cifras, 1976, El Salvador, Ministerio de Salud Publica y Asistencia Social, Cuadro 30, p. 34.

11/ Ibid., Cuadro 32, p. 35.

Although, this is indicated by the fact that the total number of doctors hours increased significantly over the period, doctors attended only 14.4% of consultations in 1975, or a little less than the 14.8% reported in 1971. 12/

Economic contraints appear to be a principal underlying cause of low service utilization levels in urban areas according to a recent study in Santa Ana.13/ In almost two-thirds (62%) of the surveyed households no one visited a medical center in the prior month although 14% had some family member who needed medical attention. Further of those needing care and not obtaining it, the lack of money was cited most often as the primary reason -- 79% of the cases.

Nevertheless, even when public health facilities have been established in previously unserved areas, no noticeable reduction in overall pharmacy business has been noted. Rather, a strong sense emerges among surveyed population groups that the pharmacy continues to be more service-oriented than other types of health providers, particularly with regard to the convenience of its hours, its ability to respond to emergencies, and the fact that its services can be obtained in a timely fashion permitting the coordination of this visit with other town errands.

In sharp contrast to traditional patterns of usage, geographical distance and the precarious economic situation of many rural households has placed the local healer, once the most prevalent provider of care, outside of the reach of the typical rural resident; the traditional healer is currently most commonly located in the municipalities and has become a medical resource for the relatively more affluent resident. 14/ The low utilization of the curanderos among the Uluazapa study group substantiated earlier findings in a survey of health care providers in the San Miguel-Morazan Department which indicated healers were the source of care for less than 3% of the population; this was particularly significant given the large sample size and the broad geographic coverage of that study. 15/

12/ Ibid., Cuadro 46, p. 45. Outpatient medical consultations rose only from 0.47 to 0.48 per person covered; and all services including nurse visits and emergency treatments increased only from 0.60 to 0.65 per person covered over the 1971-1975 period. Percentage of patient visits attended by a physician varied markedly by region, as follows: Occidental 13.4%; Central 30%; Metropolitan 2.4%; Paracentral 14.1%; and Oriental 28.0%.

13/ Fundacion Salvadorena de Vivienda Minima, Estudio Socio-economic de Santa Ana, 1976.

14/ Harrison, pp. 58-60.

15/ Grupo Multidisciplinario, Region Oriental de Salud. Diagnostico Basado en la Encuesta en el Area San Miguel-Morazan. San Miguel, El Salvador. April 1976.

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APPENDEX B

HUMAN RESOURCES

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Supply and Distribution

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- idoneos

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* administrative training
- personnel management (training)
- drug and supply management
* midwife training

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HUMAN RESOURCES

Introduction

Traditionally, health services in El Salvador have been oriented toward a hospital and/or facility-based delivery systems. The MOH, in its efforts to achieve the priority goal of extending the health services network, has focused almost exclusively over the previous Plan period on capital investments in facility construction to the relative neglect of complementary investments in human resources development. Thus, while there is now in place an impressive infrastructure of health establishments, particularly in the major urban areas, continuing shortages and striking maldistribution of existing personnel to deliver services at all levels have precluded many Salvadoreans from receiving adequate care in the public sector; for much of the rural poor, pharmacists and traditional practitioners remain the principal providers. The GOES in recognition of these problems has made both fiscal and policy provisions in the new Five-Year-Plan for redressing this deficiency, as highlighted in the stated objectives of the Department of Human Resources:

1. To plan and execute programs in the development of human resources which will satisfy the demands of the institution as well as the needs of the personnel in question.

2. To develop and implement a system for the recruitment and selection of qualified personnel who will be able to meet the personnel requirements of the Ministry.

3. To develop and operate a system for personnel training which will provide the Ministry with appropriately trained personnel and permit each employee to realize his full potential.

4. To develop methods for the evaluation of employee performance on the job in order to identify, train, and promote exceptional employees.

5. To gather information concerning the human resources of the MOH and to provide the statistics necessary for the development of programs.

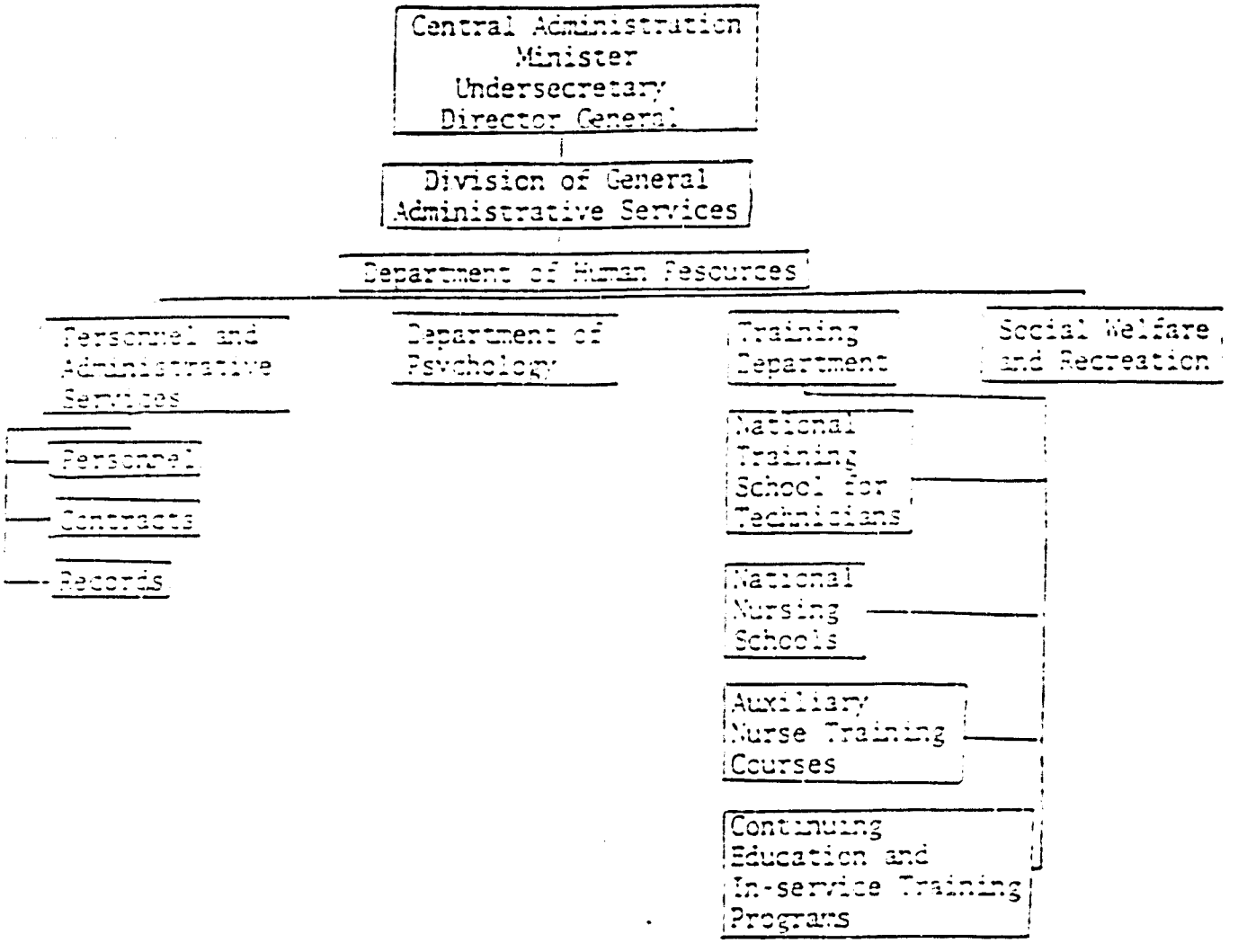
Increased emphasis is to be placed on the recruitment and training of primary health workers and their integration into an effective referral system of health care. However, there are several critical manpower problems areas that must be addressed before a change in health care distribution and equity can be effected.

Effective planning of human resources in El Salvador is precluded by the lack of coordination between training programs and of analysis to define basic or requisite skills that health care professionals must possess, given the health profile of the population they are to serve. Institutions devoted to the training and promotion of health personnel are multiple and uncoordinated

with no mechanism currently existing to provide the linkage between training and actual manpower needs. Training is dispersed throughout three major institutions: the National University trains physicians, dentists, engineers, technologists for various hospital settings (physiotherapy, X-ray, dietetics, anesthesiology, clinical laboratory, etc.); the Ministry of Education offers a secondary school speciality in health; and the Ministry of Health trains nurses, nurse auxiliaries, environmental sanitation workers, medical records technicians, statisticians and other paramedical personnel; and provides in-house training for personnel in distinct program areas such as family planning and nutrition. (See Figure 1.) Upon completion of their respective educations, it is not uncommon for personnel with the same level of academic training, working in diverse institutions, to receive substantially variable rates of salaries for the same type of work. This situation hampers efficient manpower distribution both within the public sector and importantly between the public and private sectors. The health professional tends to aggregate where the salary potential and other benefits are the greatest. Thus, despite its small geographic area and ease of access to all levels of service due to a well developed road systems, the distribution of El Salvador's professional health personnel is highly skewed toward the major urban centers, particularly the hospitals of San Salvador.

Figure 1

Organization Chart
Department of Human Resources
Ministry of Health and Social Assistance, 1976



Source: Report of the El Salvador Ministry of Health to the 15th Regional Seminar on Health Services Administration, Mexico, 1976.

SUPPLY AND DISTRIBUTION

Physicians

The country is divided into fourteen departments with 60.5 percent of the population residing in rural areas and 39.5 in urban areas, 20.6% of which population is located in the major urban department, San Salvador. Of the 1,116 doctors in the country, 787 or 70.5 percent are also located in this one Department.

TABLE 1

Geographic Distribution and Number of Inhabitants/Doctor

Department	Number of doctors	Number of Inhabitants doctor	Percentage
Cabañas	5	37,478	0.4
Chalatenango	6	34,164	0.5
Cuscatlán	6	31,127	0.5
Morazán	7	30,227	0.7
La Union	7	26,451	0.7
La Paz	13	16,611	1.2
San Vicente	19	12,042	1.7
Ahuachapan	21	11,289	1.9
Usulutan	29	10,082	2.6
La Libertad	30	9,590	2.7
Sonsonate	34	8,274	3.1
San Miguel	54	7,045	4.8
Santa Ana	98	4,068	8.7
San Salvador	787	1,106	70.5
Total Country	1,116	3,779	100.0

When the data are analyzed for the specialists alone, the geographic maldistribution becomes even more severe as shown in the next table:

TABLE 2

Geographic Distribution and Percentage by Department of Medical Specialists

Specialty	Total Country Number	San Salvador Number	San Salvador Percent	Remaining 13 Dept. Number	Remaining 13 Dept. Percent
Anesthesia	20	12	60	8	40
Cardiology	14	13	93	1	7
Surgery	75	45	60	30	40

Continue.....

Dermatology	9	9	100	-	-
Gastroenterology	10	9	90	1	10
Obstetrics-Gynecology	69	60	87	9	13
Internal Medicine	46	36	78	10	22
ENT	13	11	85	2	15
Opthalmology	26	24	92	1	8
Orthopedics	18	16	89	2	11
Pathology	12	11	92	1	8
Pediatrics	69	67	97	2	3
Radiology	12	11	92	1	8
Public Health	46	34	74	12	26
Psychiatry	20	20	100	-	-
Physiology	20	18	90	2	10
Urology	10	9	90	1	10
Others	10	9	90	1	10
Total	499	414	83	85	17

Source:

Attempts to analyze these data further are made virtually impossible by the fact that many physicians work in several public institutions and have a private practice as well. This is due, in part, to the fact that Government salaries are not competitive with the private sector. Of all hours of contracted medical work, the MOH and Social Security Institute account for 88 percent as shown in the next table.

TABLE .3

Number of Physician

Hours per week of Contracted Service

Type	MOH	ISSS	ANTEL	MILITARY	ISRI	JUSTICE	TOTAL
Resident	428	608	48	56	--	---	1,140
General Medicine	892	500	76	22	4	132	1,626
Specialty	1,069	613	103	73	28	-	1,366
Total	2,389	1,721	227	151	32	132	4,652
Percent	51.3	37	4.9	3.3	0.7	2.8	100

SOURCE:

The distribution of physicians according to hours/week of contracted work further emphasizes the part-time nature and multiplicity of responsibilities held by most physicians. Of the 1,082 physicians employed by the MOH, only 26 physicians are on full time contracts. Over one half the physicians work two hours or less and 64 percent work one half that time or less as shown in the following MOH statistics.

TABLE .4

Physicians Services as Per Contract

With Ministry of Health - 1976

	Total	Percentage
Full-time Physicians	25	2.3
Social Service Physicians	201	18.6
" 6 hours daily	7	.65
" 5 hours daily	4	.37
" 4 hours daily	81	7.40
" 2 hours daily	601	55.50
" 1 hour daily	4	.37
" Resident	163	12.40
TOTAL	1.082	100.00%

SOURCE: MSPYAS

The Salvadorean Institute of Social Security (ISSS) health systems currently provides medical care to 6.26 percent of the population and accounts for 37 percent of the contracted hours of physician service. The workers enrolled in ISSS have an amount equal to 10 percent of their salary allocated for health services provided in a series of well equipped health centers and hospitals located in the urban areas of the country. With the high percentage of contracted physician time and the free care provided by the ISSS, it is not surprising that the average subscriber has 4.45 medical consultations/year. (based on subscriber only, not on dependents who also use the system) or essentially the same number as in the United States versus ar average of .5 MOH medical consultations per

person covered.

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[4] Plan Operativo Institucional 1977, ISSS, Departamento de Planificación, Nov. 1976, p. 12.

The ISSS has ambitious plans to extend coverage during the next Five Year Plan to public employees, municipal employees, a pilot project for campesinos, domestic workers, teachers, ANTEL employees, and small businessmen. At current rates of consumption of medical services this growth plan will have the effect of extending high quality medical services to a larger part of the population while simultaneously, placing severe stress on the existing system to deliver the person-hours of care required. Given existing human and financial resource constraints, it would be difficult for the ISSS to meet its objectives without compromising either the number of persons covered within each group or the amount of services offered to each ISSS subscriber.

The part-time nature of physician employment in the MOH particularly in health posts where circuits provide physician care three times a week, and continuing unmet needs for care among the rural populace indicate that under the present physician-oriented delivery scheme, the absorptive capacity would be at least twice the current hours week of physician coverage. The projected output of the medical school of about 250 per year could clearly provide the manpower for these increased services (see table -5 & 6). The key question is whether funding of additional physician-hours is the most cost-effective way to resolve the specific health problems of the Salvadorean population. Given the existing health profile, it is clear that many of the most prevalent diseases could be adequately handled by lower level professionals thereby freeing existing physician hours for providing the more specialized care required by a smaller subgroup of the total patient load. Further unless fundamental changes occur in regulating where and what newly trained physicians will practice, it appears unlikely that expanded physician services will be deployed with any more equity and balance than at present.

A pressing need exists for an office of manpower planning within the MOH which would coordinate directly with the Faculty of Medicine, the production with needs for physician services.

TABLE -5

UNIVERSITY OF EL SALVADOR STUDENTS ENROLLED IN
THE FACULTIES OF MEDICINE, PHARMACY, AND DENTISTRY, 1975/76

Faculty of Medicine	Total	Female	Male	% Female
Medical Doctor	2976	1027	1946	34.5

UNIVERSITY OF EL SALVADOR STUDENTS ENROLLED IN
THE FACULTIES OF MEDICINE, PHARMACY, AND DENTISTRY
1977/78

Faculty of Medicine	Total	Female
Medical Doctors	3.094	34.5
Laboratory Technician	560	83.4
Nutrition	98	84.2
Health Education	61	57.1
Ecology Technician	57	61.5
Laboratory Assistant	79	92.3
Physical Therapist	163	91.5
Anesthesiologist	160	72.8
Radiology Technician	67	90.5
Maternal Health	76	79.2
Child Health	64	89.7
TOTAL - Faculty of Medicine	4.479	49.3
Faculties of Chemistry and Pharmacy		
Chemist	156	
Chemist and Pharmacist	670	76.6
Medical Visitor	30	26.7
Pharmacy Assistant	2	75.0
Total Facalties of Chemistry and Pharmacy	858	74.2
Faculty of Dentistry		
Dental Surgery	650	65.1
Dental Technician	14	100.0
Dental Assistant		75.0
TOTAL - Dental School	664	65.2

SOURCE: MINISTRY OF EDUCATION

Continue.....

Laboratory Technician	688	574	112	83.4
Nutrition	76	64	12	84.2
Health Education	14	8	6	57.1
	26	16	10	61.5
Laboratory Assistant	52	48	3	92.3
Physical Therapist	188	172	15	91.5
Anesthesiologist	158	115	43	72.8
Radiology Technician	21	19	2	90.5
Maternal Health	53	42	11	79.2
Child Health	29	26	3	89.7
TOTAL - Faculty of Medicine	4282	2112	2163	49.3
<u>Faculties of Chemistry and Pharmacy</u>				
Chemist and Pharmacist	578	443	135	76.6
Medical Visitor	30	8	22	26.7
Pharmacy Assistant	4	3	1	75.0
Total Faculties of Chemistry and Pharmacy	612	454	158	74.2
<u>Faculty of Dentistry</u>				
Dental Surgery	631	411	220	65.1
Dental Technician	1	1	—	100.0
Dental Assistant	4	3	1	75.0
TOTAL - Dental School	636	415	221	65.2

SOURCE: Ministry of Education

TABLE -6

STUDENTS ENROLLED IN FACULTIES OF MEDICINE, PHARMACY, AND DENTISTRY 1975-76 UNIVERSITIES IN SANTA ANA AND SAN MIGUEL

<u>Centro Universitario de Occidente (Santa Ana)</u>	Total	Female	Male	% Female
Faculty of Medicine	210	107	103	51.0
Chemistry and Pharmacy	32	23	8	71.9
Dentistry	3	2	1	66.7
TOTAL	245	132	112	53.9

Continue.....

Centro Universitario de Oriente (San Miguel)				
Faculty of Medicine	223	131	92	58.7
Chemistry and Pharmacy	55	50	5	90.9
Dentistry	21	16	5	76.2
TOTAL	299	197	102	65.8

SOURCE: Ministry of Education

Nurses

Although less striking, similar imbalances exist for nurses, social workers, dentists, and technicians. The auxiliary nurses are somewhat better represented in rural areas than physicians and graduate nurses since they form the only permanent staff for the 123 Health Posts. Even in this category, however, as noted in Table II.F-7, maldistribution exists. In terms of a manpower/10,000 population ratio, the Metropolitan area commands a major share of auxiliary nurses at 9.1 whereas the next closest Region, the Occidental, has only half as many or 4.62, trailing off to ratios of 2.87, 2.58 and 2.5, for the Paracentral, Central and Oriental Regions respectively. Yet, of all outpatient visits attended by an auxiliary nurse, 53.6 percent took place in the Oriental region vs. 3.9 percent in the Metropolitan, indicating greater usage of this category of staff in the more rural areas. The following table portrays the distribution of full-time graduate and auxiliary nurses by institution.

TABLE -8

DISTRIBUTION OF NURSES AND AUXILIARY NURSES

Institution	Nurses	Percent	Auxiliary Nurses	Percent
Ministry of Health	1005	76.4	2178	69.6
ISSS	164	12.5	706	22.6
ANTEL	21	1.6	52	1.7
Military Hospital	13	1.0	68	2.2
Military Headquarters	5	0.4	84	2.7
Private	55	8.1	41	1.2
TOTAL	1263		3129	

Source:

Information on distribution would seem to indicate better population coverage by nurses than physicians in the MOH particularly in nonmetropolitan regions. (See Table II.F-9) However, in terms of actual provision of care, it is important to note that Health Posts which utilize much of the auxiliary nurse corps are usually located in one of the 261 Municipios.

TABLE

Average Number of Outpatient Visits Per Year Per Person Attended by Select Health Personnel, by Region*

Category	Metropolitan	Occidental	Central	Para-Central	Oriental
Physician	.34	.30	.29	.27	.27
Nurse	.31	.34	[illegible]	.314	.344
Auxiliary Nurse	.007	.008	.06	.04	.07

Distribution of Outpatient Visits by Region attended by Select Health Personnel as a Percentage of Total (national) Visits Attended by Select Health Personnel**

Category	Metropolitan	Occidental	Central	Para-Central	Oriental	Total
Physician	45%	16%	9%	11%	19%	100%
Nurse	8.8%	25%	25.1%	6.5%	39%	100%
Auxiliary Nurse	3.9%	4.5%	21.2%	16.7%	53.6%	100%
Regional Percentage of Population	22.3%	20.6%	12.7%	16.9%	27.5%	100%

Source: Calculated from statistics using 1977 population estimates, MSPYAS.

*Calculated using 1975 MSPYAS regional outpatient visits divided by 1975 regional population estimates.
**Calculated using regional outpatient visits divided by total national visits by category of personnel.

Table

Health Regions, for the Ministry of Health
1976

	Occidental		Metropolitan		Central		Paracentral		Oriental		Total	
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Medical Director	.25	1/40,000	.28	1/35,715	.12	1/83,335	.25	1/40,000	.21	1/47,619	.23	1/43,478
Chief of Medical Service	.37	1/27,027	.30	1/33,333	.12	1/83,333	.18	1/55,555	.15	1/66,666	.23	1/43,478
Resident Physician	.35	1/28,571	.71	1/14,084	.23	1/43,478	.31	1/32,258	.24	1/41,666	.38	1/26,316
Dentist	.29	1/34,483	.51	1/19,608	.19	1/52,632	.28	1/35,714	.20	1/50,000	.30	1/33,333
Supervisory Nurse	.19	1/52,632	.58	1/17,241	.14	1/71,428	.14	1/71,428	.12	1/83,333	.24	1/41,667
Nurse	1.77	1/5,650	3.11	1/3,215	1.07	1/9,346	1.47	1/6,803	1.14	1/8,772	1.76	1/5,682
Auxiliary Nurse	1.62	1/2,165	9.10	1/1,099	2.58	1/3,876	2.87	1/3,484	2.51	1/3,984	1.48	1/2,232
Nurse's Aid	.30	1/33,333	.19	1/52,632	.32	1/31,250	.42	1/23,809	.33	1/30,303	.31	1/32,258
Lab Technician	.42	1/23,810	1.34	1/7,463	.16	1/62,500	.17	1/58,823	.18	1/55,555	.48	1/20,833
X-ray Technician	.16	1/62,500	.33	1/30,303	.09	1/111,111	.09	1/111,111	.08	1/125,000	.16	1/62,500
Social Worker	.03	1/333,333	.34	1/29,412	-		.01	1/1.0[6]	.02	1/500,000	.09	1/111,111
Nutritionist[1]	.01	1/1.0[c]	.01	1/1.0[c]	.02	1/500,000	.01	1/1.0[c]	.01	1/1.0[c]	.01	1/1.0[c]
Dietitian and Auxiliary Dietitian	.03	1/333,333	.11	1/90,909	.04	1/250,000	.03	1/333,333	.02	1/500,000	.04	1/250,000
Sanitation Inspector	.45	1/22,222	.62	1/16,129	.32	1/31,250	.41	1/24,390	.38	1/36,316	.44	1/22,727

Calculated using MOH population estimates for 1977 (January 1)

Source: MOH Statistics, 1976

(a) Number of personnel per 10,000 population in given region.
(b) Number of population per one of the given personnel.
(c) There is only one nutritionist in this region.

[1] 1 in each region only

or urban adminstrative units, thereby leaving the vast majority of the 1966 cantones in which the poor majority live largely uncovered by any health worker representing the formal system of the Ministry of Health. This vacuum traditionally has been partially filled by the partera or mid-wife and the curandero or folk healer and the pharmacist.

In contrast to physician services planning for nursing resources is simplified by the fact that virtually all nursing positions are full-time, and the retraining and operational programs for the great majority of nurses and auxiliary nurses are both within the MOH, thus facilitating essential coordination. The Department of Human Resources' Training division has four schools responsible for the production of graduate and auxiliary nurses. During 1976, 92 graduate nurses and 154 auxiliary nurses were graduated from these facilities.

Dentists

The poor dental health status of the population stands as stark evidence of the severe shortage of trained dentists throughout the country. In 1976 of the 388 dentists in the country, there were 149 working for the MOH of whom 82 were graduated dentists and 67 fulfilling the required year of Social Service. All of the graduate dentists in the country are in urban areas, leaving the rural inhabitant the choice of traveling to a health unit or health center or relying on one of the "empiricos" living in his/her area. As in the case of physicians, the part-time nature of employment is the rule rather than the exception. Only five dentists or four percent are full-time, and 55.5 percent work only five hours a day as seen in the following MOH table.

[5] Memoria 75-76, Ministerio de Salud Pública y Assistencia Social, Republica de El Salvador, p. 7.

TABLE -10

Dental Services as Per Contract
With the Ministry of Health

Dentist - Total	135	100.0 percent
Dentists - Full-time Dentists	5	3.7 percent
Dentists Social Service	54	40.0 percent
Dentists - Part time (two hours daily)	75	5.5 percent

Source: MSPYAS-MEMORIA 1975-76

Sanitarians

The MOH currently employs about 180 sanitarians/inspectors whose duties range from inspection and certification of public eating facilities and food markets to promoting the latrinification program. MOH projections for adequate coverage are one sanitarian per 5,000 inhabitants or a total group of 850 Sanitarians for the country. Nothing is planned at present, however, which would allow that number of Sanitarians to be trained, supervised, deployed or financed.

Pharmacies and Pharmacists

Introduction

The town pharmacist is a major health care provider and the most important health figure to the rural resident. Numerous pharmacies surround the central town plaza and appear to be as much a part of the community's infrastructure as is the Church. Farmacias selling not only modern medicines but frequently non-patented curative items such as waters and essences exist in virtually every town. The local pharmacist, a generally trusted and esteemed member of the town, commonly has roots in the region for several generations. He tends to be one of the wealthiest members of the community and often has served on political bodies. Overall he represents a somewhat paternalistic, stable counsel during illness who is familiar with all family members; a recent study indicates that it is to him that the family most often turns after self-treatment.

Most pharmacists actually act as if they were physicians, not only dispensing medicines but diagnosing illnesses. In fact when many rural residents speak of having been attended by a "doctor privado" or "doctor particular", they are actually referring to the pharmacist himself. In the recent study of a rural canton in the Central Region, it was noted that there was virtually no concept of the difference between a pharmacist and a licensed private physician among the typical campesino.[6]

His role as a medical advisor is reinforced by his frequent consultation for social problems as well including marital difficulties, problem children, personal failures at school or in the job, etc. This social aspect of medicine is a most important one which is infrequently duplicated by other health professionals. The constant turnover of medical personnel at the local health facilities as each completes his social service year leads to considerable discontinuity in care from a personal standpoint. It is most often this void in personalized health care which the local pharmacist fills.

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[7] Polly Fortier Harrison, The Social and Cultural Context of Health Delivery in Rural El Salvador: Implications for Programming (consultant report for the Agency for International Development) El Salvador, March-May 1976, p. 57 (mimeographed)

Table II

Use of the Pharmacy, Degree of Satisfaction and Motivation

Sex	Use Pharmacy		Satisfied with Service		Stated Uses of Pharmacy			
	Yes	No	Yes	No	Buy medicine for each illness	For consultation for all of problems	For simple illnesses	For emergencies, when the clinic is closed
Masculine	100%	-	95%	5%	30%	20%	45%	5%
Feminine	100%	-	90%	10%[A]	40%[AA]	55%	5%	-
Average	100%	-	92.5%	7.5%	35%	37.5%	25%	2.5%

SOURCE: Polly Fortier Harrison, The Social and Cultural Context of Health Delivery in Rural El Salvador: Implications for Programming (Consultant report for the Agency for International Development) El Salvador, March-May 1976, Table XIX, p. 57. (mimeographed)

A Reasons for dissatisfaction: dermatological reaction to a prescribed drug and insufficient shelf stock

AA Of this group, all without exception stated explicitly that one runs a risk in permitting a pharmacist to diagnose and prescribe for one's ailment.

[8]Gerald F. Murray, Traditional and Modern Strategies of Health Care Delivery Among Peasants of El Salvador, March 1977(unpublished).

Fewer than half the diagnoses the pharmacist makes are in the actual presence of the patient. Rather, the sick person remains at home in the canton; a member of the family goes to town to describe the symptoms to the pharmacist who then prescribes medication. The parmacist may, however, make house calls to the seriously ill during which injections as well as medications may be dispensed.

There is evidence that some pharmacists actually charge consultation fees in addition to the charges for the medicines purchased. A recent study in one rural area in the Central Region indicated an average fee of about $2.00 per consultation.[9] In order to avoid this fee, many rural residents will request specific medicines based on widespread knowledge of certain medicines for given ailments rather than seek advice from the pharmacist.

The limited income levels preclude purchase of large quantities of medicines at one time. Rather people will commonly carry their own bottles and purchase small amounts of cough medicine, paregoric, etc. Additionally common pills such as aspirin are frequently bought in quantities of two rather than by the bottle; it is common to see payment of 50 centavos (0.20) in exchange for medicines.

In at least one documented case, the pharmacist himself had donated the land on which the Public Health post was constructed, for even when other providers of care are consulted, the pharmacist continues to play an important complementary role.[10] Shortages of supplies are common throughout public health facilities and patients must often obtain prescribed medicines at their own cost from local pharmacies. Other drugs not available in prepared form are compounded at the pharmacy.

A recent study of modes of health delivery in Uluazapa, a municipality in the Oriental Region, highlights the key role and high degree of satisfaction of the community with the pharmacist. As outlined in Table IV.F-11, the local pharmacy seemed to be frequented by 100% of the survey population and 100% were satisfied with the services rendered.[11] Several other studies have shown that with regard to disease management and utilization of health resources, the pharmacy provides the greatest level of patient satisfaction.[12]

Satisfaction in health services delivered by the pharmacists in the survay, however, was coupled with satisfaction gained from other sources of health care as well. This suggests that the local pharmacy is in itself adequate for the delivery of services, but not totally sufficient in meeting all the needs and demands of the survey population.[13]

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[9]Ibid. [11]Polly F. Harrison, op. cit. [13]Ibid., p. 61.

[10]Ibid., p.60. [12]Ibid.

Table A2

Distribution of Pharmacies and the Ventas de Medicina by Department*

Department	Number of Pharmacies	Number of Ventas de Medicinas	Ratio of Population per Establishment**
Ahuachapán	35	6	5,434
Santa Ana	67	6	5,507
Sonsonate	48	10	5,203
Chalatenango	22	17	5,321
La Libertad	54	7	5,949
San Salvador	280	4	3,529
Cuscatlán	21	8	6,406
La Paz	40	15	4,145
Cabañas	20	6	6,175
San Vicente	24	7	6,066
Usulután	72	21	3,956
San Miguel	76	30	3,720
Morazán	20	33	3,510
La Unión	40	18	4,935
El Salvador Total	819	188	4,990 (Average)

* The source of this 1977 data is the Ministerio de Salud Pública y Asistencia Social. The ventas de medicinas are authorized to sell certain medicines and are generally located in the rural areas.

** The 1977 estimated El Salvador population divided by the total number of pharmacies and ventas de medicinas. For the San Salvador Department the estimated population figure is the total population for the Metropolitan Region.

According to the AnuarioEstadistico of (1973), the latest year for which information is avilable, an estimated US $14.8 million was expended in pharmaceutical imports in 1973 alone, compared to $2.9 million in exports. This substantial quantity of imported pharmaceuticals places a large drain on foreing exchange reserves needed for development. Further it significantly increases the cost for retail establishments and thus the consumers. All imports of patented pharmaceutical products are controlled by the Chemical and Pharmaceutical Board comprised f a President, two members , a Secretary and a group of proprietors as well as an alternate secretary and two members. All are Faculty Members of the Pharmacy Department of the University, and each is appointed to a two-year term. The Board is responsible to the National Government and is charged with monitoring of all establishments dispensing drugs, as well as of licensed professionals.

Distribution and Supply of Pharmacists and Pharmacies.

Data from 1976 indicate that there are 819 pharmacies and 188 ventas de medicinas in El Salvador as outlined in II.F-12. The Department of San Salvador has the largest number of pharmacies and the lowest number of ventas de medicinas. Conversely, the lowest number of pharmacies[14] are found in the Department of Cabañas and Morazan. The Department of Morazan is the only Department with more ventas de medicinas than pharmacies; in all other Departments, pharmacies are more prevalent than ventas. The average population per pharmaceutical establishment for El Salvador as a whole is 3,525; however, the ratio of population per facility varies considerably as noted. These figures do not indicate the actual distribution of clients between pharmacies and ventas de medicinas.

The establishment of a ventas de medicinas is authorized in all areas whether a pharmacy exists or not. Because the types of supplies which they are authorized to distribute is severely circumscribed by law and represents a much narrower range of products than those allowed to be sold in pharmacies, they are most commonly located in the rural areas.[15] Each is permitted to dispense only a select list of drugs including analgesics, laxatives, antacids, antiseptics, medication for parasitic diseases, cough medicines, decongestants and a limited number of surgical supplies such as bandages and packings for umbilical cords. In those communities in which there is no legally established pharmacy, commercial establishments are authorized to sell all of the above mentioned commodities in addition to the following: antidiarrheals, more advanced cough remedies, anti-amenias, nasal decongestants, optical drugs and antispasmodics. Any commercial establishment found to be dispensing medications not duly authorized by the Government is levied a fine ranging between ₡25 - 1000 ($10-$400).

The distribution of pharmacists in El Salvador is partially restricted by national legislation which states that in those municipalities where there are no pharmacists, none of the pharmacies shall be obligated to have a pharmacist. At the same time, however, if at least one pharmacy has a pharmacist in a given area, then all other pharmacies are required to retain one. As a result of this law, the maldistribution of pharmacists is perpetuated, and

Table 13

Distribution of Pharmacies with Registered and Unregistered Pharmacists*

Department	Pharmacies		
	With Active Registered Pharmacists	Without Registered Pharmacists	Total
Ahuachapán	6	28	34
Santa Ana	36	32	68
Sonsonate	29	21	50
Chalatenango	0	20	20
La Libertad	24	30	54
San Salvador	212	70	282
Cuscatlán	11	10	21
La Paz	13	29	42
Cabañas	0	19	19
San Vicente	10	17	27
Usulután	24	45	69
San Miguel	33	43	76
Morazán	0	21	21
La Unión	0	37	37
El Salvador (total)	398	422	820

* The source of this 1976 data is the Superior Council of Public Health. The Ventas de Medicinas are authorized to sell certain medicines and are generally located in the rural areas.

** The 1971 El Salvador population divided by the total number of pharmacies and ventas de medicinas.

potencial for the movement of a pharmacist into an underseved area is limited. Oely larger municipalities in which pharmacists are already heavily concentrated, therefore, absorb new graduates, while the existing shortages of trained pharmaceutical personnel in the rural areas continues. Pharmacies not required to have a pharmacist must have idoneos or auxiliares de farmacia, that is, pharmaceutical helpers or technicians. The distribution of pharmacies by department and level of training of personnel is noted in Table -13.

Overall according to the Monitoring Board of the Pharmaceutical Profession there are 466 trained pharmacists, 433 of whom are currently registered and 398 actually working, and 414 paraprofessionals authorized to work in El Salvador. The actual training level of these pharmaceutical paraprofessionals in 1977 according to the Board is: 37 auxiliares, 27 graduated of chemistry and pharmacy, and 352 idoneos. As noted in Table 13, there are only three Departments in which the number of pharmacies with trained pharmacists exceeds those without such personnel.

The available data on the supply of pharmacists, however, may be somewhat misleading. There are apparently 433 registered pharmacists but some inactive in the sector due to retirement of employment out of the country. Of the 398 active pharmacists, many are retained by pharmacies in name only. In many instances the pharmacist is legally assigned to one pharmacy but provides services only infrequently. To fill the gap in the delivery of pharmaceutical services, the pharmaceutical auxiliary prepares prescriptions and sells other medicines. It is probable, additionally, that the paraprofessional performs many of the administrative functions in the pharmacy, particularly in those establishments with an absentee licensed pharmacist. In many cases this worker does not have the requisite skills to perform these duties adequately.

Traditional Practitioners

Traditional healers play a special role in the provision of medical care to Salvadorenas. Available studies indicate the existence of many specialists, most of whom have had little or no formal training. Usually for common illnesses knowledge of appropriate treatment has been acquired from family and friends, and remedies are typically prepared without the aid of a medical practitioner. Nevertheless, the campesino is not knowledgeable with regard to all cures and periodically may consult the parcheros or other traditional healers, such as parteras (or matronas), boticarios, inyeccionistas, and curanderos, who provide quasi-modern medical treatment.

The relative proportion of both modern and traditional medical care providers has changed over time. Modern medicine has become a more dynamic force in the daily lives of a significant number of Salvadoreans but in cases in which either modern health providers remain inaccessible or modern medicine fails, traditional healers continue to hold the respect and provide care for the Salvadorean. No data exist on their precise numbers or distribution throughout the country.

Curanderos and Inyeccionistas

The curandero, curador or brujo as the religious healers are often called, are viewed as being effective in the treatment of illnesses caused by sorcery or spirits because it is believed that they are persons who have supernatural powers. There is little information available as to the social origins or healing techniques of these persons. Most of the curanderos are male with mainly a female clientele. A 1977 anthropological study of a rural area in El Salvador revealed that of 73 households surveyed, less than two percent reported using a curandero in the previous three months.[16] There is a common stereotype among urban residents which asserts that only the rural population uses the curandero.[17] Conversely, the people of the studied canton felt that only the urban residents use curanderos, which according to this recent study more accurately reflects the true utilization pattern.

Among the hierarchy of traditional healers, the inyeccionistas in El Salvador maintain a higher prestige than the curanderos because they are able to give injections. The injection is highly valued as a poweful form of curative medicine; the same medication in capsule or pill form, for example, is viewed as less potent. The stated purposes of many of the injections received by the surveyed population was to combat a general weakness labeled "anemia."[18] Injections are typically purchased in town from the pharmacy or the itinerant vendor. However, injection series are also prescribed in the public health clinics given their perceived value in an effort to entice individuals to return to receive all of the standard injections at the clinic, rather than through often most unsanitary methods employed by the inyeccionistas.[19]

The safety standards of the inyeccionista are questionable. It has been reported that many healers do not cleanse the skin before the injection nor do they properly sterilize their equipment, thus creating serious health hazards. The price of an injection in the studied community was about ₡ 0.12 or two injections for ₡ 0.25 (or $0.10), which is considered financially affordable to most of the community.

Of much greater significance concerning the inyeccionistas is that those engaged in this activity tend to hold powerful positions in the community. In the study area, for example, both the comandante cantonal and the wife of the local hacienda owner gave injections. Additionally, as a whole, there appears to be some linkage between economic and political power and the control of informal medical practices in this local community.[20]

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[16] Gerald F. Murray, Traditional and Modern Strategies of Health Care Delivery Among Peasants of El Salvador (Consultants report for Agency for International Development, March 1977), p. 157.

[17] Ibid.

[18] Ibid.

[19] Ibid.

[20] See discussion under Pharmacies section.

The Parteras

The traditional midwife or partera delivers the vast majority of infants in the rural areas; the maternity beds in most of the public health centers are virtually underutilized by rural women. In contrast, in the urban areas the primary use of hospital beds is for deliveries. Although the rural population has increasingly embraced more modern health practices when available, in matters of childbirth there are still pervasive traditional beliefs. The strong preference for home delivery of children in the rural areas can be largely attributed to the fact that the mother can take many of the traditional precautions against subsequent illness of herself or of the newborn child not permissible by the more modernly trained nurses in public health facilities.[21]

The traditional midwife in the rural areas is highly regarded by other local women. Her general reputation is that of a person adequately knowledgeable about childbirth, dedicated to the well-being of her patients, and willing to place the need of a woman during delivery above personal time demands. The midwife's role appears to be circumscribed to some degree, however. For example, many multiparous women may not even consult with the midwife during pregnancy. The midwife's clientele tend to view her role mainly as that of assistance in childbirth itself; prenatal and postnatal care are typically viewed as optional services, the need for which is an individual decision. Those who do visit her for prenatal consultation appear to be mostly younger women. The major function of the midwife during prenatal visits is to ensure that the fetus is in the correct position for birth. In the event that it is not, her principal therapy is massaging of the mother's abdomen to help position the fetus. Typical attitudes toward massage during labor and understanding of distinct warning symptoms during delivery reveal some dangerous misunderstandings of sound obstetrical practice.[22] When a problem arises which is beyond the control of the midwife, it is not uncommon for her to refer women for treatment to the nearby health post or prescribe pharmaceuticals from the local boticario (pharmacist).

The Calderon study suggests that the midwife is typically an illiterate woman over 50 years old who has been practicing midwifery for over 20 years; in contrast, only 7.2% were under 30 years of age, and 40% literate. The study documented a broad range of knowledge and attitudes toward pregnancy and childbirth.[23] The studied midwives' self-perception was that they were primarily housewives with midwifery as an additional external activity.

Income from midwifery varies substantially depending on the number of births attended each month. Some midwives charge as low as 3-4 colones (US $1.20-$1.60) while others may charge up to 20 colones (US $8.00) per birth. Typically, deliveries of male children may cost one colon or more than the fee charged for the delivery of a girl. Because of low income received, the midwife in the community is not generally associated with locally defined wealth or social positions.

[21] See discussion on health attitudes and practices in Part I.

[22] Claros de Carlderon, Algunos Rasgos Culturales de Cien Parteras Empiricas. Tradicionales de El Salvador.

[23] Ibid., p. 128.

Health Manpower Training

National University Programs

Physician Training

The Faculty of Medicine of the National University is the only medical school in the country, and like the remainder of the university, was recently closed for six months. The course of study consists of four years of basic science, two years of clinical study, one year of rotating internship and one year of social service, usually in a rural health unit or as a member of a mobile team serving three or more health posts. Except for a ten-week rotation in the sixth year in a health unit in San Salvador, all of the training is hospital-based with no special preparation for the rural problems encountered during the year of social service.

Dentists

Dental training takes place under the auspices of the Faculty of Dentistry of the National University. In 1975-1976, 631 students were enrolled in the school. To provide improved dental services, the MOH needs 293 graduate dentists and 293 dental assistants by the end of the Five-year plan in 1982. Data are not yet available for equipment procurement plans and dental facility construction plans so no judgment can be made of the absorptive capacity. Depending on whether or not the University is reopened, it appears that with the yearly output of the Dental School, the estimated requirement can be made. (See Table 5 and 6) However, in two health units visited while dentists were present, the services were both greatly underutilized. If services for adults are going to be limited to cleaning and extractions, it would appear likely that the empiricos will continue to provide a significant amount of service where the people live.

A dental assistant program has been developed to promote "4-handed" dentistry. Two years of university training is required after 12 years of basic schooling, and opinion within the MOH is that the two years could be shortened to six months.

Sanitarians

The projected need of 850 Sanitarians as expressed by the Ministry does not seem realizable in view of the shortage of supervisory personnel, financial resources and training necessities, as well as the lack of plans for

their deployment. However, these projected needs for Sanitarians would be reduced if the rural health aide assumes some responsibility for promotional activities in environmental sanitation and is trained in substantial numbers. Again, the need for a central office of health planning becomes apparent if optimal coordination and use of scarce resources is to be accomphished.

Pharmacists

Even without data on the impact of pharmacists, it is still appropriate to include the pharmacist in any planning for rural penetration of health services. Training manuals and treatment guides developed for the rural health aide or the midwife should be made available to the pharmacist. With plans for increased numbers and different kinds of health personnel to be involved in dispensing medication, high priority should be given to the development of a simple standardized formulary. This formulary should list commonly used drugs, their indications, contra-indications, common side effects, and standard doses. Such a formulary would be as appropriate for the nurse-physician staff of health units and health posts as it would be for the pharmacist and rural health aide.

From 1971 to 1975, the number of pharmacy graduates of the National University declined steadily from 53 to 8. (See Table .14)

TABLE -14

Number of Pharmacy Graduates of the National University of El Salvador since 1970

Year	Number of Pharmacy Graduates
1970	30
1971	53
1972	11
1973	1
1974	9
1975	8
1976	20
1977	3*
TOTAL	135

* As of April 1977, there were 3 graduates.

In 1976 the number of graduates increased significantly to 20, but fell drastically in 1977 with only three persons expected to graduate this year. The causes of the low interest in this profession are not clear, but the limited opportunities to work in other than already highly saturated job markets in major cities are a constraining factor. The University of El Salvador has the only training program for licensed pharmacists in the country. It offers a specialized curriculum for the licensed pharmacist and doctoral degrees. The former program requires five years of study in the University and one year of social service internship. Prerequisites for entrance into the program are secondary school degree and satisfactory score on an entrance examination. The doctoral program involves at most two years of advanced study beyond the licensed pharmacist degree.

With regard to the two levels of training for pharmaceutical manpower, there is little information available as to the quality and appropriateness of training. Assessment of the existing training infrastructure is essential to the development of future program strategies. In addition to the development of this evaluation, there should be some consideration given to the length and relevancy of training to the field task.

Paramedical Personnel Training

The School of Medical Technology is an integral part of the Medical School with much overlap in the curriculum during the preclinical years for medical students and the basic science years for the medical technicians. Students are currently enrolled in ten distinct pathways with the projected numbers of graduated shown in the following table:

TABLE -15

Pathway	1977	1978	1979	1980	1981	1982	Total
Licenciatura Laboratorio Clinico	45	170	140	80	60	50	545
Licenciatura Dietologia y Nutricion	0	5	30	35	35	40	145
Licenciatura Educacion para la Salud	0	1	1	20	25	30	77
Licenciatura Ecotecnologia	0	4	2	25	25	25	81
Tecnologo de Laboratorio Clinico	0	1	25	0	35	35	96
Tecnologo Fisioterapia	15	25	45	40	30	35	190
Tecnologo Anestesiologia	5	25	45	40	30	35	180
Tecnologo RadioTecnologia	0	2	20	25	25	30	102
Tecnologo Higiene Materna	5	5	20	25	25	30	110
Tecnologo Higiene Infantil	3	1	20	25	25	30	104

Source:

One group of clinical laboratory technicians graduated several months ago and are now working in their año social. There are no graduates from the other courses at this time. There is no coordination or communication between the

MOH and the School of Medical Technology regarding the training requirements for the students, the number ofpositions available for graduates, or the job requirements which the trainees might be expected to fulfill. Again, there is an urgent need for coordinated planning between the MOH and the School of Medical Technology to make optimum use of scarce resources. Without this joint planning effort it is very unlikely that the health system as currently constituted will be able to absorb and utilize the graduates of these programs in the numbers shown above.

Idoneos

There is apparently an excellent potential for this School to redress the shortages of registered pharmacists in many Departments through upgrading the skills of idoneos and auxiliaries by instituitng a formal training program in this important area. Currently, the idoneos receive only on-the-job training by a registered pharmacist. After a qualifying examination, idoneos are authorized to practice independently. Perhaps with a structured curriculum, the idoneos may be more adequately prepared to execute their administrative roles. The important role of the pharmaceutical worker in the community and the special relationship between the pharmacist and his client make further analysis of this level of personnel and his potential role in the sector particularly crucial to the development of a rural health delivery scheme.

National Nursing School

In contrast to the situation described above for doctors and medical technicians, the training of nurses and nurse auxiliaries is more directly under MOH authority. Two schools of nursing are located in San Salvador and Santa Ana and four schools for auxiliary nurses are located in San Salvador, Santa Ana, San Vicente, and San Miguel. The graduate nurse program is a three year course after high school for a total of 15 years of schooling. The auxiliary nurse programs are ten months in duration after 9 years of schooling for a total of 10 years of education. The numbers of students in the six programs fluctuate widely from year to year with approximately 100 graduate nurses and 200 auxiliary nurses completing training each year. Currently, 94 nurses are in social service. About thirty nurses per year emigrate to Panama.

The School of Nursing and Auxiliary Nursing in San Salvador has 31 instructors for 238 total enrollees. A curriculum committee was formed two years ago with representation from the school and the MOH to review the content of the curriculum and propose changes. In contrast to the medical students, the student nurses have rotations away from the hospital - a first year experience in pre-natal nursing in a health unit in San Salvador and a second year rotation in pediatric nursing in another Unit.

The Five Year PLan projects an additional 153 nurses and 447 auxiliary nurses in community nursing (health posts and units). For hospital staffing, an additional 338 nurses, 463 auxiliary nurses, and 67 supervisor nurses are needed during the 1978-1982 period for a total of 558 graduate nurses and 910 auxiliary nurses. To meet these projected figures there needs to be an increased enrollment in all schools of about 50%. To allow for attrition, staffing needs of ISSS and private institutions, and emigration, a doubling of enrollment would be more realistic.

Escuela de Capacitacion Sanitaria

Internal Staff Development Through the MOH Health Training School.

The Ministry of Health Training school has training facilities in San Salvador, Santa Ana, San Miguel, and San Vicente. The San Salvador central facility has a permanent professional staff of nine - one M.D., for nurses, one health educator, one social worker, and two inspectors. There are also five part-time professionals on the staff. Regional medical and nursing staff are used as trainers, particularly in the auxiliary nurse training programs.

Family planning training has been emphasized in the San Salvador school. During 1976, training in family planning was received by the following groups: 59 nurses, 46 student nurses, 101 auxiliary nurses, 166 student auxiliaries, 60 hospital social workers, 24 sanitation inspectors, 19 hospital promoters ("satisfied users".) Other training in the San Salvador facility included course for 13 women's health care specialists, 29 statistical aides, and decentralized training in three different areas for 72 rural health aides.

There has been a serious shortage of health personnel with management and supervisory skills. Thus, the chain of responsibility has been weakened, leading to fragmentation in the delivery of services and support functions.

In an attempt to strengthen the administrative infra-structure of the MOH, thirty courses were given in 1977 at the National Health Training School (Escuela de Capacitacion) of the MOH. These courses average and 3-6 days and were directed to the development of mid-level administrative skills. A seven week course was held for thirty individuals who will then assume administrative posts at various health centers hospitals, or in departments of nursing. This is, at best, a catch-up measure aimed at redressing the massive shortage of this category of personnel since no provision has been made for the institutionalization of formal administrative training. At the moment there are no courses planned for training personnel for the new hospital under construction in San Miguel; the explanation given was that the Escuela de Capacitacion could only respond to requests received from the MOH, and no requests had been made for staff development for the hospital in San Miguel. Furthermore, there are no opportunities for the director of the Health Training School to meet with other department heads in the MOH to determine what their needs might be.

There is an increasing demand for the training of health aides, expanded role nurses and midwives to staff the rural penetration project in addition to the projected needs for competent health administrators at mid-level positions. In order to meet these needs, the Health Training School will need a larger staff and its activities will need to be more integrated with the planning and operational functions of the MOH.

Midwife Training

Traditionally, the midwife has learned her skills through on-the-job training. There is a mystique about instruction from God that continues to permeate many midwives discussions concerning the source of their knowledge and skills.[24] The Ministry of Public Health, in its efforts to reorient midwives' traditional medical practices toward adoption of more modern procedures, and to increase referral to the local health posts, has instituted a number of midwifery training courses. The basic objectives of the courses, often conducted by graduate nurses at local health facilities, are to break old taboos of pregnancy and to enchance the technical skills of the local midwife. In some areas the local midwife has exhibited interest in attending scheduled classes as a means of "formalizing" her role in the practice of medicine, but to date conditions of training in the health post have not, generally, been conducive to enhancing their knowledge. The training in the past has consisted of a few short, irregularly scheduled lectures with little social or financial incentive for the midwives to attend.

Additionally, more close collaboration between traditional and public health personnel has been constrained by consistent failures to follow through on proposed agreements; promises of material support and supplies to the midwife have not been kept by many health posts. Although "diplomas" are given to the midwives upon completion of training there appears to be no formal change in the prestige of the midwife in the community or the fee they could charge relative to midwives who had not attended. Demand for classes has tended to be overestimated. In the Department of San Miguel, for example, attendance at one health post was less than half of that projected with only the very old and young midwives seeking additional training. However, some augmentation in enrollment did occur when the local mayor began to place pressure on several practicing midwives identified by birth registration forms.

Planning for the Rural midwife training component of the Rural Penetration Program indicates substantial interest on the part of the MOH in remedying these problems.

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24 Ibid., Page 136

APPENDIX C. PRIVATE VOLUNTARY ORGANIZATIONS.

This report identifies and assesses 16 major PVO's involved in the delivery of health services in El Salvador.

Information on the individual programs of 12 of the 16 identified PVO's i.e., extent of activities within each program, amount of financial support and sources, human resources utilized, possible impact of health programs and future health areas of expansion, was obtained through direct informal interviews with health representatives of these organizations.

In regard to the other PVOs' ACS, Partners of America, International Eye Program and Center San Lucas, because of AID/El Salvador's close acquaintance with these PVO's through contract loans and CPS proposals, information concerning their programs were obtained from office files.

The only 'non-health' sector PVO assessed that possessed any potential for future health programs was the Fundación Salvadoreña de Desarrollo y Vivienda Mínima*.

Potential areas for future health expansion are identified within each PVO summary. These areas are also noted in the chart identifying those PVOs examined, along the health areas in which they now are involved. Also identified are those PVOs that have received past AID assistance, those that are receiving assistance at present, and those that are under consideration for future assistance.

The PVO's are listed in two sections, those that possess some potential for future AID assistance and those that because of their present nature possess little potential for AID assistance.

Of those 12 PVO's that possess some possibility for AID assistance, 4 PVO's; Asociación Demográfica Salvadoreña, Unión Comunal Salvadoreña, International Eye Program and Centro San Lucas are now receiving or will receive AID assistance of one type or another. Other PVO's that are playing a very active role in the health sector and that display great potential for future activities in alleviating poor health status are Foster Parents Plan International, Inc., particularly in the areas of improving health delivery services and family planning, and Fundación de Desarrollo Salvadoreña y Vivienda Mínima, particularly

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* They are very indirectly involved, however in health programs through their housing projects.

in the areas of health education and nutrition. The health promotional efforts sponsored by CARITAS through their program "Desarrollo Integral de la Comunidad" and those of the Escuela de Formación Integral La Providencia in Santa Ana also display degrees of potential in their programs attempting to improve the country's poor health status. Their programs deserve closer examination in this regard. The remaining PVO's listed as possibly possessing potential for AID assistance operate on a much smaller scale than those mentioned above, and that assistance provided would be very area-specific in a geographical sense.

Those PVO's listed which possess little potential for AID assistance are categorized as such due to their small scale of action and their organizational nature.

Health

1. PVOs that Possess Potential for AID Assistance.	Hospital Clinic	Out-Patient Clinic	Nutrition	Maternal-Child Care	Environmental Health	Health Educ.	Family Planning
1. Foster Parents (PLAN)		X			X	X	0
2. CREDHO		X				X	X-0
3. Vivienda Mínima[1]			0		X	0	
4. UCS[3]			X-0			X	X-0
5. CARITAS			X	X	X	X	
6. ADS[2]						X	X
7. Baptist Association		X	0	0		X	0
8. Partners of America		X					
9. International Eye Foundation[3]		X					
- Universidades Campesinas -							
10. Centro San Lucas[2]			X		X	X	X
11. Escuela La Providencia			X	X	X	X	
12. Centro para La Joven Campesina[1]						X	

Health

1. PVOs that Possess Potential for AID Assistance	Hospital Clinic	Out-Patient Clinic	Nutrition	Maternal-Child Care	Environmental Health	Health Educ.	Family Planning
13. Club de Leones de San Salvador		X	X	X			
14. Maryknoll Sisters and Fathers Santa Ana			X	X		X	
15. Franciscan Fathers	X	X					
16. Asociación Nacional Pro-Infancia			X	X			

X - Areas Now Involved

0 - Areas of Future Expansion

X-0 - Signifies a significant future expansion within the same health area or an expansion of one specific component within that health area.

1 - Have received past AID assistance

2 - Presently receiving AID assistance

3 - Under consideration for future AID assistance

I. PVO's Nos. 1 - 12, that Possess Some Potential for AID Assistance

1. Foster Parents Plan International, Inc.
(Plan de Padrinos)
23 Ave. Norte, San Salvador

Mr. Keith R. Turner - Director

Foster Parents Plan or PLAN is currently assisting 2200 low-income foster children and their families in the marginal urban areas of San Salvador by providing them access to improved health services and upgrading environmental health conditions.

In providing access to improved health delivery, PLAN contracts 4 medical doctors to treat patients referred by Foster Parent's social workers. These patients include not only the foster child but also members of his family as well. The number of referrals made to PLAN's doctors are averaging 1,000 a month. Medicines prescribed by the doctors can be obtained at subsidized prices in the pharmacy maintained within the PLAN Office Building.

In the area of environmental health, PLAN promotes proper disposal of human waste through construction of latrines and promotes potable water services. These programs are initiated through PLAN's health and home improvement promoters and through collaboration with OMICOM*. In many projects, OMICOM provides technical assistance, PLAN provides the financial support and the benefitting local people provide the manual labor.

PLAN also maintains programs in education and home improvement. It is their philosophy that in order to elevate a child's well being, one must necessarily elevate the quality of his social and physical environment. The foster child receives approximately $19.00 per month, of which $6.00 is delivered to the child's family, and the remainder is funneled to the maternal aid and health services budget. For the coming year money will be allocated as follows:-

Item	$ Allocated
Health Services	$ 68,000
Educational Program	34,000
Community Development Program	57,000
Home Improvement Program	17,000

*Oficina para el Mejoramiento de Comunidades Marginales.

Besides the 2200 children PLAN is now assisting, 1,000 more children are on file awaiting enrollment by a family abroad through one of Foster Parents front offices in Canada, U.S., Australia and Holland. It is expected that by June of 1978 the total number of children and their families receiving PLAN's assistance will increase to 5,000. According to the director, "Never has PLAN office expanded so rapidly in such a short period of time".

At present the staff numbers 33, including 11 social workers, 1 health promotor, and 1 home educator. Seven more social workers will be added to the staff by August 1 in order to maintain a ratio of 1 social worker per 200 foster child families. By June, 1978 the staff is expected to number 70 people.

At the moment, PLAN after working in the country only one year and a half is still establishing itself; first priority is enrolling the 1,000 children now on file. As time and personnel permit, they will improve and expand their activities and efforts in the delivery of health services, and in the areas of community development, home improvement and education. It is contemplated that Foster Parents will in the future expand their activities outside the San Salvador urban area to enroll foster children in the rural areas.

In talking about expanding into other health areas, Mr. Turner expressed a great deal of interest in involving Foster Plan's Families, "a literally captive audience," in a family planning program. The program would initially disseminate information on family planning and the contraceptive devices available; thus the family could voluntarily choose the method most acceptable to it. The program would necessarily involve referral of those interested families to any one of the ADS family planning clinics or MOH health centers.

PLAN/El Salvador is a very active, action-orientated organization, deserving serious consideration for support by the AID Health Division.

2. CREDHO
   Iglesia Episcopal de El Salvador
   63 Ave. Sur y Ave. Olímpica
   San Salvador.

   Rvdo. Luis Serrano - Director General
   Dra. Rosa Judith Cisneros - Dpto. Jurídico

CREDHO is currently involved in health programs which include maintenance of two out-patient clinics and provision of some health education to rural leaders through CREDHO's rural training center named "El Maizal", located in Department of Sonsonate.

One of the two out-patient clinics is located in the same center "El Maizal." The clinic is open every Sunday from 9.00 am.-3.30 pm. Two doctors are concentrated from Hosp. Bloom and are complemented by medically trained volunteers from the community who assist in attending the parents. An estimated 60-90 patients are treated every Sunday for a small charge of ¢1.50 per patient.

The second clinic, which also is an orphanage, just recently opened in "Hogar Escuela," Soyapango, is staffed by "año social" medical personnel. It is intended that a community health extension program will be one of the clinic's future activities.

CREDHO, since January 1974, has handled 18,800 consultations in its two clinics, "El Maiz and the recently closed clinic located in Nejapa near Quezaltepeque, Dpto. La Libertad.

During the two week health education program for rural leaders at the training center "El Maizal", one day is devoted to the collective health topics of nutrition, latrines, transmissable diseases, parasites, etc. Since the centers inception in 1974, 12 courses have been given to rural leaders. No real evaluation, however, of the impact that these trained leaders have had within their rural communities has been made.

At the moment CREDHO is in the process of re-organizing themselves; the executive director and the health promotor were just recently discharged. Since they are also in a financial squeeze, involvement in the health areas in which they are working is all that can be expected for the near future.

According to Dra. Cisneros, CREDHO is very interested in becoming more involved in family planning; particularly in having the two doctors who are working in the "El Maizal" clinic, receive more adequate training in family planning practices. CREDHO has in the past received some professional assistance as well as family planning materials from ADS. This relationship has however, become less frequent, due to a change in ADS personnel. Interest was also indicated in future projects in latrinization and water supply for the areas they serve.

3. <u>Fundación Salvadoreña de Desarrollo y Vivienda Mínima</u>

18 Ave. Norte
San Salvador

Padre Antonio Fernández Ibánez - Executive Director
Dr. Michael Bamberger - Dept. of Socio-Economic Evaluation

FSDVM or Vivienda Mínima is not at present directly involved in

any one health field. They are, however, indirectly improving the health status of the low-income urban families by providing mimimum cost, quality housing*, i. e. more ample living quarters, clean drinkable water, and proper disposal of human wastes through installation of flushable toilets.

The foundation is also indirectly improving the health status of those low-income urban families situated in their projects by forming income-raising producer cooperatives. These cooperatives are involved in such areas as baking, textiles, construction, tailoring, pooling of unskilled labor, etc. The Central Coop. located on 49th Ave. Norte, San Salvador, serves as the marketing and distributing mechanism for the foundation's producer cooperatives. The philosophy of Vivienda Mínima is that by increasing their incomes people can afford to buy the foods needed to improve their nutrition and health status.

In regard to improving the health delivery system, Vivienda Mínima in many of its housing projects donates land to MOH, facilitating construction of health centers for the families in the projects. Such is the case in the recently completed housing project benefitting 1,000 families in Santa Ana, and in the housing project assisting 500 families in Sonsonate. In other FSDVM's projects, families may be located near a MOH health center, and if not they may form groups to contract communally a private doctor for short periods during the week.* In other cases individual families seek public or private medical assistance.

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*Costs of FSDVM house ₡6,000-₡7,000 without any subsidy, i.e. water installation.
Cost of IVU house-₡12,000-₡12,500 includes water installation subsidy.

**70% of FSDVM housing projects are devoted to those low urban income groups earning ₡250 or less per month. (16%-₡100 per month, and 54%-₡100-₡250 per month). This figure is compared with 30% of Instituto de Vivienda Urbana (IVU), 0% of Financiera Nacional de la Vivienda (FNV), 1% of Fondo Social para la Vivienda (FSV) and 10% of the remaining formal sector housing institutions.
For Further information see "EVALUACION DE PROYECTOS HABITACIONALES EN EL SALVADOR. FSDVM - OEA.

*For example in the "Colonia San José del Pino," Santa Tecla, a clinic promoted by a local youth group is providing clinical services 1 day a week, attended by an average of 25 patients, who pay ₡1.00 per consultation. Medicines are being solicited from local laboratories, also help has been requested from the National University's maintain the clinic open for 1 or 2 days more a week.

FSDVM has recently completed or will complete in the near future housing projects in the following areas:

LOCATION	NUMBER OF FAMILIES
Santa Ana	1,100 families
Sonsonate	500
Usulután	450 - initially only
	250
San Miguel	1,200 - for next May
Soyapango	500 families (1 1/2 year old)
Santa Tecla	500

There are other completed projects in the San Salvador Metropolitan area and in Apopa. FSDVM is the recipient of World Bank loans signed in agreement with GOES. The amount and exact nature of these loans was not investigated.

In the projected period 1978-1982 - Vivienda Mínima contemplates building 8,000 new homes, with each project averaging 1,000 homes in 8 different areas.

According to Dr. Michael Bamberger, in the next 2-3 housing projects, higher priority will be devoted to these health areas, nutrition and health education. Involvement in these areas can be expected within the next 3-4 months.

NOTE: For further information related to FSDVM's future program policy, see the recent No. 10 Estudio Socio-Economic de Santa Ana. Volumen 2. "Los Resultados de la Investigación y sus Aplicaciones para la Política de la Fundación en Santa Ana" - Febrero, 1977.

4. Unión Comunal Salvadoreña

Calle Ciriaco López
Santa Tecla

Sr. Tito Castro - Director General
Sr. Amilcar Bolaños - Director de Programas Comunitarios

Unión Comunal Salvadoreña or UCS is currently working in the health areas of nutrition and family planning through its 21 legally organized agricultural cooperatives and 100 pre-cooperative agricultural groups.

In the area of nutrition, UCS is collaborating with CARITAS in the maternal-child program, distributing supplementary foods to

an estimated 9,000 members through its 183 nutritional centers. There exists no strict supervision of the distribution and proper usage of these foods, nor has there been an evaluation of the impact that the program has effected among the cooperative beneficiaries.

UCS is actively involved in the area of family planning, promoting the various methods available through their promoters and established cooperative personnel. UCS is currently working with the Pathfinder Fund on a grant basis and collaborates regularly with ADS and MOH personnel.

Last year May, 1976 - May 1977, UCS promoted through its co-operatives, 100 vasectomies, 117 sterilizations and inscribed 230 women in utilizing the birth-control pill. In addition, an estimated 9,000 male cooperative members are using condoms. The condoms are distributed free of charge by UCS promotors at an estimated rate of 2 dozen per month per male member. A report of the number of members practicing family planning and the method employed is sent on a monthly basis to ADS.

This year under an agreement with ADS and MOH all UCS promotors, besides distributing condoms, will now be permitted to distribute the birth-control pill. All promotors have received further family planning training from ADS or MOH personnel in this area. It is expected that as a consequence of this program the number of female members inscribed for the birth-control pill will increase considerably within a year.

Although the number of total UCS promotors currently working for the organization was not known by UCS, there are known to be 28 female promotors.

UCS will continue to expand and work actively in the area of family planning.

In other areas, UCS will soon initiate a deparasitation program for the cooperative members' smaller children, followed by a regular vitamin supplementation of their diet. This program will be coordinated between MOH's malaria volunteers and UCS promotors.

5. <u>CARITAS de El Salvador</u>

1a. Calle Poniente No. 3412-B
Seminario San José de la Montaña

Sr. Daniel Barrera P. - Gerente General
Lic. Alberto Antonio Reyes Rubio - Jefe del Dpto. de Educación Nutricional

CARITAS de El Salvador is involved in primarily two areas of health, one in the field of health promotion and education, and the other in the field of nutrition.

The health education program termed "Desarrollo Integral de la Comunidad" is now in its third year of operation, funded primarily by the Inter-American Foundation. The Program presently consists of 8 health teams working in the 5 dioceses of El Salvador. The name of the dioceses and number of health teams in each one are broken down as follows:

NAME	NUMBER
Diocese San Miguel	2 teams
Diocese Santiago de María	2 teams
Diocese San Vicente	1 team
Diocese San Salvador	1 team
Diocese Santa Ana	2 teams
	8 teams

Each team consits of 3 members, the team chief who may be a graduate of a health high school, a graduate from the teacher's school 'Alberto Masferrer,' or a graduate of Centro San Lucas in San Miguel. The two assistants must possess a minimum of a 6th grade education with many possessing a 9th grade education and high-school degree. The majority of the assistants have received some health training from Centro San Lucas prior to working in the rural areas.

The team's chief's salary is ₡265.00 per month, while that of the assistants is ₡165.00. In addition, a 'viatico' of ₡25.00 per week for travel and living expenses complements the above monthly salary.

A team work schedule includes visiting 5 communities or 'caseríos' in a 5 week rotation, staying and living in the community 4 days a week*, Tuesday through Friday, teaching and promoting better practices.

Initially, however, as in all new areas , the health team needs a period of time to acquaint itself with the people. To this end, a socio-sanitary survey delineating the health and environmental needs of the "caserío" is taken before any type of health promotional work is attempted.

The primary health areas on which the health teams focus their

*Team members may live directly with a rural family for the week, or the team may stay in the local church, usually termed "La Herm.ta".

attention are personal hygiene, nutrition, environmental sanitation, disease control and limited work in family planning. The health knowledge and its application are conveyed through personal visits, through group meetings with mothers usually held in the late afternoons or at night, and through organized community health committees.

Once a month in each community a "Dia de Salud" is held, where small children are weighed to measure weight gain as a result of applied improved health practices, and to announce community health achievements and future health goals. The health teams also work with home improvement and home gardens. Many of the health teams activities are coordinated with FOCCO, Ministry of Health at CENTA.

The current policy of the "Desarrollo Integral de la Comunidad" program is to rotate, after one year of promotional and organizational effort in a community, to a new one. Since initiation of the program two years ago, an estimated 35 communities have been attended by health improvement teams. At present, the 8 health teams working with groups of approximately 30 housewives in each of their 5 respective communities, are assisting an estimated 1,200 housewives and families. It is projected that in the following year two more health teams will be added to those now in the "campo. The program is now in the second year of three-year grant from the Inter American foundations.

In addition to the Integral Community Development teams, CARITAS is the principal sponsor of the Maternal-Infant Supplementary Food Program, distributing WSB, trigor and oil through 714 nutritional centers, assisting 110,000 beneficiaries throughout the country. The number of centers and beneficiaries sponsored by the various agencies distributing CARITAS supplementary foods are broken down in the following manner:

AGENCY	No. of Centers	No. of Beneficiaries
CARITAS	250	75,000
MOH	209	25,000
UCS	183	9,000
ISTA	72	1,000
	714	111,000

A nutritional center may serve as few as 50 or as many as 500 beneficiaries, the maximum number allowed per center.

The number of beneficiaries as broken by diocese under the CARITAS program are as follows:

DIOCESE	NUMBER
Diocese San Miguel	20,000
" Stgo. de María	15,000
" San Vicente	10,000
" San Salvador	15,000
" Santa Ana	15,000

Candidates eligible to receive the supplementary foods are lactating or pregnant mothers, children below 2 years of age with normal weight, and children less than 5 or 6 years of age with abnormal weight. Each beneficiary receives an allotment of 5 lbs. of WSB, 1 lb. of trigor and 1/2 lb. of soy or peanut oil per month. Each recipient contributes $0.50 towards the program, which helps alleviate transportation costs and pay the diocese personnel who administrate the program. Under a new reorganization with stricter control, each diocese besides employing a general manager, employs a supervisor whose sole responsibility is to oversee appropriate distribution of the supplemental foods, and most important, provide closer educational supervision as to the supplemental food's proper consumption. In conjunction with these activities, the children are weighed every three months to measure weight gain and consequently proper utilization of the distributed foods.

CARITAS plans to increase the number of beneficiaries by 5,000, an expansion that most likely will occur in the Diocese of San Vicente. Also, for the near future, CARITAS is considering a vitamin supplementation program. A recent effort to examine the possibilities of incorporating a family planning program through the CARITAS Maternal-Child Program met with little success.*

6. Asociación Demográfica Salvadoreña
   1112 Calle Rubén Darío
   San Salvador

   Lic. Ricardo Castañeda Rugamas - Director Ejecutivo

The Asociación Demográfica Salvadoreña is the only health related PVO dealing strictly with family planning. In support of this programs ADS is working in three fundamental areas:

1. The maintenance of three public family planning clinics in San Salvador, Santa Ana and Santa Tecla.*

*For further information, see "Feasibility Study to Determine the Incorporation of a Family Planning Component Consisting of Information and Services into the PL-480 Title II MCH Program" Paz Buttedhal Contract No. AID-519-157, May 1977.

**Opened in September 1, 1976.

2. The dissemination of family planning information and methods to all levels of society; attempting through mass-media channels to increase the people's level of awareness of the country's demographic situation.

3. The implementation of various demographic investigations, i.e. fertility and attitude studies; medical investigation and program evaluations.

In 1976, the three clinics enrolled 3,411 women in some type of family planning method. An additional total of 64,649 were attended in follow-up consultation concerning various aspects of the clinics' family planning services. Through the ADS clinics a total of 1,139 sterilizations and 402 vasectomies were performed.*

The AID/El Salvador's Division of Health and Population has worked extensively with ADS since 1968. Currently a project agreement* has just been finalized between the two agencies under whose terms ADS will strive to improve and expand its family planning program operations in several inter-related areas. Those areas under consideration are: expansion of mass-media campaigns, i.e., T.V., radio, promotion of seminars and workshops for influential government and private leaders, implementation of community based distribution program through collaboration with UCS promotors and CENTA extension personnel, evaluation of related family planning programs with collaborative medical research, and expansion in commercializing a larger volume of contraceptive products through local pharmacies.

7. Asociación Bautista de El Salvador
Ave. Cuba No. 1726
San Salvador

Sr. Miguel Angel Alcántara - Gerente General

The El Salvador Baptist Association maintains two health clinics, one in Santa Ana and the other in El Coco, Chalchuapa, Dpto. de Santa Ana.

The clinic in El Coco is opened Tuesdays and Saturdays from 2.00 p.m. until there are no more patients to be seen, often not closing until 8.00 p.m. Two doctors from Santa Ana collaborate

* For further specific information related to ADS's activities see Asociación Demográfica Salvadoreña, Memoria de Labores, 1976. San Salvador, El Salvador, C. A., Enero 1977.

**See Project Agreement - Family Planning and Population (Salvadoran Demographic Association); Project Activity No. 519-15-580-149; July 1, 1977 to December 31, 1978.

with the Baptist Association in providing the medical assistance. A fee of ₡2.00 is charged per person, ₡1.00 for the doctor and the other half for the cost of medicines. According to the annual report of the Baptist Association, from January 1976 to October 1976 the clinic attended to 2,176 patients. According to a calculated estimate by the general manager, in the first 4 months of this year the clinic had already attended to 800 persons; many of whom came from Guatemala, just a few kilometers away. The clinic, besides providing health assistance, also provides emergency ambulance service to Santa Ana. The clinic is financed by individual contributions and by the Baptist Churches in El Salvador and the Baptist Church in Panamá, California.

The clinic in Santa Ana is open Monday, Wednesday, Thursday and Friday; but its patient count was considerably lower; only 604 were seen in the same time period as that of El Coco. This particular clinic is partially financed by the Baptist Church in Erie, Pa. Both clinics have been providing health services for the last 5 years.

The Baptist Association wishes in the future to open up other clinics in the San Miguel Region. It also is investigating the possibilities of working in the areas of nutrition and family planning. In the area of nutrition, collaboration will be solicited from CARITAS. However, this help be delayed until the clinics become legally authorized by the El Salvador government. They are also interested in complementing their health clinic activities with dissemination of family planning practices. Contact will be made with the Santa Ana ADS to solicit their family planning services.

8. <u>Partners of the Americans - Louisiana*</u>
Centro de Diagnóstico
23 Ave. Norte y 21 Calle Pte.

Dra. Noemi Sánchez de Tinetti - Presidenta

1. Burn - Intensive Care Unit.

The Louisiana Partners assisted the Social Security Institute in the establishment of a $600,000 intensive care burn unit. They provided specialists in hospital administration to

* The information obtained for this PVO summary was extracted from Paul Bells PVO Report and from the TAICN Country Report, Development Assistance Programs of U.S. non-profit organizations in El Salvador, April, 1976.

conduct workshops in El Salvador, with special emphasis on the operation and maintenance of the burn unit and intensive care unit. As a result four nurses took six week training courses in intensive care and burn nursing at Baton Rouge General Hospital.

2. Atificial Limbs

The Louisiana Partners assisted in the establishment of a $50,000 orthopedic clinic. Two seminar were conducted by sixteen orthopedic surgeons and brace specialists at the Institute for Rehabilitation for Invalids in orthopedic, prosthetic, and physical therapy programs.

3. Audiological Program

Hearing equipment valud at $7,750 was donated to the School for the Deaf. This assistance is complemented by seminars conducted by experts from Louisiana in speach and hearing.

9. The International Eye Foundation
Sibley Memorial Hospital, Washington, D.C.

Address in El Salvador: Rosales Hospital, San Salvador.

Mr. John Costello, Director of Program Development.

The foundation operates a Fellowship Program whereby senior residents of Washington University's School of Medicine, Department of Ophthalmology, are sponsored for three month assignments at the Rosales Hospital, working in the outpatient clinic performing surgery, aiding El Salvador to establish eye banks where necessary and training local doctors and nurses in modern eye health care.*

The foundation has just recently been approved by AID/El Salvador for a 1-year $57,000 OPG* grant, extending from July, 1977 to July, 1978. The grant will be used by the foundation to strengthen the MOH's capacity to deliver expanded eye care services to the more general population in the non-attended urban and rural areas outside metropolitan San Salvador.

The foundation will conduct two training courses over a twelve month period for 30 ophthalmic paramedical assistants, who will be strategically placed in MOH hospital centers and clinics.

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* TAICH Country Report, Development Assistance Programs of U.S. Non-Profit Organization in El Salvador, April, 1976.
**See Grant Agreement-Ophthalmic Assistants Training (OPG) Projec/ Activity No. 519-0188; July, 1977 - July, 1978.

In addition, two students will be selected from the first course to teach the second course under supervision of the foundation instructor(s), thus providing the MOH the capability to continue the program.

The Campesino Centers or "Universidad Campesina"

The "Universidad Campesina" presently consists of a confederation of training institutions under the Catholic Church of El Salvador, with the goal of providing non-formal training programs to educate rural leaders throughout the country. Presently the confederation consists of six campesinos centers, San Lucas in San Miguel, La Guadalupe and El Castaño in Chirilagua, Los Naranjos in Jiquilisco, Carmelitas de San José in Santa Tecla and La Providencia in Santa Ana. The Universidad Campesina centers have their own living and educational facilities; each one offers a distinct curriculum, independently handles selection of course candidates, and is financially autonomous.

The six Campesino Centers are concentrating with various degree of intensity in the field of health education and promotion. Three centers are listed below in accordance with the strength of their health programs and their effectiveness in alleviating poor health conditions among the rural populace.

1. Centro San Lucas, La Facultad de Salud del Proyecto Universidad Campesina, located in San Miguel.

2. Escuela de Formación Integral La Providencia, located in Santa Ana.

3. Centro de Promoción Rural para la Joven Campesina, located in Santa Tecla.

10. Centro San Lucas - (La Facultad del Proyecto Universidad Campesina)*

5a. Avenida Norte Bis No. 408, San Miguel.

Father William Gibbons, M.D., Director.

Since March 1971, the Center San Lucas has been training rural health promotors and mid-wives, who return to their communities often to work with other volunteer leaders in promoting better health sanitation, nutrition, and responsible parenthood practices in their

* Information for this PVO summary was obtained from AID's PVO file.

local community.

The program ultimately envisons the extension of health education and primary health services to 200 rural communities in the eastern third of El Salvador, i.e., the Departments of La Unión, San Miguel and Morazán. It is projected that by June 1978, 800 trained health promotors and mid-wives will be promoting integral health practices and attitudes reaching a potential 400 persons in each of these 200 communities.

Two-week courses in health and midwifery are offered at at two different levels. An attempted 20 courses with an average enrollment of 20 students are offered per year. After 6 months of work in the field with bi-monthly supervision, 60% of the first level graduates are invited to attend the second level course. Continued supervison is provided after the health promotors and trained mid-wives return to their respective communities.

The San Lucas staff consists of a director and 15 training and support personnel. Technical material and instruction are provided by MOH nurses, nutritionists and sanitation inspectors. During the intensive two week period, instruction includes both lectures and practical work (hospital and field trips). Appropriate films and filmstrips are shown in the evening. Attention is given to public speaking and techniques of group dynamics.

Private foundations and church-related agencies have contributed a large portion of the budget for teaching materials, office and building maintenance and costs of housing and feeding the student-trainees.

In June, 1976, Centro San Lucas received a two-year OPG grant* for the amount of $28,000.00 from AID/El Salvador. During the life of the project the 800 trained San Lucas personnel working in their 200 communities the following accomplishments are projected:

4,000 talks in the community on health, sanitation, nutrition, and family planning.

200 new latrines

30 projects for obtaining drinking water

75 communities with first-aid chests

900 first-aid cases

3,500 emergency injections.

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* See Grant Agreement - San Lucas Center (OPG), Project/Activity No. 519-173-3-60053; June 1, 1976 - May 31, 1978.

A planned joint evaluation Centro San Lucas - USAID/El Salvador of the first year's program will be made at the end of the first year of the project. Progress toward achieving the above described goals will be judged at that time, as well as whether the implementation plan is on schedule.

II. Escuela de Formación Integral La Providencia
Calle San Luis La Planta, Santa Ana.

Sr. José Baños, Coordinador de Programas de Salud

Sr. Rosa Prieto de García

The Escuela de Formación Integral La Providencia serves as the focal point in the training and coordination of 70 active health promoters, 35 active home educators and a smaller number of trained mid-wives working in the rural areas of Departments of Santa Ana, Ahuachapán and Sonsonate. Since its initiation in offering non-formal health training in 1973, over 200 rural leaders have enrolled in its health programs.

The health promoters, home educators and trained mid-wives are all volunteer workers residing within their communities and are graduates of one or more levels of health or home education training from La Providencia. The area of health includes 6 different levels of proficiency,* and the area of home education includes 5 different levels of proficiency, with each level requiring a one week training period. Candidates for health promotors or home educators are nominated by their local parishes and are screened and selected by the school during a two-week initiation course before any formal course work is offered.

The health promoters work actively in the fields of preventive medicine, curative medicine, personal hygiene, environmental health, transmissible diseases, and nutrition. When feasible the promoters work in coordination with pertinent government agencies. In the promotion of latrines, work is coordinated with FOCCO and MOH, promotion of rural water supply systems is performed with MOH and collaboration is extended to the MOH during vaccination campaigns.

In many communities or "caseríos" health promoters through assistance from La Providencia maintain "botiquines" or local dispensaries of some basic medicines. The medicines are sold at

* See - Health Textbooks for each proficiency level 1-6. Escuela de Formación Integral La Providencia, Santa Ana.

cost with the money obtained being used to buy replacement medicines.

Most of the health promoters and home educators work is performed during their free time, through personal visits and group meetings aided occasionally by filmstrips.

The school's strongest promotional and educational efforts are centered in the following three areas:

1. Santa Ana actually c. Natividad just outside the city where the school is located.

In this area there are an estimated 20-25 active promoters, working in at least 6 "caseríos."

2. Sonsonate Area - There are 30 active promoters working in 8 "caseríos."

3. Ahuachapán Area - There are 18-20 active promoters working in 6 "caseríos."

Contact is maintained with these groups through bi-monthly meetings, permitting feedback between the promoters in the field and the staff at the school. Ideally, work is to be performed in each community or "Caserío" by a team of four consisting of a health promoter, a home educator, a trained mid-wife and a catechist. However, in very few cases has this ideal team been achieved, and only in the area surrounding the school in Santa Ana are more complete teams found.

The health impact most strongly made in physical terms during last year's activities was in the area of latrinization, where approximately 125 latrines were successfully promoted. Also, through the health promoters' direct involvement one water supply system installed by ANDA and two water supply systems installed by MOH were inaugurated. A complete compilation of the various activities of the health promoters for last year was not available.

Last year 16 courses of various training levels with an average attendance of 20 health promoters were sponsored by the school. At least an equal number of health courses was planned for this year. However, because of heightened political tension many of the courses have been postponed.

The school also sponsores a weekly 30-minute radio program

every Sunday at 6:00 p.m. The last 15 minutes are devoted towards various health topics.* In recent months the topic of nutrition has been repeatedly discussed.

The school presently consists of a staff of 10 people, five of whom are full -time; there is also collaboration with MOH personnel.

Operating funds come from various sources including the Catholic Church of El Salvador, Catholic Relief Services, Advenient, Holland, Luxemburg, and other religious group. The center also maintains itself through cultivation of 42 manzanas of basic grains.

Most of these funds are allocated for support of training courses for rural leaders. Very little money, if any, is alloted for a program of supervision and evaluation of the schools' trainees once they return to their communities. The existing and future need for such evaluation and supervision of the schools' graduated trainess was fully recognized and stated very clearly by La Providencia's health coordinator, Sr. José Baños. The need for such a program, coupled with a demand for tighter administration of field activities, are points worthy of examination.

12. Centro de Promoción Rural para la Joven Campesina
    11 Avenida Sur
    Colonia Utila
    Santa Tecla

    Hermana Silveria López, Directora.

The Center provides health and leadership training to young rural girls. It is presently supervising and coordinating nine health teams comprised of from 3 to 10 girls in various parts of the country.

Three levels of health courses are offered, each of two weeks' duration. Health instruction is provided by local MOH personnel, i.e. Hospital San Rafael.

The health teams are presently working in the following areas:

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* Much of the basic health material is derived from the book, Donde No Hay Doctor

Areas	No. of teams
Verapaz, Dept. San Vicente	1
c/Concepción Cañas, Dept. San Vicente	1
Guazapa, Dept. San Salvador	2
Tenancingo, Dept. Cuscatlán	1
San Pablo Tacachico, Dept. La Libertad	1
Santa Ana, Dept. Santa Ana	2
La Libertad, Dept. La Libertad	1
	9 teams

Each health team, directed by a team leader or "animadora", is comprised of girls who have received training in one or more of the three health courses at the center, all working as volunteers in their community.*

Those health areas which the teams are promoting through personal visits and group meetings are personal hygiene, environmental health, i.e. latrines, removal of trash, infant care, nutrition, disease prevention and the ovulation method in family planning. The teams also promote adult reading classes and some home improvement. Because of heightened political tension in the last few months, the health teams' promotional activities have been curtailed, as have been the center's training programs.

The center's supervisors try to check up on the teams' activities every 15-30 days. No real evaluation of the health teams' effectiveness and impact has been made.

The center receives funds through Catholic Relief Service, Advenient, through the order of Carmelitas de San José, and through a small sewing and tailor shop the center owns.

In the future the center will concentrate its efforts and promotional activities only in Dept. La Libertad while still maintaining contact with those health teams outside this area.

II. PVO's Nos. 13-16, That Possess Little Potential for AID Assistance

13. Club de Leones de San Salvador
    1a. Diagonal, Pasaje No. 2
    Urb. La Esperanza
    San Salvador

    Sr. Raúl Vicente Martínez -President

* As a result some teams are more effective than others; others disassociate after time.

The San Salvador Lions Club operates a dental clinic and sponsors a nutritional program. Until recently they also maintained a children's health clinic but due to financial difficulties were forced to temporarily close it.

The dental clinic opens in the afternoons to the general public and provides dental assistance at subsidized costs.

The nutritional program provides free breackfast to a maximum of 70 children per day, and nutritional talks are given to the mothers. Most of the children are referred to the program by the nearby MOH health clinic "San Miguelito". A child may participate in the program for no longer than four months.

The Lions Club had for the last 6 years sponsored a children's health clinic, open to the public in the morning and afternoon; the cost was $2.00 per consultation. According to the Lions Club records 1,668 consultations were made during last year's operations. This year, however, because of a tighter budget and increased costs the Lions Club was forced to close the clinic temporarily. It is expected that the health clinic will be reopened in the near future.

14. Maryknoll Sisters of St. Dominc, Inc.
Maryknoll Sisters Center
Maryknoll, New York 10545

Maryknoll Fathers (the same)

Address in El Salvador:
Apartado Postal 1524
Santa Ana; or

Parroquia Madre de El Salvador
23 Ave. Norte y 1a. Calle Poniente

Sister Medellin Dorsey - Health Coordinator

The Parish supports one health team, Sister Medellin Dorsey and a Salvadoran nurse. The team works in the urban area of Santa Ana, visiting on a regular basis 110 "mesones", each one consisting of 6 to 30 families. They promote basic health education such as:

- Personal Hygiene
- Prevention of Diseases
- Vaccination
- Proper Nutrition

Activities include visiting the families, holding night classes, putting up posters, showing films, etc. Proper health care is also promoted through the local "parteras." Collaboration is sought from the "Casa de Niños" and the local MOH health clinic.

They have not yet established volunteer health leaders or collaborators in the "mesones" that they are assisting.

15. Franciscan Fathers
Franciscan Missionary Union, Providence of the Inmaculate Conception
147 Thompson Street, New York, New York 10012

Address in El Salvador:
Franciscan Fathers
Frailes Franciscanos
Custodia Inmaculada Concepción
Parroquia Santísima Trinidad

Rev. Isaac Calicchio, O.F.M.

The Franciscan Fathers operate two medical clinics, one in Ataco, the other in San Pedro Puxtla, both in Dept. Ahuachapán

The clinic in San Pedro Puxtla administrated by Father Guy has provided medical services to the community for the last 12 years. Last year a new clinic with 6 beds was constructed through funds provided by the Franciscan Fathers in New York. The clinic employs a full time nurse; a doctor visits once a week. The clinic also provides ambulance service for the people in San Pedro Puxtla and outlying areas.

The clinic in Ataco administered by two Franciscan nuns has been assisting the surrounding communtiy for 20 years. It employs two full time nurses; once a week a doctor and dentist provide more extensive medical assistance.

16. Asociación Nacional Pro-Infancia
Ave. España No. 635
San Salvador

Enf. Angélica de Najarro - Gerente General

The Asociación Nacional Pro-Infancia maintains a day care center

and sponsors a limited nutritional program for children of marginal urban families.

The day care center is located in the West Bus Terminal and provides meals and snacks to 30 children. A small fee of ₡0.40 per child is paid by the mother for the meals and supervision of the child.

The association maintains a nutritional program sponsoring at any one time an average of 50 children from the marginal urban areas. The foods are obtained from CARITAS, and the basic grains and sugar are bought from IRA. The program tries to measure the monthly weight gain of the children, besides supervision of the foods proper usage. The program attends to an average of 200-300 children per year. The nutritional program is complemented with an educational program, providing assistance in the form of books and uniforms. Limited family counseling is available.

The seemingly most important activities of the association are to expose, publicize and report to various private and government institutions the deplorable conditions in which the majority of Salvadoran children live. Some of the activities include sponsorship of the annual U.N. World Children's Day and sponsorship of the Fifth National Children's Conference,* held in November 9-13, 1976. The results from this Fifth Conference will be personally delivered to the new government, including the President himself.

Presently the staff consists of 7 people, including one social worker and the general manager.

Most of their funds are raised by the sale of their annual stamp commemorating the Salvadoran Child; other funds come from the El Salvador Government and from private contributions.

There is very little likelihood of any program expansion.

17. <u>Other Health PVO's not examined are:</u>

Cruz Roj. Salvadoreña
3a. Calle Poniente y 3a. Ave. Norte

Sr. Oscar Ernesto Morales - Gerente General

Besides normal red cross functions, they maintain an emergency clinic.

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* See Documentos, V Congreso Nacional del Niño del 3 al 13 de Noviembre de 1976. San Salvador, El Salvador, C.A.

Asociación Evangélica Pro-Bienestar Infantil
Col. Santa Eugenia, 17 Calle Oriente No. 298
(affiliated with "Friends of Children," USA)

No first-hand information available. Pamphlet indicates primary interest in adoption program.

Sociedad Amigas Hospital de Maternidad,
Banco de Leche
1a. Calle Oriente 2023

They offer milk at half price to poorer mothers, also used clothes are made available.

F. COMMON ABBREVIATIONS USED IN THE EL SALVADOR HEALTH SECTOR

AID - Agency for International Development

ANDA - National Water and Sewerage Administration

ANTEL - National Telecommunications Administration

CARS - Central American Research Station (HEW)

CDC - Center for Disease Control (HEW)

CENTA - National Center for Agricultural Technology

CIDA - Canadian International Development Agency

CONAPLAN - National Council of Planning and Economic Coordination

FUCCO - Federation of Cooperatives

GOES - Government of El Salvador

HSA - Health Sector Assessment

IDB - Interamerican Development Bank

ISSS - Salvadorean Social Security Institute

MAG - Ministry of Agriculture

MOE - Ministry of Education

MOH - Ministry of Public Health and Social Assistance (MSPyAS)

MSPyAS - Ministry of Public Health and Social Assistance (MOH)

PAHO - Pan American Health Organization

PVO - Private Voluntary Organization

RHA - Rural Health Aide

SDA - Salvadorean Demographic Association

USDA - U. S. Department of Agriculture

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Family Planning	Hector Correa University of Pittsburgh Robert Haladay, USAID/ES John Stivers Thomas Mulhern Gerald Brooks, CARS, CDC/HEW Douglas Zabee, PCV Mark Karns, CPDO