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REPORT ON
PRITECH PROMOTION AND EVALUATION OF
ORT/EPI ACTIVITIES IN ECUADOR

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by

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EXECUTIVE SUMMARY

This consultancy was developed as a promotional visit for PRITECH to assess current Oral Rehydration Therapy (ORT) and Expanded Program in Immunization (EPI) activities in Ecuador and to identify areas of future collaboration for PRITECH. An additional task, evaluation of the ORT/EPI activities in the Integrated, Rural Health Project, was requested to assist the Mission develop strategies for effective use of their resources in these programs.

The Diarrheal Disease Control Program of the MOH has existed for five years and is quite impressive. All health personnel have been trained in ORT and adequate stocks of oral rehydration salts exist at all levels. Community participation is a key component. Over 9,000 literacy educators (25% of which speak Quichua) have been trained in ORT, as have been community leaders in some Provinces and all DRI areas. A health education and promotion campaign began last year utilizing radio spots, printed material, and training of community leaders. These efforts have received considerable support from the ST/Health project on communications and mass media and the presence of an advisor from the Academy for Educational Development. Ciba-Geigy plans to produce ORS in the same packets as the MSP, but market it through private sources, thus assisting in national coverage.

The EPI program, on the other hand, has not achieved good national coverage, even though it has existed since 1977. For DPT and polio there is a profound drop-off in coverage from first to third doses from 60% to 28%. Coverage rates for measles are approximately 32%. Morbidity and mortality from the immuno-preventible diseases has not changed in ten years.

For both ORT and EPI programs, the health education and promotion activities are most important. The Mission should consider providing funds and negotiating with AID/W and the AED to extend services of the advisor to assist in expansion of this campaign nationwide for both programs. Management support systems within the MSP need strengthening, especially supervision, information, and operations research. Vaccine logistic and cold chain effectiveness, especially in rural areas, needs further investigation. Promotion of breast-feeding needs reinforcement. Cost-effectiveness analysis of ORT/EPI programs compared to other MSP services, such as Hospital Health Centers, may be useful in assisting the MSP make decisions about resource allocations. PRITECH can provide consultants in all these areas, if requested.

The AID Integrated Rural Health Project has existed for two years and made impressive gains in ORT and community organization. On the other hand, administrative problems with the Area Chief; competition between SEDRI and MSP personnel and programs (in some areas); and the improvement in MSP capabilities during this time have produced a situation where there is little difference in ORT and EPI activities between DRI areas and other areas of the Provinces. The Mission might consider expanding the project to include the entire Province (and possibly expand to more Provinces) and channeling Project funds directly to the MSP to support these expanded efforts. By focusing on improving ORT/EPI programs in the activities noted above, the Mission could assist the MOH produce significant improvements in morbidity and mortality within the next few years.

Several non-governmental agencies show promise for expansion of these programs and may benefit from additional support. Seguro Social Campesino, MAP International, CRS, and the Peace

Corps are all willing to participate and have a substantial national presence. Future analyses should identify ways of assisting these agencies.

I. Introduction

A. Scope of Work

1. Promote PRITECH Project to AID Mission, MOH, and other agencies.

2. Identify current ORT/EPI activities in public and non-governmental agencies and analyze achievements and constraints.

3. Examine the Integrated Rural Health Project in conjunction with the Project Evaluation Team to assess ORT/EPI activities.

4. Identify key personnel in public and non-governmental agencies who can influence ORT/EPI activities.

5. Develop strategy for future PRITECH collaboration and develop scopes of work for future consultants.

6. Submit this report.

B. Activities

This two week consultancy was initially developed as a promotional visit for the PRITECH Project to assess current ORT/EPI activities in Ecuador and to identify areas of future collaboration. However, an additional task in the scope of work added another level of complexity to this visit, that was the request to evaluate ORT/EPI activities in the Integrated Rural Health Project. This was appropriate since AID/Ecuador health resources can significantly advance these programs, and

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PRITECH resources should be complementary. The project evaluation did, however, significantly add to the work load in the short time available.

During this time period, the following activities were completed.

1. Interviews with key personnel in the MSP at the Central and Provincial levels.

2. Review of pertinent documents available in AID and the MSP, including results of previous EPI and ORT evaluations.

3. Interviews with key personnel in agencies other than the MSP. The results of this are presented in Section VI.

4. Field visits to:

- a. Province of Cotopaxi and the Project area of Salcedo, March 15-16.

- b. Province of Chimborazo and the Project Area of Quimiag-Penipe March 20-21.

Annex I is a list of people interviewed and places visited.

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ANNEX 1

PEOPLE INTERVIEWED

MSP, Central Level

1. Dra. Magdalena Banoni, Director of Priority Programs.
2. Dr. Humberto Baquero, Chief, División de Fomento y Protección.
3. Dra. Ligia Salvador, Chief, Division of Frequent Morbidity.
4. Dr. Oswaldo Barrezueta, Chief, EPI.
5. Dr. Edgar Moncayo, Chief, Programming and Planning.
6. Lcdo. Eduardo Salazar, Health Educator assigned to D.D.C.
7. Dra. Carmen Laspina, Physician assigned to Respiratory Infections.
8. Lcda. Teresa Tapia, Nurse in charge of Oral Rehydration Units.

MSP, Province of Cotopaxi

9. Dr. Parreño, Director.
10. Lcdo. Jaime Arias, Chief, Health Education.
11. Lcda. Lola Albán, Provincial Educator.
12. Lcda. Villagómez, Nurse for Rural Health.
13. Director of Department of Epidemiology.
14. Provincial Statistician.
15. Director of EPI programs.

MSP, Province of Chimborazo

16. Dr. Puslio Escobar, Chief of Priority Program.
17. Dr. Max Santillar, Chief of Epidemiology.
18. Dr. Marco Quincana, Chief of MCH (former Chief of Area, Quimiag-Penipe).

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19. Lcdo. Hector Alvarado, Educator.
20. Provincial Statistician.

Integrated Rural Development Area, Salcedo

21. Ing. Oscar Escola, Chief, Executive Unit, IRD, Salcedo.
22. Dr. Max Arias, Area Health Chief, IRD.
23. Lcda. Susana Larrea, Health Representative from SEDRI.

Integrated Rural Health Development Area, Quimiao-Penipe

24. Dr. Naranjo, Area Health Chief.
25. Lcda. Vilena, Area Nurse.
26. Ing. Araujo, Sanitary Inspector.

AID/Ecuador

27. Dr. Kenneth Farr, Chief, Health Office.
28. Dr. Jean Audrey Wight, Nutrition Advisor.
29. Dr. Juan Londoño, Population Advisor.
30. Dr. Eduardo Navas, Advisor in Regionalization.
31. Dr. Gustavo Estrella, Project Coordinator.

Evaluation Team

32. Mr. Patrick Marnane, Team Leader.
33. Mr. Robert Emrey, Management Consultant.

Other Agencies

34. Dr. Nancy Andrade, Health Advisor, UNICEF.
35. Mr. Brian Cavanagh, Director, CARE.
36. Dr. Miguel Artola, Health Officer, Peace Corps.
37. William Senn, Director, MAP International.

38. Dr. Galo Cordero, Seguro Social Campesino.
39. Dr. José Torres, Ciba Geigy.
40. Dr. Pettigiani, Representative of PAHO.
41. Dr. Alvaro Rueda, Epidemiology Advisor, PAHO.
42. Dr. Merlin Fernández, Management Advisor, PAHO.
43. Lcdo. Roberto Unda, EPI/DDC Advisor, PAHO.

SITE VISITS

Hospital Health Center, Salcedo.
Sub-Centro de Salud, Cusubamba.
Sub-Centro de Salud, Mulalillo.
Sub-Centro de Salud, Panazallo.
Sub-Centro de Salud, Quimiag.
Sub-Centro de Salud, Penipe.
Provincial Health Office, Cotopaxi.
Provincial Health Office, Chimborazo.
IRD Headquarters, Salcedo.
IRD Headquarters, Quimiag-Penipe.
Ciba-Geigy Production Facility, Quito.

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II. BACKGROUND

A. The Setting

1. General

Ecuador is a country of contrasts. Although one of the smallest South American Countries with a territory of only 284,000 km², it contains enormous geographic and cultural differences. The Cordillera of the Andes bisects the country, from the Columbian border in the North to Peru in the South, and has many peaks ranging up to 6,000 mts. This mountainous zone, called the Sierra, has numerous pockets of population located between 2,800 and 4,000 mts. elevations. Nearly 3,000,000 people in this area speak Quichua, a dialect of Quechua.

To the east of the Andes is the Oriente, that forms part of the headwaters of the Amazon River. This is sparsely populated with a high percentage of Amerindians who have retained their traditional way of life. To the west of the Cordillera lies the Pacific Coastal plain, which frequently receives heavy rains and subsequent flooding. The largest city of Ecuador (and its principal port) Guayaquil is located here.

Politically, Ecuador is divided into twenty Provinces. Each Province is divided into Cantons, and Cantons are further divided into Parroquias.

2. Demographic Indicators

Approximately 49% of the population lives in the coast, 47% in the Sierra, and 4% in the Oriente. During the last ten years, an accelerated migration of the population has

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occurred to urban areas, as shown by the differences between the census of 1974 and one recently completed in 1982:

	<u>Population</u>		
	<u>URBAN (%)</u>	<u>RURAL(%)</u>	<u>TOTAL (No.)</u>
1974	41.4	59.7	6,830,000
1982	49.7	50.3	8,072,000

Current growth (based on the 1982 census) is 2.7%, down from the 3.3% rate found in the 1974 census. Approximately, 40% of the population is indigenous, 40% mestiza, 10% caucasian, and the rest of African and Asian descent.

Obviously, a country with such geographical and cultural diversities, difficulties with transportation and communication and limited infra-structure poses a tremendous challenge for development.

In 1982, the per-capita GNP was US\$1,337. The literacy rate has improved substantially, reflecting a national commitment to improved education. In 1974, 24.6% of people over age 12 were classified as illiterate, compared to 14.5% in 1982. Rural areas have four times the illiteracy rate of urban areas (26% vs. 9.3% in 1982).

3. Health Indicators

Data on health status have shown similar improvements, but mortality rates are still high:

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<u>Age</u>	<u>1955-59</u>	<u>1975-79</u>	<u>1982</u>
- 1	122.4	84	72
1-4	22.3	9.8	*
Total	14.0	7.9	*

Rural areas have 50% greater mortality rates than urban areas. Nearly 50% of mortality occur in children under five years old. Nearly 1/3 of the deaths are attributed to infectious diseases.

The first six causes of morbidity recorded by the MOH are what one would expect of a country in this stage of development:

1. Diarrheal Disease.
2. Respiratory Diseases.
3. Immuno-preventibles.
4. Endemic Goiter (Sierra).
5. Malnutrition.
6. Malaria (Pacific Coast).

Nearly 80% of births are attended by parteras empíricas or other untrained people. Only 10.3% of the rural population has access to potable water.

The burden of providing services for these diverse health problems falls on the MOH for 85% of the population. The Ecuadorean Social Security System provides services to 7.5% of the population, and the private sector to 7.5%.

B. The Health System

1. History of Public Health Services

The MOH is the youngest institution of its kind in South America, since it was officially created in 1972. From 1942 to 1964, a joint U.S./Ecuadorean effort developed the Ecuadorean Public Health Services. With generous financial assistance from the U.S., tremendous strides were made in public health. However, after 1964, U.S. financial assistance was withdrawn, and the Government of Ecuador could not provide sufficient support to continue this centralized Public Health Service. From 1964-1972, the responsibility for organized health services fell on the provinces. Thus, each province developed their own programs according to their perceived needs and the resources available. This, of course, created marked irregularities in the quantity and quality of health services. Recognizing these inequities, the GOE created the current MSP in 1972.

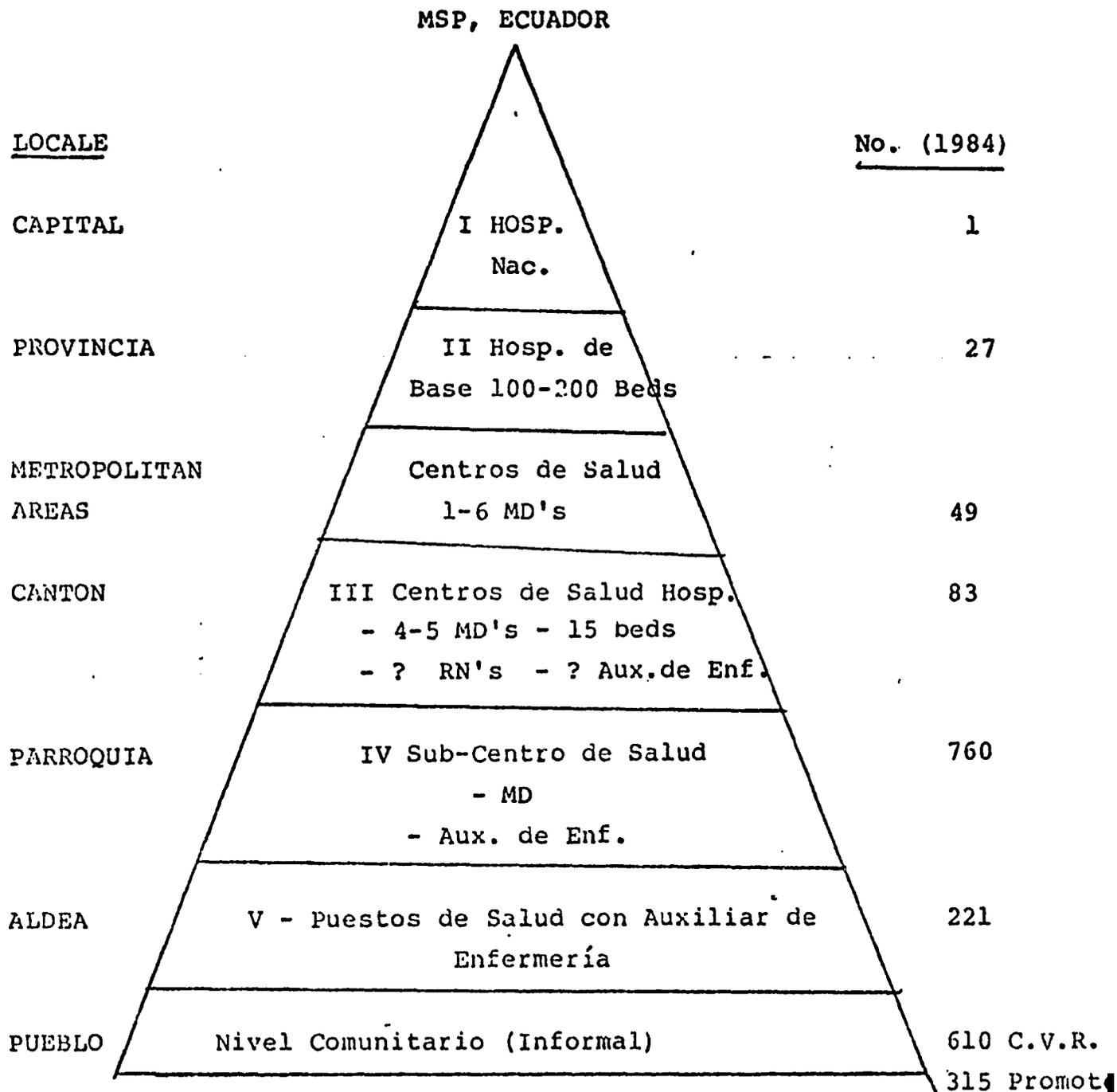
2. MOH Structure

The first National Health Plan was developed in 1973, and created the structure of health services presented in Figure 1.

From 1973 to 1978, MOH employees doubled from 6,000 to 12,000. Few of the new personnel had any formal training in public health or administration. Given this rapid growth, multiple charges in administrative structure are the rule. The most recent reform occurred in late 1983, and is presented schematically in Figure 2.

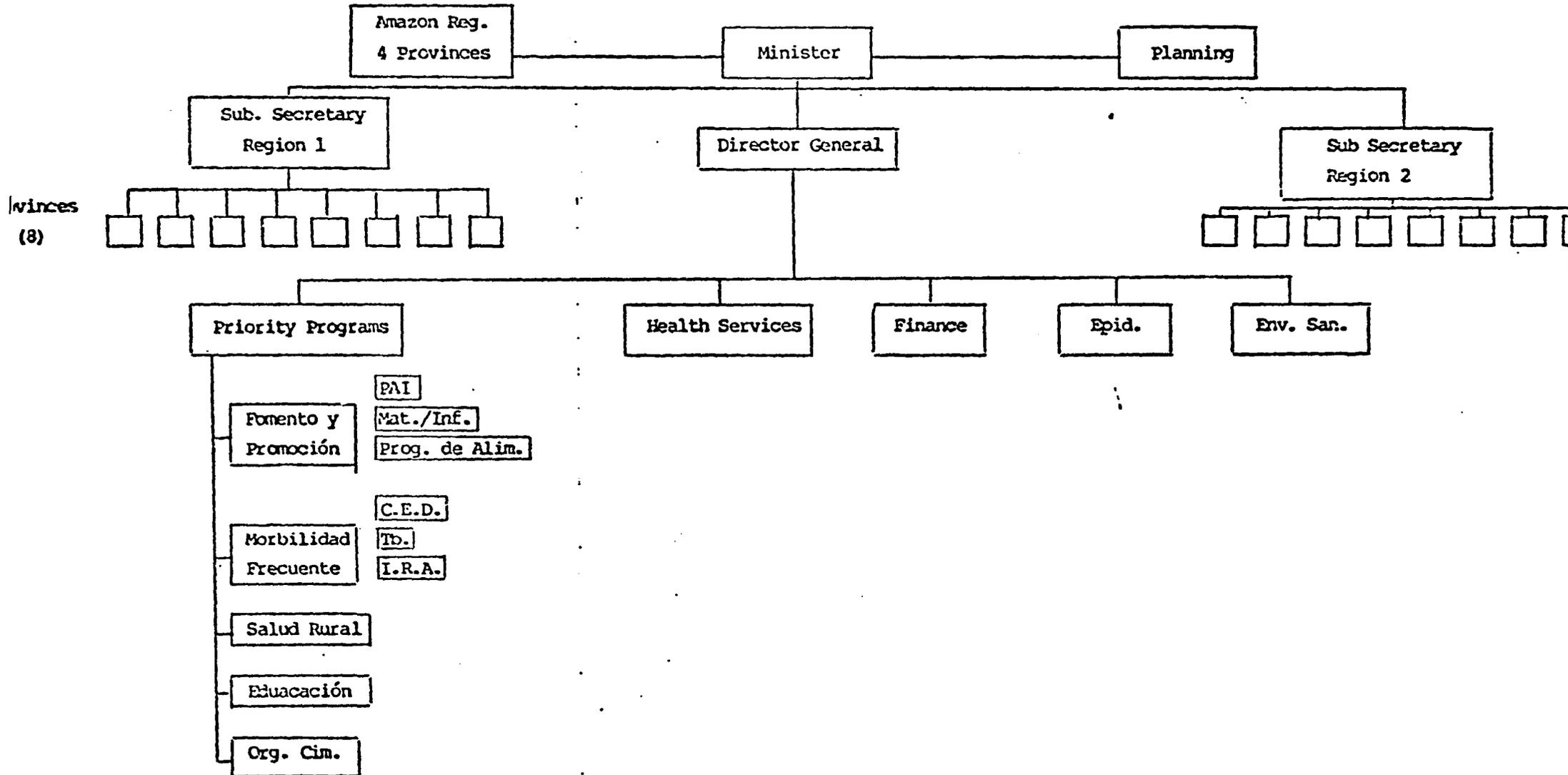
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PYRAMID OF SERVICES



1. Colaboradora Voluntario rural (Partera Empírica)
2. Promotores = Trained VHWS.

FIGURE 2
 ORGANIZATIONAL STRUCTURE
 MSP/ECUADOR, MAFCH, 1984



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3. Other Agencies

a. Instituto Ecuatoriano de Seguridad Social

Historically, the IESS has covered only 7.5% of the population, basically workers in urban areas. However, in the past two years several new initiatives have developed that could have a major impact on extension of services. Convenios have been established with cooperatives to provide services near the work place. In addition, 1% of the cuota of the insured urban population goes to the Seguro Social Campesino for services in rural areas. Conversations with field workers for this agency indicate interest and enthusiasm for extending oral rehydration and immunization programs through Campesino organizations. These efforts definitely merit further investigation and, if feasible, support.

b. Private Sector

Private health services cover another 7.5% of the population, mostly in urban areas. One interesting factor is the overproduction of physicians. Ecuador produces 1000 new physicians per year, many of whom cannot find effective employment. There is an organization of unemployed physicians that exerts a major influence on the design and acceptance of any new health initiative. This is one reason why the MSP has based its health system on Sub-Centros de Salud with physicians (760 exist) instead of Puestos de Salud with Auxiliares (220).

Ciba-Geigy maintains a production facility in Ecuador, and has announced its intention to produce and market oral rehydration salts. This is discussed more completely in Section III.

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c. Secretaría de Desarrollo Integral (SEDRI)

The current National Development Plan for Ecuador is based on a concept of integrated rural development in agriculture, education, and health. SEDRI was formed in 1980, and 17 areas of the country were selected as Integrated Rural Development Areas (Areas del DRI). These areas contain a total of approximately 500,000 people and are designed to serve as a model for development efforts in other parts of the country. Since AID health funds are channeled through SEDRI, this project is discussed more fully in Section V.

d. PVO's

Numerous PVO's exist in the country. CARE and CRS, by virtue of participation in supplementary feeding programs, cover large areas of the country. Smaller PVO's have traditionally served specific segments of the population. The more promising of these PVO's are discussed in Section VI.

C. Constraints

1. Limited Coverage of Health Services

The MOH is responsible for health services for 85% of the population, and has focused most of its attention on development of physician - oriented services to the Health Sub-Center (parroquia). Services are quite limited beyond this level, and even these at the Sub-Centers need strengthening. The IESS has traditionally focused on urban areas, but recent initiatives with cooperatives and campesino organizations show potential. PVO's have filled some of the gaps in coverage, and could complement what exists within the MSP.

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2. Relative immaturity of MSP Management Systems

The MSP has formally existed only since 1972, and did not consolidate as an institution until the late '70's. Rapid growth in personnel and frequent organizational changes have strained their capacity to respond. Thus, critical management systems, such as supervision, information and evaluation, and logistics are weak. This has negative effects on all MSP programs.

3. Conflicting Policies

As identified in the organizational structure of the MSP in Figure 2, both immunizations and diarrheal diseases have been included as priority programs. Yet the MSP continues to pursue development of services through Centro de Salud Hospitalales with only 15-20 beds. Financial analysis in other countries have consistently shown this type of services to be the least cost-effective and a drain of resources from other programs that could be substantially more cost-effective.

It would be wise to explore with the MSP their interest in completing a cost-effectiveness analysis of various health programs and levels of services.

4. Competition Between Agencies

In the limited time available to this consultant, it became abundantly clear that a fair amount of competition exists between the MSP and SEDRI at all operational levels, from the Central MSP through the Provincial Headquarters down to Centros de Salud. (Apparently, there does exist common agreement at the policy-making and Secretaría levels, but this has been difficult to translate into operational terms.) This

Competition does not exist in all Provinces but does tend to produce limited coordination and joint planning, duplication of efforts, inefficient use of resources, and raises questions about building long-term institutional capacities. Even where relationships are good and decisions are reached about location and types of services, Seguro Social Campesino locates its facilities wherever it pleases, thus disrupting the established pattern.

III. Expanded Program in Immunization (EPI)

A. Background

1. History

Ecuador was the first Latin American Country to officially establish an EPI in 1977. Originally implemented in only three Provincias, the program progressively extended to other areas, and by 1980 it was implemented in all Provincias. Between 1978-1981, the principal immunization strategy was house-to-house visits by auxiliaries or health inspectors. However, this strategy proved too costly to implement, especially in dispersed populations, and the MSP gradually shifted over to locating immunization services in areas of population concentration (e.g., Sub-Centros de Salud). The MSP then could focus resources on making immunization services available as an integral part of health services.

In addition to this latter emphasis, the MSP initiated in 1982 a national strategy of "fases intensivas". Each "fase intensiva" lasts one week, and all health personnel are requested to simultaneously participate in EPI activities. National promotion campaigns through radio and the printed media support these intensive periods. In 1982, three "fases intensivas" were implemented. However, in 1983 only one was implemented due to natural disasters that focused attention and resources on relief activities, and the lack of vaccines. These are discussed more fully in the "Problems" section.

Ecuador also has a unique resource related to EPI. The Instituto Nacional de Higiene de Guayaquil produces a limited quantity of BCG in liquid form, DPT, and TT. These quantities are not sufficient to meet all the needs of the MSP,

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out apparently the quality of production is high and could be expanded.

In 1981 and 1982, the MSP conducted two extensive evaluations of the EPI with PAHO assistance. These evaluations were very thorough and provided important information for this analysis.

2. Structure of the EPI

As illustrated in Figure 2, the EPI is assigned to the Division of Priority Programs, which is a clear policy statement by the MSP. However, implementation of EPI activities at the Provincial Level and beyond are the responsibility of the Minister in the Amazon Region and the Sub-Secretaries for Regions 1 and 2. Thus, organizational linkages between the Normative (Central) and Operational (Provincial) levels at times are difficult.

The functions of the Central EPI staff fall into five main categories:

- Establish norms and procedures for EPI activities.
- Training of personnel in application of the norms. This usually occurs on a national basis, but the staff does travel to provinces to assist at that level. However, since there are twenty provinces, they obviously cannot reach all of them.
- Supervision of provincial staff. They try to combine this with training and evaluation activities, but again

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coverage is limited by lack of personnel, per diems, and transportation.

- Vaccine management from Central to Provincial level. This includes purchasing, importation, central storage, and distribution to the provinces.

- Information and evaluation, including collecting of routine statistics and preparation of reports. Up to now, staff have been unable to implement special studies or operations research projects due to lack of resources.

Central staff appeared highly motivated, and were actively seeking ways to improve these functions.

The Provinces duplicate the central structure, so that under the Provincial Chief you will usually find a physician in charge of EPI activities, plus other staff responsible for rural health services. The provinces distribute vaccines to the Centros de Salud, who in turn distribute to Sub-Centers and Puestos. In the limited time available for field visits to this consultant, I was favorably impressed with what exists in the field. Centros de Salud have excellent cold storage equipment, including freezers for making ice for shipment to facilities without refrigerators. To my amazement, I often found, both in Centers and Sub-Centers, community maps (croquis) marking each house with pins identifying the children under 1 year of age and pregnant women, and flags on each pin representing the number of doses each child/pregnant woman had received. This was found in enough health facilities to indicate it has resulted from concerted Provincial EPI efforts and not from individuals within the health centers. These efforts are commendable and deserve reinforcement and expansion.

Clearly, in the Provinces I visited (see Annex 1), EPI activities were receiving priority attention, staff were in place, trained, and motivated.

3. External Assistance

Obviously, EPI activities have received significant resource allocation from the MSP. It is difficult to quantify this, since routine immunization activities are part of general health services and included in the regular operational budget. Nevertheless, external assistance often provides supplemental resources important for program implementation.

a. PAHO

i. Technical Assistance: PAHO provides a full-time technician just for the EPI (a sanitary engineer) plus an MD Epidemiologist, who generally works with the Division of Epidemiology.

ii. Cold chain equipment, specifically for a cold room in Region 2.

iii. Assistance with national evaluations in 1981/1982.

iv. Vaccines through the PAHO Rotating Fund.

b. UNFPA bought 250 electric refrigerators in 1980.

c. UNICEF has assisted in promotion of EPI activities through educational material, radio spots, and movie

shorts. Proposals for 1984 include thermos containers for vaccine transportation, thermometers, and twenty loudspeakers for promotion at the local level.

d. A.I.D.

The AID Integrated Rural Health Project is described in detail in Section V.

It does identify EPI activities as a priority program, and funds are available for them in each of the DRI areas. However, MSP/EPI staff have the very strong feeling that AID has provided no resources at all to the EPI, even though the project officer has apparently put considerable effort into assisting them to understand the resources available. In my opinion, this problem reflects the competition that exists among agencies described in Section II.C. of this report, since MSP staff would have to go to SEDRI for these resources. Apparently, this does not seem feasible at this time.

B. Experience to Date

1. Vaccination Coverage

Figure 3 shows the percentage of coverage for children under one year of age since 1972 for the six vaccines included in the EPI. Children under one have been selected as the priority target population for EPI activities. In addition, the coverage rate of this age group is a good indication of continuous activities, since a new population has to be immunized each year.

Analysis of Figure 3 shows several important trends. The first is that significant increases in coverage

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Figure 3
 Cobertura de la Población menor de un año^a con las
 vacunas previstas en el PAI y tasas de deserción
 Ecuador, 1972-1983

Vacuna	DPT				Antipoliomielítica				Antisaram- pionosa ^b	BCG
	1ra dosis	2da dosis	3ra dosis	% de deserción	1ra dosis	2da dosis	3ra dosis	% de deserción		
1972	10.5	6.7	1.0	90.4	12.3	16.3	2.5	79.9		16.5
1973	8.6	4.5	1.8	78.5		19.4
1974	10.4	6.7	1.2	88.4	4.6	4.6	4.1	11.3	..	23.8
1975	9.8	6.0	1.7	82.3	11.9	13.3	6.6	45.1	..	19.7
1976	17.3	10.8	.. ^c	..	30.0	17.0	11.1	62.8	2.1	29.5
1977	21.5	11.6	.. ^c	..	18.0	10.5	10.9	41.8	6.0	37.8
1978	24.9	15.9	.. ^c	..	22.0	11.9	6.9	68.6	10.6	41.8
1979	34.1	21.2	.. ^c	..	37.0	21.8	11.0	70.2	20.8	41.7
1980	33.1	19.9	6.8	79.3	37.3	26.2	13.4	64.1	16.8	52.5
1981	45.1	30.0	18.0	60.1	43.7	26.3	18.6	57.4	21.9	57.3
1982	87.9	58.2	35.2	..	87.0	59.2	34.8	..	44.5	103.6
1983	59.8	39.7	28.1	..	63.2	41.6	32.2	..	30.7	79.3

^a Cálculo de la población menor de un año (División Nacional de Estadísticas).

^b La vacuna antisarampionosa se comenzó a aplicar en 1974; no existen datos por edad para 1974 y 1975.

^c Se recomienda una dosis de refuerzo (tercera dosis) después de los 12 meses de edad.

.. Datos no disponibles

Fuente: División Nacional de Estadísticas, MSP

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have occurred with initial doses, but a profound drop-off in coverage occurs in 2nd and 3rd doses. While a common problem in most developing countries, Ecuador may have some specific cultural constraints that are discussed in the problems section. It is of interest to note that measles, which requires application at nine months of age, has not shown a dramatic rise, whereas BCG, which can be applied at birth, has. Ecuador also requires proof of BCG immunization to register a birth, another factor stimulating BCG coverage rates.

Another point is the apparent dramatic rise between 1981 and 1982. There are probably two reasons for this: the first is the implementation of three "fases intensivas" increased coverage rates in 1982, whereas the implementation of only one in 1983 caused a fall-back in coverage. This explanation has merit, and lends support to the strategy of the "fases intensivas".

However, a second factor is that a national census was completed in 1982 that showed a growth rate of only 2.7%, as opposed to the 3.3% growth rate found in the 1974 census. Thus, the denominator in coverage rates (i.e., the number of children under age 1) was adjusted downward to reflect the revised population figures. This most certainly contributed to the "spurt" in coverage in 1982. This is important, since the MSP should rationally assess the cost-effectiveness of the strategy of "fases intensivas" and not just assume that it has produced a dramatic rise in coverage. 1983 rates may reflect a more realistic coverage rate given current resources available.

2. Incidence of Immuno-preventible Diseases

Figures 4-9 show morbidity and mortality rates for the major immuno-preventible diseases from 1972 to 1982.

Measles, pertussis, and tetanus have shown little change over ten years. In fact, in 1983 the highest rate of measles ever was recorded, indicating a major outbreak. Diphtheria has shown a downward trend until 1980, with a sharp rise since. Polio is an epidemic waiting to happen. Clearly even though immunization rates have shown a steady rise over the past ten years, they have not yet reached the level necessary to produce decreased morbidity. This is probably due to the drop-off in coverage between first and third doses, but I did receive some informal observations from field staff about measles occurring in previously immunized children. These reports came from rural health personnel, and may indicate a break-down in the cold chain. This may also explain some apparent resistance to immunizations, since families will obviously be reluctant to immunize their children when they have seen failures within their community. This problem deserves further study.

C. Problems/Constraints

1. Community Education/Promotion of EPI

With almost everyone I talked to, this is cited as the number one problem and the major reason for drop-offs between first and third doses. Patients will often bring their newborns in for an initial check-up, but have not been adequately motivated to return. Resistances to immunizations seem to be present, and mothers in particular cultural groups are reluctant to bring children in again for another "shot that made their child sick when it was supposed to make them healthy". The connection between immunizations and long-term health has not been made. Nearly 3,000,000 Ecuadoreans speak Quichua, and educational programs need to be developed in that language. Community level research needs to be done to identify the roots of "resistance," and programs designed to ameliorate it.

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2. Vaccine Logistics/Cold Chain

Mention has been made that some "resistance" to immunizations may well be due to cold chain failures. The links between Centro de Salud and Sub-Centros/Puestos appear to be particularly weak. Several years ago, the MSP decided to eliminate kerosene refrigerators, so locations without electricity must rely on weekly shipments in iced thermos. These are usually timed to coincide with market day, the day of greatest use, so vaccines will have their greatest potency. However, the cold chain and vaccine viability requires more investigation.

A second related problem is with the availability of vaccines in the country. In 1983, the MSP did not have enough vaccines to cover everybody due to a breakdown in the rotating fund of PAHO. Apparently the bureaucratic procedures related to purchasing vaccines and use of foreign exchange delayed arrival of vaccines. Strategies need to be developed to increase vaccine availability.

3. Extension of Coverage

Frankly, it is not quite clear to this consultant where the major gaps in coverage are. Evidence suggests that there is limited coverage beyond the immediate pueblo of the Sub-Centros. Puestos de Salud appear very weak in the MSP structure, and there is no extension at the community level where no formal MSP services exist. However, coverage with measles is only 30%. Since the country is 50% urban, then there must be obvious gaps in urban coverage. I was not able to pinpoint the source of these gaps, since the urban health centers visited seemed remarkably well-organized for covering their immediate catchment area. Perhaps this small sub-sample

does not represent the rest of the country. It is not clear if more effective use of auxiliary personnel, more Puestos, and trained community volunteers are needed, or if more emphasis should be placed in urban health centers. Identifying the gaps in coverage will require some additional investigation.

4. Management Support Systems

As previously described, the relative youth of the MSP and frequent organizational changes have delayed development of effective support systems. This is most notable in two areas: Supervision and Information/Evaluation.

a. Supervision appears generally weak. Starting from the periphery, although Health Centers supply Sub-Centers and Puestos with vaccines, they have no responsibility, nor the resources, to do follow-up supervision activities. No national model or guidelines for supervision (in general) exist. Supervision from the Provincial Office to Centros de Salud appears good, but each Province has developed their own system. This makes it difficult for the Central Level to compare provinces and identify problems. The Central Level is limited in staff, but lack of viáticos and vehicles seems to be a greater restriction to improved supervision at all levels. In short, supervision seems to be an empirical process without specific guidelines, policies, activities, and resources.

b. Information/Evaluation

This can be separated into two components:

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i. Management Information System

This is generally weak within the MSP, but some specific weaknesses apply to EPI. For example, in trying to identify the gaps in coverage, I asked for coverage rates by level of service. These are not, however, available at the Central level. Each Province keeps their own records. It will be difficult to make sound management decisions without more precise information.

ii. Operations Research

It would be helpful to identify the causes of "resistance" to immunizations; specific breakdowns in cold chain; vaccine viability; cost-effectiveness of alternative immunization strategies; etc. Each of these studies would provide valuable information for decision-making, but resources are quite limited in this regard.

5. Training

Training activities in EPI for MSP personnel have been well-developed in the past. However, with constant turn-over of personnel, especially at the sub-center level, a process of continuing education is required. This is restricted by lack of funds for training materials and viáticos for participants. Limited training activities translate into limited motivation of personnel for EPI activities.

D. Recommendations

With the infrastructure already in place in the MSP health services, coverage rates could be significantly improved in the next two to three years with appropriate strategies and

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ome essential external support. These recommendations are designed to achieve that purpose.

1. Implement National Community Based Health Education/Promotion Campaign for EPI Activities

This program can build on experience already gained in EPI promotion with UNICEF support, and the highly successful effort in promotion of oral rehydration should be expanded to include EPI. The word community-based is used to differentiate this from an ad campaign. Community-based implies initial research into such issues as the causes of "resistance"; the types of messages must likely to be successfully accepted by the target population; the appropriate use of language, music, etc., and evaluation of the results.

A successful methodology for this strategy has been developed by the Academy for Educational Development for diarrheal control and EPI activities. With assistance from AID/W Health Office, this strategy has been implemented in Ecuador for ORT only. These efforts should be expanded, and the scope of work of the A.E.D. advisor, Dr. Reynaldo Pareja, should be amended to include EPI activities. This will require some negotiation between AID/Ecuador, A.E.D., and AID/W Health Office, since the current agreement limits the amount of time Dr. Pareja can spend in Ecuador (almost all of the original seven months of T.A. allotted under this agreement has been expended. A minimum of six additional person-months will be needed to get this effort underway). This appears to be the most cost-effective way to assist the development of this national health education activity.

Activities in this campaign should include radio spots and programs in two languages; printed educational mate-

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rials for distribution; training of provincial health personnel and community leaders; and community-based direct educational activities. This latter activity will require, in addition to training of personnel, vehicles, loud-speakers, and tape recording equipment. There is some feeling that direct educational activities (e.g., vehicles with loud-speakers touring the community, tape-recorded messages in waiting rooms of larger health facilities) will be more successful than radio spots in Sierra communities where radio penetration is limited and people respond to a more personal approach. Obviously, the direct approach is more expensive, so it should initially be implemented in those provinces where serious gaps in coverage have been identified (see recommendation No. 3).

Funds for this campaign can come from a variety of sources, including the MSP itself, UNICEF, and AID Integrated Rural Health Project funds for replication activities (or other line item, if appropriate). If this recommendation is accepted in principal and an agreement is reached with all parties concerned regarding the use of Dr. Pareja, then he can assist the MSP to develop a work-plan and budget for this program that can be shared among the participating agencies.

2. Vaccine logistics/cold chain improvements

Efforts to improve the supply of vaccines and improve cold chain performance should include the following:

a. Analysis of the peripheral cold chain below the Centro de Salud (i.e., Subcentro, Puestos, and Comunidad), identifying gaps, suggesting alternatives, and assistance with purchase of equipment. The issue of non-electric refrigerators (kerosene, gas, solar) should be re-examined.

b. Vaccine viability, including some operations research activities with the recently developed time-temperature indicators to identify break-downs.

c. Training of Maintenance technicians at both the Provincial and Health Center levels in maintenance of refrigerators, including provision of tool kits. Initial training of Provincial personnel has been planned by PAHO and budgeted at \$30,000, but has not been implemented due to lack of funds. This training should be expanded to include health centers, who should also play a stronger support role to the Sub-Centers. If other forms of refrigeration are adopted (e.g., kerosene, refrigerator), then training of health personnel in preventive maintenance will be needed.

d. Increased production of biologicals by the Instituto Nacional de Hygiene in Guayaquil, especially DPT and a lyophilized form of B.C.G. This will require an initial needs assessment and some investment in equipment and training. I understand from conversations with PAHO officials that the Instituto has purchased the equipment necessary to expand production but has been unable to install or operate it. This deserves further investigation.

e. Technical Assistance

Analysis of these alternatives and design of interventions will require the services of a specialist in cold chain and vaccine production, who will work with MSP staff and existing PAHO advisors. PRITECH can provide such a consultant. This is described more completely in Section VII, strategies.

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3. Identify gaps in coverage

This is an essential activity given current resource restrictions. With low rates of vaccine coverage, it is hard to argue against a national strategy of "fases intensivas". However, experience has shown that these are costly, and when national priorities are directed elsewhere (e.g., disaster relief), they do not occur. If gaps in coverage have been identified, then focused "fases intensivas" can still continue in the areas identified, and coverage rates can continue to improve.

Given the current state of the information system, this will require review of the records available only at the Provincial level, starting first with those Provinces who show the lowest coverage rates. The end result should be a list of specific priority geographic areas, and/or population groups, for intensive EPI activities. The previous two recommendations for health education and cold chain improvements can also be focused in these areas.

The recommendation can be implemented by current MSP/EPI staff with assistance from PAHO.

4. Management Support Systems

a. Supervision

A complete analysis of the MSP health structure will be necessary, including a task analysis of health personnel and review of job descriptions. Based on this, a model for supervision should be developed, identifying specific responsibilities for supervision by level of service and category of personnel. The model should also include norms, proce-

dures, and guidelines for supervision, so that some standardization between Provinces occurs. Training of personnel in modern concepts of supervision will be needed, as will budgetary supplementation for vehicles and viáticos. These can be phased by Provinces selected for expansion of AID integrated rural health activities (see sections V and VII).

PRITECH can provide a consultant to assist in the design of supervision activities.

b. Information/Operations Research

A thorough review of the current information system for primary care and EPI activities is needed, and information selected for "flow and analysis" based on some of the priorities presented above. Needs for operations research should be identified and the resources required to implement them elaborated. The MSP does have a division for investigations that could play an important role in O.R. activities, but time did not permit a thorough evaluation of this unit or its capabilities.

Although some work has been done in information system development, more needs to be completed. PRITECH can provide an information systems/operations research specialist to assist in this analysis.

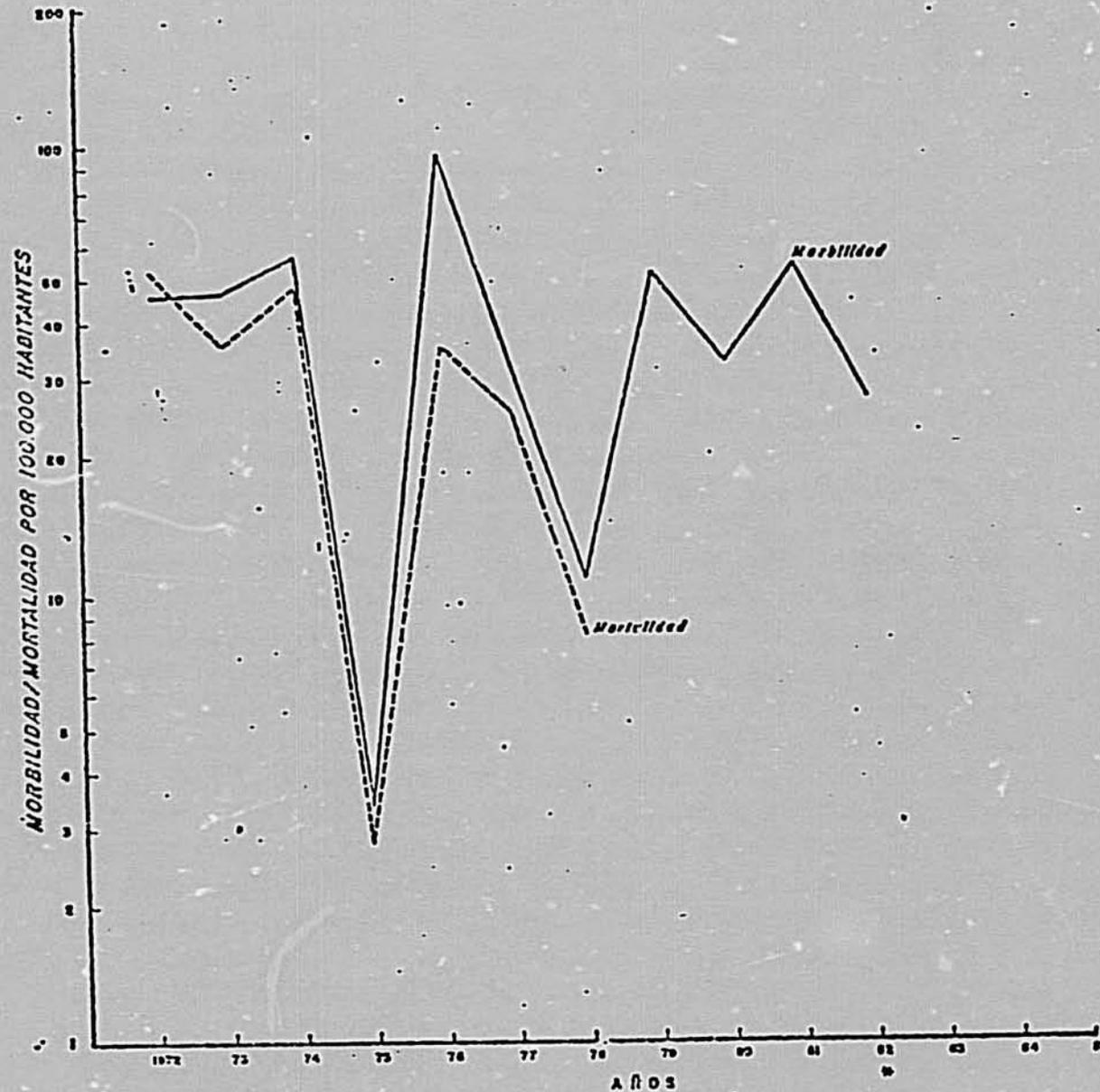
5. Training

Technical training in EPI activities seems to be well developed, although some adjustments will need to be made after the previous analyses have been completed. Financial support for development of materials, payment of viáticos, and evaluation of results could be provided by AID in the next

stage of expanded integrated rural health activities. The consultants described above, plus PAHO advisors, can help develop a training budget.

FIGURE 4

MORBILIDAD Y MORTALIDAD POR SARAMPION
 (TASA POR 100.000 HABITANTES)
 ECUADOR 1972-1985

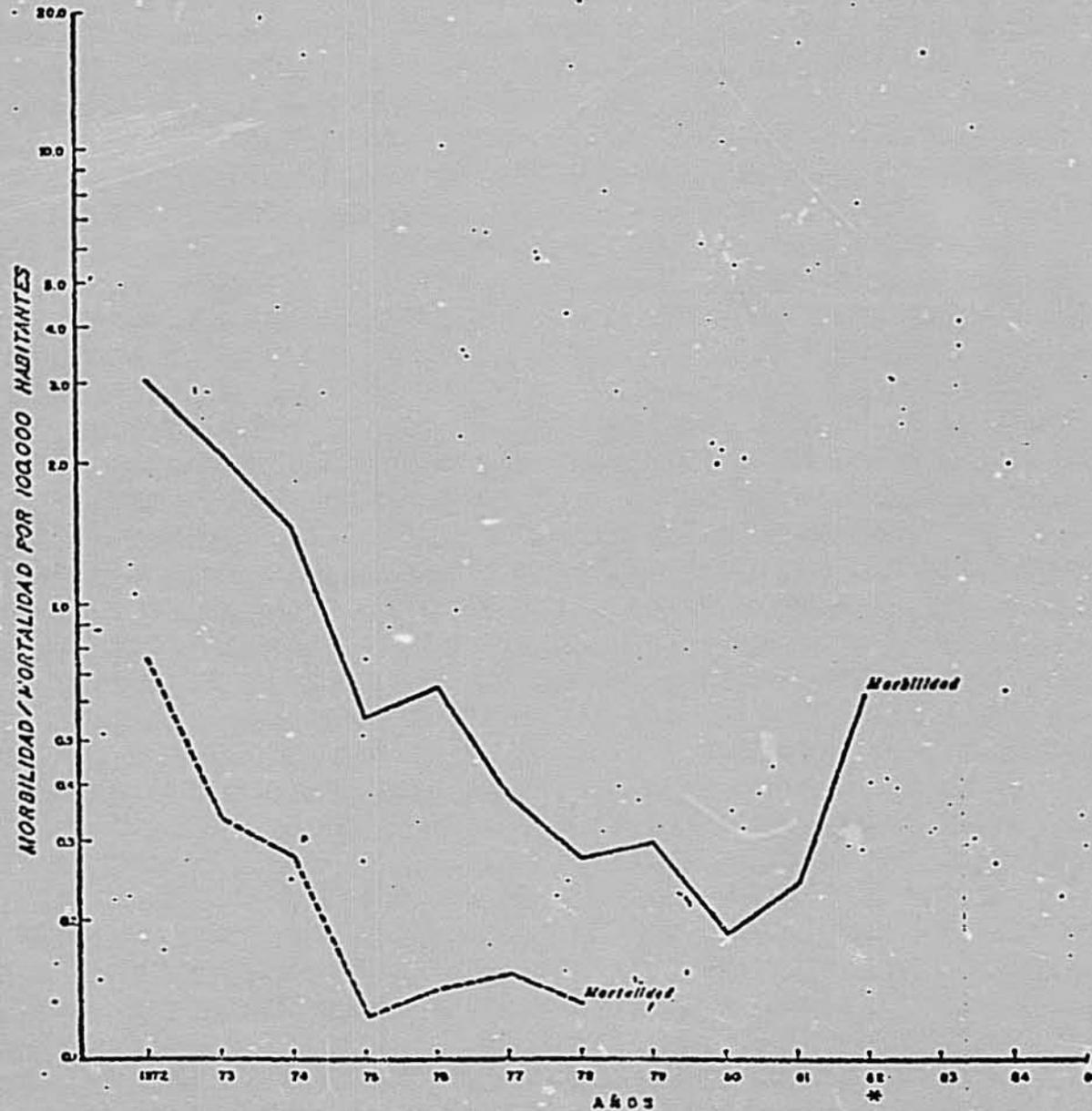


TASAS CALCULADAS CON LOS RESULTADOS DEL CENSO DE POBLACION DE 1982
 ELABORACION Y FUENTE: DIVISION NACIONAL DE ESTADISTICA

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FIGURE 5

MORBILIDAD Y MORTALIDAD POR DIFTERIA
 (TASA POR 100.000 HABITANTES)
 ECUADOR 1972-1985

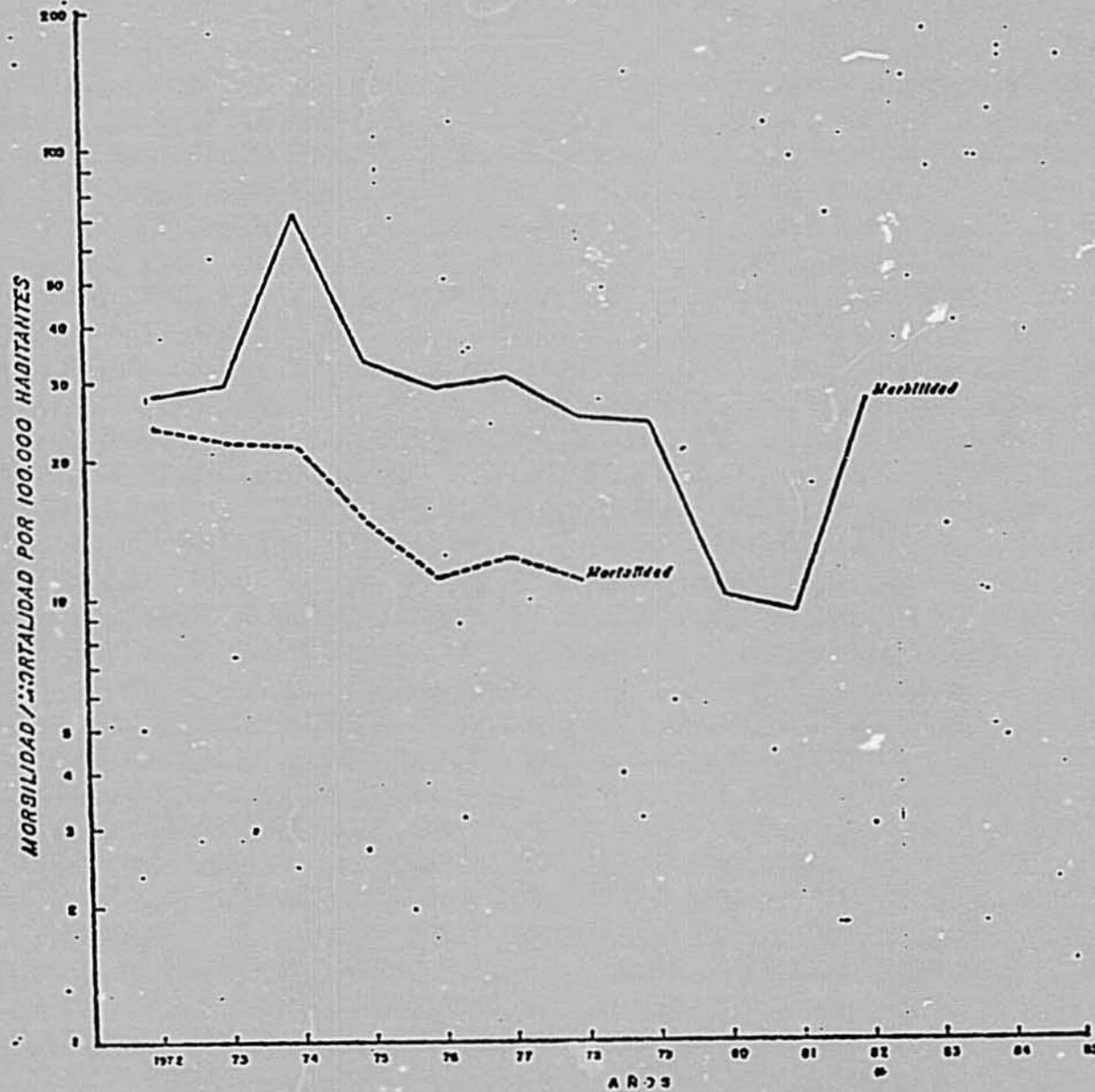


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 ELABORACION Y FUENTE: DIVISION NACIONAL DE ESTADISTICA

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FIGURE 6

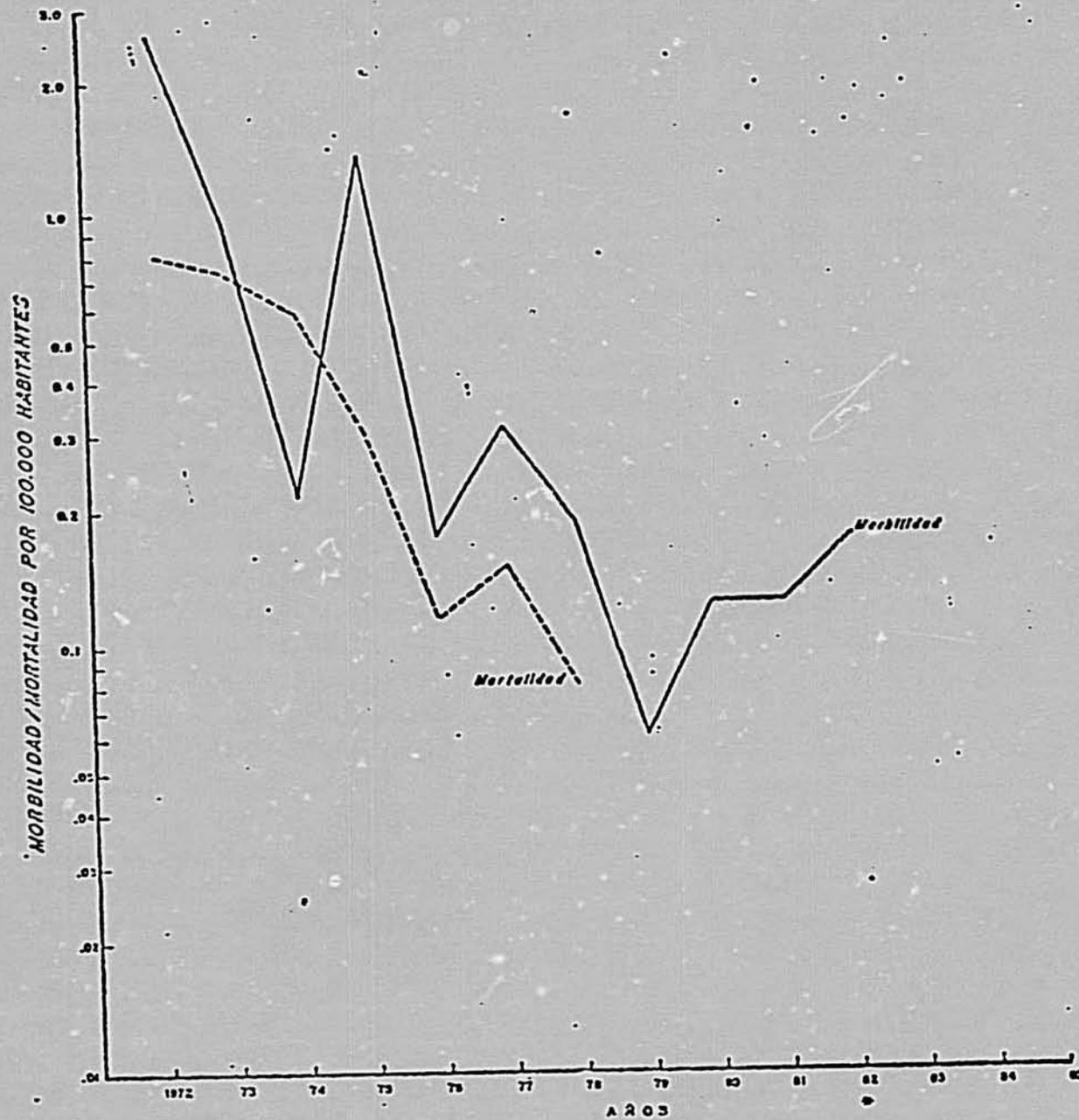
MORBILIDAD Y MORTALIDAD POR TOSFERINA
(TASA POR 100.000 HABITANTES)
ECUADOR 1972-1985



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* TASAS CALCULADAS CON LOS RESULTADOS DEL CENSO DE POBLACION DE 1981
ELABORACION Y FUENTE: DIVISION NACIONAL DE ESTADISTICA

FIGURE 7
 MORBILIDAD Y MORTALIDAD POR POLIOMIELITIS
 (TASA POR 100.000 HABITANTES)
 ECUADOR 1972-1985

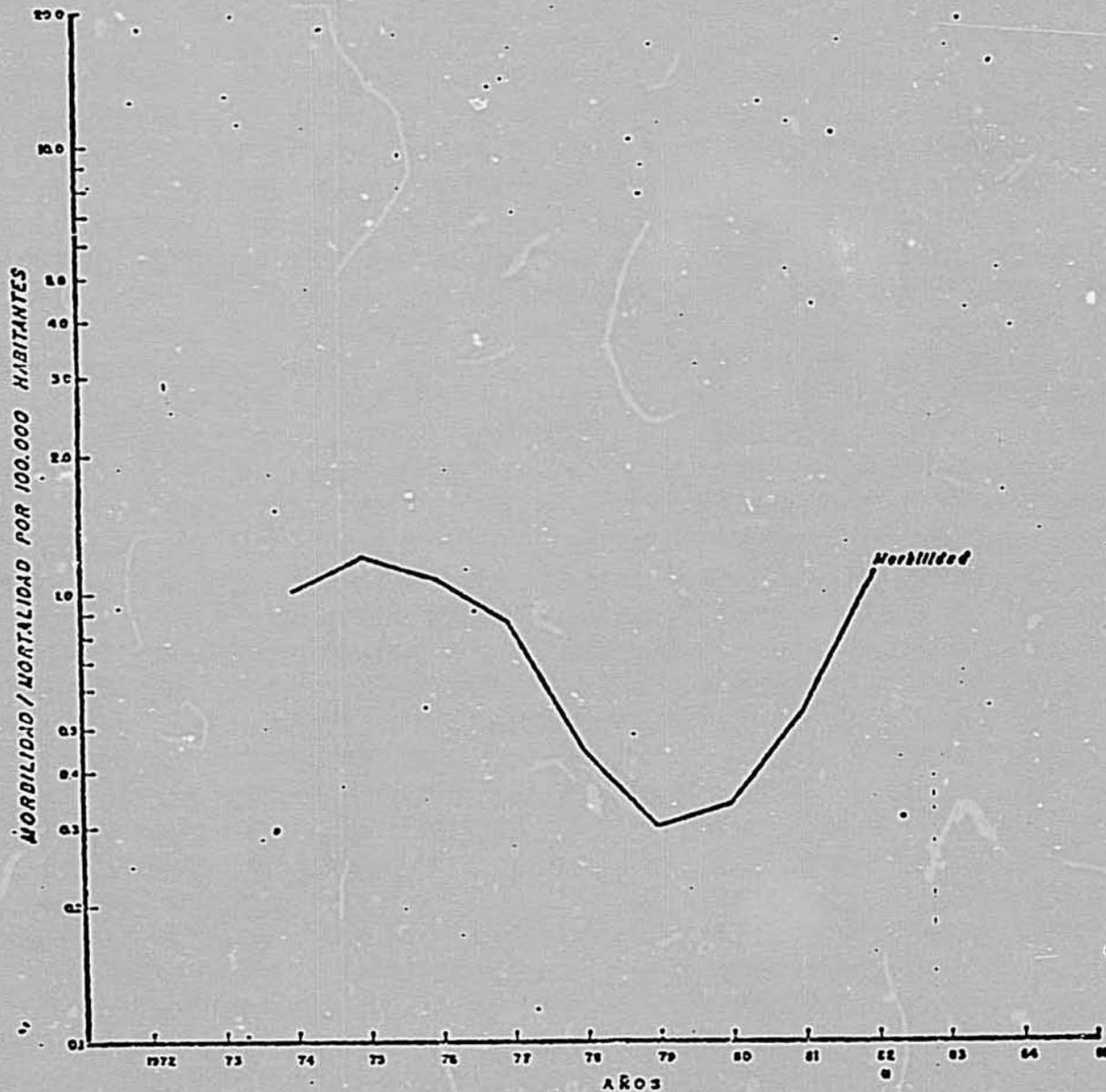


→ TASAS CALCULADAS CON LOS RESULTADOS DEL CENSO DE POBLACION DE 1981
 ELABORACION Y FUENTE: DIVISION NACIONAL DE ESTADISTICA

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FIGURE 8

MORBILIDAD Y MORTALIDAD POR TETANOS NEONATAL
 (TASA POR 100.000 HABITANTES)
 ECUADOR 1972-1985

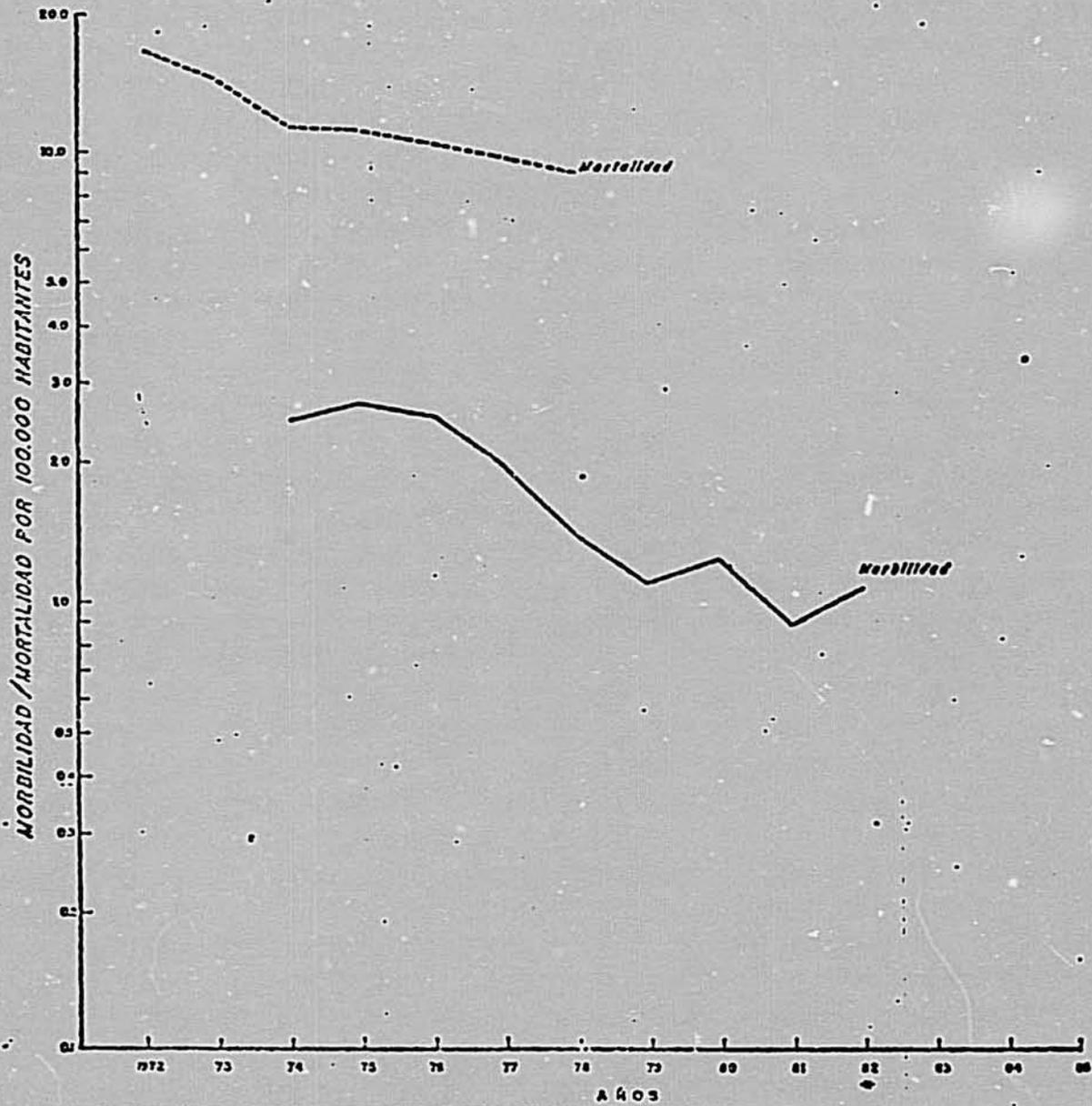


• TASAS CALCULADAS CON LOS RESULTADOS DEL CENSO DE POBLACION DE 1982
 ELABORACION Y PUENTE: DIVISION NACIONAL DE ESTADISTICA

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FIGURE 9

MORBILIDAD Y MORTALIDAD POR TETANOS DE TODAS EDADES
(TASA POR 100.000 HABITANTES)
ECUADOR 1972-1985



→ TASAS CALCULADAS CON LOS RESULTADOS DEL CENSO DE POBLACION DE 1962
ELABORACION Y FUENTE: DIVISION NACIONAL DE ESTADISTICA

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IV. Diarrheal Disease Control (DDC)

A. Background

1. History

As in other countries at a similar stage in development, the primary cause of mortality (both general and infant) is diarrhea. In recognition of this situation, the MSP inaugurated in early 1979 its program for control of diarrheal diseases. Initially, the DDC program was part of the Division of Epidemiology. In 1982 it was re-assigned to the Directorate of Priority Programs, in the Division for Control of Frequent Morbidity.

The original objectives are still valid today. Within the overall goal to reduce morbidity and mortality in children under four years of age due to diarrhea, the following specific objectives were developed:

- Promote oral rehydration to prevent severe dehydration and/or death.
- Promote breast feeding as a preventive measure for diarrhea.
- Establish a surveillance system for diarrheal diseases.
- Involve the community in the DDC program.

The basis of this program was, and remains, distribution of oral rehydration salts (ORS) through the health system and community leaders. Health education and promotion

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of ORT, as well as environmental sanitation and personal hygiene, is viewed as an integral part of this effort, and received a substantial reinforcement with the arrival in August, 1983, of an advisor from the Academy for Educational Development, Dr. Reynaldo Pareja. Dr. Pareja had previously worked in the successful national health education effort in DDC in Honduras, and this experience has advanced the program considerably in Ecuador.

The MSP program was implemented in stages, with five provinces added each year since 1979. By 1982, the program was implemented in all provinces. Personnel at all levels were trained and supplied with ORS. Although initial problems with ORS supplies were encountered, this has now been resolved. In addition, the program developed relationships with the Facultad de Medicina, so that training in DDC and ORS is now an integral part of the curriculum for physicians and nurses. In a rather creative approach to DDC, the program also developed relationships with the national literacy program, and to date has trained over 9,000 literacy educators in basic DDC/ORT, 25% of which speak Quichua. Programs for training community leaders began in 1982, with support from the AID Integrated Rural Health Project and the aforementioned A.E.D. Project.

Thus, a wide-ranging, multi-disciplinary, multi-level program for DDC has been implemented on a national basis over the past five years.

Ciba-Geigy has recently announced plans to commercially produce ORS in Ecuador using the same formula and packaging as the MSP. Conversations with officials at Ciba-Geigy indicate a desire to market this product through private physicians, pharmacies, and small stores that sell simple medications. They are willing to use the same promotional

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strategies as the MSP via radio and printed material, but without the community component. The ORS will sell for approximately S/.25/packet, (US\$27), considerably cheaper than other diarrheal medicines on the market and affordable by most Ecuadoreans. Obviously, Ciba-Geigy feels they can make a profit at that price, or they would not try to develop the market. Ciba-Geigy has also offered to hold national ORT seminars for physicians and students and pay for radio promotion in urban areas. This initiative offers an exciting opportunity to develop a truly national DDC program with both public and private sector involvement, with a capacity for being self-sustaining in the future.

2. Structure of the MSP Program

As mentioned, the program for DDC is currently assigned to the Priority Programs Directorate, a clear policy statement of its importance to the MSP. Central staff consists of an MD chief and a nurse in charge of establishing Oral Rehydration Units (ORU's) in hospitals and Centros de Salud.

The functions of this central unit are similar to the counterparts in EPI:

- Establish norms and procedures;
- Training and supervision at the provincial level.
- Programming activities and supplies for each year.
- Evaluation.
- Coordination with other programs and agencies.

At the provincial level, DDC activities are supervised by a physician epidemiologist, as well as by personnel

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in the rural health division. They have the same functions, plus program implementation at sub-provincial levels.

The DRI project has created a new position - Area Chief - that is paid for by project funds. In the DRI areas where the AID project is functional the areas chiefs have taken a strong role in DDC activities and provide direct supervision to sub-centers and community personnel, who are also supplied directly by the DRI office. This system has in some respects developed in parallel to MSP efforts, even though substantial efforts have been put into project coordination and organizational linkages. This is discussed more fully in Section V.

3. External Assistance

a. PAHO

i. Technical Assistance

The technician assigned to EPI also shares some activities with DDC, as does the physician - epidemiologist.

ii. Assistance procuring ORS.

b. UNICEF

Initially, UNICEF also provided ORS, but this has been taken over by the MSP. UNICEF currently provides \$120,000/year in two areas:

- Establishment of ORU's.

- Training of personnel, including flip charts, posters, and plastic bags with printed instructions for distribution of the ORS.

c. AID

i. Integrated Rural Health Project (Mission funded)

Significant advances have been made through this project by providing financial support for health education/promotion activities via radio and printed material and for training of community personnel in DRI areas. Both of these activities are well developed and have had substantial impact on acceptance and utilization of ORT. The Project has also procured some ORS packets.

ii. Mass Media and Communication Project (AID/W funded)

This project provides the technical services of Dr. Pareja in design, implementation, and evaluation of the activities described above.

B. Experience to Date

These will be presented by the objectives outlined in the section on History.

1. Promote oral rehydration to prevent severe dehydration and/or death.

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a. Training

By now, all personnel at all levels of the health system have received training in the epidemiology of diarrhea, ORT, and education of the mother. The capacity now exists to continue re-training on a yearly basis in each Province. During the two days I was in Cotopaxi province to attend a training session for community leaders that was supported by DRI funds, the Province held one day of training for all physicians (with exception of MD's previously trained by DRI), and a second day for nurses and auxiliaries. The Province used their own funds and staff for this effort, and invited one of the best known pediatricians (an advocate of ORT) in the country to participate in the training.

b. Supplies of ORS

Ecuador currently has 2.5 million ORS packets in-country; 1.5 million are already in the system, and 1 million are in reserve at the central level. This should cover all needs for one year. Apparently, the MSP bought these with their own funds.

Field visits confirmed the presence of ORS at all levels. The provincial warehouses at Cotopaxi had 10,000 packets well organized and stacked on shelves. Each health facility visited had adequate stocks of salts, also well maintained on shelves. Health personnel noted that they used the salts a great deal and had no problem obtaining re-supplies. In the DRI area, DRI health staff provided ORS directly to sub-centros and community personnel.

c. Oral Rehydration Units

ORU's were originally developed as a concept for larger hospitals, and many have now been established and apparently are functioning. However, the MSP now considers this concept applicable to all health units, and has made specific metal plaques with the logo of the ORT program unit for permanent display. Radio spots reinforce this concept by telling people they can get "suero oral" for diarrhea wherever the plaque exists. These plaques are now available only in DRI areas, but will be expanded nationally.

Visits to health centers and sub-centers confirmed the existence of ORU's. Every facility visited had a small area set aside where mothers could rehydrate infants under supervision, complete with posters and other educational materials outlining the procedure in understandable terminology. Only in one health center visited (Salcedo) was the ORU non-functional due to lack of ORS, although all other elements were available.

d. Health Education/Promotion

As described before, each DRI area now has an intensive health education campaign to promote ORT through radio spots, printed material, and community leaders. These efforts are impressive, and deserve assistance for expansion on a national basis.

e. Impact of ORT

Given that personnel are trained, ORS are readily available, and each health unit now functions as an ORU, what has been the impact? We really don't know, since, as

described previously for EPI, the M.I.S. is not well developed. If anything, the number of diarrhea cases treated is rising, a good sign. In one Province visited, the number of children under five years of age treated by oral rehydration in 1983 was 1/2 the population in that age group. Not enough time has passed to measure changes in mortality.

However, it is worthwhile relating an interesting vignette. In late 1983, PAHO/W DDC staff visited Ecuador with a video team to make a movie on Ecuador's program. As part of this, they wanted to film a severely dehydrated child (Grade III) being successfully rehydrated by the mother. During two weeks, they visited all the major hospitals in four different provinces and could not find a child with anything greater than 3% dehydration. Although it is difficult to make any association with program services, it is a positive sign.

2. Promote Breast Feeding

Some effort has been put into educational activities related to breast feeding, but no true organized national campaign exists for this. This is understandable, since the program described above has required enormous commitment and resource allocation; however, promotion of breast feeding on a national basis will probably require additional resources.

3. Surveillance System for Diarrheal Disease

In January, 1984 the MSP implemented a new information system for treatment of diarrheal disease and included diarrheal diseases in the list of notifiable diseases. However, implementation has not been completed in all health units in all provinces.

4. Community Involvement

In this consultant's opinion, this component of the program has been tremendously successful. Mention was previously made of the training of 9,000 community-based literacy educators. This required 1,590 courses, a phenomenal effort. In addition, training of community leaders has occurred in DRI areas supported by the AID integrated rural health project and the AED advisor. This consultant attended a re-training session of one of the original groups and was favorably impressed at the retention of knowledge and the reported level of use of ORS by the participants. Some even reported that they had trained others through Mother's Clubs, an unexpected multiplying effect (institution building, even where no institutions exist). A reporter from a local radio station that specializes in community news showed up spontaneously, and conducted interviews with participants in Quichua, asking such questions as, "what does 'suero oral' mean for the campesino". I must say I have never seen such spontaneous community interest in my career.

Each community leader was given a plaque designating them as an ORU, and sufficient packets for three to six months. This effort shows every sign of being self-sustaining with appropriate supports from the MSP.

C. Problems

1. Management Support Systems

The same problems identified in EPI apply here. However, DDC activities have an additional problem in DRI areas. Here, DRI staff provide direct supervision and ORS to sub-centros and community leaders, thus by-passing regular MSP

channels. This probably allowed ORT activities to get off to a quick start, but raises questions about long-term continuity. The first area chief left in December after only one year on the job. A new one was not appointed to March, with a 2.5 month hiatus in supervision/re-supply activities. The new chief is contracted for only three months, and it is not clear what will happen after that.

Operations research is an important activity that needs strengthening. It would be nice to investigate why no severely dehydrated children were found at the hospitals, since this could help focus DDC activities. Unfortunately, the resources do not exist.

2. Health Education/Promotion

This is not a problem now. Quite the contrary, it is going remarkably well. However, the AED advisor is contracted for only a relatively short period of time (described in EPI section), and funds for radio spots and educational materials will eventually run out if not replaced. MSP funds are not sufficient for a national program. Therefore, other sources of funds and T.A. may need to be found to continue this apparently successful effort.

3. Resistance exists among medical staff, especially rural doctors. This should be reduced overtime with constant training and experience.

D. Recommendations

The DDC program appears to be doing very well on a national basis, and shows promise to be self-sustaining. None-

theless, some adjustments can be made to improve program performance.

1. Improve Supervision and Information/Evaluation Activities

This is described in more detail in the EPI section and is equally applicable here. The suggested PRITECH Consultants in Supervision and Information/Operations Research should also investigate the DDC program and make specific recommendations for it.

A specific recommendation that can be implemented now is to integrate the trained community leaders into the MSP system. A simple way to do this would be to establish the Sub-Centro or puesto as the re-supply point (rather than DRI), and give only enough packets (e.g., 25/leader) to last two months. When the leader goes to the sub-centro for re-supply, and informal type of supervision will occur. This will also strengthen the referral system.

2. Health Education/Promotion

These AID assisted activities should continue. AID should consider liberating funds from DRI projects and provide them directly to the MSP for national education efforts. The aforementioned comments on the use of the AED advisor apply equally here.

3. Training

This appears to be going well, but some investigation is needed into the causes and patterns of resistance by rural MD's, and specific training programs designed to meet it.

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4. Breast Feeding Promotion

This deserved further analysis, and a program designed for national coverage. PRITECH can provide an initial evaluation, if desired, and help develop a PID for AID/W funding.

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V. AID Integrated Rural Health Delivery System, Project No. 518-0015

.. Background

1. Goals and Objectives

The AID Integrated Rural Health Project was developed under the framework of the previously described Ecuadorean Plan for National Development that stresses integrated development in rural areas. The project's overall goal is to improve the health of Ecuador's rural poor. The purpose of the Project is to develop a model for a low-cost rural health delivery system that is being implemented in three integrated rural development areas (DRIs) of the country-Jipijapa in the Pacific coast, and Salcedo and Quimiag-Penipe in the Sierra. Together, all three DRI areas contain approximately 100,000 people. The model is based on developing area level (Sub-Provincial) integrated services that could then be replicated on a larger scale.

The specific objectives of the Project are:

- Improve existing health services delivery and provide new integrated services in high priority rural areas.
- Improve utilization of low cost primary health care services through promotion and increased demand.
- Rationalize health services by coordinating efforts of all health institutions within the geographic area.
- Extend rural water and sanitation services.

- Incorporate nutrition concerns in programs.
- Decentralize decision-making and facilitate community participation.

2. Activities

Four major activity areas have occurred in the project.

a. Creation of the Area Chief

This is a new management post, designed to provide technical and administrative coordination for health service in DRI areas. Although assigned to work with DRI area staff, this new position is theoretically technically responsible to the Province Chief. The project has provided three months of training to candidates selected for the post, plus technical and material support for improved management systems.

b. Expanded Primary Care

The emphasis was to be placed on priority programs, such as DDC, EPI, and goiter control, that increase community participation and utilize community personnel. Funds were provided for training both MSP and community personnel, including educational materials and health promotion (radio spots), supplies (ORS), equipment for health centers, and vehicles were provided, and ____ sub-centers have been constructed.

Technical assistance has been provided by the project for management support, and by the aforementioned S/T Health/AED project for Health Education and Promotion.

c. Water Supply and Sanitation Projects, to extend coverage.

d. Nutrition activities, including supplementary feeding programs and activities to increase the availability of basic foods.

These last two activities are not covered in this analysis.

3. Project Implementation Arrangements

Four major Ecuadorean institutions are involved in implementation of project activities: the National Health Council (NHC); Ministry of Public Health (MSP); Ecuadorean Institute of Sanitary Works (IEOS); and the Secretariat for Integrated Rural Health Development (SEDRI). Project activities designed to strengthen the capacities of each of these institutions to support integrated rural health are managed by each institution. Funds for these activities include \$2.5 million in loan and \$475,000 in grant.

Funding for all field activities, including project implementation in the DRI areas, is channeled through SEDRI. These include almost \$4 million in loan and \$205,000 in grant funds. A contingency fund of \$715,000 does not have any specified channel for implementation.

The analysis that follows was requested in my scope of work, and is limited to DDC and EPI activities, plus those management activities, or constraints, that support, or hinder, those programs. As presented in Annex I, I visited only two DRI areas (Salcedo and Quimiag-Penipe), so this analysis is based on those visits, plus conversations with MSP per-

sonnel from the Provinces of Cotopaxi and Chimborazo and at the Central level.

B. Experience to Date

1. Development of the Area Chief

Posts were created, personnel assigned as Health Chief to each of the DRI areas, and three months of public health administration training was provided to the initial candidates.

a. Salcedo. The first area chief left after one year of work, in December, 1983, to study in Israel. A hiatus of 2.5 months occurred before the appointment of a new chief, who has a contract for only three months and arrived the day of my visit to Salcedo (March 16). No other health personnel had been assigned to this DRI area. Therefore, no one at the Salcedo DRI office was able to give me an accurate description of activities completed. However, review of records and conversations with personnel in Sub-Centers (see Annex I) give me the impression that the original Area Chief was quite dynamic and made repeated visits to the field to supervise Sub-Centers and hold community meetings. He seemed to focus in on two main activity areas: direct medical services and community organization/health promotion. He resupplied both sub-centers and community personnel with ORS when needed. However, all these activities stopped with his departure.

Conversations with MSP personnel, both at the Provincial office and at the Centro de Salud Hospital in Salcedo, indicate confusion over the role of the Area Chief and a fair degree of resentment. There appeared to be limited joint planning and coordination, and both the Provincial Chief and

director of the Health Center professed not to be aware of the Area Chief's activities, except as noted in periodic reports sent to the Jefatura after the fact. Both expressed concern that the Area Chief was providing direct supervision to health centers without coordinating efforts with nursing staff at the health center and Provincial offices, who also have this responsibility. A major source of resentment arose from a misunderstanding widely held that the Area Chief was paid almost 50% more than the Provincial Chief, even though he was considerably younger, less experienced, and was theoretically subordinated to him. This set of factors placed considerable strain on the relationships between the two people, and they apparently did not work well together. Concerns were also expressed about the relatively short period of time the Area Chief spent on the job and the ability of the new chief to improve relationships and coordination.

The Salcedo DRI office admitted that these problems existed, but felt they were due to personality differences and expressed hope that they could be resolved.

b. Quimiag-Penipe

Quimiag-Penipe is now on its third Area Chief. The first left before receiving training. The second was delegated from the Provincial Office, where he had been the head of Family Health. He received training in Cali, functioned for one year as Area Chief, then resigned to return to the Provincial Office as Chief of MCH Services. He apparently left because as an MSP employee he received his usual salary and felt the extra work (field trips, community organization, etc.) was not worth the pay. A third physician was appointed in January, a young medical graduate doing his required year of obligatory

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social service, which he will finish in August. This will then require a fourth person.

In contrast to Salcedo, this DRI Office had a complete staff, with the physician chief, a nurse, and a sanitary inspector. Their commitment and enthusiasm for their work was readily apparent. Frequent trips were made to the field by all, once again focusing on direct medical care and community health promotion. They had trained five nursing auxiliaries in the past year; however, none of them had been offered posts, and so were not functioning, with exception of one auxiliary who apparently volunteered as a distributor of O.R.S. The nurse indicated that she was trying to spend more time supervising auxiliaries and community personnel, but she had been there only three months and likewise was serving her year of social service. Therefore, she was just learning what the needs were and how to solve them.

Since the previous Area Chief had been (and once again is) a member of the Provincial staff with close ties to the Director, I saw none of the problems encountered in Salcedo with resentment and coordination. However, a very interesting dynamic developed when both the present and previous Area Chiefs expressed the opinion that their boss was the head of the DRI office, an Agricultural Engineer. The Project Coordinator and Regionalization Advisor (who had accompanied us on this evaluation trip) appeared irritated at this opinion and spent considerable time convincing the health staff that their "boss" was the Provincial Director, and they were supposed to "coordinate" efforts with the DRI Chief, with whom they worked daily.

In my opinion, this puts the Area Chief in an almost impossible position, and may be one of the intangible

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factors responsible for rapid turn-over. It points out the confusion that still exists (after two years of project implementation) over the role of the Area Chief. This was also apparent in Salcedo, even setting aside the issue of resentments. Does the Area Chief provide health services and promotion, or supervision, management support, and overall guidance? Who supervises the Area Chief - the DRI Chief or the Provisional Director? In both Salcedo and Quimiag-Penipe, it appeared to this consultant that the Area Chiefs reported to the DRI Chief, a fact which may account for a focus on curative services and community organization. These seem to be activities that DRI itself stresses.

2. Expansion of Primary Health Services

One of the stated objectives of the Project is to expand low-cost, highly effective services, such as EPI and ORT. This analysis looks only at those, and does not address the number or type of consultations or referrals provided by the Area Chief.

a. EPI

To this observer, there did not appear to be any special emphasis on EPI activities. As part of equipping health sub-centers, some refrigerators have been provided where electricity was available. When staff went out to visit communities they often took vaccines along, but only visited about 1/3 of the communities a second time, so coverage was limited. Support was provided to the "fase intensiva" in 1983, and one recently completed in February, 1984, but no special education or promotion campaign for EPI activities was readily apparent.

This is reflected in the rates of coverage for children less than one year of age. Figure 10 shows the rates

for the Salcedo DRI area; a neighboring canton, Pujilí, that is similar in its rural demography but with normal MSP services, and the Provincia as a whole for 1982 and 1983. Figure 11 shows rates for Quimiag-Penipe (they are really two separate Parroquias) compared to the Province of Chimborazo for 1983. Time did not permit analysis of another area in Chimborazo.

These rates were taken from the basic monthly summary of immunizations recorded by each institution, and several hours were required in each Province to develop them. They were not prepared in advance, so there is no bias evident in them.

The data show no clear difference between either DRI area and the rest of the Provinces. This probably translates into no difference in morbidity rates for the six immuno-preventible diseases, although that data is not readily available, and it is really too early to expect any changes. This does, however, reflect the national pattern.

b. D.D.C.

In contrast to the EPI program, DDC activities have received considerable emphasis. All DRI health staff, plus Provincial staffs, and MD's at Sub-Centers in DRI areas, were trained in DDC activities and ORT in a Seminar in Riobamba held in September, 1983. Training of community leaders in ORT and promotion were conducted in both DRI areas visited. I attended an evaluation of community leaders six months after training, and their retention of knowledge was remarkable. Some of them had needed resupply from the DRI office, and were doing up to 6 - 10 ORT's/month. Considerable effort has been put into promotion and education, as described previously. Since October, radio spots in each DRI area has stressed ORT

FIGURE 10

PROVINCE OF COTOPAXI

COVERAGE OF CHILDREN 1 YEAR

1982

	BCG	DPT(3 ^o)	Polio (3 ^o)	Sarampión
Salcedo	57.9%	9.4%	9.2%	20.4%
Pujilí	57.3%	16.0%	14.2%	17.4%
Provincia	67.8	10.2%	9.8%	18.2%

1983

	BCG	DPT(3 ^o)	Polio (3 ^o)	Sarampión
Salcedo	70.8%	12.2%	12.5%	16.9%
Pujilí	50.4%	12.8%	13.3%	16.3%
Provincia	143.5%	22.3%	22.4%	29.8%

Population: Salcedo = 45,606
Pujilí = 77,145
Provincia = 279,622

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FIGURE 11

PROVINCE OF CHIMBORAZO

COVERAGE OF CHILDREN 1 YEAR

	BCG	DPT(3 ^o)	Polio (3 ^o)	Sarampión
1982	83%	25%	30%	27%
1983	92%	30%	31%	28%
Quimiag (1983)	100%	14%	17%	3%
Penipe (1983)	71%	23%	23%	12%

and early treatment, and the community leaders, spontaneously, reported that the radio spots considerably reenforced their efforts and elevated their stature in the community.

Every Sub-Center visited had adequate stocks of ORS and educational materials, including the sign announcing the O.R.U., posters, and plastic envelopes with instructions for ORS distribution.

As mentioned in the general discussion of DDC activities, there is a sense of momentum in this program with ever-expanding activities designed to increase the use of ORT. As aforementioned, these efforts have received considerable reinforcement from the AED advisor, who helped design both the promotional campaign and training of community leaders. More importantly, he has involved both Central and Provincial MSP staff in these efforts, not just DRI staff. Both Cotopaxi and Chimborazo have now completed training programs for community leaders in other cantons of the provinces without DRI assistance. However, limitation of funds have prevented expansion of the health education and promotion campaign.

What has been the result of this effort? In 1983, the Province of Chimborazo reported 12,380 children orally rehydrated. This is impressive, since census figures report a total of 56,043 children 0 - 4 years of age. Quimiag-Penipe reported 366 children rehydrated in 1983, or 3% of the total. Since Quimiag-Penipe contains 4.3% of the population of children in this age group in the Province, no increased effect of the DRI project on the number of children rehydrated can be demonstrated. In all fairness, the intensive activities described above have begun only in the last half of 1983, and it may be too early to show an effect. Better results should be anticipated for 1984, if the problems with the Area Chief can be solved.

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c. Community Organization

Since the EPI and DDC programs are most effective if community-based, it is worthwhile examining Project efforts in this regard. I am frankly most impressed with them, and they may be the most concrete result of integrated rural development.

The DRI strategy for community development is based on three stages.

Stage I activities involve developing an organization within each community with members responsible for each specific component, i.e., health, agriculture, education, etc. DRI staff provide support and training to improve the capacities of this organization, plus funds and supplies for community - initiated activities once the organization is functional. As stated previously, after medical consultations this is probably the largest activity for the Area Chief.

Stage II activities involve creating a federation of community organizations within each Parroquia.

Stage III involves creating a canton-wide cooperative of community organizations.

Stage II organizations now exist within some Parroquias. DRI hopes to reach Stage III by the end of Project in late 1985. DRI staff feel that once Stage III organizations are functional, community-based activities will be able to continue on their own, supported by the larger cooperatives. While my heart would like to agree with this concept, experience suggests community organizations involved in service-oriented activities (such as health), as opposed to product-ori-

ented activities (such as agriculture or handcrafts, where the product can be sold outside the organizational area), will require continual support, supervision, and supplies. This can only be provided over the long-term by the MSP.

Within each stage of organization people are responsible for health. They usually become the people selected for specific training. Various types of training does occur: the aforementioned training in ORT; training as a promoter, who receives a small stipend; or training in managing a "Botiquín Comunal". The first type of training is going well. The last two have run into some difficulties, usually with lines of authority. Physicians have not readily accepted promoters, nor do promoters appear to function well without adequate supervision. In Quimiag-Penipe none of the programmed "Botiquines Comunales" were implemented because the Area Chief did not feel the strategy was well developed as to how they should be managed, and he did not want to waste the resources.

However, even given these constraints, the process of community organization to support health services is impressive and would not exist in its present form without support from this Project. It is this type of community structure, combined with private initiatives and MSP efforts, that allows me to feel enthusiastic about Ecuador's prospects for national coverage of both EPI and DDC.

C. Problems

Most of the problems are self-evident from the previous discussion.

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1. Area Chief

The Area Chief is the lynchpin around which all project activities resolve, yet a series of problems have developed:

a. Frequent turnover wastes investments in training.

b. Relative youth of chiefs, plus turn-over, results in inexperience and limited productivity.

c. Lack of definition of role (i.e., direct health services vs. supervision/management) produces confusion.

d. lack of clear lines of authority likewise creates confusion.

e. Resentments towards Area Chief for collateral issues (e.g., salary) hampers coordination and cooperation with MSP staff.

2. Duplication of Effort

The project design and MSP directives stipulate that all DRI health activities are MSP activities and supervised by them. However, this consultant has observed several activities that appear to be duplication of efforts.

a. Supervision

Health Centers provide vaccines and supplies to Sub-Centros, yet DRI staff provide direct supervision to Sub-Centros and communities. Would it not be better to

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strengthen the capacity of health centers to supervise sub-centros (since they provide supplies), and sub-centros to communities, rather than create a parallel system? Should not the Area Chief, if there is to be one, work out of the Health Center rather than be independent? Should not the rural Health Project strengthen the existing supervision structure to insure long-term continuity?

b. Training

The Project provided ORT training to all physicians working in the DRI areas visited. The Provinces subsequently trained the rest of their staff but without participation of the previously trained DRI staff. Would it not be more efficient and effective to do all the training on a Province-wide basis, thus reenforcing patterns of referral, and the chain of supervision and administrative authority?

c. Two Bosses

As discussed before, a horse with two riders does not perform well. There is evidence to suggest that even though Area Chiefs are supposed to be under the supervision of the Provincial Chief, the types of activities they complete seem to respond to DRI initiatives.

3. EPI Activities are weak, especially in education, promotion, and extension of coverage. The project needs to focus attention in these areas.

4. Limited Coverage

Given the amount of resources invested in this Project, the coverage in the three areas combined is only

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100,000 people. Given the analysis presented above, it would be appropriate to rethink Project strategy and reprogram the resources to achieve a much greater coverage in terms of population. The unexpended resources, wisely used, should catalyze a dynamic process of expanded health interventions that could significantly reduce morbidity and mortality in the next five years in Ecuador. This is discussed more fully in Section VII.

D. Summary

It appears to this observer that whatever gains have been made in priority primary health activities (EPI and DDC) through the Integrated Rural Health Project, could have been made just as easily by working directly within the MSP structure.

In fact, evidence suggests that for I and oral rehydration activities, the Provinces of Cotopaxi and Chimborazo have achieved similar success in Cantons outside DRI areas, but without the additional resources. This raises questions about the cost-effectiveness of the DRI project and the channeling of AID implementation funds in health through SEDRI.

One area of major project achievement is in community organization. It does not appear that the MSP structure is sufficiently developed to achieve much in this area. Therefore, this is one activity that deserves continued support through SEDRI.

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VI. Other Agencies

A. CARE

1. Contact

Mr. Brian Cavanagh, Director

2. Activities

CARE is currently phasing out of supplementary feeding programs and is focusing more on development of rural water supplies. They work in communities 300-500 population, usually in conjunction with Provincial Development Councils. In each site, they assist in developing community organizations for assistance with installation and maintenance. Each year 35 new sites are implemented. CARE has a staff of two international advisors and twelve nationals.

3. Potential for ORT/EPI Involvement

The director expressed interest in having his staff participate in training sessions. They, in turn, could train others on the Provincial Councils and community leaders. Although their overall coverage is not very large, over time a large number of small communities could be incorporated into the program.

B. Peace Corps

1. Contact

Dr. Miguel Artola, Health Officer.

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2. Activities

The Peace Corps currently has 250 volunteers in Ecuador, of which 32 are assigned to the MSP. These health PCV's work principally in Sub-Centros de Salud in seven Provinces and barrios marginales of Quito and Guayaquil. Forty percent of activities are spent within the Sub-Centros de Salud and sixty percent outside. Priority activities are in the areas of community organization, health education, and frequent morbidity. Within these large areas, the PCV usually picks more specific projects appropriate to their locale. Thus, a wide range of activities occurs with variation between sites.

3. Potential Involvement in ORT/EPI activities

Dr. Artola appeared enthusiastic about assisting health PCV's to focus in on specific priority programs to reduce mortality. In addition, he feels it would be possible to identify other PCV's (who are not necessarily directly involved in the health sector) to receive training to serve as ORT/EPI promoters at the Area Level. Training of personnel, educational materials, and supplies will be necessary for this strategy to function well.

C. MAP International

1. Contact

Mr. William Senn, Director
Dr René Manangón, Chief of Health.

2. Activities

MAP International started thirty years ago to distribute donated medicines and equipment. They still do this, but ten years ago, they started a program for international development with a health component. MAP works with church organizations, both missionary and indigenous. Their major effort is directed at thirteen Christian-Indian organizations developed on a province-wide basis. Each provincial organization belongs to a national federation.

Each Province tends to develop its program according to need, working with local community groups. In Chimborazo, as an example, MAP has assisted these organizations to implement a series of programs. Starting with increased agricultural production, the Provincial organization then developed a savings and loan association for credit and an agricultural store. Using the community organizations developed in these programs, community personnel were then trained as water technicians and solid-waste disposal technicians to assist villages with potable water and latrines. Currently, an intensive effort is underway to develop women's leadership training to focus on MCH issues and nutrition.

In Chimborazo there are currently 180 communities active in the program representing 10,000 families. In addition, each Christian-Indian organization has its own radio station with health programs.

MAP has a staff of six, including a physician and nutritionist. They are able to obtain additional staff for special projects through their network of contacts with missionary groups. They stress self-reliance of local groups and

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basically train community trainers. For this reason they promote suero casero, so isolated villages do not have to depend on unreliable logistics systems. If adequate and consistent supplies of ORS would be available, they would integrate into the national program. No programs exist for EPI activities, but they would like to start them.

3. Potential Involvement in ORT/EPI Activities

With its extensive network of grassroots community organizations and contacts with other campesino-oriented groups, MAP International offers an opportunity to expand the community base of these programs. Like the other agencies, MAP would require funds for training, materials, and supplies.

D. Seguro Social Campesino

1. Contacts

Dr. Galo Cordero, Director

Dr. César Córdova, Chief of Family Health.

2. Activities

Seguro Social Campesino is financed by a cuota of 1% of the payment by the urban insured, and notably payments by each campesino family of 1% of the minimum salary. These latter payments are often irregular. SSC currently covers 250,000 campesinos through a network of 239 Dispensaries. By December, 1984, they plan to have 375 Dispensaries covering 400,000 campesinos. Each Dispensary has at least one full-time nursing auxiliary, plus an itinerant doctor. Depending on demand, the doctor may work one day a week or full-time.

SSC services are mostly curative, although they do offer MCH services, immunizations, and supplementary feeding. They use MSP guidelines for these programs, but the lack of vaccines in the country has seriously hampered this program. They would be willing to vaccinate anybody, even children of uninsured families, if they had enough vaccines. They have no health promotion campaign, and would be willing to work with the MSP in this regard. SSC also has weaknesses in their peripheral cold chain, supervision, and operations research. Thus, the previously proposed consultants from PRITECH can analyze SSC problems as well.

One interesting problem is that the Director of Family Health is strongly opposed to ORS, feeling that the mixture becomes contaminated and adds to the disease load of the child. In the dispensaries they use venoclysis, and recommend rice water or similar mixtures for use in the home.

3. Potential for Participation

With their extensive network of dispensaries the coverage of rural populations with EPI activities is possible (although a number of dispensaries are located in communities with Sub-Centros). Since the current national effort in DDC is based on ORS, it does not appear the SSC would be willing to participate in this program at this time. However, ways could be found to integrate their concepts of home rehydration into the national program. The needs of SSC for expanded EPI activities must await further analysis.

E. Catholic Relief Services

1. Contact

Mr. Vernon Ficklin, Director.

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2. Activities

CRS is heavily involved in distribution of food supplementation and participates in over 400 Mother's Clubs around the country. Time did not permit personal investigation before this report went to press.

F. Ciba-Geigy

1. Contact

Dr. José Torres, Medical Advisor.

2. Activities

Ciba's plans to market ORS have been described in detail previously. They currently have sold 500,000 packets in the country. Their major efforts in education are directed at reducing resistance in physicians. As an interesting side-light, Dr. Torres used to be the chief of the pharmacology committee of the MSP, and is very interested in the production of basic drugs in the country. This is worth investigating further.

3. Potential for Participation

Ciba seems to be covering the private sector very effectively. The major assistance PRITECH could provide would be technical experts for national seminars.

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VII. Strategies

A. AID Rural Integrated Health Project

1. Expansion

Where do we go from here? Experience and the results of this analysis, suggest that expansion of project activities to Provinces is a natural progression. The three Provinces of Cotopaxi, Chimborazo, and Manabí contain 25% of Ecuador's population, and re-enforcing MSP provincial activities, focusing in on EPI and DDC programs, could produce significant changes in morbidity and mortality patterns in the next few years in a good portion of the population. As the economic climate improves, the MSP may well be able to expand into other provinces with their own resource, thus achieving more national coverage.

Given this type of expansion, the concept of a separate Area Chief does not seem viable, unless the MSP is willing to create the posts and fund them with their own resources. A more viable strategy would be to strengthen the Health Centers to turn the Directors into functional Area Chiefs. This could be done by in-country public health management training; the addition of more cost-effective personnel, such as a nurse, administrator, and sanitary inspector; and vehicles and viáticos for supervision. With the exception of the personnel, the other components could be supported by AID.

2. Suggested Project Activities

Given the analysis presented in their previous six sections, activities in the following area would consider-

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ably strengthen national-level efforts in EPI and DDC. The exact budget for each activity must await further analysis.

a. Health Education and Promotion

The successful experience in DRI project areas should be expanded to both include EPI activities and the wider geographic area of the Provinces.

The Project could fund radio spots, educational materials, and training and evaluation of both MSP and community personnel on a Province-by-Province basis. Continued technical assistance from the AED advisor, Dr. Pareja, would be an important adjunct to this process, and would considerably accelerate implementation and, thus, overall project success. The Mission should initiate negotiations with S/T Health and the A.E.D. in regards to the availability of Dr. Pareja.

b. Supervision

Supervision needs considerable strengthening for both EPI and DDC activities. PRITECH can provide some technical assistance in analysis and design of the system. The project can provide training in supervision; materials, such as manuals, guides, and check lists; vehicles, e.g., one for each Health Center in Project Provinces; and funds for per diems and gasoline for supervision.

c. Information/Evaluation

i. M.I.S.

Although good basic information exists, and the M.I.S. has just gone through a recent re-design, atten-

tion needs to be paid to the collection, formatting, flow, and use of this information. PRITECH can provide a technical analysis. The project could provide some micro-computers in key areas, such as the Divisions of Planning and Epidemiology, and the Project Provincial Offices. Micro-computerizing has advanced so rapidly that for \$5,000 one can buy the automated processing capacity that would have cost \$100,000 three years ago. Automated processing is essential if the MSP system is to provide timely and useful information. Funds could also be used for training, not only in the technical aspects of handling micro-computers, but in the use of the information produced in decision-making. Observational trips are often useful in this regard.

ii. Operations Research

The current capacity to do special studies in a short period of time oriented towards identifying and solving bottlenecks that prevent effective program implementation is limited. Analysis is needed to identify needs for this activity. The Project could fund field teams; data analysis or a mini-computer; training of personnel; and seminars/symposiums for presentation of results.

d. Vaccine Logistics/Cold Chain

It is unclear exactly what is needed until the recommended analysis is complete, but the Project could contemplate buying non-electric refrigerators or cold boxes; thermometers; time-temperature indicators; tools for refrigerator maintenance; and, if needed, special vehicles for vaccine transportation. Training of Provincial and Health Center maintenance personnel in refrigerator repair, and all health system personnel in preventive maintenance would significantly improve

cold chain function. It may be necessary to send several central maintenance personnel for advanced training in refrigeration for maintenance of cold rooms and large freezers. Stand-by generators at the Provincial level may be important.

Investment in the increased production of vaccines (lyophilized BCG and DPT) by the Instituto Nacional de Higiene in Guayaquil may be cost-effective, and deserves analysis.

3. Sources of Funding

The project currently has \$715,000 in unprogrammed contingency funds, plus whatever unexpended loan funds remain that could be reprogrammed for this effort. This consultant sees no advantage in channeling these funds through SEDRI, and recommends they be channeled directly to the MSP for use in Project Provinces.

PRITECH has a limited amount of funds available for specific activities designed to "bridge the gap" until the Pro Ag is amended or a new project developed. Use of these funds, of course, depends on the next stage of analysis. Ecuador could also be selected as one of the six final countries selected for intensive assistance. This I strongly support.

B. PRITECH

On the basis of this analysis, I believe that Ecuador has one of the best chances I have ever seen to implement national EPI and DDC programs, provided the country gets some critical support. This is not just rhetoric. The political and policy-level commitment exists; the physical infrastructure is in excellent condition; staff is in place; successful

and somewhat unique experiences have been obtained, especially in DDC; private sector initiatives through Ciba-Geigy and the Seguro Social Campesino show promise of achieving coverage through alternative systems; and the human resources I have met appear enthusiastic, capable, and committed. For these reasons, I recommend that PRITECH proceed with the next stage of analysis, and that Ecuador be given careful consideration as one of the final six countries selected for intensive assistance.

PRITECH should provide consultants in the following areas (oriented towards improved EPI and DDC programs):

1. Supervision

a. Scope of Work

Work with counterparts within the MSP and other agencies to:

- i. Review current supervision patterns.
- ii. Assist in design of a task analysis of key personnel.
- iii. Review and suggest changes in job descriptions of key personnel to improve supervision.
- iv. Suggest a basic model for supervision with guidelines for improved, supportive supervision; specific responsibilities and activities; check lists or supervision forms; and provide samples.

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v. Identify needs for improved supervision in Project Provinces, including but not limited to:

- Training.
- Supplies.
- Vehicles.
- Per diems.
- Gasoline.
- Further technical assistance.

vi. Develop work plan for implementation:

vii. Coordinate activities in CIMDER, host country contractor in management.

Work with AID/Ecuador health staff to:

- Design project amendments.
- Develop budget.
- Submission of PID to PRITECH for complementary support.

b. Length of Time

Eight to ten weeks in divided visits.

c. Requirements

i. Minimum master's level in management or social sciences or MD-MPH with experience in public health administration.

ii. Experience in design and implementation of primary health supervision systems in LDC's.

iii. FSI-3 in Spanish.

2. Information/Evaluation

a. Scope of Work

Work with appropriate counterparts to:

i. Identify specific indicators for EPI and DDC program performance important for management decision-making.

ii. Review current primary health management information systems with regard to EPI/DDC activities.

iii. Assess appropriateness of current MIS for producing indicators and suggest improvements (if needed).

iv. Identify needs for improved information processing with the possibility of micro-computers in key areas (Provinces/Central Level).

v. Identify training needs for MIS and alternative processing.

vi. Identify needs for operations research or special studies in EPI/DDC programs.

vii. Identify resources needed to implement O.R. projects.

viii. Develop work plan for both MIS and O R. activities.

ix. Coordinate activities with CIMDER, host-country contractor in management systems.

Work with AID/Ecuador health staff to:

- i. Design project amendments.
- ii. Develop budgets.
- iii. Prepare PID for submission to PRITECH.

b. Length of Time

Four to six weeks.

c. Requirements

i. Minimum master's, preferably doctorate in management, public health or social sciences, with emphasis in evaluation. MD-MPH with appropriate experience acceptable.

ii. Experience in LDC's in design and implementation of information and evaluation systems, with particular emphasis on EPI/DDC activities.

iii. FSI-3 in Spanish.

3. Vaccine Logistics/Cold Chain

a. Scope of Work

Work with counterpart to:

i. Review cold chain, especially from Health Center to Sub-Centro, puesto and community.

ii. Identify potential failures, and suggest alternatives for:

- Equipment (non-electric refrigerator, cold boxes, thermos, etc.).

- Strategies for vaccine delivery.

- Temperature indicators.

iii. Identify needs for operations research in cold chain and vaccine viability or effectiveness.

iv. Identify needs of Instituto Nacional de Higiene in Guayaquil for increased production of DPT, TT, and lyophilized BCG.

v. Analyze strategies for vaccine procurement and suggest alternatives (if needed).

vi. Recommendations for improved cold-chain maintenance, including:

- Personnel by level.
- Training.
- Tools and equipment.

b. Length of Time

Four to six weeks.

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c. Requirements

i. Minimum master's in management or public health, or MD-MPH, with appropriate experience in cold chain/vaccine logistics.

ii. Experience in EPI's in LDC's with emphasis on cold chain development.

iii. FSI-3 in Spanish.

Note: after initial assessment of Instituto Nacional de Higiene, a second consultant with specific training and experience in vaccine production may be needed. This depends on what level of assessment has already been completed by the Instituto.

4. Financial Analyst

This consultant is suggested if the MSP and AID together decide that a cost-effectiveness analysis of various health programs would be useful to help resolve issues in implementation of policy.

a. Scope of Work

Work with appropriate MSP counterparts to:

i. Complete a cost-effectiveness analysis of investments in expanded EPI/DDC efforts compared to investments in other programs.

ii. Within DDC/EPI programs, assess cost-effectiveness of various alternative strategies for implementation.

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iii. Do financial projections of recurring costs of completed construction of planned Centro de Salud Hospitales.

iv. Discuss results with policy-level personnel within MSP and identify methods of dissemination of results for improved decision-making.

b. Length of Time

Four to six weeks; additional time may be needed.

c. Requirements

i. Minimum master's, preferably doctorate, in management, economics, or other social science with emphasis in financial analysis.

ii. Experience in cost-effective analysis in LDC's.

iii. FSI-3 in Spanish.

6. Promotion of Breast Feeding

a. Scope of Work

i. Analyze existing information about breast-feeding patterns in urban and rural areas;

ii. Identify institutional responses to problems in breast feeding.

iii. Suggest alternatives to Ecuadorean agencies and AID/Ecuador for development of national program for promotion of breast feeding.

iv. Assist in development of project amendments, proposals, budget, and PID as needed.

b. Length of Time

Four weeks.

c. Requirements

i. Minimum master's in public health, nutrition, nursing, or social sciences.

ii. Experience in national level breast feeding promotion in LDC's.

iii. FSI-3 in Spanish.

7. General

All consultants need to touch base with the other agencies identified in this report to identify their needs for expanded EPI/DDC activities. This includes IESS, the Peace Corps, MAP International, and CRS. They can then assist the Mission develop strategies and projects to re-enforce these agencies.

In addition, Mission requests a separate training report with training needs prioritized by component.

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iv. Assist in development of project amendments, proposals, budget, and PID as needed.

b. Length of Time

Four weeks.

c. Requirements

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In addition, Mission requests a separate training report with training needs prioritized by component.

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The consultants identified above are placed in order of priority; in case resources are not sufficient for all of them. Dr. Pareja of AID should also participate with the survey team, since the major support the other agencies will need are in the area of health education and promotion. He can assist them to identify their needs and develop budgets. Because of his knowledge of these agencies and field conditions, probably two weeks of his time will be sufficient.

Addendum: Time did not permit inclusion of my analysis of CRS, but they seem the most promising of the PVO's. Not only are they in contact with 400 Mother's Clubs, CRS officials feel that the Cardinal, who strongly supports MCH programs, would encourage participation of the 2,000 parochial organizations in the country. CRS would need some staff support to do this, and is very enthusiastic about this program.

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