

PD-ABC-212

CHILD SURVIVAL: ACCELERATED IMMUNIZATION PROJECT

GRANT NUMBER CAR-0005-G-00-6971-00

**MID-TERM EVALUATION
FINAL DRAFT**

AUGUST 1989

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ABBREVIATIONS

A.I.D.	U.S. Agency for International Development
EPI	Expanded Program on Immunization
ICC	Interagency Coordinating Committee
IDB	Inter-American Development Bank
NPA	National Plan of Action
PAHO	Pan American Health Organization
TAG	Technical Advisory Group
TOPV	Trivalent Oral Polio Vaccine
DPT	Diphtheria-Pertussis-Tetanus Vaccine
TT	Tetanus Toxoid Vaccine
USAID	A.I.D. Country Mission

DEFINITIONS

EPI:	Initiated by a 1974 World Health Assembly Resolution and endorsed by a PAHO Directing Council resolution in 1977, this program has the goal of providing immunization services for all children of the world by 1990. Objectives include reduced mortality and morbidity from poliomyelitis, diphtheria, whooping cough, tetanus, measles, tuberculosis; increased national capability to deliver immunizations through comprehensive health services; and increased regional capability for vaccine production and quality control.
REGIONAL ICC	Inter-Agency Co-ordinating Committee. Established in July 1985 to ensure coordination of all international agency inputs for the polio eradication program in the Region. Agencies represented are A.I.D., UNICEF, IDB, Rotary International, the Task Force for Child Survival, and PAHO. PAHO has also encouraged the establishment of National ICC's.
REGION:	North, Central and South America, and the Caribbean.
TAG:	A group of technical experts appointed by the PAHO Director to advise PAHO on the acceleration of EPI in the Americas and on efforts to eradicate the indigenous transmission of wild poliovirus from the Region.
TOPV:	Trivalent oral poliovirus vaccine which is a mixture of live attenuated strains of all three polio types I, II and III. TOPV is administered orally. At least 3 doses of oral polio vaccine are needed for primary immunization.

1. EXECUTIVE SUMMARY

Evaluation Abstract

This project aims to eradicate poliomyelitis due to wild polio virus from the Americas by 1991, increase coverage for all antigens, and contribute to sustainable infrastructures for the delivery of primary health care. The project is being implemented by the Expanded Program on Immunizations of the Pan American Health Organization (PAHO), with support from A.I.D., PAHO, Inter-American Development Bank, and the Rotary Club. The mid-term evaluation (March 1-17, 1989) was conducted by an external consultant team on the basis of a review of project documents, visits to three national programs, and interviews with project staff and Ministry personnel. The major findings and conclusions are:

- In 1988, a provisional total (as of March 16, 1989) of 361 cases of polio confirmed by laboratory analysis were reported in the Region of the Americas. Additionally, 155 probable cases are awaiting final classification. This total represents a 61% decline from 1986.
- A gradual increase in vaccination coverage with OPV has occurred Region-wide between 1980 and the peak in coverage in 1988.
- Coverage rates for DPT, measles, and BCG vaccines have increased progressively between 1985, when the Project Plan of Action was devised, and 1988.
- Estimated coverage rates for 1988 are: OPV3 (82%), DPT3 (59%), measles (64%), and BCG (72%).
- The project is well-managed and an initial financial management review is favorable.

The evaluators noted:

- The project, although close to achieving its goal of eradicating polio, may not meet this goal by the current PACD.
- The project needs to place increasing emphasis on surveillance and support for all EPI vaccines.
- Not all national inter-agency coordinating committees are functional, and this important innovation in donor and country coordination needs more encouragement.

Summary of Evaluation Findings

Introduction:

The "Child Survival: Accelerated Immunization Program" project grant (598-0643 and 597-0005) was authorized on August 14, 1986 for the period August 14, 1986 to July 31, 1991. The purpose of the grant was to support a multi-donor effort originally conceived by the Pan American Health Organization (PAHO) to:

- 1) Strengthen the overall development of the Expanded Program on Immunization in the Region and to speed up the attainment of its objective of improved child survival;
- 2) Interrupt indigenous transmission of wild polio viruses and eradicate poliomyelitis in the American Region by the year 1990;

A mid-term evaluation was conducted from March 1 - 17, 1989 in accordance with the project agreement. The scope of work for the evaluation consisted of a request for a review of progress in the project and listed additional items of interest to A.I.D./W, including a review of financial management. The four-person evaluation team utilized a hybrid case-history and archival research methodology to respond to the scope of work. On March 1, 2 and 3 the evaluation team met with PAHO and A.I.D. to review the scope of work and clarify evaluation team members' questions. During the week of March 6 the team split into two groups to visit Guatemala, Honduras and Bolivia. During the final week of evaluation activities the team met in the Washington offices of PAHO to review data, talk with TAG members and write the final report.

Findings:

In 1988, a provisional total (as of March 16, 1989) of 361 confirmed cases of polio were reported in the Region of the Americas, with 155 probable cases still awaiting final classification. This provisional total represents a 61% decline from the 930 confirmed cases reported in 1986. The impact of intensification of surveillance activities which began in 1986 can be seen from the 48% increase in notification of cases of acute flaccid paralysis Region-wide that occurred in 1986 compared to 1985, and the 77% increase in notification in 1988 as compared to 1985. Since surveillance was strengthened in 1986, there has been a progressive decline in the incidence of confirmed polio cases reported in the Region. It is also interesting to note that for the first time during 1988 there appeared to be a dampening or virtual disappearance of the usual seasonal pattern of polio that has existed in the Region, characterized by a seasonal increase in polio cases during weeks 10-30. The disappearance of this seasonal increase in 1988

suggests that transmission of polio has been substantially suppressed.

If all sub-Regions are combined, with Brazil and Mexico excluded, a steady increase in OPV3 coverage has occurred between 1980 and the peak in coverage in 1988. Because of the problems that exist with the reported OPV coverage data for Mexico and Brazil during 1980-84, it is reasonable to conclude that the Region-wide OPV3 coverage estimate of 82% in 1988 probably represents an all-time high in OPV coverage.

Region-wide coverage rates for DPT vaccine, measles vaccine, and BCG vaccine all progressively increased between 1985, when the Project Plan of Action was devised, and 1988. Coverage rates for all of these antigens have reached record high levels in 1988. Provisionally, the estimated coverage rates for 1988 are as follows: OPV3 (82%), DPT3 (59%), measles (64%), and BCG (72%).

These data suggest that the Project has influenced the improvement in coverage levels of all EPI antigens, not just with OPV, and has strengthened the overall EPI program. Infrastructure investments in cold chain equipment and logistics as well as the surveillance and monitoring systems established under the eradication program also support the EPI effort.

However, the goal of achieving coverage levels of greater than 80% in children younger than 1 year of age for all EPI antigens is unlikely to be reached by 1990, with the exception of OPV and possibly BCG vaccine. Following upon the improvements in delivery and monitoring infrastructure, emphasis should be placed at the country level on balancing the poliomyelitis eradication effort within the context of the EPI as a whole. For example, poliomyelitis specific activities, such as disease surveillance, should be expanded (as envisioned in the EPI policy and strategic approaches in the Americas) to include other EPI target diseases (especially measles and neonatal tetanus).

Additional findings:

The project developed Inter-Agency Coordinating Committees at both the Regional and National levels to coordinate program activities. These ICCs are an important institution and have served to coordinate program activities. Not all national ICCs have been successful, however, and a country-by-country review of the ICCs needs to be undertaken.

Missions have been, on the whole, very supportive of the project. A.I.D./W should encourage interested Missions to use the buy-in mechanism to support these activities. This will be facilitated by A.I.D./W's sharing of financial information with the Missions, so that they can track project expenditures.

The current situation with regard to surveillance of EPI target diseases suggests the need for a follow-on donor-funded Regional project to apply the functional gains in surveillance capability from polio towards improving surveillance of all EPI target diseases. The evaluation team felt it was important for A.I.D. to participate in a follow-on project because the current project would not be self-sustaining by its conclusion, and continued A.I.D. participation would ensure that the gains made in disease control, surveillance and delivery made by country EPI programs during this project, as a result of aggressive leadership at the Regional level, will be consolidated and applied to new surveillance objectives and disease reduction targets.

2. INTRODUCTION

The "Child Survival: Accelerated Immunization Program" project grant (598-0643 and 597-0005) was authorized on August 14, 1986 for the period August 14, 1986 to July 31, 1991. The purpose of the grant was to support a multi-donor effort originally conceived by PAHO/EPI to:

- 1) To strengthen the overall development of the Expanded Program on Immunization in the Region and to speed up the attainment of its objective of improved child survival;
- 2) To interrupt indigenous transmission of wild polio viruses and eradicate poliomyelitis in the American Region by the year 1990;
- 3) To contribute to the development of sustainable infrastructures for the delivery of primary health care

One of the major outcomes of the proposed plan was to set up a polio surveillance system at regional and national levels, so that all suspected cases of poliomyelitis are immediately investigated, and appropriate control measures to stop transmission are rapidly implemented. This surveillance system has been implemented. The system serves as the basis for measuring the impact of the overall expanded program on immunization.

The grant was authorized for a total of \$20,600,000, which accounts for 44% of the \$47,550,000 total all-donor commitment to the project. Other donors include PAHO, IDB, UNICEF and Rotary International. Project activities were not initiated until April 1987 due to the long approval process of the IDB and the need to coordinate donor inputs. As of March 1989, the project has been in operation for 23 months.

The grant is managed by PAHO's EPI office in Washington, D.C. PAHO headquarters staffing was reinforced with 5 additional management and technical personnel to provide technical assistance and ensure adequate monitoring, supervision, coordination and liaison with donor agencies. Twelve epidemiologists resident in countries which required special assistance were recruited to support national Ministry of Health staff. At the national level a polio eradication manager coordinates all polio eradication activities within the EPI. At the subregional level, eight PAHO epidemiologists or technical officers serve as advisors on an international basis to provide support and supervisory assistance to the in-country personnel. PAHO/Washington is responsible for reviewing National Plans of Action (NPA), monitoring their implementation, centrally procuring commodities based on field requests, providing

technical assistance, operational research, evaluations, reports to A.I.D. and financial accountability. Routine evaluation activities include national coverage surveys, country program reviews, plus reviews of regional level activities such as laboratory diagnostic services.

The Technical Advisory Group and the Inter-Agency Coordinating Committee have been convened by PAHO to review progress and provide continuing guidance and endorsement as specified in the grant.

2.1. DESCRIPTION OF THE EVALUATION TEAM

The original logframe contained in the A.I.D. proposal "Child Survival: Accelerated Immunization Program in the Americas", calls for a mid-term and EOP evaluation. The evaluation took place between March 1 and March 17, 1989. A four-person evaluation team was selected:

Carl Kendall, Ph.D., Associate Professor, Department of International Health, School of Hygiene and Public Health, Johns Hopkins University and Director, Center for International Community-based Health Research, Team Leader

Stephen L. Cochi, M.D., Chief, Infant Immunization Section, Division of Immunization, Centers for Disease Control

Robert J. Kim-Farley, M.D., M.P.H., Public Health Advisor, Health Services Division, Office of Health, Bureau for Science and Technology, Agency for International Development

Don Rudisuhle, independent Financial Management Consultant and former Financial Director, Central America, Bristol-Myers Company.

The team evaluated project accomplishments to date in four areas - planning, management, finances and technical issues - at both the regional and national levels. The team reviewed project documents and met with PAHO, A.I.D. and IDB staff and conducted telephone interviews of TAG members during the first week of the evaluation. A.I.D./W and Mission-specified criteria were used to select three countries, Guatemala, Honduras and Bolivia, for field visits. Each of these countries has a Child Survival emphasis and large external donor inputs for immunization. Following brief visits to the three countries (see Tour and Trip reports, attached ANNEXES 9.1.1, 9.1.2, 9.1.3), the consultants

returned to Washington for analysis and write-up.¹ A briefing was held for A.I.D. and PAHO staff on Friday, March 17, 1989.

2.2 ORIGIN AND REASON FOR PROJECT

Immunization against disease is the single most effective health intervention. Building immunization programs within health delivery systems is an important step toward the international donors' goal of child survival. The six vaccines which currently comprise the global Expanded Program on Immunizations are well known, and program efforts have focused on delivery: logistics, cold chain, supervising and monitoring delivery and a host of administrative issues that appear to impede program implementation. Although rapid progress has been made in improving coverage, many service providers felt that they had reached plateaus of coverage, and many lost enthusiasm in the face of new cohorts of infants requiring vaccination. The designers of this project felt that a new initiative was required to regenerate enthusiasm and lift coverage to adequate levels.

Since the inception of EPI in 1977 remarkable improvements in the control of paralytic poliomyelitis in the Americas have been made. The proportion of children less than one year of age who received the recommended three doses of polio vaccine increased from 35% in 1978 to more than 75% in 1984. The number of reported cases of paralytic polio had decreased by 90% from the 4,728 reported cases in 1979 to 525 in 1984. The number of countries reporting cases decreased from 19 in 1975 to only 11 in 1984. A major reason for the increased polio vaccine coverage and decreased paralytic polio morbidity has been the incorporation of special national immunization days into the poliomyelitis control and EPI strategies. Bolivia, Brazil, the Dominican Republic and Mexico have emphasized oral polio vaccination during these special national immunization days. Colombia and El Salvador have provided DPT, measles and TT vaccines in addition to polio vaccine on national immunization days and Brazil has expanded its strategy to include these other EPI antigens since 1984. The successes of polio immunization and the use of national immunization days created an opportunity to attack polio directly and interrupt transmission.

2.2.1. Advances in Vaccination Coverage

Table 1 presents the reported coverage of the less than one year old population with three or more doses of polio vaccine during the period 1978-1984, since the adoption of the EPI in the Americas.

¹ The evaluation team wishes to thank Mr. Cameron Mustard, B.A., M.P.H., for his assistance in the completion of the final version of the evaluation.

Table 1
Coverages With Three or More Doses of Polio Vaccine in the
Americas, 1978-1984

Subregion and % coverage by year of the less than one year old population of the country	1978	1979	1980	1981	1982	1983	1984
<u>North America</u>							
Bermuda	...	...	39	...	68	53	48
Canada	...	...	...	...	...	...	...
United States	...	...	...	...	...	...	...
<u>Caribbean</u>							
Anguilla	77	48	86	81	86	99	73
Antigua and Barbuda	53	...	36	47	90	99	93
Bahamas	99	27	35	40	67	65	62
Barbados	56	60	99	54	63	62	77
British Virgin Is.	...	14	95	70	94	75	85
Cayman Islands	31	52	47	63	91	90	90
Cuba*	99	97	99	82	82	95	99
Dominica	20	31	53	97	73	92	82
Dominican Republic	28	35	46	42	37	22	99
Grenada	...	6	32	41	61	72	75
Haiti	1	3	2	3	7	6	12
Jamaica	...	...	34	37	68	47	56
Montserrat	63	5	38	55	95	95	82
Saint Lucia	32	...	58	65	81	80	84
St. Kitts/Nevis	...	25	76	71	93	91	97
St. Vincent	5	...	26	33	99	84	90
Trinidad and Tobago	45	28	38	55	59	61	66
Turks and Caicos	...	21	44	27	80	79	70
<u>Continental Mid America</u>							
Belize	45	42	21	51	52	61	54
Costa Rica	58	44	67	85	78	54	81
El Salvador*	...	57	42	38	42	48	44
Guatemala*	...	62	43	42	45	44	37
Honduras	7	25	32	37	53	70	84
Mexico	...	11	43	85	85	74	91
Nicaragua	18	...	99	52	50	30	73
Panama	41	57	45	50	61	60	70
<u>Tropical South America</u>							
Bolivia	3	12	14	15	15	11	57
Brazil*	34	49	99	99	99	99	89
Colombia	17	19	16	22	27	42	60
Ecuador	10	16	14	19	36	34	36
Guyana	31	37	42	37	73	59	41
Paraguay	2	5	14	26	39	47	59
Peru	21	19	16	20	23	18	26
Suriname	...	20	24	22	53	83	79
Venezuela	83	88	95	75	77	67	59
<u>Temperate South America</u>							
Argentina	...	5	31	38	94	94	64
Chile	98	97	91	93	98	93	87
Uruguay	52	58	59	58	72	74	83
Total**	34	34	59	69	74	72	78

* Second instead of third dose data.

** Includes only countries with available data.

... Data not available.

Table 2
Number of Polio Cases in the Americas by Country, 1975-1984

Country	Mean No. of Cases		No. of Cases			
	1975-77	1978-80	1981	1982	1983	1984
Bermuda	-	-	-	-	-	-
Canada	1	4	-	-	-	1
U.S.A.	13	20	-	9	12	7
Anguilla	-	-	-	-	-	-
Antigua & Barbuda	-	-	-	-	-	-
Bahamas	-	-	-	-	-	-
Barbados	-	-	-	-	-	-
British Virgin Islands	-	-	-	-	-	-
Cayman Islands	-	-	-	-	-	-
Cuba	-	-	-	-	-	-
Dominica	-	-	-	-	-	-
Dominican Republic	63	107	72	70	7	-
French Guiana	-	-	-	-	-	-
Grenada	-	-	-	-	-	-
Haiti	25	16	35	35	62	63
Jamaica	-	-	-	58	-	-
Montserrat	-	-	-	-	-	-
Saint Lucia	-	-	-	-	-	-
Saint Kitts/Nevis	-	-	-	-	-	-
Saint Vincent	-	-	-	-	-	-
Trinidad & Tobago	-	-	-	-	-	-
Turks & Caicos	-	-	-	-	-	-
Belize	-	2	-	-	-	-
Costa Rica	-	-	-	-	-	-
El Salvador	38	23	52	16	88	19
Guatemala	39	116	42	136	208	17
Honduras	78	101	18	8	8	76
Mexico	710	966	186	98	232	137
Nicaragua	26	36	46	-	-	-
Panama	-	-	-	-	-	-
Bolivia	138	121	15	10	7	-
Brazil	2,807	1,854	122	69	45	82
Colombia	525	305	576	187	88	18
Ecuador	45	10	11	11	5	-
Guyana	2	-	-	-	-	-
Paraguay	74	20	60	71	11	3
Peru	136	120	149	150	111	102
Suriname	-	-	-	1	-	-
Venezuela	44	34	68	30	-	-
Argentina	2	22	5	10	26	-
Chile	-	-	-	-	-	-
Uruguay	6	-	-	-	-	-
TOTAL	4,772	3,877	1,464	969	911	525
NUMBER OF COUNTRIES REPORTING CASES	19	18	16	17	15	11

Table 3

Mean Number of Cases of Poliomyelitis Reported Annually in the Americas by Stages Post-EPI Implementation and Percentage Change from Pre-EPI, by Sub-region

Sub-Region	Pre-EPI	Stage 1		Stage 2		Stage 3	
	Implementation	Post-EPI		Post-EPI		Post-EPI	
	1969-1977	1978-1980		1981-1983		1984	
	No.	No.	%	No.	%	No.	%
<u>North America</u>	20	23	+15	9	-55	8	-60
<u>Middle America</u>							
Continental	1,062	1,140	+7	473	-55	276	-74
Caribbean	29	1	-97	19	-34	0	-100
<u>South America</u>							
Tropical	3,011	2,465	-18	599	-80	205	-93
Temperate	151	22	-85	14	-91	0	-100
TOTAL	4,274	3,651	-15	1,115	-74	489	-89

The impact of the high coverages with polio vaccine can be seen in Table 2, which shows the annual reported incidence of poliomyelitis in the Region of the Americas during the period 1969-1984, and in Table 3, which shows the absolute number of cases reported each year during the same period.

Given these figures demonstrating rapid declines in polio rates, clustering of polio cases and rising coverage rates, member states of the Pan American Health Organization set the goal of totally eradicating the indigenous transmission of wild poliovirus from the Americas by 1990. Not counting loss of income due to paralysis nor loss of life, the cost of acute care and rehabilitation of poliomyelitis to the Region is approximately US\$40 million annually. A cost benefit analysis showed that the region will save US\$30 million annually through eradication of polio -- above and beyond the cost of eradication.

The focus on the eradication of wild poliovirus has been a source of controversy. Would such a focus reduce resources, both financial and personnel, to EPI programs? Would the results be sustainable? Supporters argued that the eradication of wild poliovirus from the Americas would promote the development of the EPI in the region through improvements in surveillance and supervision systems, vaccine storage and delivery systems and laboratory services. Training for Polio eradication programs would result in improved health staff performance. The focus on disease would also provide a mechanism for feedback on the effectiveness of the program, and would give the program high visibility. In the effort to eradicate poliomyelitis through immunization, the EPI would also deliver DPT and measles vaccine as well as tetanus toxoid vaccine to women of childbearing age for the prevention of neonatal tetanus. As stated in the original project proposal, it was felt that the eradication of wild poliovirus would serve as the wedge by which sustainable immunization programs may be achieved while contributing directly to improved child survival. In fact, as demonstrated in Section 6.3, immunization coverage rates in the Americas are at their all-time highest levels and the project, as reviewed, appeared to be achieving the other states as well.

Factors which favor the regional eradication of wild poliovirus are: (1) infection is limited to a human host and transmitted person to person; (2) paralytic polio is usually serious and recognizable; (3) there are no long term carrier states; (4) though the period of infectivity is accurately known, cases are probably most infectious during the first few days before and after the onset of symptoms; (5) following the disease or immunization with polio vaccine, immunity is conferred for life, and a patient is not subject to reinfection; (6) the seasonality of polio is such that one can experience fade-outs in transmission at the low point in the yearly cycle of the wild

virus. There exist two types of vaccine, TOPV and inactivated polio vaccine which has proven to be very effective in providing immunity and controlling outbreaks. The conclusions of the International Symposium on Poliomyelitis Control indicated that both are effective against the disease and that political will and financial and administrative matters are the necessary ingredients for the achievement of worldwide control of its eradication.

The experience of the United States of America and Canada in the past decade illustrates this point. In both countries, wild poliovirus transmission ceased in the early 1970's (only on one occasion has wild poliovirus been introduced which resulted in the occurrence of paralytic cases). Although both countries have continuing antipolio vaccination programs, there are areas where immunization coverage is not optimal and where, if the virus were constantly present, outbreaks would have been expected. If similar conditions were achieved in all countries of the Americas, transmission would be interrupted and new cases would not occur, even in those population groups which are especially difficult to reach with vaccination programs.

A Plan of Action to interrupt indigenous transmission of poliovirus from the Americas was formally reviewed and endorsed at the 31st meeting of the PAHO Directing Council in September 1985. A Technical Advisory Group composed of world experts in this field and an Interagency Coordinating Committee of potential donors which included participants from A.I.D., IDB, Rotary International, the Task Force for Child Survival, and UNICEF also endorsed the plan. The Administrator of A.I.D. addressed the Ministers of Health attending PAHO's Directing Council Meeting and declared his support for activities to eradicate poliomyelitis from the Region by 1990.

(Resolution no. 22, can be found in Annex B of "Child Survival: Accelerated Immunization Program in the Americas, 1986-1990. A Proposal to the U.S. Agency for International Development").

2.3 SCOPE AND CONTEXT OF THE PROJECT

Key strategies to achieve the goals of the project are: 1) fiscal planning to enable the mobilization of national resources and to meet the recurrent costs of the program, 2) achievement and maintenance of over 80% coverages for each country, 3) surveillance to detect and control outbreaks, 4) strengthened diagnostic services through laboratory support, 5) information dissemination, and 6) a certification protocol to declare the countries and the Region free of indigenous polio transmission, and ongoing evaluation of all program activities.

The project is a strengthening activity for regional immunization

programs. It provides resources for improving surveillance, cold chain, and other components of EPI, and introduces new delivery strategies such as national immunization days. At the same time, the project has had a unique disease eradication component, focusing on eliminating polio in the Americas. The mass-campaign based immunization days, mobilization of many sectors of society and a biological strategy for eradication have promoted discussion and controversy in the international health community. Some of the questions raised include: Do national immunization days augment or undercut the routine delivery of immunizations through health services? Is eradication of wild polio virus feasible? Does it make sense to invest resources in tracking down cases of polio when there are few cases to begin with, and when the use of OPV in routine EPI will have to be continued after transmission has been interrupted, because of the existence of wild poliovirus elsewhere in the world? Several of these questions are more appropriate to an EOP evaluation, however, but some comments are appropriate here.

As this evaluation will show, the disease focus of the project has appeared to galvanize local support in the medical community and facilitated involvement of non-government local groups, such as Rotary Clubs. Since the number of polio cases has been declining, health workers and the community perceive the problem as solvable, so that extra efforts made on behalf of EPI do not seem onerous. Equally, national vaccination days (NVDs) were a response to low levels of immunization coverage. They appear to raise coverage in ways that are not replicable through routine vaccination strategies. Many countries, such as Bolivia, had instituted national vaccination days prior to the onset of the project. NVDs allowed the Ministry to guarantee supplies, upgrade the cold chain and monitor coverage in ways not possible for Bolivia using routine strategies. In addition, the high visibility and PAHO/Washington base of the program appears to encourage Ministry staff. Finally, the adoption of well-defined and achievable goals focused on the eradication of polio favors flexibility in planning and management.

3. PLANNING

3.1. REGIONAL POLIO ERADICATION STRATEGY

This section discusses the relationship of the EPI, Plan of Action and the Polio Eradication Strategy. As the discussion documents, the polio eradication strategy is a means to achieve EPI goals, i.e. are part of the same strategy.

The essential elements of a regional EPI Plan of Action are contained in the report by the PAHO Regional Director to the Directing Council in September 1977 which established EPI in the Americas. Subsequent reports to the Directing Council by the Regional Director have detailed regional program progress and refinement of regional program strategies. These refinements are periodically incorporated into the Medium-Term Program (MTP) for the EPI (the current MTP covers the period 1984-1989 and an update for the period 1990-1995 is in progress). In addition, the PAHO EPI annual budget submission as well as the PAHO internal quarterly work plan detail regional level activities in support of the overall EPI plan of action. The project document entitled "Child Survival: Accelerated Immunization Program in the Americas, 1986-1990" details A.I.D. support, through PAHO, and amendments to the plan of action for the "Eradication of Indigenous Transmission of Wild Poliovirus in the Americas" dated July 1985.

The long-term objectives of the global EPI, endorsed by the PAHO Directing Council in September 1977 are as follows:

- reduce morbidity and mortality from diphtheria, whooping cough, tetanus, measles, tuberculosis and poliomyelitis by providing immunization services against these diseases for every child in the world by 1990 (other selected diseases may be included when and were applicable);
- promote countries' self-reliance in the delivery of immunization services within the context of comprehensive health services; and
- promote regional self-reliance in matters of vaccine production and quality control.

The plan of action for the eradication of poliomyelitis in the Americas emphasizes that "activities related to the eradication of diseases preventable by immunization must be considered within the context of the EPI, directed at the control of the six priority diseases" and explicitly enunciates the following three primary objectives:

- to promote the overall development of the EPI in the region,

to speed up the attainment of its objectives;

- to eradicate indigenous transmission of wild polio viruses in the American Region by the year 1990; and

- to set up a surveillance system at regional and national levels, so that all suspected cases of poliomyelitis are immediately investigated and appropriate control measures to stop transmission are rapidly implemented.

The expected outputs of the EPI are the same as for the PAHO/A.I.D. Project, namely:

- A regional strategy and plan of action developed for the eradication of poliomyelitis by 1990 from the Americas.

- National Plans of Action (NPAs) developed with resources and constraints identified and targets determined.

- functioning, effective epidemiological surveillance and outbreak control mechanisms in place at regional and national levels.

- strengthened national immunization programs and improved polio control activities.

- strengthened Ministry of Health institutional capacity in planning, implementation, monitoring and evaluation of immunization services in general and poliomyelitis in particular.

- access to laboratory facilities by all countries for identification of polio virus types.

- improved strategies and alternatives for increasing immunization services and polio control activities tested in pilot areas.

- interruption of indigenous transmission of wild poliovirus and eradication of poliomyelitis in the American Region by the year 1990.

3.1.1. Findings and Observations

The status of these expected outputs are discussed in detail in this evaluation report. The Regional Strategy and Plan of Action has been developed for the eradication of poliomyelitis from the Americas by 1990 (Annex 9.7, Document 18). Consensus has been reached by all members of the ICC on the EPI policy and strategic approaches in the Americas. The NPAs have been developed in virtually all countries and are discussed in detail in the next section and in the individual trip reports. The status of the

technical outputs are discussed in detail in the technical section of the evaluation report.

The mechanisms listed for review of the progress of the EPI in the Americas (in addition to the mechanisms used to monitor the progress of the National Plans of Action discussed in the next section) include the following:

- annual review of progress by the PAHO Executive Committee and by the PAHO Directing Council;
- regional and sub-regional meetings;
- biennial Technical Advisory Group (TAG) meetings;
- annual EPI Global Advisory Group (GAG) meetings;
- biannual Inter-Agency Coordinating Committee (ICC) meetings;
- continuous disease surveillance activities; and
- tri-annual monitoring of the internal PAHO four-month work plan which helps to monitor the implementation of the regional inputs supporting country programs.

Based on the PAHO Directing Council and other reviews, the EPI Plan of Action for the Americas is periodically adjusted, revising the strategies and approaches to improve the program's progress towards achieving its objectives. Examples are the decision by the Directing Council to establish the target of poliomyelitis eradication by 1990, the decision of the Ministers of the English speaking Caribbean to eliminate measles from that sub-region by 1995, and the intensification of activities to control neo-natal tetanus in the region.

3.1.2. Achievements

A major achievement has been the coordinated planning and implementation of multidonor efforts to enhance EPI. The development of a plan of action for the eradication of indigenous transmission of wild poliovirus in the Americas has served as a stimulus for the world community and can be credited as one of the major reasons for the development of a global goal of poliomyelitis eradication by the year 2000. It is also an important achievement that this plan is integrated, at the Regional level, as a part of an overall in the EPI plan of action that places emphasis on all six of the priority global EPI target diseases (pertussis, tetanus, diphtheria, measles, poliomyelitis and tuberculosis). Another major achievement is the establishment of an Inter-Agency Coordinating Committee (ICC) that developed and now monitors the progress of the plan and provides a mechanism for issuing joint statements to ensure unity of purpose and approaches

among the donor and international organization communities. These plans, and the ICC, are the basis of current EPI activities in the region.

3.1.3. Issues

The only issue involves the importance of maintaining a balance between poliomyelitis eradication activities and EPI activities as a whole. This is more an issue at the country level where there is a great variation in poliomyelitis cases. At regional level, efforts are made to emphasize that poliomyelitis eradication is being undertaken within the context of the EPI as a whole and that activities that emphasize poliomyelitis, such as disease surveillance, are only lead activities that will ultimately serve as a foundation for strengthened surveillance for all EPI target diseases.

At both the regional and the country level the evaluation team judges the polio eradication project to have a net positive effect on country-level EPI activities.

3.1.4. Recommendations

The evaluation team recommends the following:

- The mechanisms for monitoring and review of the regional EPI plan, with the poliomyelitis eradication component, continue as in the past with further refinements and adjustments as new scientific information and strategies are made and developed.

- Continued emphasis be placed, especially at country level, on the balance of the poliomyelitis eradication effort within the context of the EPI as a whole. Poliomyelitis specific activities, such as poliomyelitis disease surveillance, should be expanded (as envisioned in the EPI Policy and Strategic Approaches in the Americas) to include other EPI target diseases (especially measles and neonatal tetanus) as soon as the infrastructure is sufficiently developed.

3.2. NATIONAL PLANS OF ACTION

3.2.1. Findings and Observations:

There are currently 37 National Plans of Action (NPAs) for the EPI in the Americas. Although most of these NPAs have support from the A.I.D. Grant, there are some countries (e.g., Cuba and Nicaragua) that do not involve A.I.D. funds. The NPAs cover countries and territories that contain over 99.5% of the population of Latin America and the Caribbean.

The only countries or territories that do not have NPAs are some of the small Caribbean Islands (e.g., the French speaking territories of Guadalupe, Martinique and French Guyana) and some of the Dutch speaking territories (e.g., Aruba and Curaçao).

The NPAs are developed for the EPI as a whole and are not only related to poliomyelitis eradication. In some countries the NPAs address not only diphtheria, tetanus, pertussis, poliomyelitis, measles and tuberculosis, but also include activities related to the control of mumps and rubella.

According to information available from PAHO/Washington, all 37 countries have reviewed their NPAs for 1988 and 34 have revised their NPAs for 1989 (only Guatemala, Jamaica, and Uruguay have not yet revised their NPAs for 1989). The NPAs for the English speaking Caribbean are reviewed each year during the Annual EPI Program Manager's Meeting, usually held in November of each year. The NPAs for Latin America were reviewed during EPI Program Managers meetings held in 1981, 1984 and 1986. In 1987 the strategy for NPA reviews in Latin America changed to in-country reviews and revisions due to the increased financial resources, the need for inter-agency programming, and to allow for more strict financial and operational management.

Minutes and records of country-level ICC meetings detail minor revisions to the NPAs. These records are not available for most countries at PAHO. However PAHO does maintain records of each annual operating plan. Currently, 34 revised 1989 operating plans are available in PAHO.

At the regional level, PAHO utilizes the following five mechanisms to monitor the implementation of the NPAs:

- 1) -Technical analysis of field reports sent in from PAHO EPI field staff at country level.
- 2) -Field visits by PAHO Washington staff. In general, PAHO Washington staff conduct monthly field visits and most countries are visited by either PAHO Washington or PAHO inter-country staff at least two times a year (even more if the country situation requires more frequent visits).
- 3) -Review of technical documents presented by the countries during regional and sub-regional meetings which are held at least two times a year.
- 4) -Reports or minutes from National ICC Meetings for some countries.
- 5) -Continuous monitoring of financial disbursements made to each country.

NPAs are formally evaluated by multi-disciplinary country-level evaluations or program audits. The timing of these evaluations is determined at country-level. Typically an evaluation team is composed of 8-14 national members and from 4-6 international

members. National evaluation team members usually include personnel from various departments of the Ministry of Health (e.g., Epidemiology, MCH, Planning, and Administration), and international members are usually drawn from PAHO or from neighboring countries. In some countries, personnel from other national agencies or organizations (e.g., Social Security) and personnel from A.I.D., UNICEF or Rotary have also participated in the evaluation process. To date, 35 such comprehensive evaluations have been conducted in the region since 1980 in 24 countries. Only 2 of these have been conducted in the period 1986-1988. This is because in recent years PAHO has placed more emphasis on the evaluation of specific problem areas (e.g., cold chain or surveillance) within a country program.

In the three countries visited by the evaluation team, the following were the highlights of specific findings and observations regarding the NPAs (details of the findings and observations are found in the individual trip reports in the Annexes 9.1.1, 9.1.2 and 9.1.3):

Bolivia:

The Bolivia Plan of Operation for the EPI, which includes the EPI NPA, 1987-1991, was completed in 1987 and the funds were made available in the same year. This Plan was developed as a collaborative effort of the Ministry, PAHO, A.I.D., and UNICEF. PAHO provided the major impetus for developing the plan. The Plan includes immunization with all EPI antigens. The actual discussion of immunization coverage and disease reduction is quite limited. Immunization coverage goals of 100% for each year from 1987-1991 are unrealistic. The issues addressed in the plan include strategies of routine EPI in clinics, brigades for dispersed rural populations, national vaccination days and poliomyelitis blocking campaigns in areas of suspected or confirmed cases. The Plan was extensively revised and strengthened in 1987 and published as the 1988 Plan which included specific targets in terms of the actual numbers of women and children to be immunized. A.I.D. has experienced difficulty in disbursing bilateral monies and, in fact, no bilateral funds were provided to support the Plan activities in 1988. Funds promised by USAID/Bolivia in the Memorandum of Understanding were included in the bilateral A.I.D. grant agreement with the Bolivian MOH for the Child and Community Health Project. However, the grant was not signed until July 28, 1988 and the MOH did not meet initial conditions precedent for disbursement of funds under the EPI component of the project until October 4, 1988. A formal evaluation of the NPA was scheduled for 1988, but could not be completed because of a shortfall of funding through A.I.D./Bolivia.

Guatemala:

The Guatemala EPI National Plan of Action (NPA), 1987-1991, was completed in March 1987 and the funds were made available in the second half of 1987. This Plan was developed as a collaborative effort of the Ministry of Health, PAHO, UNICEF, A.I.D., the Rotary Club of Guatemala, and IDB. PAHO provided the major impetus for developing the NPA. The role and inputs of each participating Agency were detailed through 1988 in the original plan. USAID/G has supported the plan each year with funds from the Immunization and Oral Rehydration Therapy Services for Child Survival Project (No. 520-0339). MOH personnel, in conjunction with USAID health officers, prepare annual action plans for each calendar year in September of the previous year. Therefore, the 1990 and 1991 annual action plans have not yet been prepared. The outputs in terms of targets for coverage with all EPI antigens and disease reduction are clearly defined. However, the methods to verify coverage and disease reduction are not specified. In Guatemala, the NPA emphasizes the six EPI target diseases: measles, polio, diphtheria, pertussis, tetanus, and tuberculosis. The NPA adequately documents resources, but does not analyze the constraints to achieving the expected outputs. The NPA addresses, in a general manner, the improving of the cold chain, strengthening the information system (monitoring immunization coverage is explicitly mentioned in the text, but disease surveillance is only mentioned in tables in the Annex of the NPA), EPI communications (tables in Annex of the NPA), training, improving laboratory support (only specifically mentioning the INCAP laboratory), supervision, vaccination schedules, strategies for 1987, and evaluation. Vaccine quality control, operations research for program problem solving, methods for outbreak investigations and control measures for all EPI target diseases, and the role of immunization coverage surveys are not specifically mentioned. The NPA is, in general, being followed by donors and the national government.

USAID has experienced difficulty in disbursing bilateral monies. The main constraints have been: laborious USAID and MOH procurement regulations, numerous audits and the time these audits have taken from normal counterpart activities, frequent turnover of key MOH staff, poor MOH administrative and managerial capacity, MOH delays in liquidating USAID advances and the resulting delays in the approval of new advances (at the time of this report, for CY89, the MOH had received an advance of US \$548,360 and had liquidated just US \$38,611) In order to improve administrative procedures, the MOH is currently in the process of implementing financial decentralization from central to area levels (11 out of 25

health areas are now officially decentralized). USAID/G is attempting to support this process and has provided Project 520-0339 petty cash funds to all 25 health areas for a more expeditious implementation of Project activities. A total of US \$82,761 in petty cash funds has been provided to the 25 health areas.

The NPA is currently undergoing revision that is not yet finalized. This revision concentrates on Agency inputs in the tables of the original NPA and does not currently explicitly address changes of strategy and the decentralization plan. This is the first revision of the NPA and it is being reviewed and revised with the participation of all Inter-agency Coordinating Committee (ICC) members. A mid-term evaluation of Project 520-0339 is scheduled for August, 1989, and will include an immunization coverage survey, developed by CDC with input from USAID, PAHO, UNICEF, and the MOH.

Honduras:

The Honduras NPA for the EPI, 1987-1991, was completed in April 1987. PAHO and the Division of Epidemiology, MOPH, provided the major impetus for the development of the plan, with inputs from A.I.D., UNICEF and Rotary International. The role and inputs of each participating agency were detailed through 1991 in the original plan by activity and amount of funds. Vaccination coverage and disease reduction targets, other than the goal of achieving poliomyelitis eradication, were not specified. Disease surveillance was addressed only in terms of poliomyelitis. In the text, the NPA specifies the objectives of strengthening the cold chain, strengthening health education and promotion, and providing technical support. In an Annex to the plan, laboratory support, training, supervision, and operations research are addressed. Vaccine quality control, outbreak investigation and control measures for all EPI target diseases, and the role of immunization coverage surveys were not specifically mentioned. The NPA is being followed by donors and the national government. All agencies signed the revised 1989 annual plan in December 1988. The NPA specifically states that the ICC will meet every 3 months to monitor the NPA in collaboration with national technical personnel, but this has not been carried out in practice. There has been no formal evaluation of this NPA and there is no scheduled date for such an evaluation.

3.2.2. Achievements

The major achievements are the development of NPAs in virtually all countries of the region, the fact that these NPAs relate to the EPI as a whole, and that an ICC mechanism has been instituted to monitor and revise the NPA on an on-going basis.

3.2.3. Issues

The major issues regarding the NPAs relate to the frequency of comprehensive program reviews, the timeliness of NPA revisions, and the variability of their completeness and depth.

3.2.4. Recommendations

The following are recommendations regarding NPAs:

- The NPAs should be reviewed prior to approval at PAHO Washington and formal written suggestions sent to Ministries for possible inclusion in the annual revised NPAs. These suggestions would be for the purpose of trying to ensure that all elements of EPI (including, e.g.: vaccine quality control, role of immunization coverage surveys, outbreak investigation and control measures, and operational research agendas) are explicitly included in the text of all plans.

- A schedule of comprehensive program evaluations of NPAs as well as a schedule of focussed problem-specific reviews should be developed for at least two years into the future.

4. MANAGEMENT

Any project which is a collaborative effort among many donors is a challenge to traditional management techniques. The challenge of coordinating this multi-donor / multi-program effort has been met through the use of the Interagency Coordinating Committee (ICC), at the regional and national levels. Many countries which have used the ICC as a management tool for their immunization programs have begun using this innovation to coordinate other public health efforts.

4.1 REGIONAL ICC

The Regional ICC consists of representatives from PAHO, UNICEF, A.I.D., and Rotary International. Since the IDB does not maintain in-country missions, its representatives are not members of the Regional ICC. The Regional ICC has met four times (July 29, 1985 and October 10, 1985 in Bogota, Colombia; in 1987 at an unreported site; and on June 9, 1988, in Washington DC) to discuss policy, review project accomplishments, publish joint communiques and explore new program strategies. The Regional ICC has concerned itself with coordinating policy and demonstrating high-level institutional interest in the program.

4.1.1. Achievements

The Regional meetings of the ICC have been very successful, serving as an opportunity to collate information from the field and tackle special projects. Because of the long track record of the EPI program, consensus among donors about general goals, and the personal ties between participants, this arrangement is highly effective. Documentation of these meetings is excellent and readily available from PAHO offices. Description of these activities will not be attempted here.

The ICC has helped facilitate the timely disbursement of funds within this multi-donor project. Although the technical issues of disbursement will be dealt with in the financial section of this report, it is important to emphasize several issues we have observed at this juncture. In all, in each country, eight donors are involved:

- | | |
|-----------------------|------------------------|
| •A.I.D./Washington | •USAID Missions |
| •UNICEF | •PAHO |
| •IDB | •Country |
| •Rotary International | •National Rotary Clubs |

4.1.2. Issues

Planning and execution of the Regional meetings consumes an enormous amount of staff time and other resources.

4.1.3. Recommendation

A single, regularly scheduled, annual meeting of the Regional ICC should be sufficient through the remainder of the project. The twice yearly schedule of meetings has served well to date, but is no longer necessary. Should a crisis arise which requires the attention of the regional ICC, a special ad hoc meeting could be convened.

4.2 NATIONAL ICCS

The national ICCs coordinate much day-to-day activity and therefore differ significantly from the Regional ICC. Each national ICC develops, updates and monitors the National Plan of Action (NPA) and its execution. The ICC in each country plans its own agendas, schedule of meetings, membership and organization. As a result the function and frequency of meetings, the attendance and documentation of the meetings vary from country to country. Descriptions of the national ICCs in each of the three countries visited highlight these differences.

4.2.1 Guatemala

In Guatemala the ICC meets every three months, and is perceived as a slow and ineffective means of decision making. One reason appears to be the special bilateral relationships created between donors with divergent policies and the Ministry. A.I.D., on the one hand, has placed emphasis on a Child Survival project which focuses on immunization and the control of diarrheal disease, and plans activities that focus on EPI and CDD until 1997. Their project is effected in the Ministry through a main counterpart, Dr. Esteban Andino, project coordinator for Project 520-0339, in the Division of Epidemiology. The USAID mission maintains close, ongoing and active communication with numerous MOH officials and their subordinates.

UNICEF, on the other hand, has traditionally worked closely with the MCH Division in the Ministry, while PAHO has had closer links with the Division of Epidemiology. PAHO has been concerned with the development of organizational infrastructure, and consequently has proposed the integration of these programs into MCH, and local level programming (SILOS). A.I.D. has been concentrating its resources on the bilateral Child Survival Projects, whose purposes are to support and strengthen the Ministry of Health's capacity to manage and deliver Child Survival Services, and includes the development of an improved management information system, improved logistics systems, utilization of modern social communications, significant financial and managerial decentralization to the health area level, improved training and supervision, institutionalization of services and support systems, and closer coordination with other

donors. These different commitments beyond the scope of the Accelerated Immunization Project color the interaction of the ICC, where these strategies are played out.

4.2.2. Honduras

In Honduras the ICC meets even less frequently and only in response to crises. The USAID Mission expressed the desire for PAHO to take a more active role in organizing the ICC, and has recommended to the PAHO country representative that meetings be organized on a bimonthly or quarterly basis, and that meeting agendas be broadened to consider EPI goals. Interestingly, unlike in Guatemala, USAID/Honduras has supported a program of strengthening systems supports within the MOH since 1980, working closely with the contractor, Management Sciences for Health, to augment the Ministry's resources. Working in the same area as PAHO creates inevitable conflicts over strategy and execution, and these conflicts appear to affect the operation of the ICC. The situation appears to be complicated by the relative magnitudes of USAID/Honduras and country resources. Unlike in Guatemala or Bolivia, the MOH depends much more on USAID resources, which makes donor coordination more difficult. If anything, the situation requires a strengthened ICC.

4.2.3. Bolivia

In Bolivia the ICC meets regularly and is composed of high-level members from participating organizations. Membership includes the PAHO Country Representative, the Chief of the MOH Division of Epidemiology, the Head of UNICEF in country or his deputy, the USAID/Bolivia CDC TAGS advisor, and the USAID/Bolivia General Development Officer. Coordination of the Polio Eradication project, EPI and other donor activities are discussed at each meeting. Often the group meets in the homes of participants, and the program serves as a crucial forum for discussing policy. Because of this close collaboration, the Program was able to weather the unavailability of USAID/Bolivia's funding in 1988 due to the late signing of the bilateral agreement. Unfortunately, the ICC does not develop an agenda to circulate before each meeting, nor are minutes taken on a regular basis.

4.2.4. Recommendations

The National ICC is an important institution and should be developed beyond the scope of its original intent. We have identified four recommendations which should help in improving the quality and productivity of each country's ICC.

- 1) Each National ICC should identify a chairperson, perhaps on a revolving basis to a) circulate an agenda of each meeting and b) take notes and circulate minutes of each meeting.

- 2) Each National ICC should meet regularly (at least every three weeks).
- 3) Each regular member of the ICC should identify a deputy to participate in meetings when he/she cannot attend.
- 4) Membership should comprise the highest levels of authority of each institution or organization represented at the ICC.
- 5) Consideration should be given to organizing a separate contractor and PVO council to coordinate activities, where appropriate. This applies especially to countries such as Honduras, where A.I.D. spends a substantial portion of its resources through its contractor.
- 6) PAHO should undertake a review of national ICCs, perhaps through a cable request to each country. The review should request information on frequency of meetings, names of those attending, issues discussed, agenda, minutes and special concerns.

4.3 PAHO MANAGEMENT

PAHO/EPI staff in Washington consists of a Regional Advisor for the EPI program, four professional staff: an Epidemiologist, an Operations Officer, an Information Officer, and one Administrative Officer and four support staff. This unit provides administrative, training, technical services, collects and analyses surveillance data, assists with planning and serves as liaison with other PAHO Administrative staff, and with country PAHO offices.

4.3.1. Achievements

The project takes advantage of the long working relationship between the countries and PAHO's EPI staff. Procurements and fund transfers are executed between PAHO and its member governments (which includes the United States) pursuant to a General Agreement between PAHO and each respective Government. This general agreement and the working relationship between PAHO staff and government authorities is well established and functions smoothly. In addition, the Regional Advisor for the EPI program has been continuously involved in EPI activities for twelve years, providing a sense of continuity and a working relationship unparalleled in international health in Latin America. A consequence is that both day-to-day management and country planning is unusually effective at the Regional level. Responses to country requests are speedy and appropriate. In addition, the project has undertaken the task of modernizing the collection and

analysis of central office and country-level data including the development of new software.

4.3.2. Issues

The office not only manages financial requests, but also collects and processes a relatively large amount of data on coverage, logistics, and disease epidemiology. The project uses short-term and consultant staff to provide support for data storage and retrieval, and has developed a report-generating capability. The project intends to share these skills with country offices. However, even in Washington, these applications are limited to a single computer, with rather limited capabilities. Data entry and analysis, for example, are accomplished on different machines using different file formats. Finally, word processing is limited to Wang micro- and mini-computers, as elsewhere in PAHO. Because of these restrictions, professional staff are often forced to wait while graphs or reports are generated, or wait to access the single capable machine. Country-level computerized applications are not fully supported by the Office and depend on country interest and capabilities. Again, different software and incompatible file formats abound.

4.3.3. Recommendations

- 1) This staff has an exceptionally heavy workload and could be legitimately strengthened through an increase in staff.
- 2) PAHO Washington should develop a local area network (LAN) and upgrade all its machines to handle data management, analysis and report generation. A minimum configuration would include a 80386 CPU-based server, a 300 mb hard-disk, a tape back-up, a high-speed modem and fax, and a networked PC with at least a 80286 CPU on the desk of each professional and each secretary.
- 3) An additional staff person for PAHO Washington would need to be recruited to train a local LAN manager and provide, data management consultant services to the Office and to the field.
- 4) Because of the need to share documents quickly with the field for editing and adaptation Secretarial staff should be trained in data entry and word processing on standard PCs.

4.4 A.I.D.

4.4.1. Findings and Observations

All Missions visited have a substantial commitment to EPI and the project and have invested substantial resources in the program, as demonstrated in the field visits and review of the cables.

Quarterly Reporting requirements do not appear to be onerous. Reports flow from the Ministry to PAHO at the country level, and from there to Washington. PAHO Washington shares these reports with A.I.D./W., which, in turn, distributes the PAHO reports to USAID missions: the July-Dec 1988 report was distributed on 3.8.89; the Jan-Mar 1989 report was distributed on 4.89.

Although the Project was officially authorized on April 14, 1986, activities did not begin until April 16, 1987, when the IDB authorized expenditures of its funds for the project. IDB was the last of the donor participants to sign the agreement: the release of A.I.D. funds was contingent on all five donors signing the agreement. None of the Missions contacted by the evaluation team have expressed concern about the PACD.

During the review of the evaluation Scope of Work with the evaluation team, A.I.D./W expressed concern about the PACD. Since the project began later than planned, target disease eradication dates might not be met. The evaluation team was requested to poll Missions about this issue. The Missions encouraged an extension of the prospect beyond the current PACD. LAC should consider raising the project ceiling to accommodate additional buy-ins. Missions should consider OYB transfers.

Several missions, in their cables, expressed concerns about management:

- 1) The El Salvador Mission expressed unfamiliarity with PAHO administrative and management procedures in the project;
- 2) The Haitian Mission, while acknowledging the efficient management of the project and the smooth functioning of the ICC, mentioned that the Memorandum of Understanding with government officials remains unsigned;
- 3) The Mission to the Dominican Republic expressed concern about the reporting of coverage and financial reporting;
- 4) Jamaica mentioned in its cable that the MOH has had difficulty in accessing project funds, and mentions that only limited support has been provided.

4.4.2. Issues

The budgets for national plans of action include several donor columns. For example, PAHO administered A.I.D./W funds, PAHO funds, and A.I.D. Mission funds are all listed separately. Missions have the option, through the buy-in mechanism, to channel their own EPI efforts through the project or to maintain independent projects. If Missions opt for the former the project ceiling would need to be raised. In both cases, the use of A.I.D./W funds directly or through buy-ins have created extra demands on the time of Mission staff. For example, the Bolivia mission had the Ministry sign a separate agreement on procurement for A.I.D. origin funds in their buy-in. Mission staff felt that this was unavoidable. These demands can be reduced, however, if Missions took more complete advantage of the project:

- 1) the central funds can be administered and supervised by PAHO, requiring only minimal oversight by Mission staff, or
- 2) Mission staff may choose to play only a technical and executive role on the project through the ICC and allow PAHO to handle procurements
- 3) take advantage of the buy-in mechanism for the separate A.I.D./Mission planned EPI contribution.

4.4.3. Recommendations

A.I.D./W should encourage Missions to buy-in, thus greatly alleviating the workload at the Mission level.

MOH's should be encouraged to share financial as well as technical reports with USAID Missions, other donors and technical agencies in each country. Financial data reported to A.I.D./W by PAHO headquarters should be shared with relevant Missions.

4.5 GENERAL COMMENTS

Since the IDB does not have in country missions it is unable to participate at the local level. However, the Bank could do more to inform its staff about the project, and a mechanism should be found for the Bank to play a more active role.

A significant issue that is affecting the project is local disbursement of funds. In Bolivia, for example, understaffing and narrow windows for project obligations due to Brooke-Alexander restrictions make funding problematic at times.

This is a reason for Missions to pursue the buy-in mechanism to support their EPI efforts. This may be the only mechanism that

guarantees, in many settings, effective disbursement of funds. This is a question not only of responsibility to recipients, but also to other donors.

Bilateral programs in Guatemala and Bolivia are closely linked with PAHO, and numerous spin-offs of the relationship exist. In Bolivia, the Chief of Epidemiology, working as a consultant for REACH, helped prepare "Child Survival in Bolivia: Current Status and Priorities for Action" and participated in the design of the new Child Survival Project. The Mission decided, based on these reports to include a separate EPI component to add to resources already committed to the project. At the same time, the Mission decided to emphasize the greatly underserved rural populations of Bolivia and provide innovative new community-based approaches, again with the enthusiastic support of the Ministry, UNICEF, PAHO and other donors.

5. FINANCIAL REVIEW OF OPERATIONS IN BOLIVIA & WASHINGTON

5.1. INTRODUCTION

5.1.1. Purpose of the Financial Review

The main purpose of the financial review was to verify the quality of the records and internal controls used to control the funds conveyed by A.I.D./Washington to PAHO under the Regional Child Survival Accelerated Immunization Program and the Bolivian Mission Buy-In. Due to the fact that the entire review had to be completed within a 15-day period, it was not possible to perform the sort of exhaustive testing of records and processes that would be required in order to provide adequate assurances regarding the integrity of the system and data. Rather, the consultant's review consisted of a series of spot checks of records and reports and their supporting documentation, reinforced by interviews with the personnel responsible for their preparation, maintenance and custody.

The manual and computer ledgers were examined, as were the files containing the supporting documentation. A number of individual transactions were traced to the source documents and the transmission times between locations were noted. These transactions were then traced to the detailed and summary reports sent to PAHO/Washington.

The consultants' conclusions are based entirely on the above procedures, coupled with their professional experience of having reviewed similar systems in many different countries. The PAHO Administrative Officer for the EPI reports that all the donors which direct their contribution through PAHO/Washington are current in meeting their obligations. IDB has provided \$2.2 million of a total commitment of \$5.4 million; A.I.D./W has provided \$16 million of \$20.6 million; the Canadian Public Health Association has provided \$0.7 million of \$1.2 million; and Rotary International has provided \$.45 million of a total commitment to the CoPaho managed-fund of \$1.2 million. PAHO is current on its total project obligation of \$5.7 million. The \$5.0 contribution from UNICEF is provided directly to national governments, and is not accounted by PAHO/Washington. A similar condition applies to Rotary contributions for the purchases of vaccines, and to bilateral contributions from USAID Missions to national programs.

It is important to emphasize that the conclusions drawn as a result of the financial review are based on a limited sample that is inadequate to certify properly such a large and complex system. However, except as noted in the text, the consultants found no other evidence that would suggest that their conclusions might be incorrect.

If A.I.D./Washington requires further assurances regarding the

safeguarding of the funds it has conveyed to the EPI program through PAHO, it should commission a proper examination, employing professional auditors using established audit practices. It is nevertheless the feeling of the consultants that at least in the case of PAHO/Bolivia and PAHO/Washington, that such a review would not be a good use of A.I.D.'s funds, given the cost of such an undertaking.

5.1.2. Overview of A.I.D. Funding for the Program in Bolivia

There are three sources of A.I.D. funding for the EPI activities in Bolivia:

1. The A.I.D./LAC Regional Accelerated Immunization Project Funds (MCD/EPI/020/PG)
2. The USAID/Bolivia mission buy-in to the LAC Regional Accelerated Immunization Project (MCP/EPI/028/PG)
3. USAID/Bolivia bilateral funds

The PAHO office is responsible for disbursing funds under the first two allotments. The third category is the sole responsibility of the USAID mission in La Paz and was not included in the scope of the consultant's review, except to the extent that bilateral activities affect the implementation of the plan of action. Specifically, the adequacy of the USAID/Bolivia mission's financial system was not tested except to verify the timeliness of the disbursement of A.I.D. bilateral funds used to support EPI activities supported jointly by PAHO and its donors.

5.2. SPECIFIC COUNTRY AND AGENCY SCOPES OF WORK

5.2.1. PAHO/Bolivia:

A general briefing was made by the PAHO local representative. Several meetings were held with the accounting staff of the local PAHO office. The purpose of these meetings was to obtain an understanding of the accounting and financial reporting system and evaluate the internal controls in place. An exit meeting was held with the Administrator to discuss the various findings and recommendations.

5.2.2. USAID/Bolivia:

A number of meetings were held with technical, administrative and financial personnel. These various meetings were conducted with the objective of understanding the information requirements of the administrators of the health projects. Similarly, it was necessary to understand the A.I.D. internal reporting mechanisms to insure that data sent by PAHO was presented in a format that can be integrated into the A.I.D. accounting system.

5.2.3 Ministry of Health-EPI/Bolivia:

Meetings were held with EPI administrative and financial personnel in order to document the system used for forecasting the Ministry's needs as well as the mechanism employed to requisition goods and services from PAHO and USAID.

5.2.4. PAHO/Washington:

The findings from the field visit to Bolivia were discussed with PAHO financial and administrative people in Washington. The system used by PAHO/Washington to process data from the field and to convey information to A.I.D./Washington was reviewed.

5.3 REVIEW OF THE PAHO/BOLIVIA SYSTEM

5.3.1. Introduction

The PAHO office is responsible for disbursing funds from the A.I.D./Washington Child Survival Funds (MCD/EPI/020/PG) and the USAID/Bolivia mission buy-in (MCP/EPI/028/PG).

The PAHO office in La Paz maintains two bank accounts, one in U.S. Dollars and the other in Bolivianos. PAHO's Washington office transfers funds into the dollar account according to a monthly forecast prepared by the La Paz office. Funds are converted into Bolivianos according to local needs, as determined by the financial personnel. A telex authorization from Washington headquarters is required before any transfer between

accounts may occur. The funds are converted at the current UNDP exchange rate in effect in the country at the time. However, for financial reporting purposes, all local currency transactions are converted back to U.S. dollars at the official United Nations exchange rate. The difference between the actual bank rate and the U.N. rate is recorded in a "Foreign Exchange Gain/Loss" account.

5.3.2. How local currency transactions are processed

Obligation:

The PAHO office in La Paz sends periodic requests to PAHO/EPI in Washington detailing the requirements according to the PAHO chart of accounts. These requests are based upon the activities and their corresponding budgets as set out in the Plan of Action. When the requests are approved by telex from PAHO/Washington, the obligation is entered in the local PAHO books.

Cash management:

PAHO/Bolivia routinely informs the accounting department at PAHO/Washington regarding the balances in the dollar and local currency accounts. PAHO/Washington will transfer dollars from the U.S., if necessary. If the dollar balance in the Bolivia office is adequate, then PAHO/Washington will simply authorize an appropriate amount of dollars to be converted and deposited in the local currency account.

Disbursements:

Once the Ministry of Health requests have been properly approved by the local PAHO office, a payment voucher is made out and check is prepared in the name of the supplier. In the case of funds provided for the purpose of travel advances, the amount of the disbursement is recorded in a suspense account pending the submission of the supporting documentation. When the actual receipts are submitted by the Ministry, the advance can be closed out and the expense booked.

Reporting:

PAHO/Bolivia has a series of standardized imprest reports that it sends to PAHO on a monthly basis. These reports fall into two categories: summaries of obligations (funds committed but not yet disbursed) and summaries of disbursements (funds which have been spent as the result of the issuance of a check). There are organized in various ways according to obligation and budgetary category.

5.3.3. General findings - PAHO/Bolivia

- The accounting records and books of original entry were found to be current and well-maintained. Supporting documentation is available on-site and is easily retrievable.
- The potential for misuse of funds is minimal due to the internal controls that are in place and the close scrutiny applied to all transactions by members of the accounting staff.
- The accounting system is entirely computerized and there is little potential for lost data due to the fact that all major areas are backed up by a parallel manual system.
- The PAHO management system responds promptly to requests from the Ministry for goods and services.
- The Ministry usually submits documentation for travel expenses on time, so that cash advances are generally not outstanding for more than 30 days.

5.3.4. Specific problems and recommendations - PAHO/ Bolivia

Problem #1: Transmission of the U.S. Dollar exchange rate to PAHO/Bolivia

The accounting department at PAHO/Bolivia does not always receive timely information regarding the latest monthly U.N. exchange rate. This generates extra work for the local accounting personnel, since any time the rate changes without their knowledge, they must make adjustments retroactively in their records to reflect the different exchange gain or loss on their books. This is occurring in spite of the fact that PAHO/Washington sends a monthly telex and memo.

RECOMMENDATION:

PAHO/Washington should send a letter to all PAHO country offices instructing them to contact the accounting department in Washington by phone or telex if they do not receive the official UNDP rates by the first of each month.

Problem #2: Issuance of checks to ministry personnel

It is presently a practice for the PAHO/Bolivia office to issue advance checks payable to the Director of Epidemiology for minor expenses incurred by the Ministry of Health. The expenses are subsequently justified through the submission of appropriate documents. The advances are handled in this manner in order to

expedite project activities that otherwise might be delayed if the checks were routed through the Ministry's central accounting system. However, this method is not consistent with good internal control practices.

RECOMMENDATION:

PAHO/Bolivia should ask the Department of Epidemiology to set up a separate bank account to handle all monies conveyed to them for the purpose of financing project activities. Nevertheless, PAHO/Bolivia should always pay suppliers and employees directly by check and keep payments to the Ministry to an absolute minimum.

Problem #3: Commingling of A.I.D./Washington funds in the plan of action

The Plan of Action does not yet segregate A.I.D./Regional funds from the newly-created USAID/Bolivia buy-in which will soon begin to be disbursed. This has created some confusion at the Ministry of Health at the time they prepare their requests for goods and services to be procured by PAHO. Also, local country personnel in various organizations have been confused by the fact that Plan of Action revisions have not been dated and once separated from their cover document, they are difficult to identify.

RECOMMENDATION:

PAHO/EPI Washington should create a separate column in the plan of action to segregate mission buy-in from other funds. In addition, all future revisions of the Plan of Action should show the date somewhere on each page.

5.3.5. Current status of the PAHO/EPI revolving fund in Bolivia

OUTSTANDING DEBT:

The current amount owed to the fund by the Ministry of Health in Bolivia is \$141,522 and is considered by PAHO to be in arrears. USAID has paid the entire past due amount of \$141,522 with bilateral funds from the Community and Child Health Project.

SERVICE LEVEL:

According to the Ministry, the PAHO revolving fund has provided them with good service over the years. Vaccines are received from the suppliers according to the delivery schedule set out in advance and expiry dates have been with adequate limits. The Ministry is always notified in advance regarding vaccine arrival dates.

PRICES:

The Ministry noted that the prices charged by PAHO for vaccines were considerably lower than those charged by UNICEF. However, UNICEF prices for syringes are much cheaper than PAHO's. Orders for syringes in the amount of \$140,000 have recently been placed with UNICEF.

5.4 REVIEW OF THE USAID/BOLIVIA SYSTEM

5.4.1. Role of USAID/ Bolivia in the financial system

PAHO/Washington and PAHO/Bolivia both disburse A.I.D./Washington funds for the purpose of conducting project activities. The local PAHO office reports its expenditures to PAHO/Washington, who consolidates them with whatever expenditures have been incurred at the central level and this information is used to prepare the quarterly report to A.I.D./Washington detailing the funds it has spent. This report is the basis for A.I.D./Washington to reimburse PAHO/Washington using a letter of credit mechanism established for this purpose. The USAID office has control over the bilateral funds it disburses directly to individuals and suppliers for the purpose of conducting EPI activities. This allows them to generate internal reports that are useful to help them manage the various projects. However, when A.I.D. monies are channeled through PAHO, then the local USAID mission must rely on the combined PAHO quarterly reports and A.I.D./Washington reporting systems in order to obtain detailed line item information about project expenditures.

5.4.2. General Findings - USAID/ Bolivia

- Disbursements for signed agreements from the USAID mission have been timely and sufficient, however, in 1988, the Mission was unable to meet its financial commitments to the project due to the late signing of the bilateral agreement with the MOH.
- The internal budgeting and financial planning mechanism is adequate for conducting the activities contemplated under the Project Agreement.
- Although the structure of the Mission Accounting and Control System (MACS) is unable to capture a useful level of detail for expenses made by PAHO, there are other internal mechanisms that will be able to provide project management with the proper line item classifications.

5.5 REVIEW OF THE MINISTRY OF HEALTH/BOLIVIA SYSTEM

5.5.1. Planning and requisitioning:

The Ministry of Health requests goods or services from PAHO by submitting a document called "Solicitud de Cooperación a la OPS/OMS". This document is signed by the Minister of Health and other officials and is accompanied by a number of pages explaining the activity to be carried out. It is supported by a detailed estimate of the costs to be incurred, by Action Plan activity number and broken down by object of expense. This form is used for a wide variety of requests such as foreign procurement, hiring of local personnel and travel expenses and per diems. If it contains a request for a local purchase that exceeds U.S. \$50.00, the three required quotes from suppliers are attached to the forms.

5.5.2. General findings - Ministry of Health/Bolivia

- Since the buy-in mechanism is new, the Ministry, USAID and PAHO have not yet established a systematic process for the requisitioning of goods and services. However, an ICC meeting has already been scheduled for this purpose. (See item C.)

- There is evidence of a lack of internal communication of financial information within the Ministry itself. There is evidence that some financial reports are not circulated to the proper individuals who require the information.

5.5.3. A proposal for a new system for forecasting MOH/Bolivia requirements

At the next ICC meeting, the Department of Epidemiology of the Ministry of Health intends to present a plan to the donor organizations whereby the 1989-91 budget will be reformulated and a rolling 4-month forecast will be established.

The main features of this plan are:

1. All 1988 A.I.D. funds budgeted for capital equipment will be spent in the early part of 1989, primarily for cold chain equipment.
2. All 1988 A.I.D. funds budgeted for operating expenses will be apportioned over the remaining months of 1989.
3. A separate bank account will be opened to handle all A.I.D. local funds.
4. A four-month forecast by Action Plan activity number will be prepared three times per year. It will serve to inform

PAHO and A.I.D. about the Ministry's requirements well in advance of the actual disbursement dates.

5.5.4. Internal communications within the MOH/Bolivia

The Department of Epidemiology has not been receiving statements detailing the actual expenditure line items for insurance and sea and inland freight for importations made by PAHO on behalf of the Ministry. The Chief of Administration for the Department of Epidemiology at the Ministry of Health has been unable to reconcile the advances paid to PAHO/Bolivia for the purchase of imported goods to the actual expenditures made by PAHO/Washington. These purchases are largely for items outside the EPI program, although a small amount of vaccines have been procured using this mechanism. This situation is creating difficulties for the Ministry in that the funds for these advances are being supplied by the PL-480 program. Failure to provide proper accounting for these monies could ultimately lead to a interruption in the flow of PL-480 funds to the Ministry.

Discussions with financial personnel at PAHO/Washington revealed the existence of detailed accounting records covering all such transactions. A separate control account exists for each country and contains detailed information regarding advances from countries and all monies disbursed in connection with each individual shipment. This information is forwarded to all Ministries at the end of each calendar year.

RECOMMENDATIONS:

1. Since PAHO/Washington has been sending these reports every year, it must be assumed that they have been lost with the Ministry of Health itself. A copy of all transactions made on behalf of the Ministry of Health in Bolivia since 1980 should be sent to the Director of Epidemiology at the Ministry. All future reports should be sent to him, also.
2. PAHO/Washington should circularize all countries with a statement of their current balance and a letter requesting that they contact PAHO if their records do not reflect the same balance.
3. Given the material amounts of the purchases made for the various Ministries of health, PAHO/Washington should consider issuing statements on a quarterly basis.

5.6 REVIEW OF THE PAHO/WASHINGTON SYSTEM

5.6.1. Financial structure

The role of the PAHO/Washington accounting department is to collect and review financial data from all of the local country offices and consolidate it with disbursements and other accounting activity conducted at the headquarters level. It is also responsible for the preparation of reports to donor agencies and management of the organization's cash flow.

5.6.2. Problems related to delays in reporting to A.I.D./Washington

PAHO/Washington has experienced delays in the submission of its official financial reports to A.I.D./Washington. While Amendment 7 discusses the topic of technical reporting and the reporting of financial estimates, it does not specifically address the subject of reporting of actual expenditures. The time requirement for financial reporting of expenditures is specified in the Standard A.I.D. Regulations, which is referred to on p.71 of the grant agreement. SF 269s are to be submitted quarterly, 15 days after the end of the quarter; SF 272s, 30 days after the end of each quarter. As of the date of the evaluation, PAHO/Washington had still not submitted the report covering actual expenditures for the period September-December 1988, despite the fact that the closing for the first quarter of 1989 is only days away. These reports are separate from the technical reports issued by PAHO/EPI, which were found to be timely. A.I.D./W has discussed this reporting requirement at length with PAHO, and have restated that the reporting requirement cannot be changed for individual grantees. The delay in reporting financial results is at least partially attributable to the fact that PAHO/Washington must manually re-input the data they receive from their field offices, in spite of the fact that it is already available on computer in most field offices.

RECOMMENDATIONS:

1. It would be in the best interests of both A.I.D./Washington and PAHO/Washington to meet to agree upon a realistic deadline for the submission of reports of actual expenditures (A.I.D. forms 269 and 1035). The 15-day requirement specified in Amendment 7 is reasonable for technical reporting, but could not be realistically met by the PAHO accounting department for the purpose of financial reporting.
2. PAHO/Washington should examine its internal accounting practices to identify the bottlenecks in preparing the consolidated financial statements to determine whether or not this process could be accelerated in the short run. It

is the consultants' understanding that PAHO currently has a plan to upgrade the computerized central level accounting system, although this will take some time to implement.

5.7 REVIEW OF THE A.I.D./WASHINGTON SYSTEM

5.7.1. Financial structure

The financial role of A.I.D./Washington is generally limited to the processing of and approval of requests for payment from PAHO/Washington. As mentioned earlier, the PAHO local office sends a detailed report to PAHO Washington, which after being recorded in the PAHO general ledger, serves as the basis for the preparation of USAID form 269. It is this form that informs A.I.D./Washington about the expenditures realized on its behalf by the local PAHO office and when approved by A.I.D., allows PAHO/Washington to draw against letters of credit established for the purpose of funding EPI activities. A.I.D./Washington will subsequently send a copy of forms 269 and 1035 to the local mission so that they can record the expense on their books.

5.7.2. General findings

- Payments to PAHO/Washington by A.I.D./Washington have been made on a timely basis.
- The expenditure data provided to the USAID/Bolivia Mission by the A.I.D. Financial Management Office has not been forwarded on a timely basis and is not sufficiently detailed to be useful for project management purposes.
- The continued reliance of host country governments on external funding for critical activities suggests that financial self-sufficiency for EPI activities is still a long way away.

5.7.3. Specific problems and recommendations - A.I.D./Washington

Problem #1: Financial reporting by A.I.D./Washington

Based on the Mission's past experiences with other similar letter of credit financing arrangements, the A.I.D./Washington Financial Management Office is very slow in communicating back to USAID/Bolivia the amount of funds expended locally by international organizations. Based on documents examined, it would appear that it is not unusual for this process to take six months. Since this is the only way that the local mission is officially informed of the amount of funds expended by PAHO, this delay could result in unnecessary increases in the size of the pipeline on the missions's books. Furthermore, the Form 269 which used for communicating this amount only lists the total amount of the expenditures made by PAHO, so the information

contained on these forms is not useful to USAID/Bolivia for the purpose of managing their project activities.

RECOMMENDATION:

The A.I.D./W Financial Management Office should investigate why it takes so long for a copy of Form 269 to be routed back to the local mission. If this delay can be resolved, then the Financial Management office should also forward a copy of the support provided by PAHO to A.I.D./Washington. This support sheet groups expenditures according to A.I.D. budget categories and would be very useful to the local mission in updating their project expenditure records.

In the event that the large volume of transactions processed at the Financial Management Office does not permit prompt processing of Form 269, an alternate arrangement should be made. The simplest method would be for A.I.D./Washington to write a letter to PAHO/Washington instructing them to send a copy of the supporting schedules for Form 269 directly to the USAID/Bolivia Mission. Although this would not be an official document which the mission could record on its books, it would be sufficient for them to book an accrual, thus decreasing the amount of the pipeline and at the same time providing useful financial information to the project managers.

5.8 LONG-TERM REVOLVING FUND SUSTAINABILITY

Due to the very diverse and intangible nature of many host country government contributions, it is difficult to make any sweeping generalizations about any given government's financial commitment to the EPI effort. However, the current status of the PAHO/EPI fund may provide some insight into the liquidity positions of various governments. There are presently 38 countries participating in the revolving drug fund. As of January 31, 1989, PAHO/Washington had suspended future procurements for 15 of them, because they are in arrears in their payments for previous shipments. It is the opinion of PAHO management that these past due amounts do not constitute a threat to the solvency to the fund because countries requiring vaccines will always find a way to pay for them. For example, in Bolivia, the local USAID mission has agreed to pay the \$141,522 of existing debt to the PAHO revolving fund using bilateral Community and Child Health funds only. In the Dominican Republic, the USAID mission will be paying for the procurement of new vaccines, but not the existing debt of \$108,000 which has been on the books for over 4 years and which is being slowly paid down by the Ministry.

Even though the revolving fund is not actually at risk, it is important to recognize the implications of continuing widespread

donor support of vaccine procurement. The important role of external inputs raises some issues regarding the various ministries' ability or will to underwrite the cost of their own EPI programs. Because of the critical importance of having an uninterrupted supply of vaccines to support the momentum of immunization activities, the donor organizations must be prepared to accept the fact that they will be called upon for emergency financial support in the foreseeable future because some EPI target diseases (e.g. tetanus) will always require continued immunization coverage.

6. TECHNICAL REVIEW

6.1 OBJECTIVES OF THE TECHNICAL REVIEW

The primary objectives of the Accelerated Immunization Project in the Americas, as summarized in the Plan of Action (July 1985), are as follows:

1. to eradicate poliomyelitis due to the wild polio virus in the Americas by 1990;
2. to expand coverage for other EPI vaccines; and
3. to contribute to sustainable infrastructures for the delivery of primary health care.

The technical review focused on the implementation of the key strategies adopted in the Plan of Action and the progress towards achieving the above objectives. These key strategies, which were accompanied by technical components to ensure their success, are as follows:

1. Mobilization of national resources, especially as it relates to technical cooperation among countries.
2. Achievement and maintenance of vaccine coverages of greater than 80% of the target population (children < 1 year of age).
3. Surveillance activities adequate to detect promptly all cases of poliomyelitis, with thorough investigations and institution of control measures.
4. Laboratory diagnostic services available to all countries, to permit laboratory verification of reported probable cases of poliomyelitis.
5. Information dissemination within countries and throughout the Region.
6. Identification of research needs with subsequent funding for execution.
7. Development of a certification protocol to declare the countries and the Region free of indigenous transmission.
8. Evaluation of all ongoing program activities.

6.2 INFORMATION SYSTEMS

PAHO has developed a phased plan for the introduction of new information systems at the Regional and Country levels for the surveillance of polio and the other EPI target diseases. Phase I was the development of the Polio Surveillance and Analysis System (PSAS) at the Regional level with subsequent installation of the system in all countries. A weekly telex to PAHO/Washington provides limited data on each polio case for use at the Regional level, including: case number, sub-Region, country, state, municipio, week of onset, week of report, and classification.

Currently, all EPI diseases are reported on a weekly basis by all countries to PAHO/Washington on a report form, completed by the country epidemiologists, in which all communicable disease data are reported. Data on cases of polio, measles, diphtheria, pertussis, tetanus (all countries), and neonatal tetanus (all countries) have been compiled for the period 1977-1988. The data are compiled monthly. In addition, coverage data for all EPI antigens are reported every three months directly to the Regional EPI office. Coverage data by municipio are available locally within each country but are not computerized. PAHO is making plans to move toward automatic data transmission for its disease reporting.

Phase II has been the development of a system designed to enhance polio surveillance called the Polio Eradication Surveillance System (PESS). This system will be installed later this year in all 11 "Group I" polio-infected countries (Brazil, Peru, Ecuador, Venezuela, Colombia, Bolivia, Honduras, Guatemala, El Salvador, Mexico, Haiti) and in certain other countries with substantial numbers of probable cases. Currently, every three months each country sends detailed data on each polio case which are then compiled on PESS at Regional headquarters. These data include: age, sex, name, date investigated, number of doses of vaccine, date of last dose, clinical findings, sites of paralysis, presence or absence of residual paralysis, laboratory data, and final classification. In the future, PESS data will be sent by diskette or telexed. Beginning in 1989, cases will be compiled and analyzed by date of onset rather than date of report.

Phase III will consist of adding tetanus and measles to the PESS system. Work on this phase is scheduled to begin in the summer of 1989 when Marc Strassburg, an epidemiologist from the Los Angeles County Health Department who has been a consultant for the development of the PSAS and PESS systems, joins PAHO headquarters for one year. As part of Phase III activities, PAHO is also working in collaboration with EPI/Geneva to adapt a Regional level computerized EPI information system (CEIS) to the requirements of PAHO. This CEIS would include coverage levels for all antigens, disease surveillance for all EPI target

diseases, results of coverage surveys, and a survey of training activities.

6.2.1 Disease Surveillance

Technical assistance has been provided at both the sub-Regional and country levels. At the sub-Regional level, 8 epidemiologists funded by PAHO (2 of the 8 from the A.I.D. Regional grant monies) serve as technical advisors on an international basis in the following countries: Bolivia, Brazil, Colombia, Guatemala, Haiti, Mexico, Perú, and Trinidad (CAREC). At the country level, 12 PAHO-funded (from IDB monies) EPI National Consultants serve as epidemiologists/technical advisors in Dominican Republic, Jamaica, Paraguay, and 9 of the 11 countries currently classified as polio-infected (Brazil and Haiti do not have National Consultants).

Standardized procedures for poliomyelitis surveillance have been developed at the Regional level and implemented in all countries. Implementation was facilitated by the development of the "Polio Eradication Field Guide" in 1987 and its wide distribution at the country level. The guide has undergone one minor revision in 1988. This field guide is a very useful manual which presents information on the major clinical aspects and differential diagnosis of polio, procedures and criteria for laboratory diagnosis, standard case definitions and case classification system, a flow chart of procedures for case investigation, guidelines for outbreak investigation and control, criteria for evaluating the quality of polio surveillance at the local and country level, and several other subjects. Model forms for case investigation, line listing of suspected and probable cases, outbreak control documentation, and monitoring of completeness of weekly reporting from reporting sites, are provided in the appendices of the guide. All countries are currently using the same case definitions for suspected, probable, and confirmed polio cases.

Surveillance activities for the other EPI target diseases have, in general, not been intensified. However, this was not the main objective of the project, which was polio-specific in its emphasis. Plans have now begun to apply the surveillance capability that has been gained in polio to improvements in surveillance for the other EPI diseases. Efforts are underway to identify the risk areas for neonatal tetanus in the Region, and the recent adoption by the countries of the English-speaking Caribbean of a target of measles elimination by 1995, together with plans to improve the quality of measles surveillance in this sub-Region. The current situation with regard to surveillance of EPI target diseases suggests the need for a follow-on donor-funded Regional project to apply the functional gains in surveillance capability from polio towards improving surveillance of all EPI target diseases.

6.2.2 Immunization Coverage

PAHO has encouraged the development of health information systems at country levels capable of providing national EPI managers monthly data on immunization coverage, by EPI antigen, by dose, by municipio, and by age group (children <1 year of age, children 12-23 months of age, and children >23 months of age, as well as doses of TT in women of childbearing age). To date, 12 countries have such a health information system in place. The accuracy of coverage percentages in children under 1 year of age is variable depending on many factors, including: accuracy of census information to establish correct denominators, completeness and variability in completeness of reporting from all immunization sites, variability in inclusion of vaccines provided through the private sector or through social security health systems, variability in reporting of doses administered to children over 1 year of age as being given to children under 1 year of age, and variability in reporting of doses administered during national vaccination days (sometimes only doses administered to children under 5 years of age are reported without separating out doses administered to children under 1 year of age). The accuracy of coverage percentages in pregnant women and women of childbearing age is also variable due to the first three reasons stated above, as well as for other reasons, including: vaccination policy (whether or not it is recommended that a dose of TT be administered in each subsequent pregnancy) and the inability to determine percentage coverage in an age group of women 15-44 years of age with women constantly entering and leaving the group. For these reasons, immunization coverage surveys are also encouraged by PAHO for countries to confirm or better ascertain true immunization coverage in selected areas of concern. To date, 82 such immunization coverage surveys have been done in 12 countries.

At regional level, PAHO requests reports on immunization coverage for the entire country from national EPI managers every three months. Currently, 5 countries routinely report coverage in this manner and all countries report on at least an annual basis. PAHO encourages that such reports on immunization coverage include both numerator data on the number of doses administered as well as percentage coverage, however some countries (7 countries) provide only percentage data. These data are routinely entered into a computerized EPI information system (CEIS) that is capable of providing reports and graphics in a standard format (excluding or selecting data on different groups of countries, other than the standard subregional groupings, is not currently a feature of the system). The CEIS is currently undergoing revision that will provide for additional flexibility in the near future. Some countries in the region have a policy for only two doses of OPV in children under 1 year of age (Paraguay, Cuba, Brazil, and Mexico) and the regional statistics

treat these two doses as though they were three doses for calculations of coverage in the region (with suitable notation on the graphic output). The accuracy of regional immunization coverage statistics reflects the problems of accuracy noted at the country level above.

6.3 PROGRESS OF THE PROJECT

Great progress has been made since the primary objectives of the Accelerated Immunization Program were first enunciated in the PAHO Plan of Action in 1985, and later in the proposed Scope of Work to A.I.D. entitled "Child Survival: Accelerated Immunization Program in the Americas, 1986-1990" (p.5). Progress has been particularly noticeable in the two years since full funding of the Project occurred. These objectives and the key strategies to achieve them, were summarized at the beginning of the Technical section of this report. We restate the objectives here, and the following section will review progress toward achieving these goals. The objectives are:

1. to eradicate poliomyelitis due to the wild polio virus in the Americas by 1990;
2. to expand coverage for other EPI vaccines; and
3. to contribute to sustainable infrastructures for the delivery of primary health care.

6.3.1 Progress Toward Polio Eradication

In 1988, a provisional total (as of March 16, 1989) of 361 confirmed cases of polio were reported in the Region of the Americas (Annex 9.2, Table 1), with 155 probable cases still awaiting final classification. This provisional total represents a 61% decline from the 930 confirmed cases reported in 1986. The impact of intensification of surveillance activities which began in 1986 can be seen from the 48% increase in notification of cases of acute flaccid paralysis Region-wide that occurred in 1986 compared to 1985, and the 77% increase in notification in 1988 as compared to 1985 (Annex 9.2, Table 1). Since surveillance was strengthened in 1986, there has been a progressive decline in the incidence of confirmed polio cases reported in the Region (Figure 1). It is also interesting to note that for the first time during 1988 there appeared to be a dampening or virtual disappearance of any large spikes of polio activity throughout the year in the Region (Figure 2). The disappearance of such activity suggests that transmission of polio has been substantially suppressed. However, the relative contribution of the large polio outbreak in Brazil in 1986 to the marked seasonality observed during that year cannot be assessed

from this graph. Figure 3 shows the breakdown of confirmed polio cases by country in 1987 and 1988.

Further evidence of substantial progress in interrupting circulation of wild poliovirus in the Region is that, as of March 16, 1989, only 26 wild poliovirus isolations had been made during 1988 and 1989 (Table 2). Another indicator of substantial progress toward polio eradication can be drawn from data on the proportion of "municipios" (counties or districts) with confirmed polio cases in the Region during 1985-1988 (Table 3). Only 1.7% of the nearly 14,000 municipios in the Region have reported confirmed cases of polio in 1988. This suggests that circulation of wild poliovirus is limited and focal within the Region, confined to a low proportion of geopolitical units.

6.3.2. Quality of Polio Surveillance, Case Investigation, and Outbreak Control

Several criteria have been developed for evaluating the quality of poliomyelitis surveillance. Some of these criteria are shown in Table 5. None of the data include those from Brazil.

An interval of less than 15 days between onset of paralysis and notification of a probable case of polio has been established as an indicator of the timeliness of reporting. On a Region-wide basis, the proportion of probable polio cases reported within 14 days of onset of paralysis increased from 41% in 1987 to 59% in 1988 (Table 5). Data to evaluate the quality of surveillance according to this indicator are now being collected in most countries (Table 5.2). For those countries that have been collecting such data for more than one year, the trend, in general, is toward an increase in proportion of probable cases reported within 14 days after onset of paralysis. A similar trend of improvement has occurred with regard to the proportion of reporting centers ("reference centers") reporting the presence or absence of new cases on a weekly basis (Table 5.1).

In addition to prompt and complete reporting of probable polio cases, another aspect considered important to the success of the polio eradication effort is the prompt institution of appropriate outbreak control measures, referred to as "bloqueos." These generally consist of vaccination of contacts of the case(s) and young children in the surrounding community. Several countries have begun compiling data on the proportion of probable cases for which the interval between notification and the initiation of control measures was less than 24 hours (Table 5.3), an indicator of excellent outbreak control response time.

The final indicator for which Region-wide data are currently available concerns the extent and promptness of collection of stool specimens among probable polio cases (Table 5). The data show evidence of improvement in the rate of collection of stool

specimens from cases between 1987 (68% of cases) and 1988 (76% of cases). Furthermore, there has been improvement in the timely collection of stool specimens, defined as collection within 7 days of onset of paralysis. In 1987, 24% of cases had timely collection of stool specimens, while in 1988 the rate was 38%. Data by country for this indicator are found in Table 5.4.

Efforts are being made to increase the number of countries collecting data on other indicators of the quality of surveillance and case investigation. These indicators include: percentage of probable cases with a convalescent serum obtained, percentage of probable cases with an interval between the first and second serum specimens of between 21 and 35 days, and percentage of probable cases with a follow-up examination within the period 60-70 days after onset of paralysis. These parameters, as well as those for which adequate data are already available, will be useful in assessing continued improvements in the surveillance system.

6.3.3 Immunization Coverage

Region-wide immunization coverage data for all EPI antigens have been available since 1978. These data should be interpreted with caution because of changes over time in the methodology for assessing coverage, in the personnel doing the assessments, and in the population estimates used as denominators in the calculations. The team had insufficient time to make an in-depth critical assessment of these possible biases. However, several general statements can be made about the existing data.

In the Region of the Americas, vaccine coverage rates for oral polio vaccine (OPV) are shown in Figure 4. The high coverage rates reported during 1980-84 are probably artifactually elevated because Mexico and Brazil, where coverage estimates have been consistently difficult to measure, both reported 99% coverage with OPV during the period 1980-84 (Brazil during 1980-83; Mexico during 1981-82 and in 1984). It is difficult to believe in the validity of these reported data, which skew the Region-wide coverage rates upward. To address this problem, a separate analysis that excluded Brazil and Mexico was necessary. Therefore, we examined secular trends in OPV coverage by individual sub-Region for the Andean countries, Central America, the Southern Cone countries, The English-speaking Caribbean, and the Latin Caribbean (Figure 4.1). All sub-Regions, with one exception (the Southern Cone), exhibited an upward trend of coverage with OPV3 during 1980-88.

Figure 4.2 shows that if all sub-Regions are combined, with Brazil and Mexico excluded, a steady increase in OPV3 coverage has occurred between 1980 and the peak in coverage in 1988. Because of the problems that exist with the reported OPV coverage data for Mexico and Brazil during 1980-84, it is reasonable to

conclude that the Region-wide OPV3 coverage estimate of 82% in 1988 probably represents an all-time high in OPV coverage.

Region-wide coverage rates for DPT vaccine (Figure 5), measles vaccine (Figure 6), and BCG vaccine (Figure 7) all progressively increased between 1985, when the Project Plan of Action was devised, and 1988. Coverage rates for all of these antigens have reached record high levels in 1988. Provisionally, the estimated coverage rates for 1988 are as follows: OPV3 (82%), DPT3 (59%), measles (64%), and BCG (72%).

These data suggest that the Project has been beneficial in terms of increasing coverage levels with all EPI antigens, not just with OPV. Nonetheless, with the exception of OPV and possibly BCG vaccine, the goal of achieving coverage levels of greater than 80% in children younger than 1 year of age for all EPI antigens is unlikely to be reached by 1990.

6.3.4. Disease Reduction for Other EPI Target Diseases

The project appears to have served as a wedge to improve the delivery of other antigens. In addition, the growing success with poliomyelitis has suggested the potential eradication of other diseases.

Regional data on reported cases of measles, diphtheria, pertussis, tetanus, and neonatal tetanus for 1974-1987 are shown in Figures 8-12. There have been declines in the reported incidence of all these diseases since the early 1980s. However, the currently poor quality of surveillance for these diseases limits any further interpretation of these data.

The consistent decline in reported measles in the English-speaking Caribbean during the period 1982-1988 (Figure 13), together with already high existing coverage levels with measles vaccine, has led the countries of this sub-Region to recently adopt the goal of measles elimination in the sub-Region by 1995.

6.3.5 Sustainability of the Progress Achieved to Date

An important question is to what extent the Project's initiative on polio eradication has acted as a leading wedge to strengthen the overall EPI program and its sustainability. While there exists the view by some that there has been undue focus on the eradication of polio relative to the other EPI target diseases, the Project has unquestionably contributed substantially to improvement of the EPI program as a whole. This is exemplified by: 1) The achievement of record high levels of coverage in 1988 with DPT vaccine, measles vaccine and BCG vaccine; 2) The development and implementation of an operational research agenda under the direction of the TAG (see Section 6.6); 3) Training and experience gained at the country level with setting up a system

for active disease surveillance and case investigation; 4) Activities in progress to develop a plan of action and a research plan to address the recently adopted goal by the countries of the English-speaking Caribbean to eliminate measles in the sub-Region by 1995; 5) Efforts underway to identify the risk areas for neonatal tetanus in the Region.

Poliomyelitis is a highly visible disease, a substantial cause of childhood morbidity in much of the world, and is capable of capturing public attention and resources. As such, it is an appropriate choice for an initiative to strengthen the EPI program in the Americas and has served that purpose well. In spite of the advances noted, however, the evaluation team was concerned that the current level of effort and financial resources being invested in the EPI program would not yet lead to sustainability by the conclusion of the Project in 1990-91. Because of this, the evaluation team felt that increasing attention should be given henceforth toward achieving a balance of poliomyelitis eradication effort within the context of the EPI as a whole. A follow-on Regional project with A.I.D. as a participating donor would ensure that this goal could be realized.

6.4 LABORATORIES

Several major project objectives have been achieved to date. A Manual for Laboratory Diagnosis of Poliomyelitis has been developed and distributed. Six sub-Regional laboratories have been selected as part of a network of reference laboratories for polio. They are located in Argentina, Brazil, Colombia, Guatemala, Mexico, and Trinidad (CAREC). Staff from these laboratories have received training in DNA probe technology at the Centers for Disease Control, which is serving as the central reference laboratory for the network.

A two-day meeting of representatives from the network of poliovirus reference laboratories was held immediately before the most recent TAG meeting in November 1988. A copy of the summary report of this meeting is attached (Annex 9.3). The Regional laboratory network is now functional and a third round of quality control proficiency testing is underway under the supervision of the CDC laboratory. The major obstacles now impeding the role of the laboratories are operational in nature. These include: a relatively low proportion of patients with polio are having stool specimens collected and sent to the laboratory in a timely fashion, problems still exist with the proper transport of specimens and provision of complete information to the laboratory, and in many laboratories the time interval between receipt of the specimen and provision of results is too long to be useful from a programmatic standpoint.

6.5 NATIONAL VACCINATION DAYS (NVDS)

The strategy of holding at least two NVDS annually is recommended by the TAG for those countries that are endemic for polio (Group I countries). During 1988, at least two NVDS were held in 10 of 11 Group I countries (all except Ecuador, where only 1 NVD was held) (Table 6). Figure 14 shows the secular trend during 1980-1988 in number of countries holding NVDS. Brazil was the only country that held NVDS during 1980-82. Since 1982, the number of countries holding NVDS has increased from 3 in 1983 to 14 countries in 1988.

NVDS have been found to be an effective strategy for increasing the delivery of immunizations under conditions of low population coverage rates, a typical circumstance in the early years of the EPI (1977-82). The NVD strategy addresses the two principle constraints that are presumed to limit increases in coverage: client access to immunization services, and household knowledge and understanding of the benefits of immunization. Under campaign conditions, the availability of vaccination services is dramatically, if temporarily, increased. At the same time, a broadly diffused information campaign provides information to households about the dates and sites of the campaign, and the benefits of the service. A household's appreciation of the benefits of immunization is presumed to lead to demand for, and utilization of vaccination services.

By 1984, the most mature country programs, reaching 50% of the region's children, had achieved coverage rates of 50% or greater for DPT and measles, and 80% for polio. Under these conditions, where routine services are sufficiently mature to potentially attain EPI coverage targets, the issue of the cost-effectiveness of the NVD strategy becomes significant. For example, USAID/ El Salvador reports that the MOH has determined that recently implemented community-based approaches are more cost-effective, and reach a higher proportion of the target population than Vaccination Day campaigns. An analysis of the cost-effectiveness of the three National Vaccination Days held in Colombia in 1984 determined that the costs per immunization via routine service (\$2.60) and for the national campaign (\$3.60) were roughly comparable. A cost-effectiveness study of the first year of the Ecuadorian PREMI campaign (1986) estimated that the MOH routine services delivered approximately 2,280,000 doses in an annual period at a unit cost of \$0.29, compared to 2,005,000 doses delivered during the three week-long campaign phases, at a unit cost of \$0.83. The estimated cost per fully vaccinated child (FVC) was \$4.77 for routine services, and \$8.13 for the campaign. The analysis also offered the estimate that 20% of the total coverage of 64% was attributed to doses administered during the campaign phases. This higher cost per FVC under campaign conditions has been reported from a number of settings.

This cost differential needs to be interpreted with caution. A number of observations can be offered:

1) While routine services are clearly more cost efficient in the delivery of individual doses and completed immunization cycles, it is not clear the degree to which the populations served by passive routine services and campaign services are different. It is reasonable to assume that some households which have utilized routine services may substitute NVD services; households may find the campaign condition more convenient and more reliable. In this case, the household finds the campaign condition more cost-effective. More significantly, campaigns do recruit households which had previously been non-users of routine services. It is reasonable to expect any strategy which recruits households missed by routine services to be more costly. Properly, the comparison is best made between the efficiency of various outreach strategies, as was reported in El Salvador, rather than between an outreach strategy and routine services.

2) The number of fully vaccinated children is an important program output, and provides useful information on program efficiency in the comparison with the raw indicator of numbers of individual doses. The campaign is a poor programmatic strategy for achieving completed immunization cycles, principally because of the limitation of only two to four events per year. An alternate indicator, to complement measures of the number of fully vaccinated children, would be a measure of the numbers of new recruits attributed to routine vs campaign services.

3) Most NVD campaigns invest in a broadly diffused IEC activity. Intensive IEC activity, especially combined with the mobilization of health and non-health sector resources during a campaign has the potential to alter individual and normative values. The effects of these changes in household knowledge and awareness about immunization on subsequent utilization of routine services has not been estimated. It is reasonable to expect that some households which were introduced to immunizations during a campaign would subsequently complete the vaccination cycle through the use of routine services.

There are thus gaps in current knowledge of client behavior in a context in which both campaign and routine services are available. It is important that research be conducted concerning all these issues, including cost-effectiveness studies, operational research concerning routine vaccination delivery, NVDs, and their interaction; community-based research on popular response to vaccination programs and NVDs, and intervention research to test new communication and delivery strategies.

6.6 TECHNICAL ADVISORY GROUP, RESEARCH AGENDA AND IMPLEMENTATION

6.6.1. Role and Composition

An EPI Technical Advisory Group (TAG) was established in 1985 to advise PAHO on the acceleration of the EPI and the eradication of indigenous transmission of wild poliovirus in the Americas. The TAG is responsible for guiding the implementation of the Regional Plan of Action, advising on technical components of the program, assisting in the identification of research needs, overseeing the progress of studies, and reviewing the progress of the program. The TAG is composed of five experts in the fields of immunizations and polio (Annex 9.4).

6.6.2. Review of Meetings Held

The TAG meets approximately twice a year to review progress and problems encountered in order to make recommendations that will enable the acceleration program to successfully achieve its objectives. The first meeting of TAG was held in Washington, D.C. on July 11-12, 1985, to discuss and revise the Plan of Action, which was subsequently approved by the XXXI PAHO Directing Council in September 1985.

The second meeting was held in Mexico City on January 15-17, 1986, and included 10 participants from Mexico and 14 participants from PAHO, UNICEF, Rotary International, and CDC. Several poliomyelitis subject areas were discussed at this meeting. A review of polio surveillance procedures carried out in Brazil during 1983-85 was presented, highlighting problems encountered with case definitions (including the difficulty of separating Guillain-Barré syndrome cases from polio cases), diagnosis and case investigation, containment activities, and laboratory support. It was reported that 7 laboratories in the Region had been visited to observe methods of poliovirus isolation and identification, a laboratory manual was in preparation, and two 2-week courses had been conducted for virologists: one on isolation procedures and serology (Rio de Janeiro, June 1986), and the other on molecular virological techniques (Atlanta, September 1986). Representatives from Mexico made presentations on their polio surveillance system, national vaccination days, and national DTP and measles vaccination programs. Polio case definitions were refined, attention was drawn to the fact that the 80% level of polio vaccine coverage in children <1 year of age applied to each geopolitical unit down to the smallest level (municipio), and difficulties encountered in establishing and maintaining laboratory support were addressed.

The third meeting was held in Brasilia, Brazil on September 10-12, 1986. At this meeting progress was noted in several respects. PAHO had initiated a weekly bulletin to chart progress

in polio case notification and classification. The EPI program managers from the Latin American countries had met to develop plans collectively. Evaluation of laboratory capabilities had been completed and PAHO had sponsored the first international course on laboratory techniques in Rio de Janeiro. A field manual for polio surveillance had been developed and improved surveillance techniques were in the process of being evaluated in two countries. Reports from 5 countries were presented, but attention was focused on a large outbreak of type 3 polio in the Northeastern Region of Brazil. Surveillance and operational issues were again discussed in detail, as well as the recommendation by the TAG to designate a limited number of laboratories (5-6) in the Region to receive support to allow them to function as international resources. The TAG also recommended that PAHO coordinate development of a formal research agenda to be presented at the next meeting.

The fourth meeting was held in Antigua, Guatemala on April 20-22, 1987. Note was taken of the fact that the project was now completely funded, and of the contributions of the various donor agencies, including A.I.D. Between the third and fourth meetings, a course on polio surveillance and case investigation attended by representatives from 14 countries was held in Brazil, 6 sub-Regional reference laboratories had been identified (Argentina, Brazil, Colombia, Guatemala-INCAP, Mexico, and Trinidad-CAREC), and 4 sub-regional epidemiologists had been hired by PAHO (for Brazil, Honduras, Mexico, and Haiti). A procedural guide for poliovirus and enterovirus isolation, identification and serology was developed. It was also noted that the Central American countries had held a joint National Vaccination Day on April 5. It was recommended that vaccination coverage be monitored by municipio and a list prepared of all municipios with coverage levels <80%. Research priorities identified for the ensuing 18 months included studies of missed opportunities for immunization, review by each country of practices regarding contraindications to immunization, establishment of techniques to evaluate the effectiveness of National Vaccination Days, studies comparing the immunogenicity of the new Edmonston-Zagreb (EZ) measles vaccine with Schwarz-type vaccines given to infants at 6 and 9 months of age, evaluation of the magnitude of neonatal tetanus in the Americas, and establishment of methods for surveillance of pertussis.

The fifth meeting was held in Lima, Peru on January 26-28, 1988. Attending the meeting were 70 participants from 13 countries and representatives of the donor agencies. Reports from 11 countries were presented, focusing on the Andean sub-Region. In addition, summary reports were given by each of the network laboratories. Research issues were addressed with reports on EZ measles vaccine, OPV field trials in Brazil with different vaccine formulations, a study of missed opportunities for vaccination in Nicaragua, a polio lameness survey in Costa Rica, review of the

Regional strategy for neonatal tetanus control, an update on IPV, and a study of facial paralysis in Brazil caused by agents other than polio. Note was made that overall coverage for OPV had reached 81% Region-wide in 1986, and reported polio had declined in 1987 compared to 1986. Continued problems with the collection and processing of laboratory specimens were highlighted. The TAG reviewed the status of the NVDs and continued their strong endorsement of them and of the need to include multiple antigens. Prospective studies of the clinical and epidemiologic characteristics that differentiate GBS from polio were recommended.

The sixth and most recent meeting of TAG was held in Buenos Aires, Argentina on November 1-4, 1988. Representatives of the laboratories in the Regional network held a 2-day meeting immediately before the TAG meeting. Attending the meeting were 107 participants from 17 countries and the donor agencies. Country summaries from 10 countries were given. Several retrospective studies of GBS were presented and a committee composed of neurologists and epidemiologists at the meeting made recommendations for increasing the specificity of the polio case definitions in use. Reports on EZ measles vaccine, neonatal tetanus, and missed opportunities for immunization demonstrated that other EPI target diseases were also the subjects of discussion. It was announced that the countries of the English-speaking Caribbean had set a target of measles elimination by 1995 (using combined measles-mumps-rubella vaccine). Major progress toward polio eradication was evidenced by the fact that only 10 wild poliovirus isolations had been made during 1988 and fewer than 2% of the nearly 14,000 municipios in the Region had reported cases of polio during 1988.

The agenda for the next meeting in Colombia in July will include an extensive review of the measles elimination plan for the English-speaking Caribbean.

6.6.3 Summary

The above review lends strong support to our Team's view that the TAG has ably fulfilled its responsibility to provide direction on the implementation of the Regional EPI Plan of Action. TAG meetings have been held according to the original plan of approximately two meetings per year. The meetings have provided an opportunity to review and discuss progress on the project, and to identify problems encountered so that solutions to these problems could be devised. The meetings have promoted a spirit of collaboration among country representatives and established a forum for sharing of ideas, experiences, and techniques among the participants. Discussion of issues regarding other EPI target diseases have occurred on a regular basis. As the project has

evolved, the TAG has periodically identified priorities for operational research which have been the basis for reports given at subsequent meetings

6.7 EPI COMMUNICATIONS

While communication issues are not emphasized in the original project proposal from PAHO sent to A.I.D., health communications are an important component of any primary health care immunization program, especially those that apply the National Vaccination Day strategy. Approximately 8% of the total external contribution to the Polio Eradication initiative has been allocated to communication and education support activities.

A NVD approach that has seen wide use in the region is the social mobilization strategy articulated by UNICEF. This approach emphasizes the deployment of intense government and non-government resources to directly provide immunizations, and provide logistics support, for a period of short duration. Communication strategies supporting these campaigns may have relatively simple objectives, for example, to inform households of the dates and sites of campaign activities.

Alternatively, campaigns may have elaborate objectives, and utilize a variety of communication channels. The communication plan which supported the PREMI effort in Ecuador during the years 1985-88, developed with support from A.I.D. technical assistance, integrated a continuous mass media program with a broad emphasis on community based inter-personal communication. Message content alternated between campaign phase information about dates and sites and intra-campaign phase messages concerning the benefits and principles of immunizing household children. A range of target audiences were identified, from the primary audience of mothers, to the secondary audiences of health workers, school teachers, and community leaders.

The social mobilization strategy has not been well evaluated for long-term effects on household knowledge and behavior. As the objectives of the communication component in this strategy are generally short-term, to increase participation in the campaign, the effectiveness of the communication activity is usually measured in terms of participation rates.

There are few examples in the region of national-level health communication programs which integrate the objectives of the EPI with other disease control activities, and deliver health information to households across mass media and inter-personal channels. The PREMI program is a particularly strong example, and has been intensively evaluated. PREMI monitoring data has been compared to data collected under the WHO 'Missed Opportunities' protocol in the following table.

Failure to have Children Immunized

	Ecuador 1986(3)	Kenya 1980(4)	Burma 1983(4)	Malawi 1980(4)	Zambia 1984(4)
Percent fully immunized	66.4	46.0	62.0	29.0	35.0
Sample Size	153	92	604	424	96
OBSTACLES¹	35.0	31.5	27.0	65.5	62.5
Lack of vaccines	7.0	14.1	1.0	13.9	.3
Inconvenient time	43.1	9.8	10.4	10.8	13.5
Location too far away	17.0	5.4	-	16.3	12.5
LACK OF INFORMATION²	65.0	55.4	67.5	27.4	20.6
On program and benefits	28.4	8.7	-	8.3	6.4
On immunization dates	4.1	2.2	15.6	2.1	1.0
On number of doses	14.7	21.7	4.2	8.0	-
Child Ill	40.2	22.8	11.1	7.3	9.4

1 OTHER OBSTACLES: cost (money and travel), immunization not given, waiting time, family problems

2 OTHER LACK OF INFORMATION: on contra-indications, fear of side-effects, no faith in immunization

3 SOURCE: Immunization Coverage Analysis, REACH, John Snow, 1987

4 SOURCE: WHO/EPI/GAG/87

A number of relationships are suggested by this table. Where coverage rates are low, as in Malawi and Zambia, mothers of unimmunized children report obstacles associated with the performance of the health system as the primary reason for the failure to immunize. These obstacles include factors such as the unavailability of vaccines, the inaccessibility of immunization services and clinic protocols which may contra-indicate vaccination if the presenting child is ill. Alternatively, under conditions of high coverage, which characterizes many countries in Latin America, the smaller proportion of households with unimmunized children report factors associated with information deficits as the primary barrier to participation.

Health communications, then, must be applied with objectives specific to the operating context, and in support of overall EPI and Polio Eradication program goals. In the many pockets of population in the region which have very low coverage rates, it would be inappropriate, for example, to expect an intensive communication campaign to result in increased coverage rates without a coincident improvement in the availability of immunization services. On the other hand, as EPI programs continue to improve the reliability and reach of service coverage, it is important to use communications to create demand for the expanding service, or to re-ignite demand that had been suppressed by poor health system performance.

Of concern to maturing EPI programs are the households that remain non-participants in areas of good service coverage. Where there is evidence that these households hold beliefs that are in opposition to immunization, or that they perceive risks associated with immunization, there is a clear need to provide educational outreach. Door-to-door recruitment of non-participating households, as has been attempted in Guatemala, may be a more effective communication strategy in this context than the reliance on a broadly targeted mass media campaign.

Many of these issues need to be investigated. Primary to this investigation is the exploration of community response to these communication strategies. The contribution of communications to the increases in immunization coverage in the region under EPI and the Polio Eradication Project have been important. If maturing programs are able to reduce the reliance on the campaign strategy, the specific role of communication support will need to be transformed. But it is reasonable to suggest that communication and education activity will continue to be important in maintaining household participation in immunization programs, and especially in recruiting those sub-groups which continue to be non-participants.

6.8 TECHNICAL SUMMARY

6.8.1 Achievements

1. Great progress has been made in less than two years since full funding of the Project was received in April 1987. There has been progress toward achieving all three primary objectives: a) to promote the overall development of the Expanded Program on Immunization (EPI) in the Region, 2) to eradicate indigenous transmission of wild polioviruses in the region of the Americas by the year 1990, and c) to set up an effective polio surveillance system at Regional and national levels.
2. Reported polio in the Region has declined by 61% during the period 1986-1988; a provisional total of 361 cases was reported in 1988, which represents a record low. Available evidence suggests that the circulation of wild poliovirus is limited within the Region. If the current level of effort is sustained, and special efforts are directed toward the remaining foci of infection, there is every reason to think that polio eradication will be achieved.
3. The project has served as a wedge to improve the delivery of all EPI antigens, not just with OPV. Immunization coverage levels in children younger than 1 year of age have reached an all-time high for all EPI antigens, which include OPV3 (82%), DPT (59%), measles (64%), and BCG (72%).
4. Polio surveillance systems are in place and functioning well in all countries of the Region.
5. The Regional laboratory network is now functional and a third round of quality control proficiency testing is underway under the supervision of the CDC laboratory.
6. The consistent decline in reported measles in the English-speaking Caribbean during the period 1982-87, together with the already high existing coverage levels with measles vaccine, has lead the countries of this sub-Region to recently adopt the goal of measles elimination in the sub-Region by 1995.
7. Efforts are underway to identify the risk areas for neonatal tetanus in the Region.
8. The TAG has ably fulfilled its responsibilities to provide direction on the implementation of the Regional Plan of Action. TAG meetings have been held according to the original plan of approximately two meetings per year. Discussion of issues regarding other EPI target diseases

have occurred on a regular basis. As the project has evolved, the TAG has periodically identified priorities for operational research which have been the basis for reports given at subsequent meetings.

6.8.2 Issues

1. Despite substantial progress toward polio eradication, the possibility exists that one or a few countries will still have indigenous polio at the end of 1990. The countries at highest risk are Brazil, Peru, Mexico, Guatemala, Colombia and Haiti.
2. With the exception of OPV and possibly BCG vaccine, the goal of achieving coverage levels of greater than 80% in children younger than 1 year of age for all EPI antigens is unlikely to be reached by 1990.
3. The major obstacles now impeding the role of the laboratories are operational in nature. These include: a relatively low proportion of patients with polio having stool specimens collected and sent to the laboratory in a timely fashion, problems still exist with the proper transport of specimens and provision of complete information to the laboratory, and in many laboratories the time interval between receipt of the specimen and provision of results is too long to be useful from a programmatic standpoint.

6.8.3 Recommendations

1. The Project has been beneficial to date for the overall development of EPI in the Americas. Continued support by A.I.D. through a direct grant to PAHO at the Regional level will be important to maintain the success of the polio eradication effort, and to provide the central organization and aggressive leadership to achieve, as well as document, disease reduction for the other EPI diseases.
2. New support is needed to apply the functional gains in surveillance capability towards improving surveillance of all EPI target diseases. Of highest priority are measles and neonatal tetanus.
3. Further efforts are needed to assess the specificity of the current case definitions being used for polio. Collaboration among epidemiologists and neurologists should be encouraged. As the incidence of polio declines in the Region, the need for a more specific case definition increases.

4. The PAHO Region is 5-10 years ahead of other WHO Regions outside of EURO and many of the strategies for the global eradication of poliomyelitis will be developed based on the lessons learned in PAHO. However, because of this advance, countries in PAHO will be subject to the reintroduction of wild poliovirus from sources outside of the region for several more years. Although data suggest that such reintroduction of wild poliovirus may not be that common an occurrence, it is expected that it will be important for heightened surveillance and high immunization coverage to continue for at least the next ten years.
5. Measles and neonatal tetanus control: PAHO should be encouraged to continue to strengthen their efforts to focus on disease reduction for those diseases that are major killers of children, measles and neonatal tetanus. Increasing amounts of time on the part of the TAG and ICC, as already envisioned by PAHO, should be spent on developing appropriate strategies for control or elimination of these diseases -- within the context of strengthening the EPI as a whole.
6. Tetanus toxoid (TT) coverage of women of childbearing age: Accurate estimates of TT coverage are difficult to obtain for the reasons mentioned in Section 6.2.2 and even coverage surveys may be difficult in the absence of retained maternal records of TT immunization. Newer methods have been developed in conducting serosurveys for anti-tetanus antibodies using finger-stick filter paper techniques and it is suggested that PAHO may wish to consider using such techniques in selected areas to better estimate TT coverage. This would also provide more experience with the method to help determine its appropriate place within the EPI.
7. Although the Fifth PAHO TAG meeting held in January 1988 reviewed the status of the National Vaccination Days (NVDs) and continued their strong endorsement of them and the need to include multiple antigens, it is recommended that the NVDs continue to be followed through operational research to better understand: (i) how they can best contribute to sustainability; (ii) how and when they should be phased out in favor of all immunizations being provided by the routine program; (iii) how best to integrate all EPI antigens in NVDs; and (iv) how best to focus NVDs on the main target group of children under one year of age.
8. Decentralization of program implementation and monitoring: it is recommended that the efforts of decentralization of the EPI continue in such a manner that it strengthens the

capacity of EPI managers at local and municipio levels to develop and implement immunization strategies appropriate to the constraints and opportunities in their areas. An integral part of this process is the developing of an improved capacity of these managers to monitor immunization coverage and disease surveillance through data analysis at the local level.

9. Technical Recommendations of the EPI TAG on the site of the injection: PAHO in conjunction with the Regional and country-level ICCs, may wish to consider encouraging countries to change (or at least conduct operational research on the feasibility of changing) the preferred site of injection of DPT from the buttocks to the lateral thigh as recommended by the EPI TAG.
10. DPT vaccine shortfall in Mexico: It is understood that one reason for a less than expected increase in Regional DPT coverage was due to the shortfall of DPT vaccine in Mexico. It is recommended that surveillance of vaccine supplies, especially in large population countries, be closely monitored and that mechanisms be established to ensure an uninterrupted flow of vaccine.

7. CONCLUSIONS

The Accelerated Immunization Project, with its emphasis on surveillance for polio and prompt response to an episode of necessity focuses on a high risk approach to health delivery. The effective use of this strategy, however, depends on reliable routine vaccination programs. In fact, countries have opted for national vaccination days, which, in turn require a great deal of community participation, both on the part of service organizations and vaccination volunteers, and on the part of recipients. Such a strategy on prima facie evidence alone might not have seemed viable, but overall acceptance and the effectiveness of this approach appears to be high.

As evidenced by several of the questions in the original scope of work, however, concerns have been raised about its sustainability. Both questions of audience fatigue, and the credibility of the program arise. In addition, as cases decline, an increasing level of effort of the polio eradication component of the program will have to be spent in fewer and fewer countries and municipios. The impact of these concerns and developments needs to be addressed by the program now, at the level of operational and policy research.

8. SUMMARY OF RECOMMENDATIONS

PLANNING

Regional Polio Eradication Strategy

- 1) The mechanisms for monitoring and review of the regional EPI plan, with its poliomyelitis eradication component, continue as in the past with further refinements and adjustments as new scientific advances and strategies are made and developed.
- 2) Continued emphasis be placed, especially at country level, on the balance of the poliomyelitis eradication effort within the context of the EPI as a whole. Poliomyelitis specific activities, such as poliomyelitis disease surveillance, should be expanded (as envisioned in the EPI policy and strategic approaches in the Americas) to include other EPI target diseases (especially measles and neonatal tetanus) as soon as the infrastructure is sufficiently developed.

National Plans of Action

- 3) The NPAs should be reviewed at PAHO Washington and formal written suggestions sent to Ministries for possible inclusion in the annual revised NPAs. These suggestions would be for the purpose of trying to ensure that all elements of EPI (including, e.g.: vaccine quality control, role of immunization coverage surveys, outbreak investigation and control measures, and operational research agendas) are explicitly included in the text of all plans.
- 4) A schedule for at least two years into the future of comprehensive program evaluations of NPAs as well as a schedule of focussed problem-specific reviews should be developed.

MANAGEMENT

Regional Inter-Agency Coordinating Committees

- 5) Substantial effort and cost go into Regional ICC meetings. A single annual meeting of the Regional ICC should be sufficient through the remainder of the project. The twice yearly schedule of meetings has served well to date, but is no longer necessary. Should a crisis arise which requires the attention of the regional ICC, a special ad hoc meeting could be convened.

National Inter-Agency Coordinating Committees

- 6) The ICC is an important institution and should be developed beyond the scope of its original intent. We have identified four recommendations which should help in improving the quality and productivity of each country's ICC.
 - 6.1) Each National ICC should identify a secretary to a) circulate an agenda of each meeting and b) take notes and circulate minutes of each meeting.
 - 6.2) Each National ICC should meet regularly (at least every three weeks).
 - 6.3) Each regular member of the ICC should identify a deputy to participate in meetings when he/she cannot attend.
 - 6.4) Membership should comprise the highest levels of authority of each institution or organization represented at the ICC.
 - 6.5) Consideration should be given to encouraging the participation of important USAID contractors and PVOs. This applies especially to countries such as Honduras, where A.I.D. spends a substantial portion of its resources through its contractor.
 - 6.6) PAHO should undertake a review of national ICCs, perhaps through a cable request to each country. The review should request information on frequency of meetings, names of those attending, issues discussed, agenda, minutes and special concerns.

PAHO/Washington

- 7) The staff at PAHO/Washington has an exceptionally heavy workload and could legitimately be strengthened through an increase in staff.
- 8) PAHO/Washington should develop a local area network (LAN) and upgrade all its machines to handle data management, analysis and report generation. A minimum configuration would include a 80386 CPU-based server, a 300 mb hard-disk, a tape back-up, a high-speed modem and fax, and a networked PC with at least a 80286 CPU on the desk of each professional and each secretary.
- 9) An additional staff person for PAHO Washington would need

to be recruited to manage the LAN and provide data management consultant services to the Office and the field

- 10) Secretarial staff should be trained in data entry and word processing on standard PCs.

A.I.D./Washington

- 11) A.I.D./W should encourage Missions to buy-in to the project, thus greatly alleviating the workload at the Mission level.
- 12) MOH's should be encouraged to share financial as well as technical reports with A.I.D., other donors and technical agencies in country. Financial data reported to A.I.D./W by PAHO headquarters should be shared with relevant USAID Missions.

Inter-American Development Bank

- 13) Since the IDB does not have in country missions it is unable to participate at the local level. However, the Bank could do more to inform its staff about the project, and a mechanism should be found for the Bank to play a more active role.

FINANCIAL

- 14) PAHO/Washington should send a letter to all PAHO country offices instructing them to contact the accounting department in Washington by phone or telex if they do not receive the official UNDP rates by the first of each month.
- 15) PAHO/Bolivia should ask the Department of Epidemiology to set up a separate bank account to handle all monies conveyed to them for the purpose of financing project activities. Nevertheless, PAHO/Bolivia should always pay suppliers and employees directly by check and keep payments to the Ministry to an absolute minimum.
- 16) PAHO/EPI Washington should create a separate column in the plan of action to segregate mission buy-in from other funds. In addition, all future revisions of the Plan of Action should show the date somewhere on each page.
- 17) Since PAHO/Washington has been sending these reports every year, it must be assumed that they have been lost with the Ministry of Health itself. A copy of all transactions made on behalf of the Ministry of Health in Bolivia since 1980 should be sent to the Director of Epidemiology at the Ministry. All future reports should be sent to him, also.

- 18) PAHO/Washington should circularize all countries with a statement of their current balance and a letter requesting that they contact PAHO if their records do not reflect the same balance.
- 19) Given the amounts of the purchases made for the various Ministries of Health, PAHO/Washington should consider issuing statements on a quarterly basis.
- 20) It would be in the best interests of both A.I.D./Washington and PAHO/Washington to meet to agree upon a realistic deadline for the submission of reports of actual expenditures (A.I.D. forms 269 and 1035). The 15-day requirement specified in Amendment 7 is reasonable for technical reporting, but could not be realistically met by the PAHO accounting department for the purpose financial reporting.
- 21) PAHO/Washington should examine its internal accounting practices to identify the bottlenecks in preparing the consolidated financial statements to determine whether or not this process could be accelerated in the short run. It is the consultants' understanding that PAHO currently has a plan to upgrade the computerized central level accounting system, although this will take some time to implement.
- 22) The A.I.D. Financial Management Office should investigate why it takes so long for a copy of Form 269 to be routed back to the local mission. If this delay can be resolved, then the Financial Management office should also forward a copy of the support provided by PAHO to A.I.D./Washington. This support sheet groups expenditures according to A.I.D. budget categories and would be very useful to the local mission in updating their project expenditure records.

In the event that the large volume of transactions processed at the Financial Management Office does not permit prompt processing of Form 269, an alternate arrangement should be made. The simplest method would be for A.I.D./Washington to write a letter to PAHO/Washington instructing them to send a copy of the supporting schedules for Form 269 directly to the USAID/Bolivia Mission. Although this would not be an official document which the mission could record on its books, it would be sufficient for them to book an accrual, thus decreasing the amount of the pipeline and at the same time providing useful financial information to the project managers.

TECHNICAL

- 23) The Project has been beneficial to date for the overall development of EPI in the Americas. Continued support by A.I.D. through a direct grant to PAHO at the Regional level will be important to maintain the success of the polio eradication effort, and to provide the central organization and aggressive leadership to achieve, as well as document, disease reduction for the other EPI diseases.
- 24) New support is needed to apply the functional gains in surveillance capability towards improving surveillance of all EPI target diseases. Of highest priority are measles and neonatal tetanus.
- 25) Further efforts are needed to assess the specificity of the current case definitions being used for polio. Collaboration among epidemiologists and neurologists should be encouraged. As the incidence of polio declines in the Region, the need for a more specific case definition increases.
- 26) The PAHO Region is 5-10 years ahead of other WHO Regions outside of EURO and many of the strategies for the global eradication of poliomyelitis will be developed based on the lessons learned in PAHO. However, because of this advance, countries in PAHO will be subject to the reintroduction of wild poliovirus from sources outside of the region for several more years. Although data suggest that such reintroduction of wild poliovirus may not be that common an occurrence, it is expected that it will be important for heightened surveillance and high immunization coverage to continue for at least the next ten years.
- 27) Measles and neonatal tetanus control: PAHO should be encouraged to continue to strengthen their efforts to focus on disease reduction for those diseases that are major killers of children, measles and neonatal tetanus. Increasing amounts of time on the part of the TAG and ICC, as already envisioned by PAHO, should be spent on developing appropriate strategies for control or elimination of these diseases -- within the context of strengthening the EPI as a whole.
- 28) Tetanus toxoid (TT) coverage of women of childbearing age: Accurate estimates of TT coverage are difficult to obtain for the reasons mentioned in Section 6.2.2 and even

coverage surveys may be difficult in the absence of retained maternal records of TT immunization. Newer methods have been developed in conducting serosurveys for anti-tetanus antibodies using finger-stick filter paper techniques and it is suggested that PAHO may wish to consider using such techniques in selected areas to better estimate TT coverage. This would also provide more experience with the method to help determine its appropriate place within the EPI.

- 29) Although the Fifth PAHO TAG meeting held in January 1988 reviewed the status of the National Vaccination Days (NVDs) and continued their strong endorsement of them and the need to include multiple antigens, it is recommended that the NVDs continue to be followed through operational research to better understand: (i) how they can best contribute to sustainability; (ii) how and when they should be phased out in favor of all immunizations being provided by the routine program; (iii) how best to integrate all EPI antigens in NVDs; and (iv) how best to focus NVDs on the main target group of children under one year of age.
- 30) Decentralization of program implementation and monitoring: it is recommended that the efforts of decentralization of the EPI continue in such a manner that it strengthens the capacity of EPI managers at local and municipio levels to develop and implement immunization strategies appropriate to the constraints and opportunities in their areas. An integral part of this process is the developing of an improved capacity of these managers to monitor immunization coverage and disease surveillance through data analysis at the local level.
- 31) Technical Recommendations of the EPI GAG on the site of the injection: PAHO in conjunction with the Regional and country-level ICCs, may wish to consider encouraging countries to change (or at least conduct operational research on the feasibility of changing) the preferred site of injection of DPT from the buttocks to the lateral thigh as recommended by the EPI GAG.
- 32) DPT vaccine shortfall in Mexico: It is understood that one reason for a less than expected increase in Regional DPT coverage was due to the shortfall of DPT vaccine in Mexico. It is recommended that surveillance of vaccine supplies, especially in large population countries, be closely monitored and that mechanisms be established to ensure an uninterrupted flow of vaccine.

ANNEX 9.1 REPORTS OF FIELD VISITS**Annex 9.1.1. Bolivia Trip Report**

Trip notes of Carl Kendall and Don Rudisuhle,
Bolivia, March 5-9, 1989

(Financial and technical sections have been incorporated
into the main report)

1. LIST OF PERSONS CONTACTED**PAHO/BOLIVIA:**

Dr. Juan Manuel Sotelo, Country Representative
Dr. Airton Fischmann, Consultant, EPI
Sra. Rosa Maria de Welles Cardoso, Regional Advisor, EPI
Sr. Humberto Godoy, Administrative Methods Consultant
Sr. Daniel Gutierrez, EPI Consultant
Snra. Pamela Landivar, Head, Data Processing Department
Snra. Katty Santinez, Chief Accountant
Sr. Estaban Ugrinovic, Chief Administrator

USAID/BOLIVIA

Mr. Paul Hartenbarger, General Development Officer
Dr. Joel Kuritsky, Technical Advisor, Child Survival
Mr. John Davison, Controller
Ms. Isabel Elias, Financial Analyst
Ms. Brenda Smith, Financial/EDP Manager

MOH/BOLIVIA

Dr. Jorge Mariscal, Director of Epidemiology
Dr. Percy Halkyer Belaunde, Polio Eradication Supervisor
Sr. Alberto Coca, General Administrator
Sr. Angel Rios, Chief of Financial Administration

3. BACKGROUND

Bolivia is a country of extremes. At 1.1 million km², with a population estimated at 6.8 million inhabitants, it is one of the largest and least populated countries in Latin America. Bolivia has three sharply differentiated ecological zones: the high plateau, above 3500 meters, valleys, ranging from 1000 to 3500 meters, and plains stretching down into the Amazon. *0% of the

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population is found in the first two zones. 35 % of population is found in urban areas (2000+). These ecological zones are roughly reflected in a tripartite division used by the Ministry: concentrated urban, rural, and dispersed rural. Blessed with great mineral resources, it is also the poorest country in Latin America. From 1980 to 1984 its GNP actually declined 16%, while public debt rose 29%. In 1984 overdue payments on the national debt equalled 700,000,000 dollars, or one-third of the gnp. Significantly, a large sector of the population is indigenous, and have been significantly marginalized from benefits.

The economic crisis in Bolivia has affected the provision of health services. Between 1980 and 1982 expenditures in health declined by 80%. This low level of support has meant deteriorating services throughout the public sector. Reliable data on imr are available only from a 1976 census, reporting an average of 167/1000 live births, ranging from 97/1000 in urban areas to 210/1000 in rural areas. A current estimate of infant mortality nationally is 200/1000 live births, maternal mortality is estimated to be 48/10000 live births (MPSSP). Malnutrition is widespread. In 1981 the National Institute of Food and Nutrition established that 46.5% of children less than 5 were malnourished.

Causes of infant mortality are: acute diarrheal disease, acute respiratory disease, perinatal problems, immunizable diseases, and malnutrition. Diarrhea constitutes one third of all reported diseases. Immunizable diseases constitute 11.4% of mortality in children less than five years of age (1981).

Bolivia is organized into 11 regions (Unidades Sanitarias), subdivided into districts and areas. In all, there are 1300 health establishments in the country. Due to the economic crisis staff have had to be fired and health posts closed throughout the country since 1983. Partially in response to this crisis, the health system has reverted to immunization days. The reasons are several. First, limited resources could be collected for these weeks of intensive activities; second, vaccines, cold chain equipment and other elements of a successful program could be purchased, refurbished, and supplied for these special events. In short, the routine delivery of vaccines was felt to be too inefficient to be effective.

Against this background the Polio Eradication project began in 1986. Although formal bilateral funding of the project by A.I.D. did not begin until July 28, 1988, the project began the task of organizing services, recruiting staff and focusing on disease. Unlike normal EPI programs which focus on coverage, Polio Eradication focuses on disease, and this seems to increase the interest of health workers in the program. Traditional service delivery activities revolve around norms of health worker conduct, and around the management and administration of services. Frequently there is a great deal of variation from health post to

health post because a great deal of autonomy is granted each physician and graduate nurse in the system, as an incentive to stay involved, and because of the recognition of important cultural, ecological and economic differences from site to site. Normative rules for performance are proposed more as guidelines than rules.

In this system motivational incentives are very important, and a focus on disease, as opposed to administration and management does seem to galvanize participants.

An example is provided by the Technical Committee in Cochabamba, Bolivia, a volunteer group consisting of local physicians who have become enthusiastic supporters of the program. They participate in examinations of suspected cases of polio and in surveillance activities in major hospitals and health posts, and attend a weekly meeting. Because of the important role these members play in community activities they also serve to drum up support for vaccination days.

Disease outcomes also serve as an important test of the immunization program because they are the only test of success, besides serology, of the vaccinations. Polio is the lead vaccine of the antigens since it is the easiest to protect and administer and because the flaccid paralysis that accompanies symptomatic cases is very visible.

Planning

Development of the National Plans of Action.

Although concerns have been expressed that the Polio Eradication Project might rob resources from EPI, in Bolivia, in fact, PEP is explicitly part of EPI, and included in planning documents that are called "Plans of Operation for the Expanded Programme of Immunization". The original planning document used as the base for planning the PEP is entitled "Proyecto programa ampliado de inmunizaciones - Bolivia 1987 - 1991" (PEP 1). PEP 1 only includes polio eradication as a correction on page 6 of the document. Clearly polio eradication is a complement to an EPI strategy, not a substitute. Included in the document are plans for immunizing with all EPI antigens. The document serves mostly as a budget for program activities, and a pledge by donors. The actual discussion of coverage and disease rates is quite limited. The failure of realistic planning is found in coverage goals (p. 8) where coverages for 1987-1991 are targeted for 100% in each year. The strategies proposed for the project include routine EPI in clinics, brigades for the rural dispersed populations, vaccination days, and polio blocking campaigns where suspected cases are found. The project received PAHO approval and funding in 1987.

The plan was extensively revised and improved in 1987, and

published as the 1988 plan. The plan provided concrete targets expressed in terms of the actual numbers of children and women to immunize in the target population: 664,034 children less than 3,

253,886 women between the ages of 15-44 and BCG for entering school children. As in the previous plan, donors are mentioned.

USAID is cited for its contribution of PL-480 title III monies which began to be used in October 1978 to finance EPI activities.

The 1988 plan describes 1987 activities:

- 1) reinforcing routine EPI;
- 2) conducting three social mobilizations for vaccination (all EPI antigens) and dosing 2-9 year-olds with mebendazole.
- 3) a Training class for cold chain technicians
- 4) purchase and installation of a central cold room for vaccine storage.
- 5) purchase and distribution of 77 refrigerators, 15 freezers, 800 cold boxes, 2000 insulated containers, 1 refrigerated truck, 800 thermometers and 13 cold chain maintenance tool kits.
- 6) training of 43 polio surveillance specialists
- 7) active case finding for polio in Cochabamba, Santa Cruz, and Tarija
- 8) conducted a national coverage survey with the following results:

Polio	61.6%
DPT	60.2
Sarampion	65.8
BCG	76.3
TT	3.2
- 9) reported that coverage for the information system had improved slightly.

The report also includes a detailed description of expenditure of PL480 funds, and shows, for 1988, total expenditures of A.I.D./W at \$28,000, and USAID/B \$1,388,000. In fact, the bilateral contribution by USAID/Bolivia using bilateral project funds was \$0. for 1988. The fact that the program was able to continue in spite of this shortfall of funds is a testament to the ICC and close donor collaboration.

4. MANAGEMENT

The national team is just recently in place, following the recruitment of a national polio eradication supervisor, and the retirement and recruitment of another national EPI program manager. It is too early to evaluate their effectiveness. The Regional

Advisor slot is open, following the departure of Sra. Welles de Cardoso, due to illness. Three additional staff have been recently hired for the country, and are serving in the three major population centers of La Paz, Cochabamba, and Santa Cruz. Prior to recruitment, project activities were limited to planning, provision of equipment, training and cold chain improvement. National authorities claim that all three activities were successful. Training, and the provision of two-way radios, for example, produced increased reporting. The cold chain was extensively reviewed, and a national computer-based inventory was conducted. As national staff noted, prior purchases of cold chain equipment were conducted on an ad hoc basis. Now purchases can be planned.

The ICC has been active since its inception and involves representatives of all organizations except Rotary. Rotary in Bolivia has depended on Central Rotary funding and with the absence of administrative capacity and dependent on volunteer support, has not been reliable. The MOH commented, however, that Rotary was opening an office for the project in La Paz and hoped to develop the administrative capacity to support the project.

5. FINANCES (included in report)

Annex 9.1.2 Guatemala Trip Report

Trip notes of Dr. Robert Kim-Farley and Dr. Stephen Cochi to Guatemala, March 5-8, 1989

1. PURPOSE:

To conduct a field visit to Guatemala to review the Expanded Program on Immunization (EPI) as part of the mid-term evaluation of the Agency for International Development (A.I.D.) and Pan American Health Organization (PAHO) Project entitled "Child Survival: Accelerated Immunization Program in the Americas, 1986-1990".

2. PERSONS CONTACTED:

Ministry of Health:

Dr. Otto Zeissig, Jefe de la Division de Vigilancia y Control de Enfermedades
Dr. Julio Hernandez, Coordinador del Plan de Erradicación de la Polio
Dr. Francisco Salazar, Coordinador de las Jornadas Nacionales de Vacunación, Sub-director de la División de Vigilancia y Control de Enfermedades
Dr. Nuñez, Jefe de Departamento Materno-Infantil

Chimaltenango Health Area:

Dr. Roberto Huertas, Jefe del Area de Salud

Institute of Nutrition of Central America and Panama (INCAP):

Dr. Jose Ramiro Cruz, Director, Virus Laboratory
Lic. Patricia Caceres, Supervisor, Virus Laboratory

Pan American Health Organization (PAHO):

Dr. Norberto Martinez Cuellar, WHO Representative
Dr. Ana Cristina da Cunha, Consultora PAI
Dr. Jorge Mario Luna, Consultor Nacional PAI
Ing. Carlos A. Pacheco, STC
Ing. Victor Gomes, STC

Agency for International Development (A.I.D.):

Mr. John Massey, Population Officer
Mr. Andy Krefft, child Survival Liaison

United Nations Children's Fund (UNICEF):

Mr. Victor Hector Barberis, Oficial de Proyectos

3. FINDINGS AND OBSERVATIONS:

It should be recognized that the number and duration of interviews as well as opportunities for on-site observations during this field trip were restricted due to the limited time in country.

The team focussed on planning, management, financial and technical areas of the project with observations and findings as follows:

3.1 PLANNING

The Government considers eradication of poliomyelitis by 1990 to be one of the four principle objectives for the country in the health sector (the other three being: reduction of infant mortality rate by 50%, reduction of maternal mortality to 1 per 1,000 live births, and potable water available for 50% of the population). The EPI as a whole figures prominently in the strategy to reduce infant mortality rates.

The EPI National Plan of Action (NPA), 1987-1991, was completed in March 1987 and the funds were made available in the second half of 1987. This Plan was developed as a collaborative effort of the Ministry of Health, PAHO, UNICEF, A.I.D., and the Rotary Club of Guatemala. PAHO provided the major impetus for developing the NPA. The role and inputs of each participating Agency were detailed through 1988 in the original plan (Rotary inputs for 1989-1991 and A.I.D. inputs for 1990-1991 are not specified). The outputs in terms of targets for coverage with all EPI antigens and disease reduction are clearly defined, however the methods to verify coverage and disease reduction are not specified. The NPA addresses the EPI as a whole and does not focus only on polio. The NPA adequately documents resources, but does not analyze the constraints to achieving the expected outputs. The NPA addresses, in a general manner, the improving of the cold chain, strengthening the information system (monitoring immunization coverage is explicitly mentioned in the text, but disease surveillance is only mentioned in tables in the Annex), EPI communication (tables in Annex), training, improving laboratory support (only specifically mentioning the INCAP laboratory), supervision, vaccination schedules, strategies for 1987, and evaluation. Vaccine quality control, operations research for program problem solving, methods for outbreak investigations and control measures for all EPI target diseases, and the role of immunization coverage surveys are not specifically mentioned.

The NPA is, in general, being followed by donors and the national government. However, USAID has experienced difficulty in disbursing bilateral monies. The NPA is currently undergoing revision that is not yet finalized. This revision concentrates on the Agency inputs in the tables of the original NPA and does not currently explicitly address changes of strategy and the

decentralization plan. This is the first revision of the NPA and it is being reviewed and revised with the participation of all Inter-agency Coordinating Committee (ICC) agencies. The status of the output indicators as of December 1988 is shown in Annex 1.

Some features of the 1989 plan include: Rotary Club support of a "mop-up" OPV antigen only effort to be held in high risk poliomyelitis areas before the National Vaccination Days (this support will include 3 physicians and 2 vehicles); National Vaccination Days to be held on 22 and 23 April and 27 and 28 May; and, in July and August, special acceleration activities using all EPI antigens to be held in areas of high risk.

A formal evaluation of the NPA is scheduled for the fourth quarter of 1989, however there are not yet any written terms of reference for this evaluation.

3.2 MANAGEMENT

The Inter-Agency Coordinating Committee (ICC) is composed of representatives from Government, PAHO, UNICEF, USAID and Rotary Club. Meetings are held approximately every three months. The USAID Mission noted that the ICC mechanism is a welcome means for coordinating donor activities in the child survival area. The ICC has been perceived as slow to make decisions. The ICC NPA is not always perceived as a project with its own life and budget. There is an impression that the ICC is slowly becoming a stronger forum for donor coordination.

USAID is deeply involved in child survival activities, primarily due to the large bilateral child survival project with government that runs through December 1991. It is anticipated that this project will be renewed and continue until 1997. The formal contact point with Government is through Dr. Carlos Andrino, Coordinador Proyecto PAI/TRO. UNICEF has traditionally worked closely with the MCH Division and PAHO with the Epidemiology Division. UNICEF also anticipates that its project monies, currently running until 1991, will be continued in another project that will run until 1996. EPI activities are going to be transferred from the Epidemiology Division and placed in the MCH Division in June 1989. There is concern as to whether or not the EPI will falter since it is not clear if the personnel and the expertise will be transferred along with the responsibility.

The Ministry's plan for decentralization holds promise for rapid increases in coverage as occurred when decentralization of funds for per diem were made available by PAHO in October-December 1988. The plan consists of creating 8 regional administrative authorities to dispense funds to the 24 Health Areas (Annex 2) and keep an account of these funds. There is concern, however, as to the possibility of skewing the activities of health workers towards immunization and away from other activities because of the per diem

incentives. There is also the concern about the sustainability of these per diem payments in the future by the government when external donors are no longer as active.

The likelihood of a no-cost extension of the PAHO/A.I.D. Project presents no problem for the USAID Mission. It is clear to all donors that additional external inputs will be necessary during the decade of the 1990's to achieve and sustain high immunization coverage levels and poliomyelitis eradication.

The information system still needs strengthening. The current reporting of coverage by Municipio is one step forward in that strengthening. Additional computer hardware and software, as well as training, are needed to improve the coverage and disease surveillance information system.

3.3 FINANCIAL

USAID has experienced difficulty in disbursing bilateral monies due to AID constraints because of required procedures that make it difficult to respond quickly to requests. This problem is being addressed with the decentralization plan and the development of budget line items.

The government has been timely with payments to the PAHO revolving fund except for one outstanding debt for \$30,000 that occurred due to a bureaucratic problem five years ago. Currently all vaccine costs are paid for by external donors.

There is very little awareness at the country level of the A.I.D. contribution to the regional PAHO funds that come into the country. For example: a UNICEF document on the EPI designates the PAHO contribution without mention of the component due to A.I.D., and there is no awareness at Health Area level of A.I.D. monies other than those through the bilateral project.

3.4 TECHNICAL

The following technical issues were noted during conversation with health staff and the Central and Health Area levels:

- Immunization coverage is improving, but still remains relatively low. The National Vaccination Days (NVDs) contribute significantly to coverage, as shown by the drop in coverage in 1987 when no NVDs were conducted compared to 1986 when the first NVDs were held (Annex 1). However, the majority of these doses are provided to children over 11 months of age (Annex 3). It is encouraging that decentralization appears to have created a significant increase in coverage in the last quarter of 1988 (Annex 1).

- The project has enhanced surveillance activities for poliomyelitis. Surveillance of other EPI target diseases do not have the same priority at this time. The degree of completeness and variability of completeness of reporting for the other EPI target diseases is such that the disease trends shown in Annex 1 should be considered with caution.
- Uniform case definitions exist only for poliomyelitis. Data exits on probable polio cases discarded as not polio, but the data is not always as complete as desired. The country does not currently have an expert panel to review all probable cases of poliomyelitis, however, a group of visiting experts is expected to review the cases this year.
- The site of injection of DPT is the buttocks. The recommendation of the EPI Global Advisory Group to change the site to the lateral thigh has not been discussed.

3.5 FIELD TRIP

The team visited the Area Health Office of Chimaltenango to gain a better understanding of the data available, cold chain, program constraints and issues of decentralization. The following were noted:

- The Area Health Office did not keep statistics on the true percent coverage by antigen by Municipio (or even for the entire Health Area). They had coverage percentages, by antigen, but this was using denominators (a different denominator for polio than for DPT) other than those recommended by the Central level. We were told that the Area Health Officer was new in this locality and that in many other Health Areas we would find correct statistics. However, it was also stated that there is currently a relative passivity at the Health Area level and that some Health Area Offices simply send the data on number of doses administered to the Central level and wait for the analysis of coverage to be done by the Central level. The plan for decentralization includes strengthening the capabilities for data analysis at Health Area level.
- In the past, monies for fuel and per diems usually took 3-4 months for reimbursement and discouraged field activities. The decentralization of funds for the accelerated immunization activities in October through December of 1988 was an exception and was considered to be a welcome change of administrative procedure. It was hoped that this decentralization of funds for fuel and per diems would be instituted on a permanent basis.
- Although the staff at the Health Area level were

aware that PAHO funds had supported the funds for fuel and per diem for the accelerated immunization activities in October through December, they were not aware that these funds had been supplied by AID through PAHO at the regional level.

4. CONCLUSIONS AND RECOMMENDATIONS:

4.1 PLANNING

4.1.1. Current NPA:

The current NPA could benefit from additional detail as to the methods of monitoring and evaluation (especially the role of immunization coverage surveys) and specification of the types of operational research needed.

4.1.2. Provisional Revised NPA:

The revised NPA should be finalized as soon as possible and should include terms of reference for the evaluation scheduled for the fourth quarter 1989 and the changes due to the planned decentralization of the program and the movement of the EPI to the Materno-Infantil Division.

4.2 MANAGEMENT

4.2.1. Role of ICC:

Continued efforts should be made by Government and donors to strengthen the coordinating role of the ICC and to make the NPA a true joint effort project by all parties.

4.2.2. Transition of EPI to Materno-Infantil:

Special efforts on the part of Government and donors are needed to ensure that the transition of EPI from the Division of Vigilancia y Control de Enfermedades to the Division of Materno-Infantil is smooth and that the momentum of the EPI is not lost. The ICC may wish to consider sponsoring one or more key Government personnel to visit another country, such as Honduras, that has made a similar transition to learn from previous experience.

4.2.3. Decentralization:

The plan for decentralization offers opportunities for operational research to assess the cost benefit of such a change in strategy, the impact on other programs (do payments for EPI activities result in diminished activities in other important areas such as CDD?),

and ultimately the question of sustainability of these extra funds for per diems.

4.2.4. Computerized EPI Information System:

The computerized EPI information system software for coverage for all EPI antigens, results of coverage surveys, disease surveillance (for EPI target diseases other than poliomyelitis), training and funding would be appropriate for introduction at this stage in program development to strengthen management capabilities.

4.3 FINANCIAL

4.3.1. Disbursement of Funds:

The NPA clearly delineates the amounts of funds from Government and each donor agency in support of the EPI. Although the A.I.D. Regional Funds through PAHO are easily disbursed and utilized, USAID bilateral funds often face difficulties in their utilization. Project 520-0339 disbursed US \$2,566,499. in CY88, or 106% of the planned amount. However, the mission recognizes that the MOH has had considerable difficulty in disbursing funds, and three strategies have been developed: 1) supporting the MOH decentralization of funds in the health areas through the establishment of MOH petty cash funds, 2) increasing the amount of Project petty cash funds in accordance with health area needs, and 3) the option of allocating Project funds through a central buy-in for the Accelerated Immunization Project is currently being studied.

4.3.2. Sustainability:

Because the major donors, A.I.D. and UNICEF, intend to have follow-on child survival projects that will continue past 1996 there is no immediate concern about financial sustainability. However, it would be appropriate for operational research and planning activities to focus on the issue of the sustainability of activities -- especially the external donor supported per diems.

4.3.3. Visibility of Regional A.I.D. funds:

Visibility for A.I.D. funds donated at the regional level should be expected at the regional level. It is not realistic for identification of credit at the country or sub-national level. The USAID Missions as well as Government and other donors all benefit from the expert staff and flexible, easily programmable PAHO funds that the A.I.D. monies help support. USAID Missions, however, should be kept more fully informed of the status of A.I.D. Regional funds being used in-country through PAHO.

4.4 TECHNICAL

4.4.1. Immunization coverage and poliomyelitis eradication: Significant progress is being made in the poliomyelitis eradication effort. Improved poliomyelitis surveillance and analysis of surveillance data through the use of computer systems are examples. Continued efforts are needed to increase coverage levels for all antigens, through the acceleration of program activities achieved by decentralization and with special emphasis on reaching children under 1 year of age during the National Vaccination Days.

4.4.2. Data analysis at Health Area level:

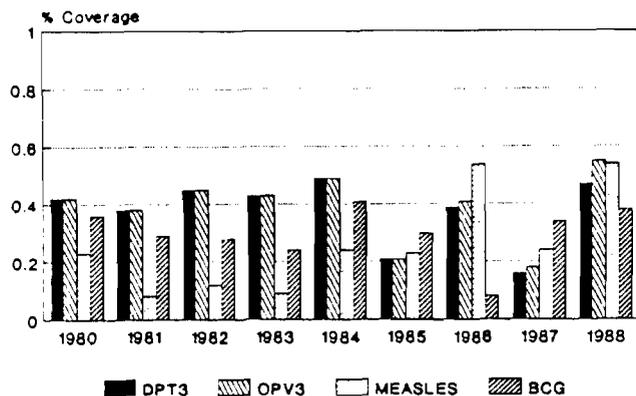
Depending on the situation in each Health Area, it may be appropriate to conduct training activities in the methodology of data analysis of coverage and disease surveillance information. Health Areas should have the capacity, especially under the planned decentralization, to analyze and take action on the data generated from municipios.

4.4.3. Site of injection:

The Government, in conjunction with the ICC, may wish to consider changing (or at least conducting operational research on the feasibility of changing) the site of injection of DPT from the buttocks to the lateral thigh as recommended by the EPI Global Advisory Group.

ANNEX 9.1: GUATEMALA FIELD TRIP

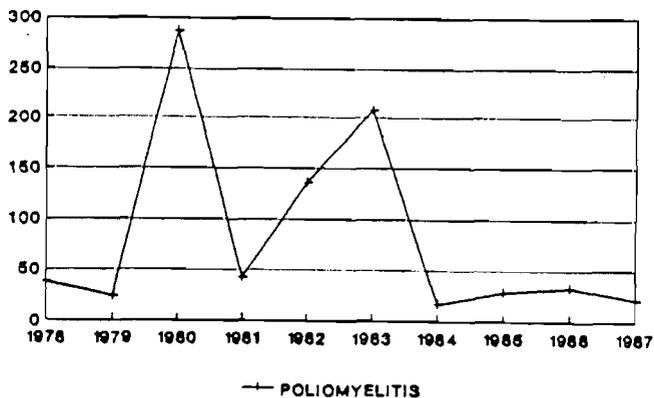
EPI VACCINE COVERAGE
GUATEMALA, 1980-1988



Source: PAHO

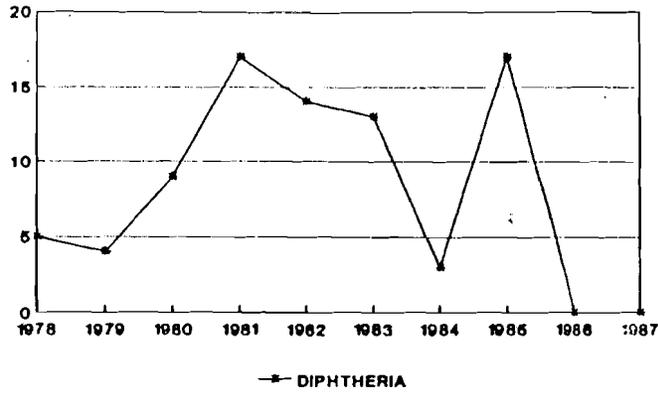
Note that figure uses DPT2 and OPV2 coverage for years 1980 through 1984.

EPI DISEASES REPORTED, POLIOMYELITIS
GUATEMALA, 1978-1987



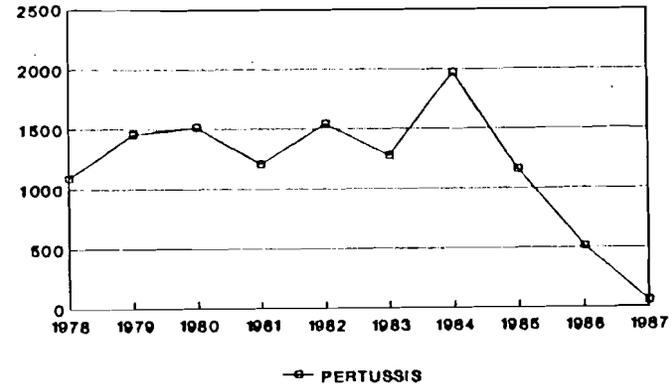
Source: PAHO

EPI DISEASES REPORTED, DIPHTHERIA
GUATEMALA, 1978-1987



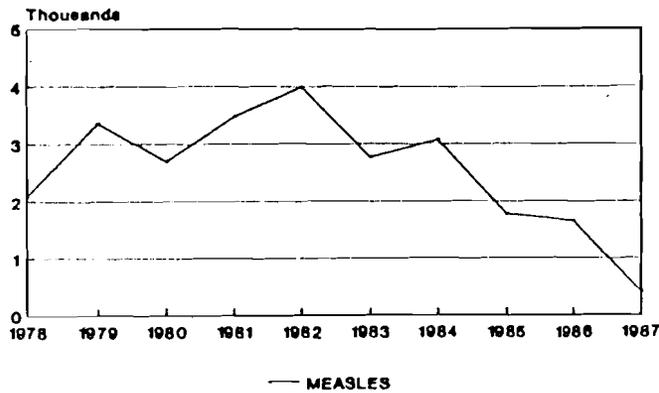
Source: PAHO

EPI DISEASES REPORTED, PERTUSSIS
GUATEMALA, 1978-1987



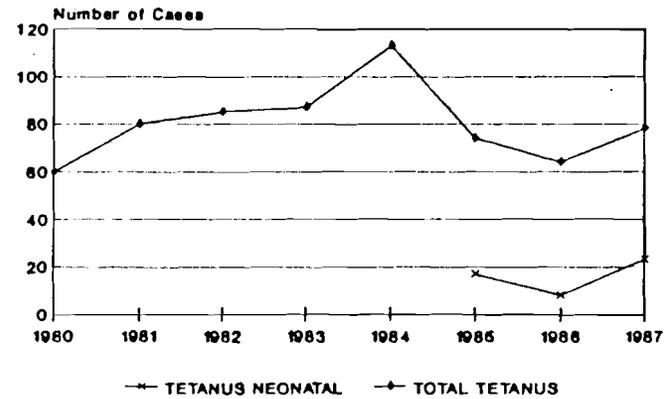
Source: PAHO

EPI DISEASES REPORTED, MEASLES
GUATEMALA, 1978-1987



Source: PAHO

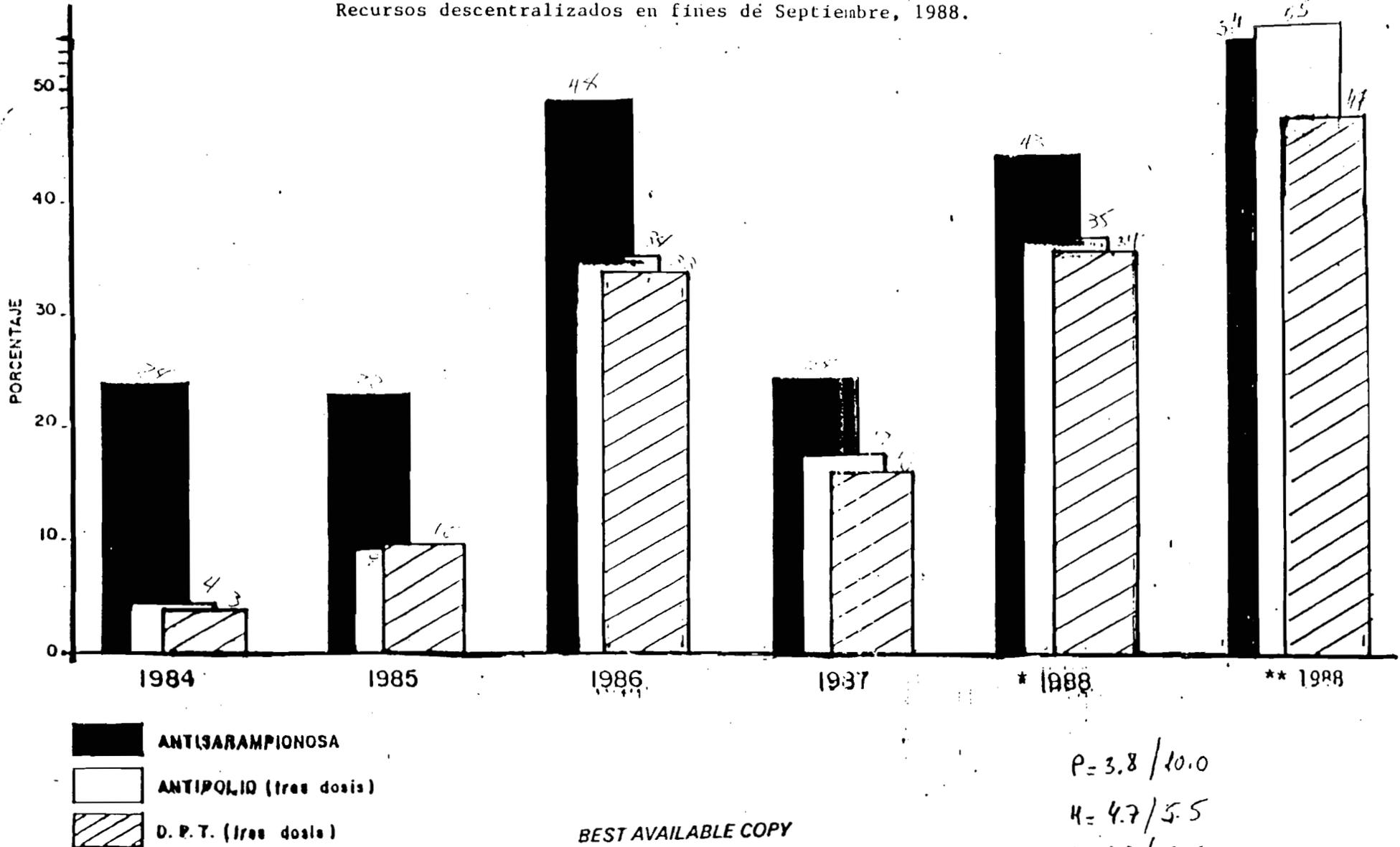
EPI DISEASES REPORTED, NEONATAL TETANUS,
TETANUS TOTAL, GUATEMALA, 1980-1987



Source: PAHO

LOS EFECTOS DE LA DESCENTRALIZACION DE LOS RECURSOS OPS/PAI HACIA LAS AREAS DE SALUD.
 COBERTURAS POR TIPO DE BIOLÓGICO EN MENORES DE UN AÑO
 EN EL CUADRIENIO 1984-1987
 DURANTE LOS PERIODOS: *ENERO-SEPTIEMBRE, **ENERO-NOVIEMBRE 1988
 REPUBLICA DE GUATEMALA C. A.

Recursos descentralizados en fines de Septiembre, 1988.

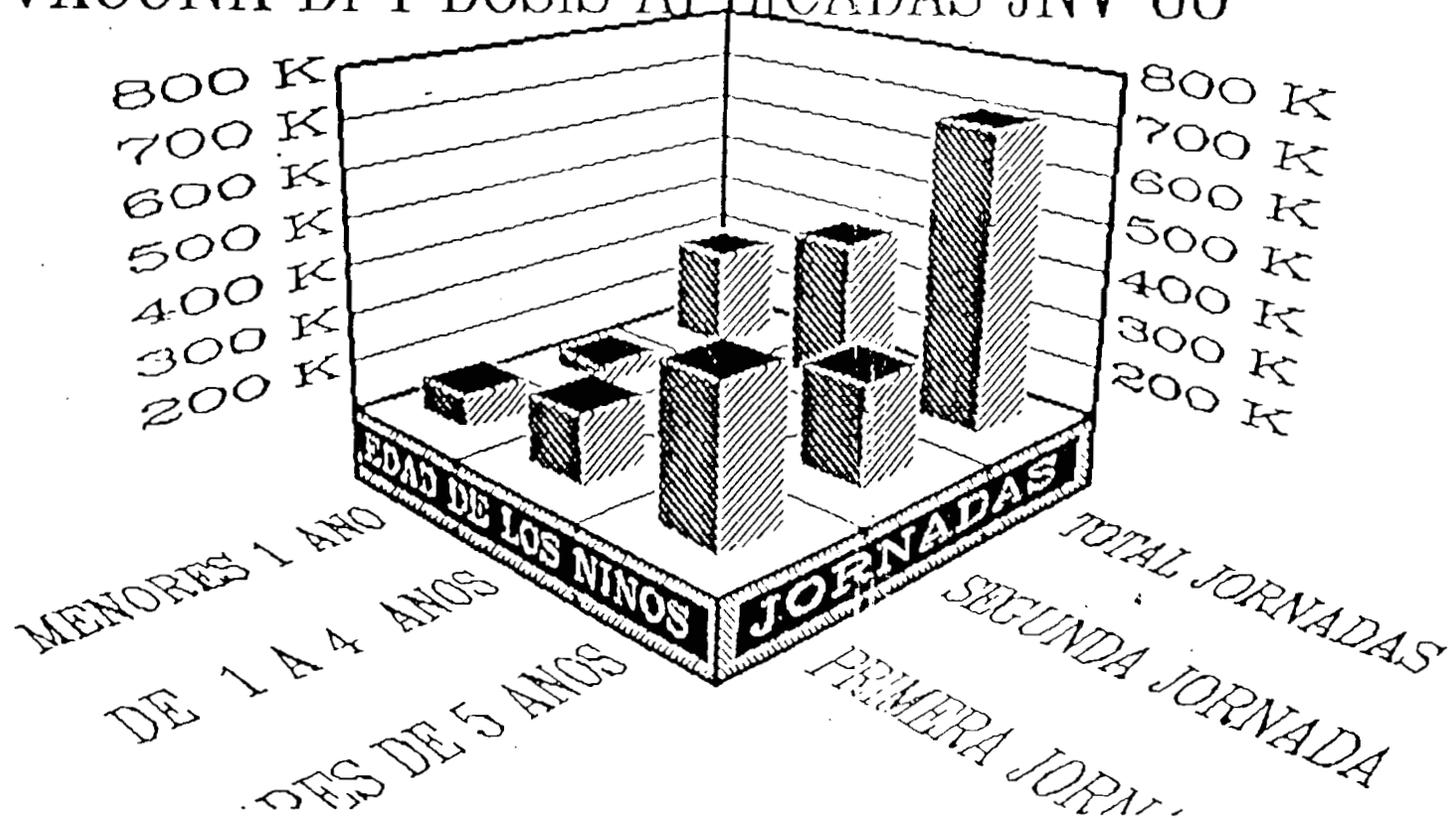




Guatemala - 22 Departamen
24 Areas de
Salud.

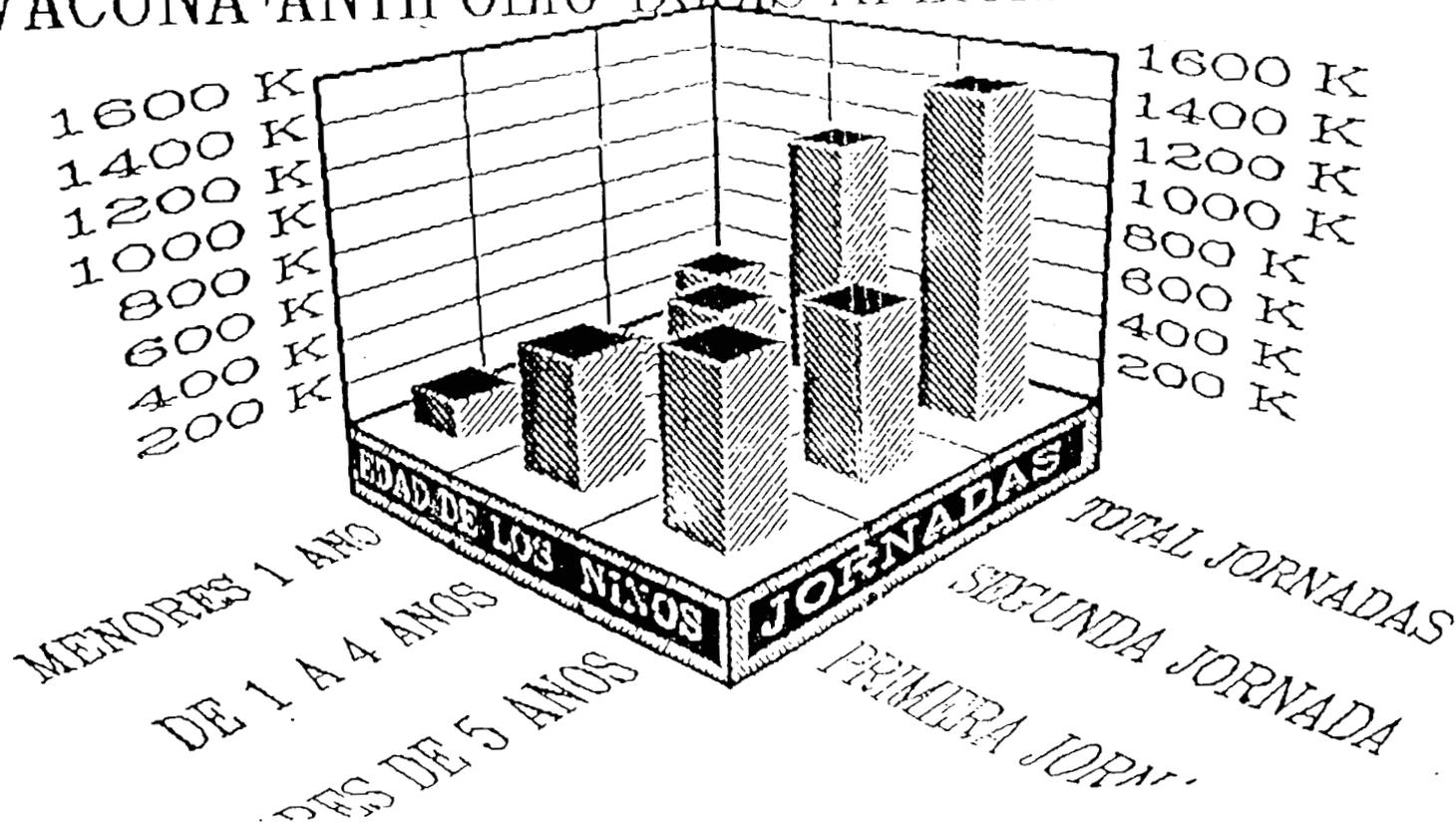
Fuente: División de Control de Enfermedades, DGSS

VACUNA DPT DOSIS APLICADAS JNV 88



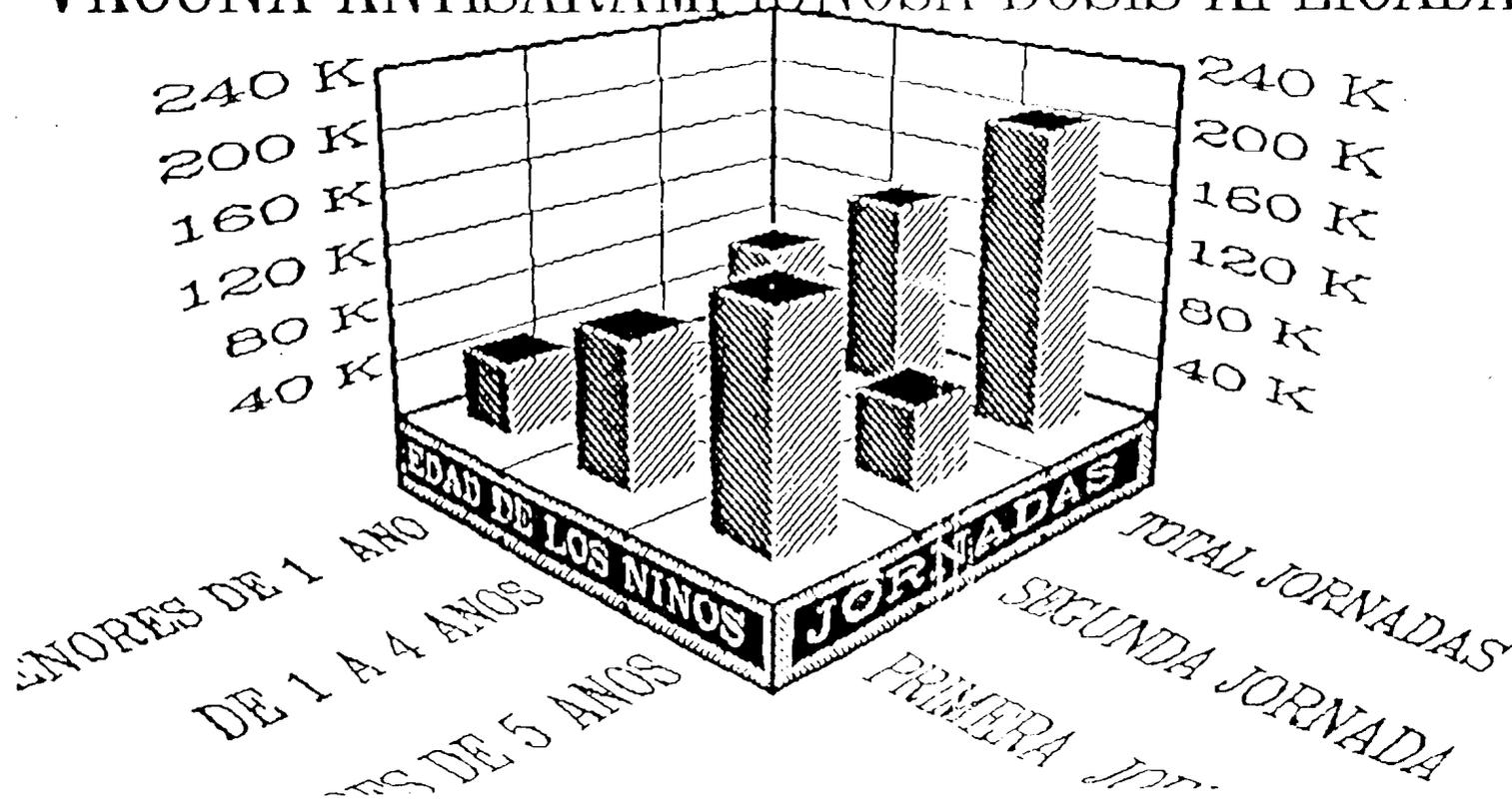
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VACUNA ANTIPOLIO DOSIS APLICADAS JNV 88



ANNEX 9.1: GUATEMALA FIELD TRIP

VACUNA ANTISARAMPIONOSA DOSIS APLICADAS



ANNEX 9.1: GUATEMALA FIELD TRIP

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ANNEX 9.1: GUATEMALA FIELD TRIP

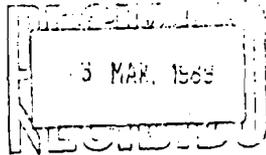
ANNEX 4 -- Letter of Agreement to team's visit



Ministerio de Salud Pública y Asistencia Social
Dirección General de Servicios de Salud
9a. Avenida 14-65, Zona 1 Tels. 21801 al 3 y 536071 al 5
Guatemala, C. A.

NUM.	00282
REF.	EEDEA/1/bde

Al contestar sírvase mencionar el
Número de referencia de esta nota.



Guatemala,
2 de marzo de 1,989.-

C.M.S.	
EPI	

Doctor Norberto Martínez Cuellar
Representante a.i. de OPS/OMS en Guatemala
Edificio Etisa zona 9
Ciudad Guatemala

Estimado Doctor Martínez Cuellar:

En Referencia a su nota GUT-MCP-EPI-OLC/61/5/6087 de fecha 28 de febrero de 1,989, me complace comunicarle que para la Dirección General, es un gusto y honor que los Doctores STEVE COCHI del Center For Disease Control (CDC) y ROBERTO KIM-FARLEY de USA-AID visiten nuestro país, las fechas comprendidas del 5 al 9 de marzo de 1,989, específicamente a cumplir la misión relacionada con la evaluación del progreso del Plan de Acción PAI.

Aprovecho la ocasión para saludarlo y suscribirme como atento servidor.

77

DR. FRANCISCO BERNARDEZ VILLALBA
DIRECTOR GENERAL

OPINION DEL COORDINADOR

c.c. Lic. Carlos Maldonado, Coordinador de Asuntos Internacionales
OCAI
Dr. Otto Zeissig B. Jefe de la División de Vigilancia y Control de Enfermedades.
Dr. Luis Alberto Alonzo Lara, Coordinador a.i. dle Programa PAI/TRC.

SALUD PARA TODOS LOS GUATEMALTECOS

Annex 9.1.3 Honduras Trip Report

Trip Notes of Drs Stephen Cochi and Dr. Robert Kim-Farley,
Honduras March 9-11, 1989

1 PURPOSE

To conduct a field visit to Honduras to review the Expanded Programme on Immunization (EPI) as part of the mid-term evaluation of the Agency for International Development (AID) and Pan American Health Organization (PAHO) Project entitled "Child Survival: Accelerated Immunization Program in the Americas, 1986-1990."

2 PERSONS CONTACTED

Ministry of Public Health (MOPH):

Dr. Ricardo Kaffie, Chief, Division of Maternal and Child Health
Dr. Jorge Meléndez, Chief of Child Health Programme, Division of Maternal and Child Health
Lic. Regina Durón, Coordinator of Polio Eradication, Division of Maternal and Child Health
Dr. Roberto Cruz Gavidia, Chief of EPI
- Lic. Ruth Andino Suazo, Division of Epidemiology

Health Region 5 (Santa Rosa de Copán):

Dr. Arnulfo Vueso Pineda, Chief, Health Region 5

Pan American Health Organization:

Dr. Luis Antonio Loyola, WHO Representative, Honduras
Dr. Edgardo Umaña, National EPI Consultant
Dr. Ana Cristina da Cunha, Regional EPI Consultant for Central America
Dr. Guillermo Gosset, Epidemiologist, PAHO

Agency for International Development (AID):

Mr. Robert Haladay, Chief, Office of Health and Population
Mr. Tom Park, General Development Officer

United Nations Children's Fund (UNICEF):

Mr. Rubén Gamboa, Oficial de Proyectos

Rotary International:

Dr. Ramón Alcerro de Castro, Country Representative for Polio Eradication

3 FINDINGS AND OBSERVATIONS:

It is important to note that the team had only two working days to conduct interviews and make on-site observations in Honduras. Consequently, this report is meant not to be a comprehensive evaluation of the Honduras EPI and its relationship to the AID-funded Accelerated Immunization Project, but to present our major findings during the limited visit. The team focussed on planning, management, financial and technical areas of the project.

3.1 Planning

The Honduras National Plan of Action (NPA) for the Expanded Program on Immunization, 1987-1991, was completed in April 1987. PAHO and the Division of Epidemiology, MOPH, provided the major impetus for development of the plan, with inputs from AID, UNICEF, and Rotary International. The Division of Epidemiology was directly responsible for its implementation until August 1988, when primary responsibility within MOPH was transferred to the Division of Maternal and Child Health. The role and inputs of each participating Agency were detailed through 1991 in the original plan by activity and amount of input in dollars. Vaccination coverage and disease reduction targets were not specified, with the exception of achieving the goal of polio eradication by 1990. However, the general objective of protecting all children 5 years of age, with an emphasis on those 1 year of age, against all EPI target diseases was stated. The vaccination strategy outlined for achieving this objective was said to consist of three components: 1) ongoing ("horizontal") vaccination activities, 2) directed vaccination in areas of low coverage or elevated risk, and 3) National Vaccination Days (NVDs). Disease surveillance was discussed only in terms of polio. The objectives of the plan for strengthening the cold chain, health education and promotion (public health communication) and providing technical support were addressed, but laboratory support, training, supervision, and operational research ("investigation") were only addressed in tables in the Annex of the plan. Vaccine quality control, outbreak investigation and control measures for all EPI target diseases, and the role of immunization coverage surveys were not specifically addressed.

The NPA is being followed by donors as well as the national government. All agencies signed the 1989 annual plan in December 1988. There have been two significant revisions of the NPA within the past year. First, when primary responsibility for implementation of the NPA within the national government was transferred in August 1988 from the Division of Epidemiology to the Division of Maternal and Child Health, the transition was problematic. EPI and polio eradication activities faltered during the latter part of 1988. However, this year the Division of Maternal and Child Health has held two planning sessions, at the 3rd Central American Meeting for Review of EPI and Polio Eradication held in Guatemala City February 15-17, 1989, and at the Ministry on March 2. The 1989 EPI Plan of Action has been refined and new strategies elaborated. These include efforts to decentralize operational activities including financing down to the local level, to eliminate missed opportunities for vaccination, and to improve epidemiologic surveillance and case investigation at the local level.

A second major revision of the NPA for 1989 has been to supplement it with a detailed plan entitled "Accelerated Plan for Polio Eradication" (so-called "mop-up operations"). This plan was drafted in December 1988 by the Division of Maternal and Child Health with inputs from PAHO and Rotary. The supplementary plan is being financed primarily by \$50,000 in funds provided by Rotary International. It is an effort to target certain municipios, defined as areas of risk for polio, for intensified case investigation and special polio vaccination efforts including house-to-house vaccination. The municipios to be targeted have been defined as those with confirmed polio cases during 1986, 1987, or 1988, or with OPV coverage of 60% in children 1 year of age; these municipios represent about 40% of the total population of Honduras. Regional work-sessions to provide information to public health workers, to plan operational activities, and to estimate per diem and fuel costs are scheduled to occur during March in each of the 8 Regions. These

meetings are scheduled to conclude by March 22, at which time the Accelerated Plan will be finalized. We had the opportunity to attend one of these work sessions on a field visit to Region 5. In addition, three nurses have been hired to support polio surveillance and case investigation efforts and have been based in the two Regions where most of the confirmed polio cases occurred in 1989 (Region 3 and Metro Region). The two nurses based in the Metro Region will support activities in Regions 1, 4, 7 and Metro, while the nurse in Region 3 will support activities in Regions 3, 5 and 6. The polio "mop-up operations" have been planned to supplement the NVDs, which include all EPI antigens. NVDs have been scheduled for 12 May and 18 August, while "mop-up" activities are scheduled for March-April and June-July. UNICEF is considering a plan to provide funds for a third phase of "mop-up" operations to begin in September, and to provide a salary and vehicle for a physician to help coordinate the program.

The NPA specifically states that the Interagency Coordinating Committee (ICC) will meet every 3 months to monitor and evaluate the NPA in collaboration with national technical personnel, and at the end of each year revise the annual plan for the following year. However, this has not been carried out in practice. There has been no formal evaluation of the NPA and there is no scheduled date for such an evaluation. Informal evaluations have occurred approximately annually at the Central American sub-Regional meetings, most recently in February 1989.

3.2 Management

As in Guatemala and the other countries in the Project, the ICC is composed of representatives from the Ministry, PAHO, UNICEF, AID, and Rotary. In general, coordination has not been good among the donor agencies and the ICC has not been an effective coordinating body. ICC meetings are organized directly by the Minister of Public Health rather than having that role delegated to others within the Ministry. Although meetings are supposed to occur every 3 months, in reality they are held sporadically. Three meetings were held during 1988, the last of which was in December. Rather than serving as planning sessions, the meetings tend to be called to deal with a crisis that has arisen. Both AID and UNICEF expressed the desire that the coordinating and evaluating functions of the ICC become established, and the hope that this could be accomplished through a permanent, regular schedule of meetings. The AID mission felt that PAHO needed to take the lead in coordinating the activities of the ICC.

The AID mission believed it was not getting sufficient information about PAHO activities funded by AID at the Regional level, either from PAHO or AID-Washington. It was their belief that AID-Washington should either give detailed instructions to PAHO for providing such information to the AID missions, or stop being concerned about getting visibility for AID at the country level for the grant to PAHO at the Regional level. The mission was unaware that it had the opportunity to call upon PAHO Regional and National consultants for technical assistance in matters pertaining to EPI since the salaries of those persons were funded at the Regional level by AID. The mission believed that the Regional Accelerated EPI project has had a tremendous impact in improving all EPI activities in Honduras, but expressed concern about the cost-effectiveness of NVDs. The mission sees no problem with the plan for a no-cost extension of this project. Its own bilateral project runs through 1991 and it is anticipated that a renewal of funding for

EPI will be needed at that time. The UNICEF project is funded for 1987-1990 and a continuation is being planned after 1990 for 4-5 years.

Most of the management problems that arose when EPI was transferred within the Ministry are now being addressed. The Division of Maternal and Child Health (MCH) under the leadership of Dr. Kaffie has come forward with a detailed plan for EPI activities in 1989. Lic. Regina Durón of MCH has done an excellent job as the new Coordinator of Polio Eradication in eliminating the backlog of cases of acute flaccid paralysis in need of investigation that accumulated during the latter part of 1988, and in establishing mechanisms to prevent a similar situation from arising again in the future. Whether operational problems have been overcome will be evidenced by an assessment of whether output indicators such as vaccination coverage and the promptness and thoroughness of polio case investigations show improvement over the next 6-9 months.

3.3 Financial

AID funds provided to PAHO at the Regional level are being spent in accordance with the budget revised on April 12, 1988. Ministry of Health officials and all donor agencies have been provided with the same detailed breakdown of that budget in the NPAs for 1988 and 1989. One problem that has arisen is that the NPA for 1987-91 allocated a high proportion (82%) of the total AID funds given to PAHO at the Regional level for the first two years of the plan (at \$400,000 per year), with substantially lower funding of \$60,000 per year for the following three years. This was based on an agreement made between PAHO and the AID mission to support the \$400,000 per year level of funding during 1989-91. However, this was not taken into account in the new bilateral agreement between AID and the government of Honduras.

Perhaps the greatest financial strength of the EPI in Honduras is that the government is completely self-sufficient in its purchase of EPI vaccines, with the exception of OPV provided by Rotary. In general, the government has been timely with payments to the PAHO EPI revolving fund, with the exception of a debt of \$500,000 accumulated at the beginning of this year due to a problem with PAHO absorbing sufficient local currency from the government; this debt was paid off last month.

Within the realm of child survival activities, AID has large ongoing projects on the control of diarrheal disease and acute respiratory infections, in addition to EPI. The AID mission child survival activities are funded through 1991. The AID mission reported that all bilateral funds specific for EPI have been spent for 1988; however, all child survival activities are integrated in the AID bilateral funding for capacitation, social communication, and supervision, so it was not possible to determine whether the EPI component had been fully obligated for 1988.

The FAHO project could absorb more funds if those funds could be disbursed rapidly to support the decentralization activities being planned by the Ministry.

3.4 Technical

There is ample evidence that the project has enhanced polio surveillance activities. Case notification of acute flaccid paralysis has increased substantially during the period 1986-88, from 38 cases in 1986, to 61 cases in 1987, and 117 cases in 1988. A detailed document summarizing polio

ANNEX 9.1.3: HONDURAS TRIP REPORT

surveillance and case investigation for 1988 has been prepared and was presented at the Central American EPI meeting in February 1989. There is no clear evidence as yet of a positive impact on the surveillance of other EPI diseases. Uniform case definitions and case classification systems exist only for polio.

Certain operational indicators of the efficiency of the polio surveillance system in Honduras suggest the need for improvement. Honduras was the only Central American country not to show an increase in 1988 in the percentage of probable cases notified promptly within the first 15 days of onset of symptoms, and it has the lowest rate (62%) of timely notification among the Central American nations. It was also last in percentage of probable cases for which control measures (bloqueos) were organized, that occurring in 40% of cases; in contrast to the other countries of Central America, control measures were not instituted within 24 hours for any of these cases. Honduras also experienced a decline in 1988 (compared to 1987) in the percentage of cases in which a stool specimen was obtained within 8 days of onset of paralysis. On a positive note, coverage for all EPI antigens in children 1 year of age increased in 1988 to 70% for OPV3, 74% for DPT3, 76% for measles, and 84% for BCG. Honduras completed a study of missed opportunities for immunization in 1988 and has been disseminating the results of this study to local health workers at recently held meetings at the Health Region level.

There is concern about the adequacy of documentation of probable polio cases discarded as not polio during 1988. However, Honduras has organized a multidisciplinary working group whose membership includes epidemiologists, public health administrators, a virologist, a pediatric neurologist, and a neurophysiatrist, to review cases. This group has been meeting on a weekly basis. It is hoped that this group will demand adequate documentation of cases and that recent changes in the organization of polio activities within the Division of MCH will improve the promptness and quality of case investigation, including the taking of adequate laboratory specimens, recording of neurological findings and their rate of progression, and followup clinical examinations. It is worth noting that Dr. Hilda Alcalá, a pediatric neurologist from Mexico City, will be visiting Honduras during the first week in April to meet with neurologists and review data on cases of acute flaccid paralysis. She will also be visiting the other Central American countries in preparation for a meeting of the neurologists of those countries in May.

3.5 Field Visit

The team spent one day on a field visit to Region 5 (Santa Rosa de Copán). Part of the day was spent attending an all-day work session among the health workers from all of the Health Areas of the Region, staff from the EPI and Division of MCH at the national level, and PAHO EPI staff. The program included didactic lectures on procedures for investigating cases of acute flaccid paralysis, missed opportunities for immunization, identification and discussion of Areas at risk for neonatal tetanus, and discussion of the polio "mop-up operation." The didactic presentations were combined with work sessions for the health workers of each Area to: 1) collectively examine vaccination coverage data in children 1 year of age for all EPI antigens for each establecimiento (the smallest health unit, consisting of the catchment population for one health center [MD-staffed] or health post [nurse-staffed]), and 2) estimate per diem and fuel cost needs for the upcoming "mop-up operation." All indications were that the meeting was a success, and the team

observed much enthusiasm among the health workers, who continued their work session during the afternoon coffee break. Similar meetings have occurred or are planned during March 1989 in the other 7 Health Regions.

The remainder of our day was spent visiting one urban and one rural health center to observe vaccination activities, examine the record system, and examine the cold chain. No significant problems were identified.

4 CONCLUSIONS AND RECOMMENDATIONS

1. Measures should be taken to increase the role of the ICC as the coordinating group for planning, monitoring, and evaluating the NPA in collaboration with national and PAHO technical staff. The methodology used for drawing up the annual NPA should be reviewed with all ICC members to ensure that the sources and dispersment of all funds are fully understood. The Minister of Public Health should designate a coordinator to schedule regular meetings at least every 3 months, develop and circulate an agenda in advance of each meeting, and where possible distribute materials for discussion prior to the meeting. A formal evaluation of the NPA by the ICC should be scheduled.
2. Better communication among the donor agencies is needed, in particular, between the AID mission and PAHO consultants. Such communication could be enhanced by having PAHO consultants provide technical assistance to AID as needed on EPI-related matters, subject to the approval of PAHO Regional headquarters.
3. As has occurred already in Honduras, Guatemala will be transferring its EPI from the Division of Epidemiology to the Division of MCH in June 1989. It would be useful for the Honduras Ministry of Public Health to share its experiences with officials from Guatemala who have expressed interest in such discussions.
4. Significant progress has been made toward the goal of polio eradication. The overall EPI program has been greatly strengthened by the project, especially in terms of technical capability. However, there is a clear need for further improvement in the function of the polio surveillance and case investigation system. Specifically, improvement is necessary in the prompt notification of suspected polio cases, prompt investigation of cases of acute flaccid paralysis, timely collection of adequate laboratory specimens, prompt institution of outbreak control measures, followup clinical and neurologic evaluation of probable cases, and documentation of probable cases discarded as not polio. Ministry and PAHO EPI staff should carefully monitor these operational measures so crucial to the success of the polio eradication effort.

ANNEX 9.2 IMMUNIZATION COVERAGE AND DISEASE INCIDENCE: TABLES

Table 1	Number of Reported Poliomyelitis Cases and Case Classification, Region of the Americas, 1985-1988.
Table 2	Poliovirus Strains Isolated from 1512 Probable Cases, Region of the Americas, 1988.
Table 3	Number and Percentage of "Municipios" with Confirmed Poliomyelitis Cases, Region of the Americas, 1985-1988.
Table 5	Criteria for Evaluating Polio Epidemiologic Surveillance, Region of the Americas, 1987-1988.
Table 5.1	Polio Surveillance: Proportion of Reference Centers Reporting Weekly
Table 5.2	Proportion of Probable Cases with Interval of less than 15 days between onset of paralysis and notification, Region of the Americas, 1986-1988.
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ANNEX2
 IMMUNIZATION COVERAGE
 AND DISEASE INCIDENCE

Table 1
 Number of Reported Poliomyelitis Cases and Case Classification,
 Region of the Americas, 1985-1988*

Year	Reported Cases	Case Classification		
		Confirmed	Discarded	Probable
1985	1,075	673	402	0
1986	1,587	930	657	0
1987	1,667	656	1,011	0
1988*	1,906	361	1,390	155

*Provisional data for 1988 (as of March 13, 1989)

Table 2
 Poliovirus Strains Isolated From
 1512 Probable Cases, Region of the Americas, 1988*

Country	Total	Strain Typification	
		Wild	Vaccine-Like
Argentina	2	-	2
Belize	1	-	1
Bolivia	1	1	-
Brazil	40	12	28
Colombia	21	1	20
Ecuador	1	1	-
El Salvador	8	1	7
Guatemala	11	-	11
Honduras	7	-	7
Mexico	14	-	14
Paraguay	2	-	2
Peru	8	2	6
Venezuela	17	8	9
Total:	133	26	107

* As of March 16, 1989 (provisional data)

Table 3
 Number and Percentage of "Municipios"
 with Confirmed Poliomyelitis Cases,
 Region of the Americas, 1985-1988

<u>Year</u>	<u>Number of Municipios</u>	<u>Percentage of Municipios*</u>
1985	390	2.8%
1986	544	4.0%
1987	457	3.3%
1988	236	1.7%

*N=13,759

Table 5
 Criteria for Evaluating Polio Epidemiologic Surveillance
 Region of the Americas, 1987-1988*

<u>Criterion</u>	<u>1987</u>	<u>1988</u>
1. % of Reference Centers That Report Weekly	see Table 5.1	
2. % of Probable Cases:		
A. Reported Within 14 Days of Onset of Paralysis	41	59
B. For which Control Measures are Initiated Within 24 Hours	see Table 5.3	
C. With Stool Specimens Collected	68	76
D. With Stool Specimens Collected Within 7 Days of Onset of Paralysis	24	38

*Provisional data for 1988; data do not include Brazil

TABLES POLIO SURVEILLANCE

TABLE 5.1
PROPORTION OF REFERENCE CENTERS REPORTING WEEKLY

REGION OF THE AMERICAS, 1986-1988

COUNTRY	1986	1987	1988*	REMARKS
ARGENTINA	60%	60%	60%	FOR 1988 UP TO WEEK 40
BOLIVIA	N.A.	N.A.	54%	FOR 1988 UP TO WEEK 41
BRAZIL	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 36
CHILE	27%	100%	100%	FOR 1988 UP TO WEEK 26
COLOMBIA	N.A.	N.A.	N.A.	
COSTA-RICA	N.A.	N.A.	N.A.	
CUBA	N.R.	N.R.	N.R.	
DOMINICAN REPUBLIC	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 40
ECUADOR	N.A.	N.A.	43%	FOR 1988 UP TO WEEK 41
EL SALVADOR	N.A.	77%	90%	FOR 1988 UP TO WEEK 52
GUATEMALA	N.A.	0%	11%	FOR 1988 UP TO WEEK 52
HAITI	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 41
HONDURAS	N.A.	N.A.	37%	FOR 1988 UP TO WEEK 52
MEXICO	N.A.	N.A.	N.A.	
NICARAGUA	45%	75%	85%	FOR 1988 UP TO WEEK 52
PANAMA	N.A.	N.A.	N.A.	
PARAGUAY	N.A.	55%	80%	FOR 1988 UP TO WEEK 52
PERU	56%	61%	51%	FOR 1988 UP TO WEEK 41
URUGUAY	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 25
VENEZUELA	88%	92%	95%	FOR 1988 UP TO WEEK 39

N.A., Information not available

N.R., Report not received

TABLE 5.2
 PROPORTION OF PROBABLE CASES WITH INTERVAL OF LESS THAN 15 DAYS
 BETWEEN ONSET OF PARALYSIS AND NOTIFICATION
 REGION OF THE AMERICAS, 1986-1988

COUNTRY	1986	1987	1988*	REMARKS
ARGENTINA	N.A.	19%	6%	MOST OF CASES KNOWN THRU
BOLIVIA	N.A.	N.A.	54%	FOR 1988 UP TO WEEK 30
BRAZIL	N.A.	50%	50%	FOR 1988 UP TO WEEK 36
CHILE	N.A.	22%	100%	FOR 1988 UP TO WEEK 26
COLOMBIA	47%	33%	54%	FOR 1988 UP TO WEEK 41
COSTA-RICA	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 52
CUBA	N.R.	N.R.	N.R.	
DOMINICAN REPUBLIC	18%	8%	84%	FOR 1988 UP TO WEEK 40
ECUADOR	43%	52%	17%	1988, 63% CASES THRU AC
EL SALVADOR	54%	79%	88%	FOR 1988 UP TO WEEK 52
GUATEMALA	60%	65%	76%	FOR 1988 UP TO WEEK 52
HAITI	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 41
HONDURAS	58%	69%	62%	FOR 1988 UP TO WEEK 52
MEXICO	51%	58%	70%	FOR 1988 UP TO WEEK 52
NICARAGUA	29%	72%	100%	FOR 1988 UP TO WEEK 52
PANAMA	N.A.	N.A.	N.A.	
PARAGUAY	N.A.	55%	59%	FOR 1988 UP TO WEEK 52
PERU	N.A.	N.A.	36%	FOR 1988 UP TO WEEK 41
URUGUAY	N.A.	100%	100%	FOR 1988 UP TO WEEK 25
VENEZUELA	31%	40%	48%	FOR 1988 UP TO WEEK 39
REGION WITH DATA		94%	83%	
REGION INTERV. <15		41%	59%	

N.A., Information not available

N.R., Report not received

TABLE 5.3
 PROPORTION OF PROBABLE CASES WITH INTERVAL
 BETWEEN NOTIFICATION AND CONTROL MEASURES LESS THAN 24 HOURS
 REGION OF THE AMERICAS, 1986-1988

COUNTRY	1986	1987	1988*	REMARKS
ARGENTINA	0%	0%	0%	FOR 1988 UP TO WEEK 52
BOLIVIA	N.A.	5%	16%	FOR 1988 UP TO WEEK 40
BRAZIL	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 36
CHILE	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 26
COLOMBIA	N.A.	N.A.	0%	FOR 1988 UP TO WEEK 41
COSTA-RICA	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 40
CUBA	N.R.	N.R.	N.R.	
DOMINICAN REPUBLIC	0%	8%	17%	FOR 1988 UP TO WEEK 40
ECUADOR	26%	48%	29%	FOR 1988 UP TO WEEK 41
EL SALVADOR	N.A.	8%	18%	FOR 1988 UP TO WEEK 52
GUATEMALA	N.A.	42%	41%	FOR 1988 UP TO WEEK 52
HAITI	0%	0%	0%	FOR 1988 UP TO WEEK 41
HONDURAS	N.A.	N.A.	32%	FOR 1988 UP TO WEEK 52
MEXICO	N.A.	9%	35%	FOR 1988 UP TO WEEK 52
NICARAGUA	0%	0%	0%	FOR 1988 UP TO WEEK 52
PANAMA	N.A.	N.A.	N.A.	
PARAGUAY	0%	0%	0%	FOR 1988 UP TO WEEK 52
PERU	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 41
URUGUAY	90%	94%	98%	FOR 1988 UP TO WEEK 25
VENEZUELA	88%	92%	95%	FOR 1988 UP TO WEEK 39

N.A., Information not available

N.R., Report not received

TABLE 5.4
 PROPORTION OF PROBABLE CASES WITH INTERVAL
 BETWEEN ONSET OF PARALYSIS AND COLLECTION FECES LESS THAN 8 DAYS
 REGION OF THE AMERICAS, 1986-1988

COUNTRY	1986	1987	1988*	REMARKS
ARGENTINA	N.A.	68%	50%	FOR 1988 UP TO WEEK 35
BOLIVIA	N.A.	N.A.	25%	FOR 1988 UP TO WEEK 30
BRAZIL	N.A.	21%	22%	FOR 1988 UP TO WEEK 36
CHILE	100%	100%	100%	FOR 1988 UP TO WEEK 26
COLOMBIA	N.A.	33%	56%	FOR 1988 UP TO WEEK 41
COSTA-RICA	N.A.	N.A.	N.A.	
CUBA	N.R.	N.R.	N.R.	
DOMINICAN REPUBLIC	0%	80%	67%	FOR 1988 UP TO WEEK 40
ECUADOR	N.A.	24%	21%	FOR 1988 UP TO WEEK 41
EL SALVADOR	N.A.	15%	75%	FOR 1988 UP TO WEEK 52
GUATEMALA	N.A.	49%	63%	1987, 77% CASES WITH S1
HAITI	0%	0%	0%	FOR 1988 UP TO WEEK 41
HONDURAS	N.A.	44%	32%	FOR 1988 UP TO WEEK 52
MEXICO	41%	28%	43%	FOR 1988 UP TO WEEK 52
NICARAGUA	21%	11%	100%	
PANAMA	N.A.	N.A.	N.A.	
PARAGUAY	N.A.	89%	47%	FOR 1988 UP TO WEEK 52
PERU	32%	23%	42%	FOR 1988 UP TO WEEK 41
URUGUAY	N.A.	N.A.	N.A.	FOR 1988 UP TO WEEK 25
VENEZUELA	17%	36%	34%	FOR 1988 UP TO WEEK 39
REGION WITH S1		68%	76%	
REGION S1 < 8 DAYS		24%	38%	

N.A., Report not available

N.R., Report not received

Schedule for 1988 National Vaccination Days

Country	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Belize				17								
Bolivia				17			24					
Brazil					21			13				
Colombia					28 ^a		25 ^a			26	1 ^b	
Dominican Republic			19-20 ^c				16-17 ^c				19-20 ^d	
Ecuador					28-29							
El Salvador	31	28		10								
Guatemala				21-22	18-19							
Haiti									11	23		4
Honduras				29-30		3-4		12				
Mexico	30 ^e		19 ^e							24-28 ^f		
Nicaragua			27-28	24-25	28-29							
Paraguay							30 ^a		10			
Peru					22		10 ^d					
Venezuela		7		10		12						

^a Polio

^b Accelerated activities

^c Polio and DPT (under 2 years)

^d Measles and Polio (under 2 years)

^e Polio and DPT

^f Measles

Table 7
EPI Vaccination Coverage, 1986-1988
Selected Countries: Latin America
 Fully vaccinated children, less than one year of age

GUATEMALA		BCG	DPT3	OPV3	Measles
	1986	8.0	39.0	41.0	54.0
	1987	34.0	16.0	18.0	24.0
	1988	38.0	47.0	55.0	54.0
HONDURAS		BCG	DPT3	OPV3	Measles
	1986	72.0	62.0	63.0	60.0
	1987	66.0	58.0	61.0	57.0
	1988	84.0	74.0	70.0	76.0
EL SALVADOR		BCG	DPT3	OPV3	Measles
	1986	51.0	50.0	51.0	51.0
	1987	55.0	53.0	57.0	48.0
	1988	65.0	61.0	62.0	63.0
HAITI		BCG	DPT3	OPV3	Measles
	1986	-	-	-	-
	1987	45.0	28.0	28.0	23.0
	1988	45.0	49.0	48.0	59.0
DOMINICAN REPUBLIC		BCG	DPT3	OPV3	Measles
	1986	-	80.0	79.0	71.0
	1987	-	80.0	79.0	71.0
	1988	38.0	39.0	64.0	26.0
BOLIVIA		BCG	DPT3	OPV3	Measles
	1986	15.0	29.0	31.0	17.0
	1987	31.0	24.0	28.0	33.0
	1988	27.0	39.0	40.0	44.0
ECUADOR		BCG	DPT3	OPV3	Measles
	1986	93.0	43.0	43.0	49.0
	1987	85.0	51.0	51.0	46.0
	1988	85.0	54.0	58.0	52.0
PERU		BCG	DPT3	OPV3	Measles
	1986	54.0	50.0	50.0	41.0
	1987	61.0	43.0	45.0	56.0
	1988	57.0	61.0	61.0	64.0
COLOMBIA		BCG	DPT3	OPV3	Measles
	1986	70.0	48.0	53.0	45.0
	1987	80.8	58.0	82.0	59.0
	1988	99.0	74.0	94.0	74.0
VENEZUELA		BCG	DPT3	OPV3	Measles
	1986	86.0	58.0	64.0	48.0
	1987	-	54.0	64.0	57.0
	1988	-	51.0	68.0	49.0

Table 8

EPI: Projected Trends in Internal and External Funding, 1987-1989

By Country, Thousands of US Dollars

		1987	1988	1989	TOTAL
ARGENTINA	External	283.	368.	350.	1,001.00
	Internal	1,933.	1,838.	1,838.	5,609.00
BELIZE	External	0.00	341.9	230.6	572.50
	Internal	0.00	170.4	159.4	329.80
BOLIVIA	External	755.8	2,436.8	1,067.4	4,260.00
	Internal	965.5	1,109.5	1,276.	3,351.00
BRAZIL	External	1,458.3	1,514.	1,524.	4,496.30
	Internal	39,068.4	39,462.3	38,364.2	116,894.90
CHILE	External	0.00	267.3	147.4	414.70
	Internal	0.00	1,288.1	1,405.3	2,693.40
COLOMBIA	External	732.0	924.9	390.6	2,047.50
	Internal	2,221.1	1,960.1	1,910.2	6,091.40
COSTA RICA	External	234.3	246.	208.	688.30
	Internal	1,662.5	1,691.	1,781.	5,134.50
DOMINICAN REPUBLIC	External	1,387.9	699.6	612.9	2,700.40
	Internal	2,196.3	2,035.9	2,088.2	6,320.40
ECUADOR	External	755.8	532.9	717.4	2,006.10
	Internal	2,461.9	2,430.1	2,391.8	7,283.80
EL SALVADOR	External	1,068.7	1,038.0	877.0	2,983.70
	Internal	3,168.7	3,164.9	3,247.0	9,580.60
GUATEMALA	External	2,477.0	2,184.0	829.0	5,490.00
	Internal	2,846.3	2,883.8	2,871.8	8,601.90
GUYANA	External	1,211.5	1,140.0	1,070.	3,421.50
	Internal	849.2	1,106.3	1,314.7	3,270.20
HONDURAS	External	1,904.5	1,230.4	1,383.0	4,517.90
	Internal	3,962.5	4,000.5	3,855.	11,818.00
JAMAICA	External	381.9	227.7	171.6	781.20
	Internal	2,893.	3,156.9	2,690.8	8,740.70
MEXICO	External	1,587.4	1,123.	793.2	3,503.60
	Internal	3,141.3	3,979.	4,360.	11,480.30
PERU	External	1,328.8	1,303.	910.	3,541.80
	Internal	2,719.5	2,626.	2,789.	8,134.50
PARAGUAY	External	221.5	205.1	214.6	641.20
	Internal	557.9	540.2	542.7	1,640.80
PANAMA	External	28.4	205.1	214.6	448.10
	Internal	321.0	1,573.1	1,529.	3,423.10
URUGUAY	External	158.5	115.5	127.0	401.00
	Internal	1,020.	1,025.	1,042.	3,087.00
VENEZUELA	External	730.5	335.	363.	1,428.50
	Internal	3,771.	3666.	3679.	11,116.00

Table 9

EPI: Projected Trends in Internal and External Funding, 1987-1989

Thousands of US Dollars

	1987	1988	1989	TOTAL
External	17,908	17,592	14,366	49,866
Internal	74,602	83,237	80,415	238,254

Table 10

EPI: Polio Eradication Initiative**Financial Contributions by Donor Agency to PAHO Central Fund***

By Year, Thousands of US Dollars

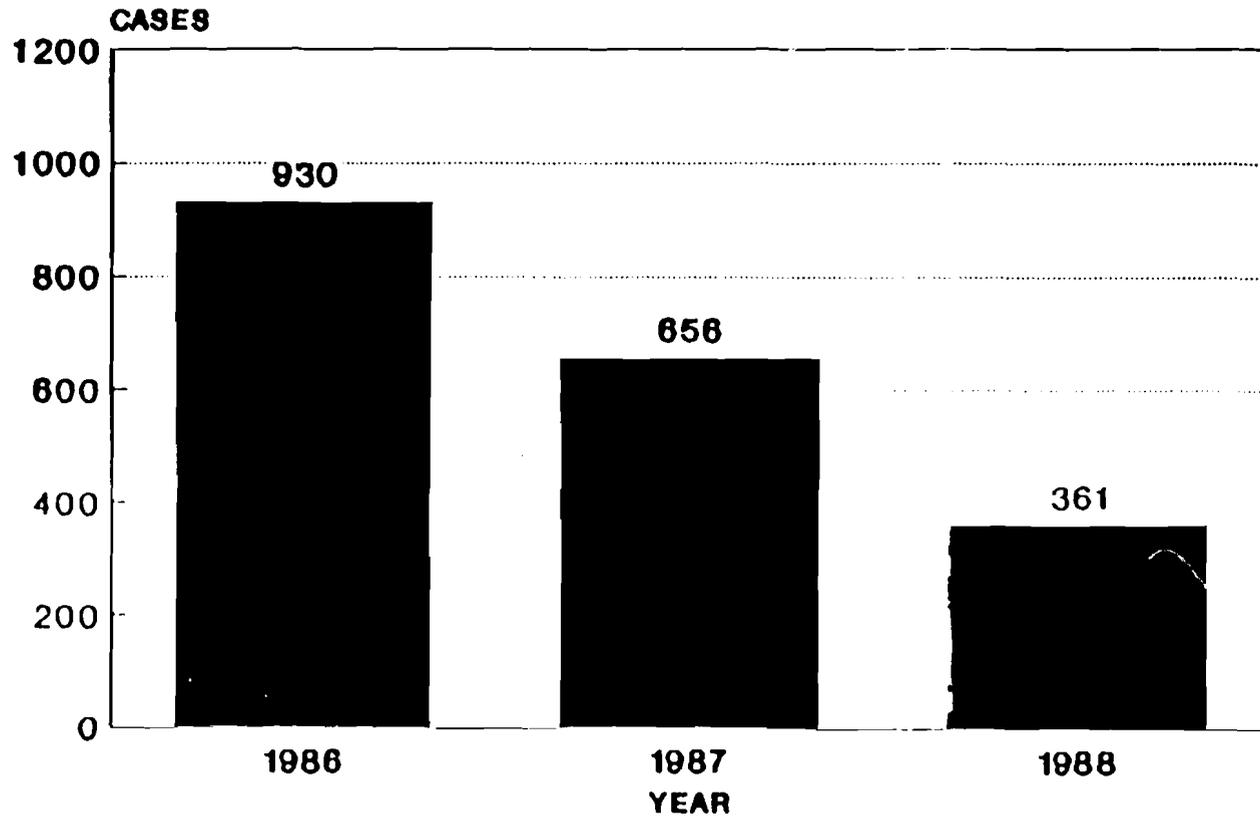
	AID	PAHO	IDB	ROTARY	CPHA
1986	3,922	930	0	112	175
1987	4,837	930	1,100	112	175
1988	4,588	930	550	112	175
1989	2,848	930	550	112	175
TOTAL TO DATE ¹	16,295	3,720	2,200	450	700
TOTAL OBLIGATION TO 1990	20,600	5,400	5,400	1,200	1,200

¹ Mid 1989

* Both UNICEF and Rotary contribute committed funds directly to country programs. Neither these funds, nor A.I.D. Mission contributions to country programs are accounted within the PAHO Central fund. UNICEF's commitment to the EPI Polio Initiative is \$5 million. Rotary's commitment, exclusive of funds directed through PAHO, is \$9.5 million.

FIGURE 1

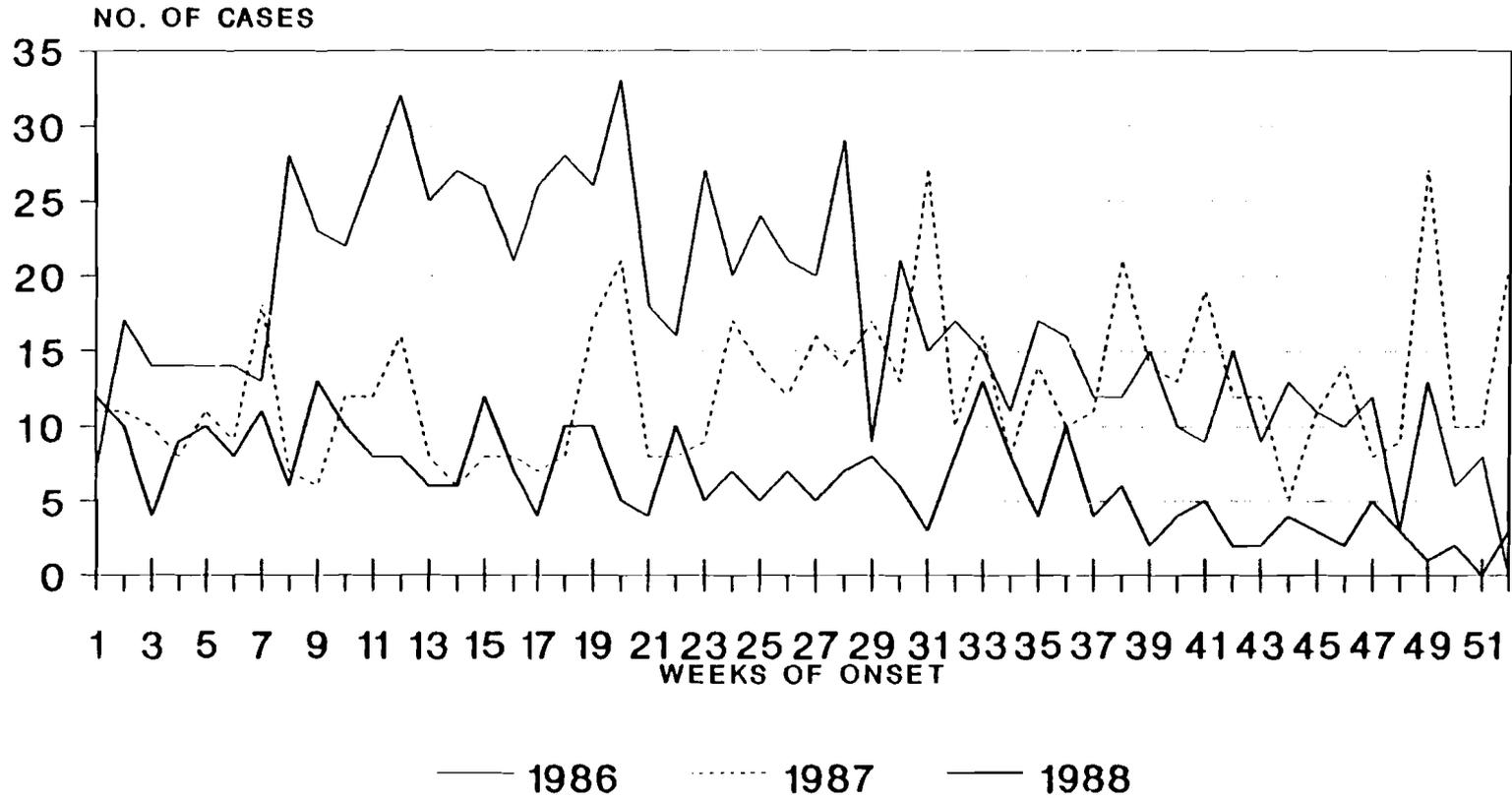
CONFIRMED POLIO CASES AMERICAS, 1986 TO 1988*



- PROVISIONAL DATA
SOURCE: PAHO

FIGURE .2

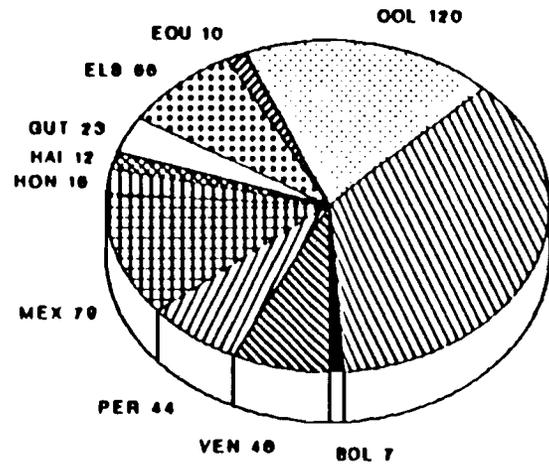
WEEK OF ONSET OF SYMPTOMS CONFIRMED CASES OF POLIOMYELITIS REGION OF THE AMERICAS, 1986-1988



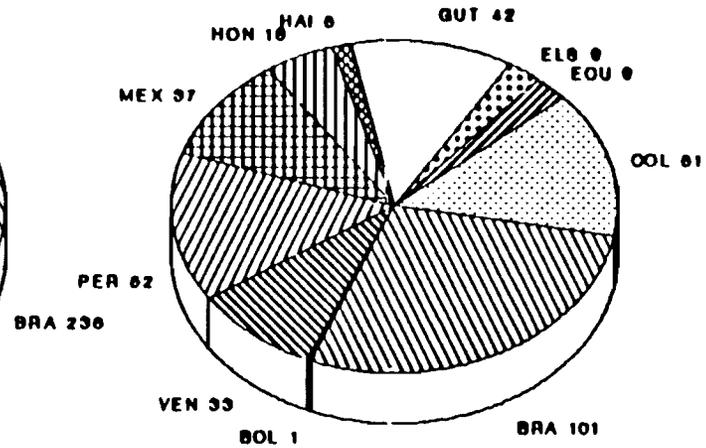
Note: For 1988 10 cases have unknown date of onset and 155 cases are not yet confirmed or discarded

FIGURE 3

CONFIRMED CASES OF POLIOMYELITIS REGION OF THE AMERICAS



1987 (TOTAL = 647 CASES**)

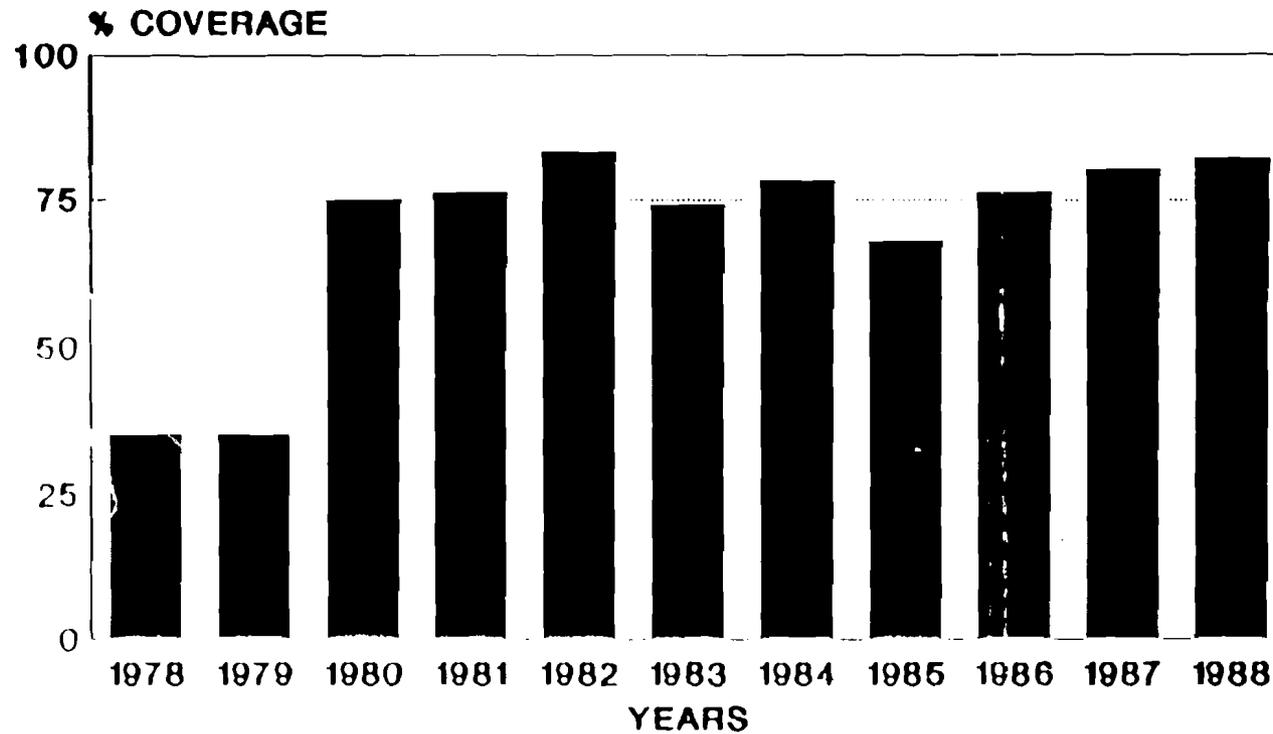


1988 (TOTAL = 361 CASES*)

• PROVISIONAL DATA
** EXCLUDES 9 VACCINE-RELATED CASES
SOURCE: WEEKLY TELEXES FROM COUNTRIES

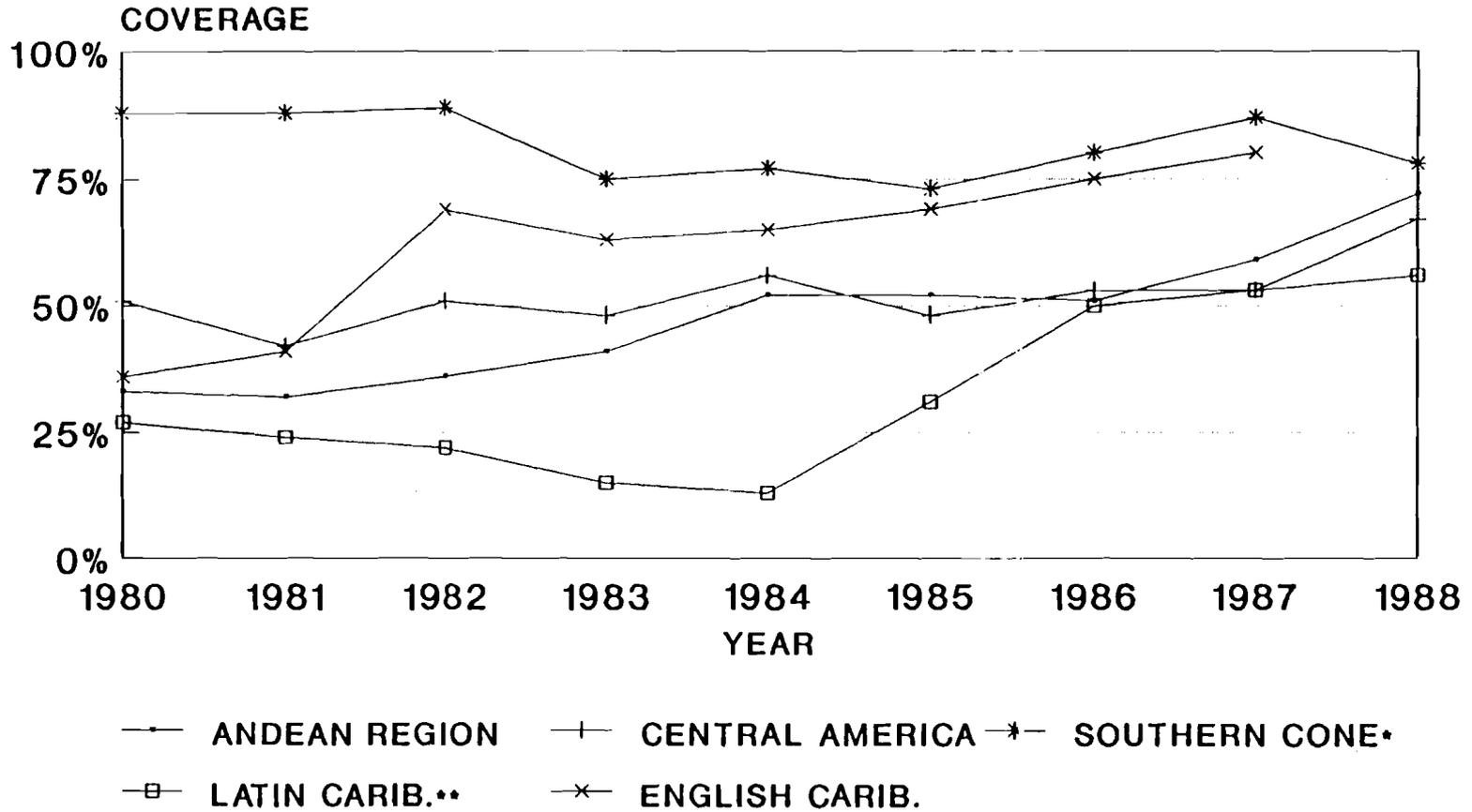
FIGURE 4

VACCINATION COVERAGE IN CHILDREN UNDER ONE YEAR OF AGE IN THE REGION OF THE AMERICAS, 1980-1988 - OPV (3rd dose*)



Source: Country data
- Brazil, Mexico, Paraguay and Cuba coverages based on 2 doses.

OPV3 COVERAGE BY SUBREGION AMERICAS, 1980 - 1988



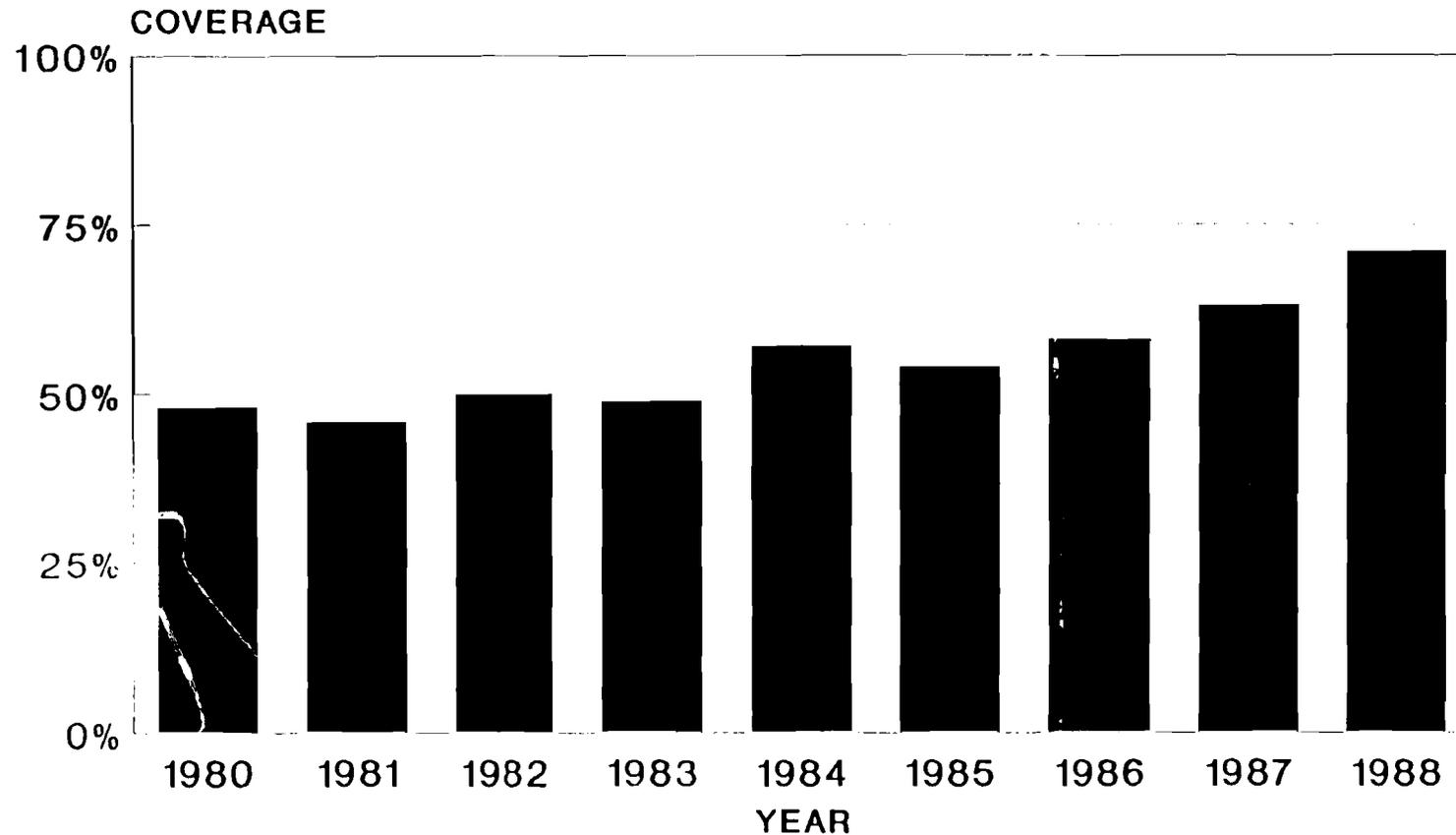
SOURCE: PAHO

• EXCLUDES PARAGUAY

** EXCLUDES CUBA

FIGURE 4.2

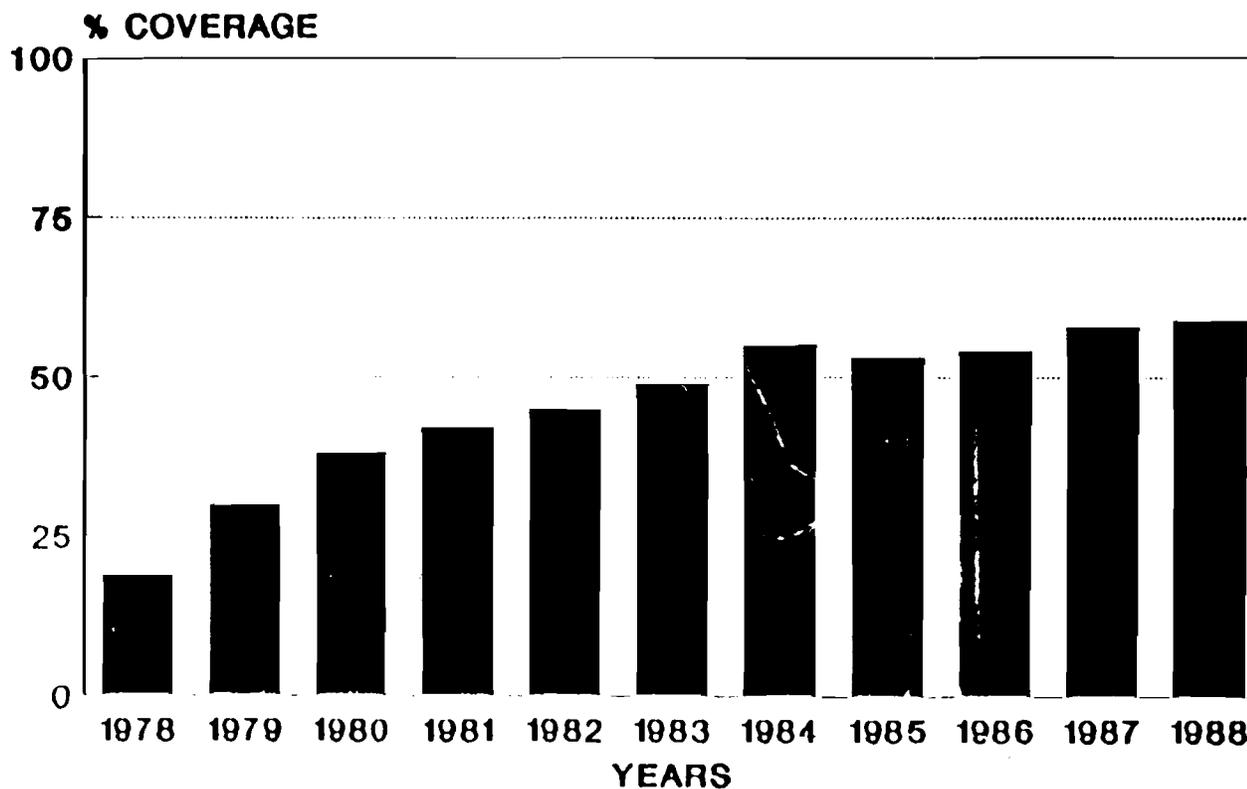
OPV3 COVERAGE LATIN AMERICA AND THE CARIBBEAN 1980 TO 1988



- A. DOES NOT INCLUDE BRA,MEX,CUB,PAR
- B. 1984 DOES NOT INCLUDE DOR
- C. 1988 DOES NOT INCLUDE ENG. CARIB.

FIGURE 5

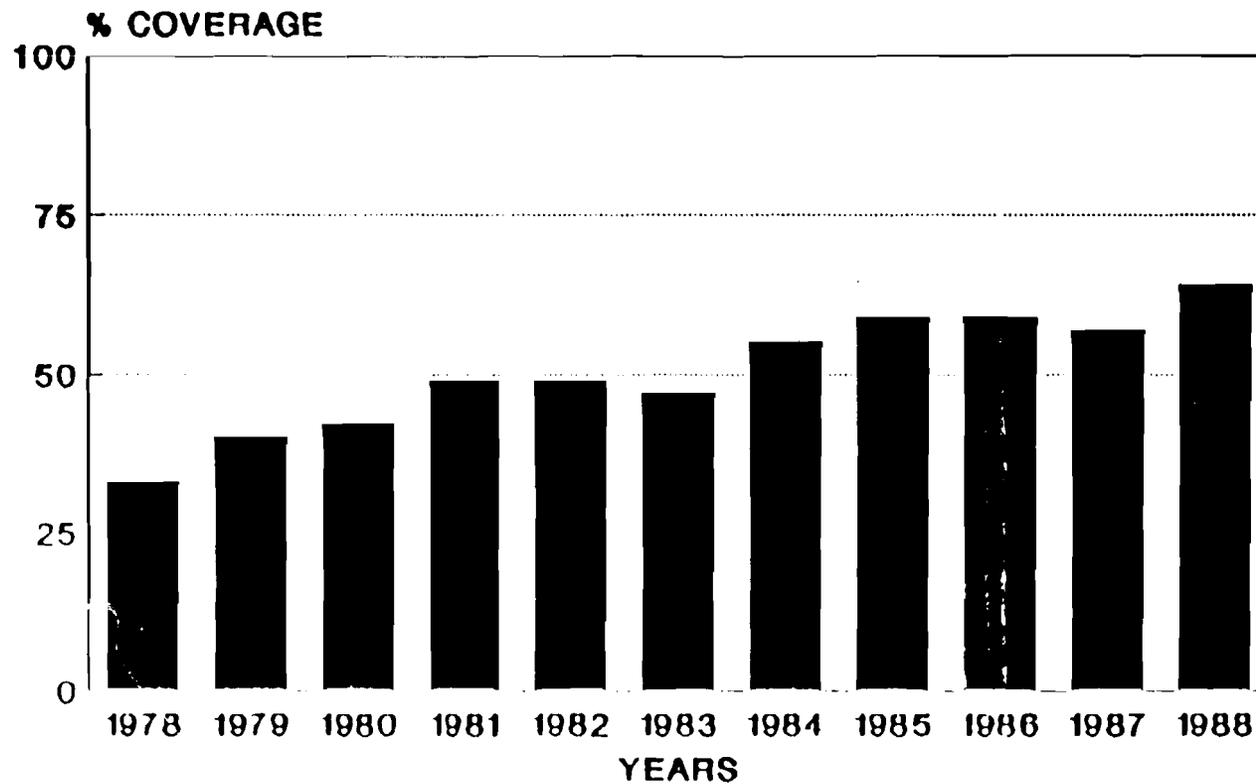
VACCINATION COVERAGE IN CHILDREN UNDER ONE YEAR OF AGE IN THE REGION OF THE AMERICAS, 1980-1988 - DPT (3rd dose)



Source: Country data

FIGURE 6

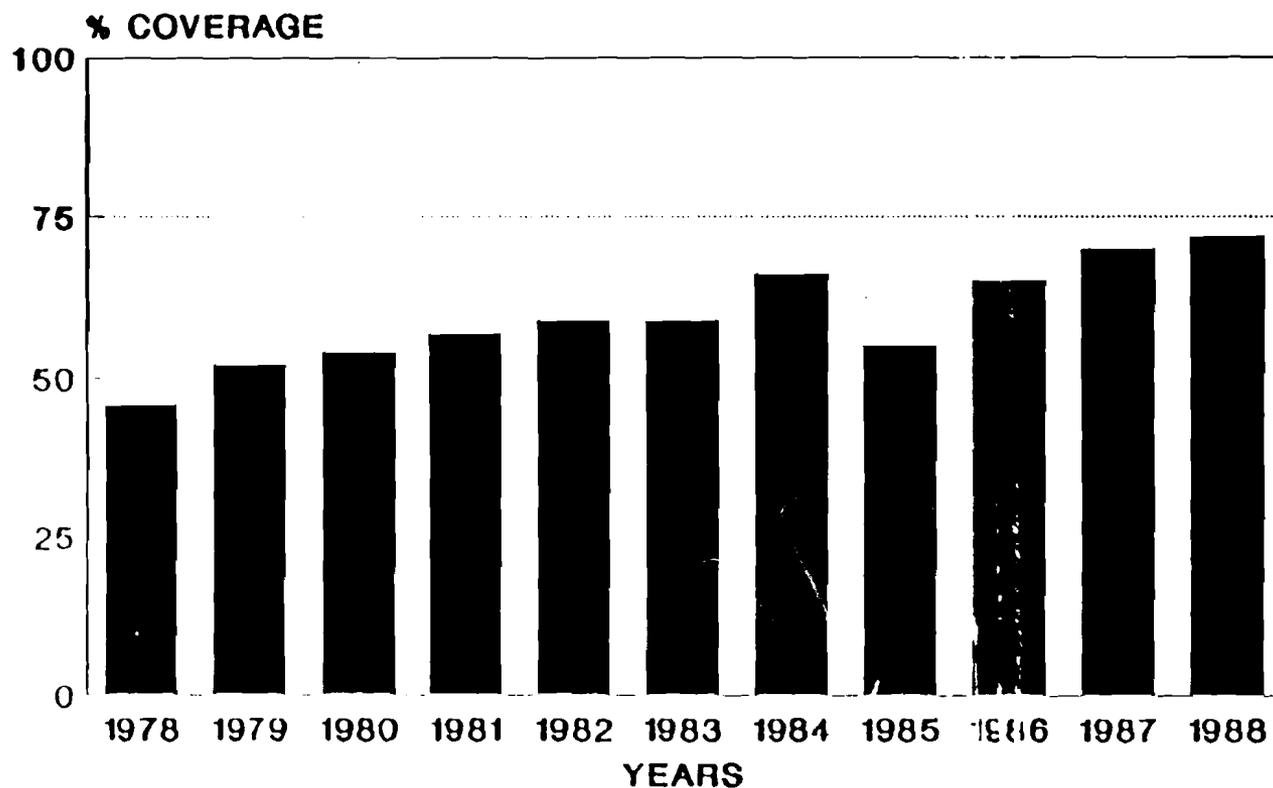
VACCINATION COVERAGE IN CHILDREN UNDER ONE YEAR OF AGE IN THE REGION OF THE AMERICAS, 1980-1988 - MEASLES



Source: Country data

FIGURE 7

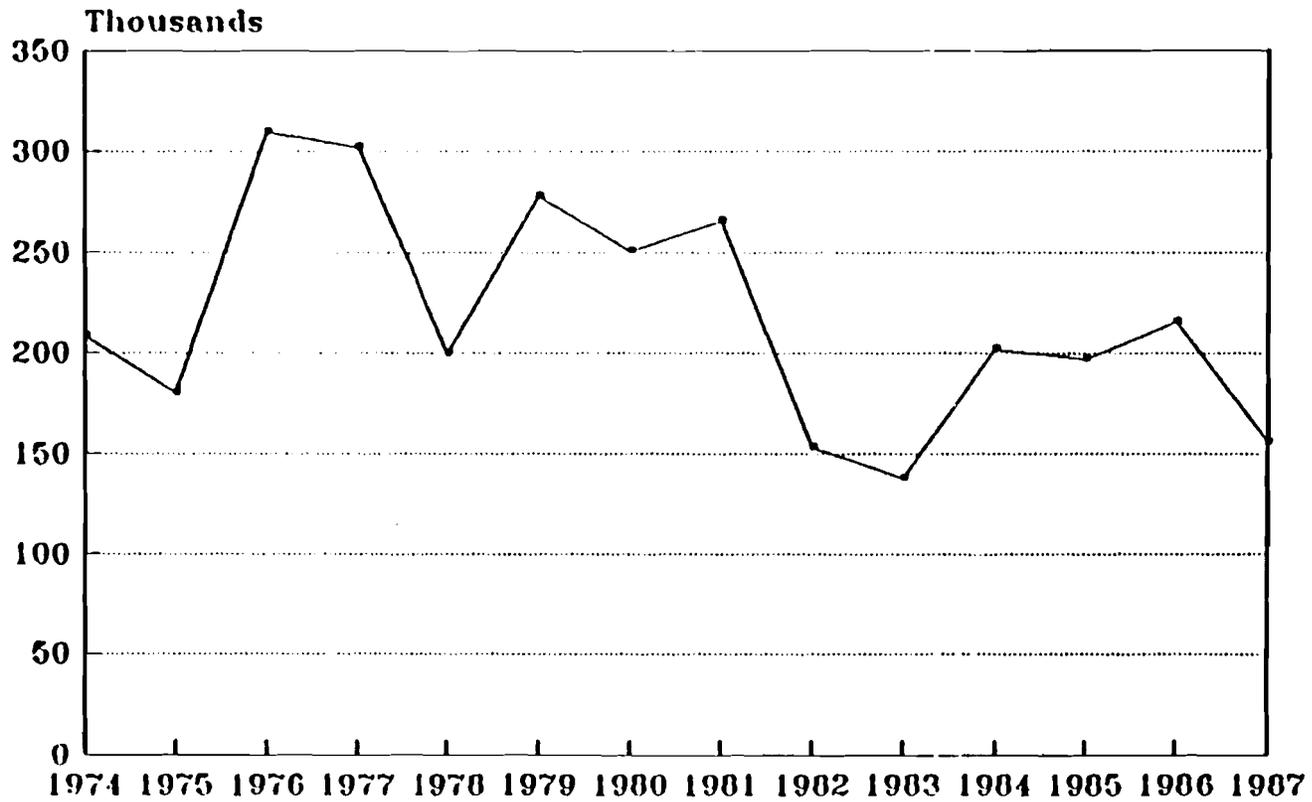
VACCINATION COVERAGE IN CHILDREN UNDER ONE YEAR OF AGE IN THE REGION OF THE AMERICAS, 1980-1988 - BCG



Source: Country data

FIGURE 8

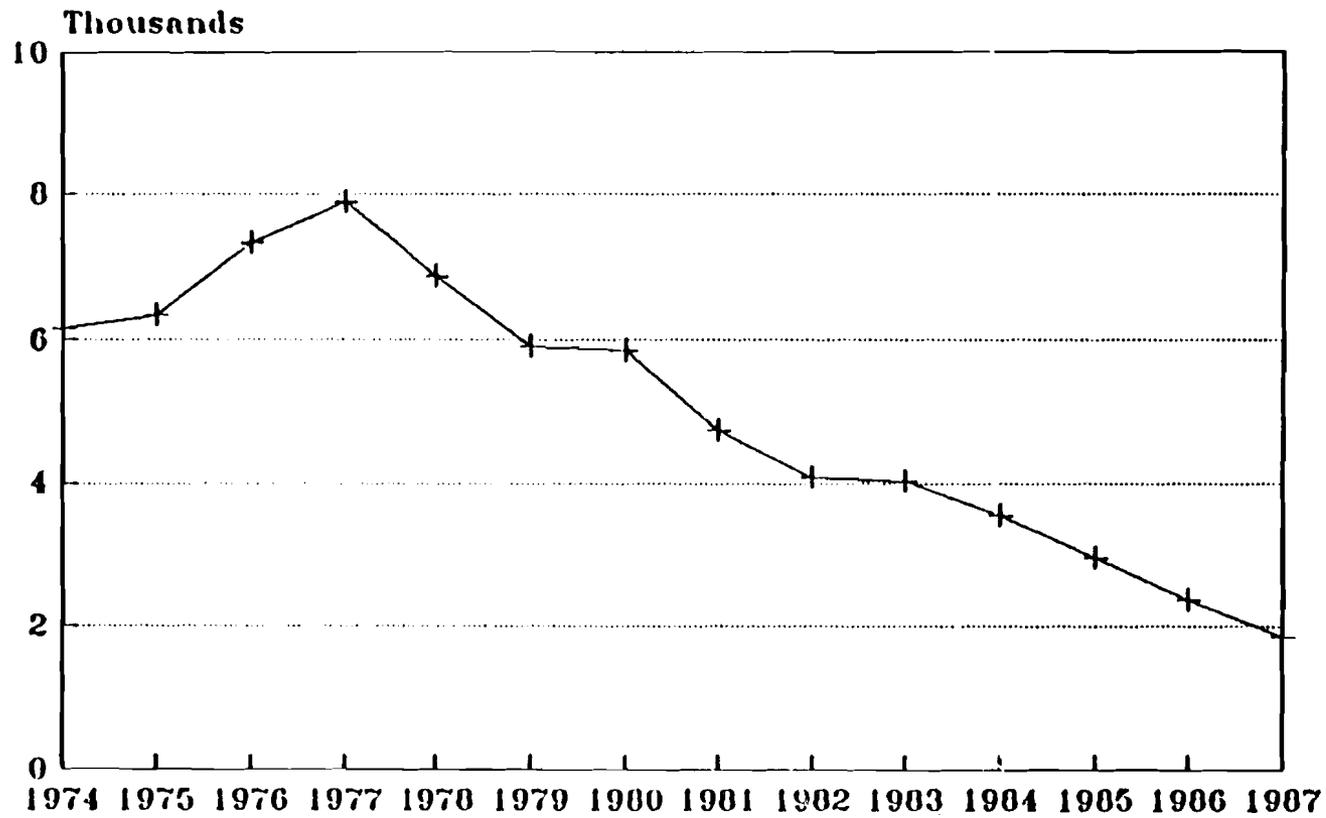
EPI REPORTED CASES: MEASLES REGION OF THE AMERICAS, 1974-1987



Source: PAHO

FIGURE 9

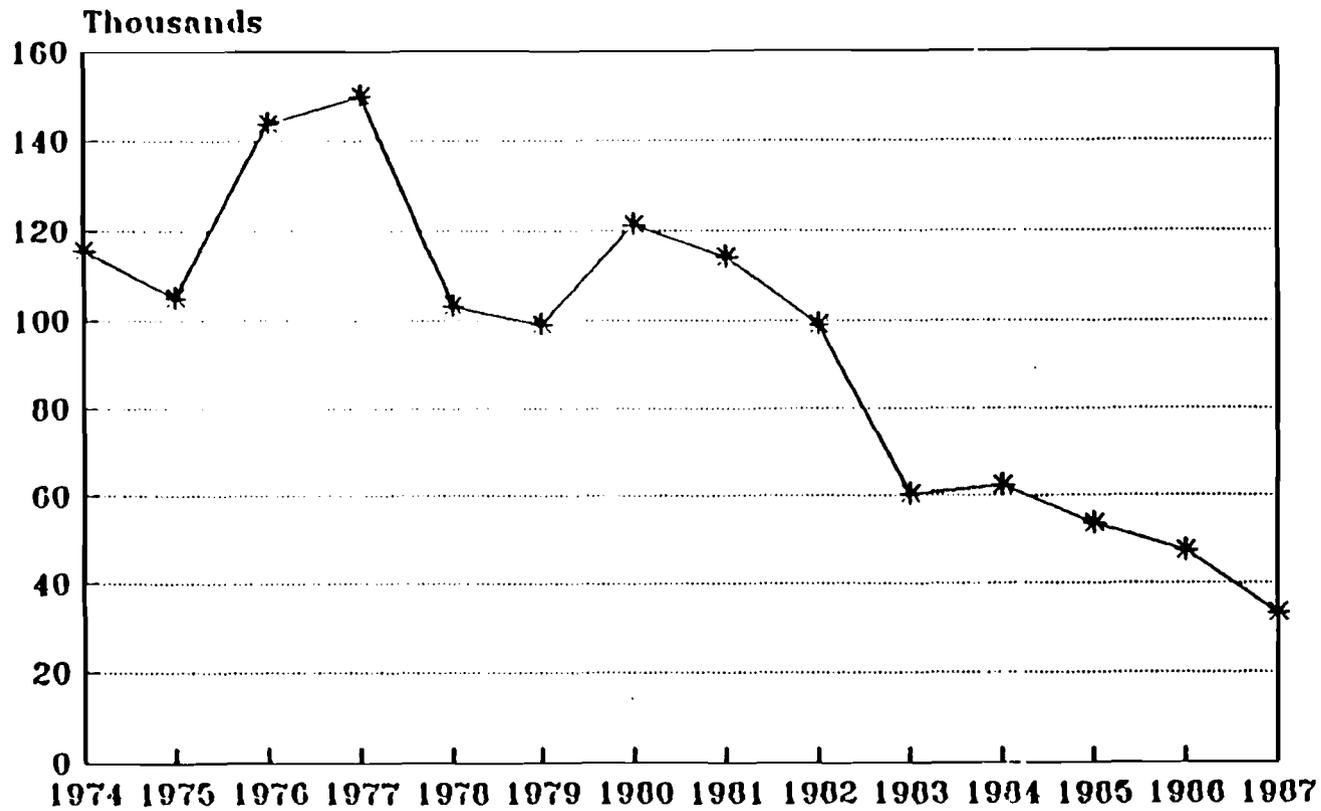
EPI REPORTED CASES: DIPHTHERIA REGION OF THE AMERICAS, 1974-1987



Source: PAHO

FIGURE 10

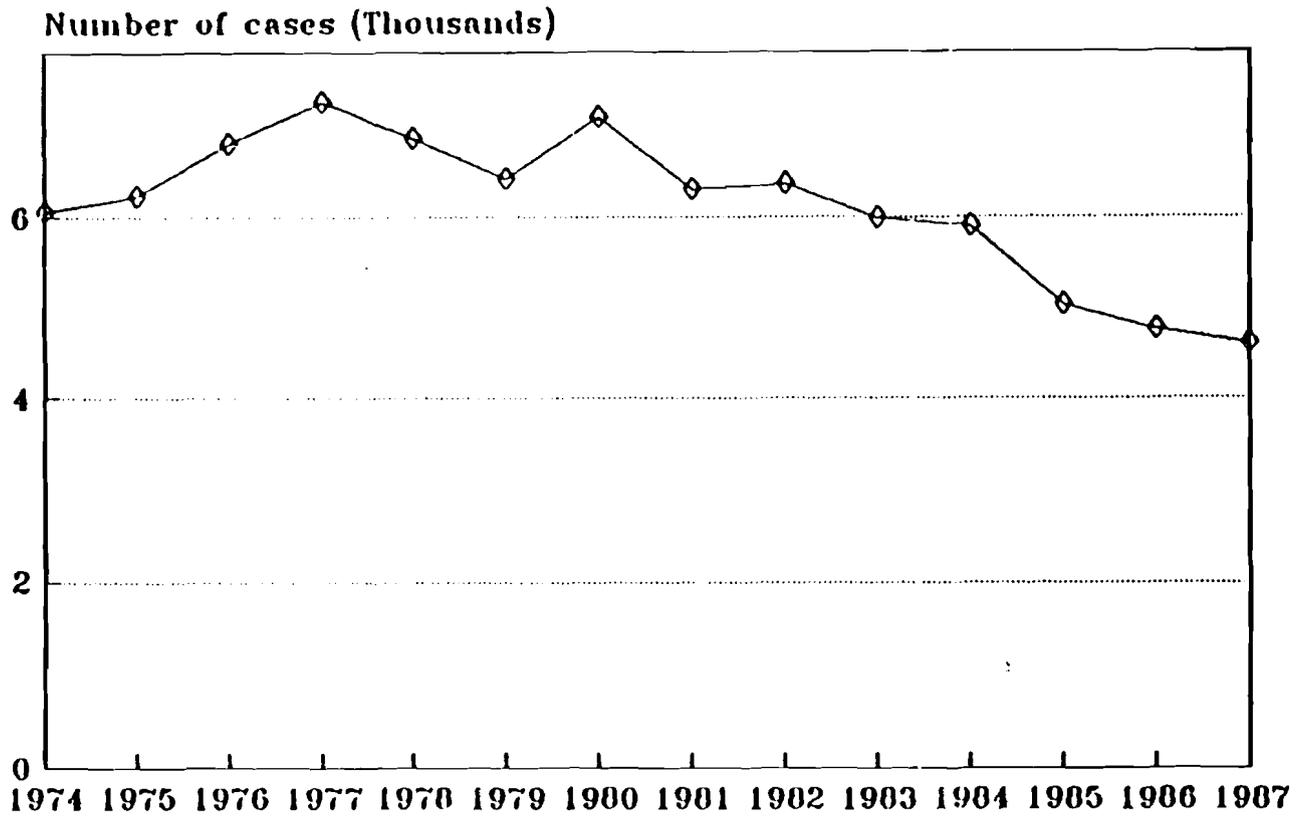
EPI REPORTED CASES: PERTUSSIS REGION OF THE AMERICAS, 1974-1987



Source: PAHO

FIGURE 11

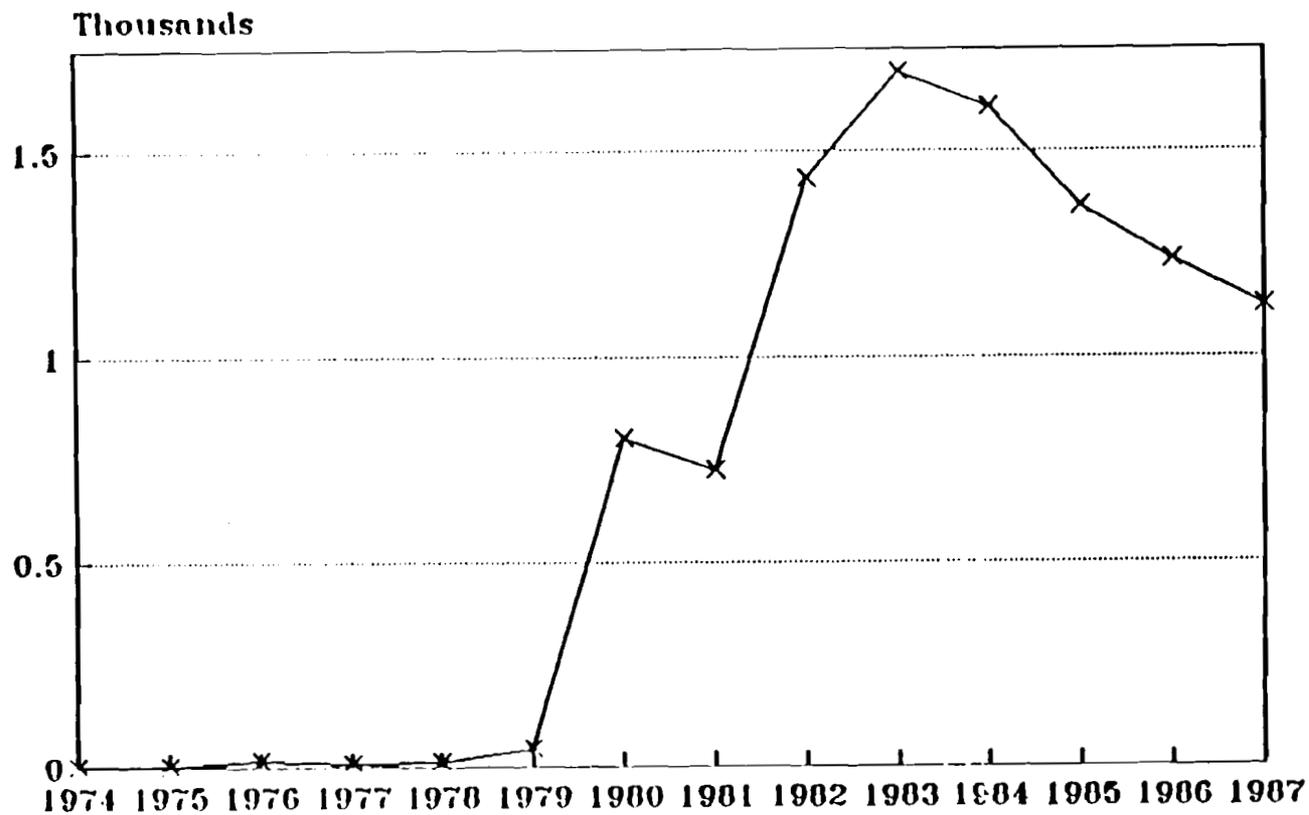
EPI REPORTED CASES: TOTAL TETANUS REGION OF THE AMERICAS, 1974-1987



Source: PAHO

FIGURE 12

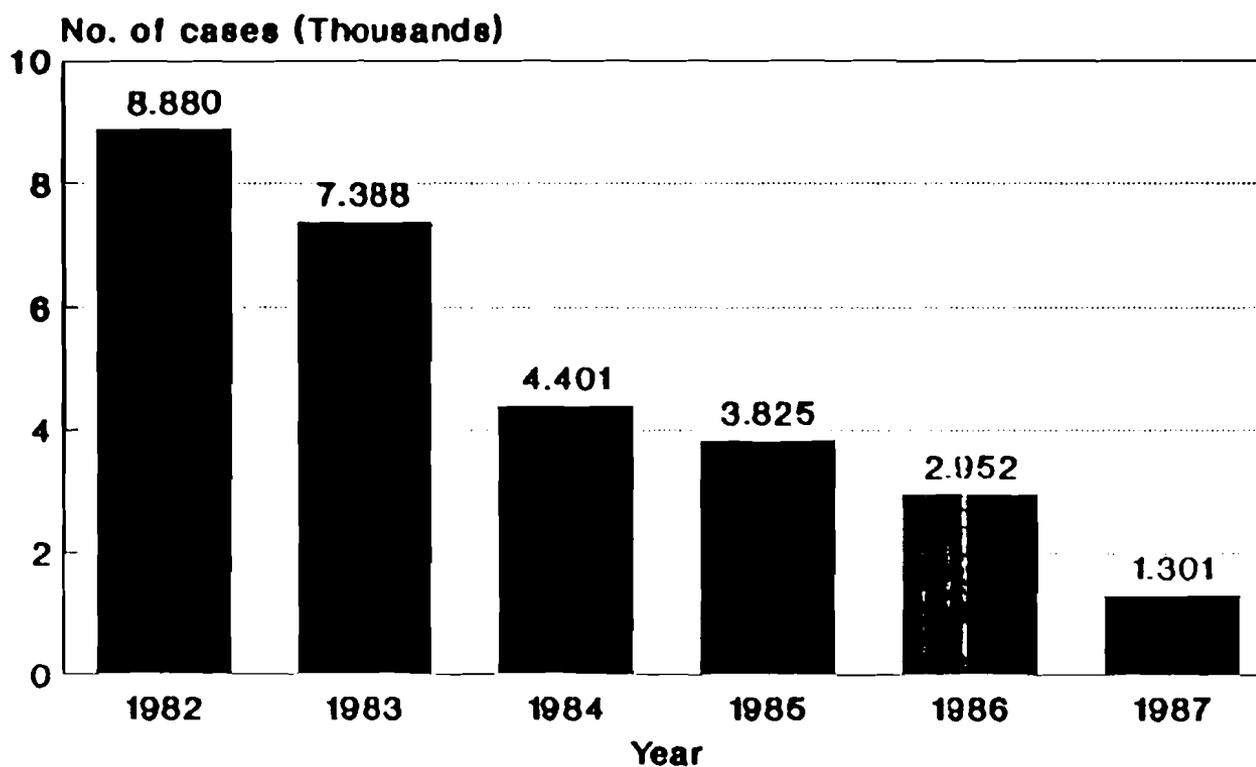
EPI REPORTED CASES: NEONATAL TETANUS REGION OF THE AMERICAS, 1974-1987



Source: PAHO

FIGURE 13

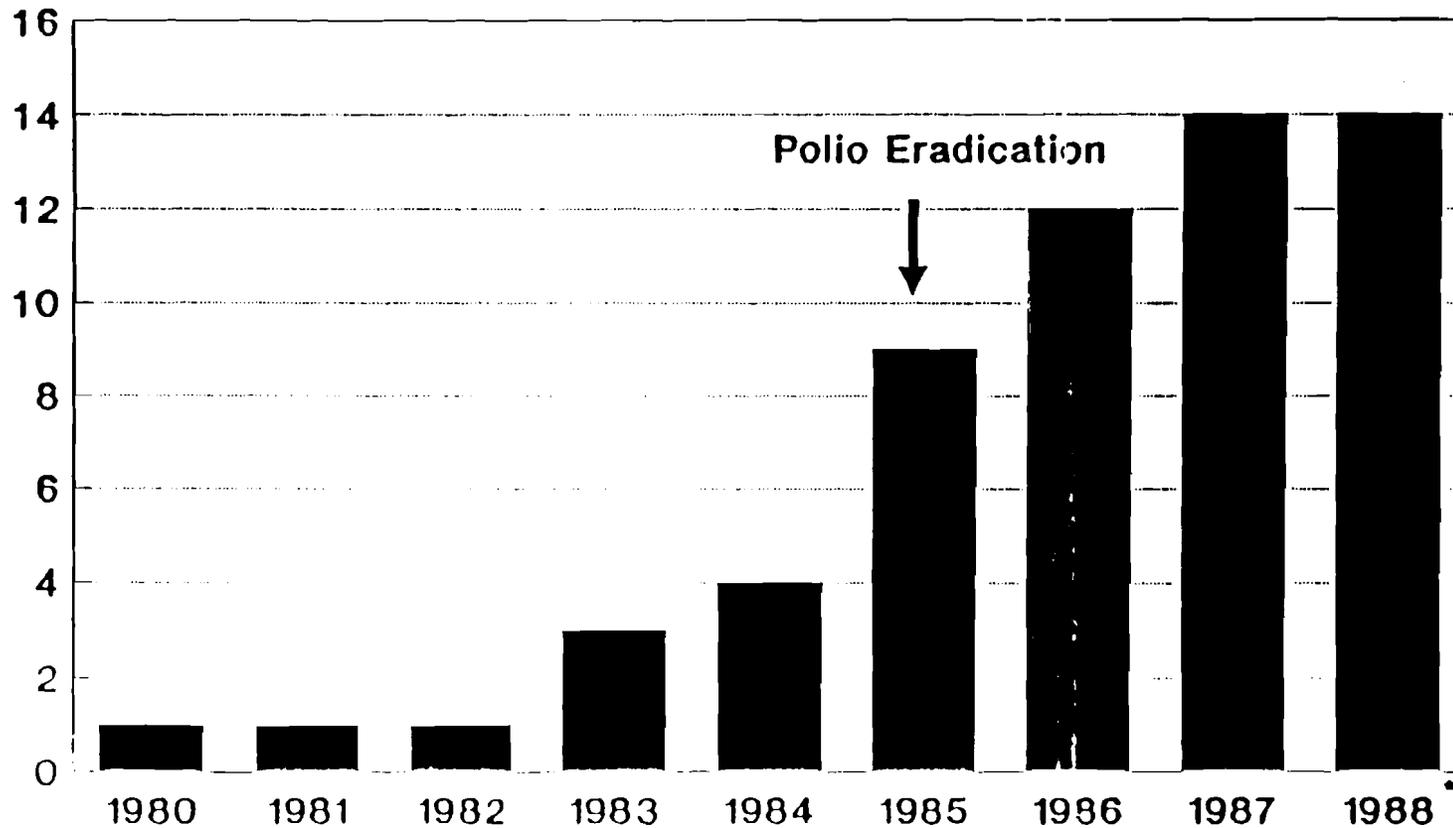
REPORTED CASES OF MEASLES IN THE ENGLISH-SPEAKING CARIBBEAN 1982 TO 1987



Source: PAHO

FIGURE 14

NUMBER OF COUNTRIES HOLDING NATIONAL VACCINATION DAYS REGION OF THE AMERICAS, 1983-1988



Source: PAHO/WHO
• Planned

ANNEX 9.3

Report of the Regional Laboratory Network

Sixth TAF Meeting, Buenos Aires, November 1-4, 1988

A two-day meeting of representatives from the network of poliovirus reference laboratory was held immediately before the TAG meeting. The objective of this meeting was to review the methodology for the laboratory diagnosis of poliomyelitis, to analyze the laboratory results of confirmed cases and to discuss related issues. A summary of this meeting is presented below.

1) General Aspects: The isolation of poliovirus from probable cases followed by its molecular characterization is recognized as a very high priority. In order to achieve this, stools should be collected during the first two weeks after the onset of paralysis, before vaccination blockage. The samples should be well preserved and sent immediately to the laboratory. Information from each case should be provided to the laboratories, such as patient's identification, city of residence, date of onset of paralysis, date of collection of specimens, number of doses and dates of OPV. The epidemiologists and virologists should meet on a regular basis to discuss the interpretation of results and every month the laboratory should be supplied with a list of the cases confirmed by sequelae, death or other non-laboratory criteria. Virus isolation and identification, and strain characterization by dot-blot hybridization should be performed as early as possible, and laboratory reports sent to the epidemiologist as soon as possible.

Methodology: Experience of the reference laboratories in the polio eradication program has shown that polioviruses are most often isolated in RD (human rhabdomyosarcoma) cells. Vero cells, on the other hand, have not isolated any polioviruses which were not recovered in either RD or Hep-2 cells. Therefore, it was decided to make the use of Vero cells optional for isolation of polioviruses. Results of neutralization tests obtained so far in the polio eradication program in human sera have shown higher titers than anticipated. Accordingly it is now recommended that stable, high neutralization titers on paired sera be interpreted with great caution and that stable titers of 1:512 no longer be considered indicative of recent poliovirus infection. It was also recommended that re-isolation of poliovirus be attempted from any original stool specimen found positive in initial studies. This is considered a desirable step to confirm the presence of the virus in the specimen.

Research: The poliomyelitis eradication program has attained a stage of development that sensitive detection of wild polioviruses is of paramount importance. The laboratories of the network have

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resolved to implement the following methods to optimize detection of wild polioviruses which may be present in specimens containing an excess of vaccine-related strains:

1. Selective propagation of wild strains by careful selection of incubation temperatures.
2. Recognition of candidate wild isolates by plaque morphology.
3. Utilization of techniques to liberate polioviruses from immune complexes that may be present in some clinical specimens.
4. Continued development of wild strain-specific hybridization probes and polymerase chain reactions for selective amplification and detection of wild strains from clinical and environmental samples.
5. Analysis of results: Table 1 shows the laboratory results of confirmed cases of seven countries. Diagnosis by virus isolation and serology was achieved in 66 out of 221(30%) cases confirmed by all criteria, between weeks 32 and 41 of 1988. Virus isolations were obtained from 44 (25.9%) of 170 cases from which fecal samples were submitted to the laboratories. The results of intratypic differentiation by the dot-blot hybridization technique of 47 poliovirus isolates (three strains from Brazil isolated from cases confirmed after week 32/88 included in the analysis) are shown in Table 2. Only 10 of the viruses were typed as wild strains all of which were recovered from cases in Brazil, Colombia and Venezuela. Of the remaining strains 21 were identified as Sabin-like and 16 additional strains are currently being analyzed.
6. Testing of Contacts: Stool specimens from close contacts of the index case may, in many situations, be essential to the detection of the circulation of wild polioviruses. When stool specimens are obtained from contacts the following criteria should be applied:
 - 6.1. Contacts should be less than 5 years of age.
 - 6.2. Up to 4 contacts may be studied.
 - 6.3. Specimens should be taken from both the index cases and contacts before blockades, and approximately at the same time.
 - 6.4. The field epidemiologists should identify the most appropriate close contacts.

**ANNEX 9.4
MEMBERS OF THE TECHNICAL ADVISORY GROUP**

1. Dr. Donald A. Henderson (Chairman)
Dean, Johns Hopkins University
School of Hygiene and Public Health
Baltimore, Maryland
2. Dr. José Manuel Borgoño
Chief, Office of International Affairs
Ministry of Health
Santiago, Chile
3. Dr. Alan Hinman
Director, Center for Prevention Services
Centers for Disease Control
Atlanta, Georgia
4. Dr. João Baptista Risi, Jr.
Secretary, National Secretariat of Basic Health
Actions
Ministry of Health
Brasilia, Brazil
5. Dr. Jesús Kumate Rodríguez
Secretary of Health
Secretariat of Health
México City, México

**Annex 9.5:
LIST OF DOCUMENTS**

Pan-American Health Organization

- 1) Child Survival: Accelerated Immunization Program in the Americas, 1986-1990. A Proposal to the U.S. Agency for International Development.
- 2) Polio Eradication Field Guide. Technical Paper No. 6, "Expanded Program on Immunization", 1987.
- 3) "Identificación de las áreas de riesgo de tétano neonatal y de las soluciones operacionales para desarrollar medidas para controlar la enfermedad." Dr. Claudio Marcos da Silveira, EPI/TAG/6/88/20.
- 4) "Position Paper on Immunization Delivery in the Americas." September 1983. EPI/86/002.
- 5) "Polio Eradication Initiative in the Americas", Ciro A. de Quadros and Jean-Marc Olivé, June 23, 1988.
- 6) Tercera Reunión Centro Americana para la Revisión del PAI y la Erradicación de la Poliomiélitis, Informe Final. 15-17 Febrero 1989, Ciudad de Guatemala, Guatemala.
- 7) Sixth Meeting of the EPI Technical Advisory Group on Polio Eradication: Final Report, Conclusions and Recommendations. Buenos Aires Argentina, 1 to 4 November, 1988.
- 8) "Vigilancia de la Poliomiélitis en Bolivia." EPI/TAG6/88/29.
- 9) Recent Advances in Immunization, A Bibliographic Review. Neal A. Halsey and Ciro A. de Quadros, Coordinators. PAHO Sci. Pub. No. 451, 1983.

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Agency for International Development and A.I.D. Subcontractors

- 10) "Child Survival in Bolivia - Current Status and Priorities for Action", USAID/La Paz, November 1987. Prepared by The Resources for Child Health Project, USAID Contract No: DPE-5927-C-00-5068-00
- 11) "Vaccination Coverage Rates - USAID Child Survival Emphasis Countries", USAID/Washington, March 1989. Prepared by the Center for International Health Information, USAID Contract No. DPE-5951-Z-00-8004-00
- 12) "Plan of Operation for the Expanded Programme of Immunization 1989", USAID/La Paz, December 1988. (Similar documents for Guatemala and Honduras)
- 13) "Diagnosis of the Measles Vaccination System in Costa Rica: An Overview Brief" HIID/PRICOR Briefs, December 2, 1988.
- 14) "Evaluation of EPI Service Delivery in the Cono Sur of Lima, Perú", Perú PRICOR Report, September 8, 1988, Series 01.09/88.

Government of Bolivia, Ministerio de Previsión Social y Salud Pública, Dirección Nacional de Epidemiología

- 15) Proyecto Programa Ampliado de Inmunizaciones Bolivia 1987-1991.
- 16) Programa Ampliado de Inmunizaciones, Gestión 1988.
- 17) Encuesta de Cobertura Vacunal, Informe Final, Encova 1987, Resultados Finales.

ICC Member Agencies

- 18) EPI Policy and Strategic Approaches in the Americas, A Joint Statement by ICC Member Agencies. PAHO/WHO, UNICEF, USAID, Rotary International, IDB.

World Health Organization

- 19) "Expanded Program on Immunization in the Americas National EPI Plans of Action: Preliminary Financial Analysis" WHO/EPI/GAG/87.
- 20) Report of the Expanded Programme on Immunization, Global Advisory Group Meeting, 17-21 October 1988, Abidjan, Côte d'Ivoire. WHO/EPI/GEN/89.1

Inter-American Development Bank

- 21) "Economic and Social Progress in Latin America 1988 Report.", Inter-American Development Bank, Washington D.C., 1988.

Other Organizations

- 22) "Immunizing the World's Children" Population Reports, Series L, Number 5, March-April 1986, Population Information Program, Johns Hopkins University, Baltimore.
- 23) "Cost-effectiveness of Immunization Programs in Columbia", Creese A.L., Dominguez-Uga M.A., PAHO Bulletin 21(4), 377-394, 1987.

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MEMORANDUM

TO: Dr. Ciro de Quadros
FROM: Don Rudisuhle/EPI Evaluation Team
DATE: March 13, 1989
RE: Central procurements by PAHO on behalf of
foreign governments
CC: John Fitzsimmons

During my recent visit to Bolivia, the Chief of Financial Administration at the Department of Epidemiology at the Ministry of Health brought to my attention a financial reporting problem which they have been experiencing for some time now.

The problem has resulted from the fact that the Chief of Financial Administration has not been receiving a reconciliation regarding the exact amount of the funds expended by PAHO on behalf of the Ministry for importation of goods such as pharmaceuticals and insecticides. The Ministry gives a check to the local PAHO office who in turn credits their account at PAHO/Washington, who is acting as the procurement agent. The Ministry has been receiving a copy of the invoice for the value of the goods, but never for the insurance, sea and inland freight. These items often account for one-half of the cost of the transaction. This inability to reconcile has created problems between the Ministry and the PL-480 program administrators in Bolivia, since they are the source of the funds used for these importations. Ultimately, it could lead to an interruption in the flow of funds from the PL-480 program to the Ministry of Health.

When this situation was brought to the attention of financial personnel at PAHO Washington, it was revealed that such a reconciliation exists and in fact is sent to the all Ministries on an annual basis, or at any time upon request. Since the Ministry stated that they had not received any reconciliations since 1980, it would appear that there is a problem with the internal transmission of information within the Ministry itself.

In order to resolve this problem, a copy of all transactions made since 1980 should be forwarded to the Dr. Jorge Mariscal, Director of Epidemiology at the Ministry of Health in Bolivia. This is simply a matter of photocopying some sheets of paper, since the Accounts Section at PAHO/Washington keeps detailed records on these

transactions, by country. It might also be a good idea to circularize all Ministries in Latin America with a statement which indicates the balance of their account with PAHO/Washington. Those countries that do not agree with the amount presented could then request details of all shipments and costs incurred.

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PAGE 01 OF 02 SAM SA 03251 00 OF 02 132310Z 1420 023720 A103310 ACTION A10-00

SAM SA 03251 00 OF 02 132310Z 1420 023720 A103310 USAID FINDS IT MORE HELPFUL TO TRACK THESE COMMODITIES DIRECTLY.

ACTION OFFICE LADR-03 INFO PPDC-01 LAOP-02 LACE-01 LAEM-02 SAST-01 PPCE-01 PPPB-02 GC-01 GCLA-01 ES-01 STHE-03 RELO-01 AMAD-01 KAY-01 /022 AB

--THE USAID IS NOT THINKING ABOUT A BUY-IN TO PAHO'S AGREEMENT WITH LAC AT THIS POINT IN TIME.

INFO LOG-00 CIAE-00 EB-00 DODE-00 ARA-00 AMAD-01 /001 W -----215654 132311Z /63-70 38

C. FINANCIAL

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--FINANCIAL DATA ARE NOT DISCLOSED TO THE USAID OUTSIDE OF PLANNING FIGURES.

UNCLAS SAN SALVADOR 03251

--DONORS APPEAR TO BE COMPLETING THEIR OBJECTIVES AS STATED IN THE NPAS AND REVIEWED QUARTERLY BY THE COORDINATING COMMITTEE.

AIDAC

--THE USAID CANNOT COMMENT ON EFFECTIVENESS THROUGH EXPENDITURES VS. ACCOMPLISHMENTS BUT MORE TIME WILL BE NEEDED FOR EL SALVADOR TO REACH 90 COVERAGE (PERHAPS AS MUCH AS 5 MORE YEARS).

FOR B. SPAID LAC/DR/HM

D. TECHNICAL

E.O. 12356: N/A SUBJECT: LAC CA REGIONAL ACCELERATED IMMUNIZATION PROJECT (598-0543/597-0005) MID-TERM EVALUATION.

--DURING THE PERIOD 1987-1988 THE MINISTRY OF HEALTH EVALUATED THEIR SYSTEM OF IMMUNIZATION COVERAGE. A MEETING WAS HELD IN NOVEMBER 1988 IN WHICH THE REGIONAL MOH DIRECTORS AND THE MAJOR DONORS PARTICIPATED. THE FOLLOWING CONCLUSIONS WERE REACHED DURING THE MEETING.

REF: (A) STATE 059475 (B) STATE 042490

--IMMUNIZATION COVERAGE FOR THE MAJOR IMMUNO-PREVENTABLE DISEASES INCREASED FROM 1985 TO 1988 AS FOLLOWS (SOURCE DHS 85 AND DHS 88):

1. PER REFTEL A, THE FOLLOWING ARE THE USAID INPUTS RE SUBJECT EVALUATION AND ITS SOW DELINEATED IN REFTEL B

--VACCINATION COVERAGE OF CHILDREN LESS THAN 5 YEARS OF AGE EXPRESSED IN PERCENT COVERED BY YEAR OF SURVEY:

A. PLANNING:

--THE REGIONAL STRATEGY WITH REGARDS TO EL SALVADOR IS BEING FOLLOWED. IT APPEARS TO BE USEFUL WITH THE NOTABLE EXCEPTION OF THE VACCINATION DAY CAMPAIGNS AS THEY ARE REACHING A SMALLER PERCENTAGE OF THE TARGET GROUP EACH YEAR ACCORDING TO MOH STATISTICS.

	85	88
--BCG	71	72
--POLIO	64	74
--DPT	63	72
--MEASLES	73	78

--THE NATIONAL ACTION PLANS (NPAS) ARE BEING COMPLETED. THE NPAS IDENTIFY ALL ACTIONS TO BE COMPLETED AND IMMUNIZATION OBJECTIVES FOR THE TARGET GROUP. ALL DONOR INSTITUTIONS PARTICIPATE ALONG WITH LOCAL ROTARY CLUB AND THE MINISTRY OF HEALTH. ALL PARTIES ARE LIVING UP TO THEIR COMMITMENTS IN THE ACTION PLAN. THE NPAS ARE REVIEWED SEMI-ANNUALLY AND ADJUSTED.

--SOURCE DHS 85 AND DHS 88

B. MANAGEMENT

--THE ICC IS AVERAGING 2 MEETINGS PER YEAR IN EL SALVADOR. MINUTES OF THE MEETINGS ARE NOT KEPT. --THESE MEETINGS ARE USEFUL TO THE EXTENT THAT THE DONORS ARE ABLE TO FOLLOW UP ON THEIR COMMITMENTS TO FUND COMMODITIES AND ACTIVITIES. ALTHOUGH INTER-COUNTRY MEETINGS HAVE TAKEN PLACE THE USAID HAS NOT BEEN INVITED TO PARTICIPATE TO DATE.

--ALTHOUGH NOT A CONCLUSION FROM THE MEETING, RATES FOR CHILDREN UNDER ONE HAVE DECREASED IN POLIO AND DPT DURING THE PERIOD ACCORDING TO THE 85 AND 88 DHS AS FOLLOWS:

	85	88
--BCG	64	66
--POLIO	60	58
--DPT	62	58
--MEASLES	58	48

--THE USAID IS UNAWARE OF COORDINATION AND ADMINISTRATIVE/MANAGEMENT MECHANISMS AND PROCEDURES THE PAHO USES TO IMPLEMENT THIS PROJECT.

--THE MINISTRY FOUND THAT COMMUNITY BASED APPROACHES TO IMMUNIZATION ARE MORE COST EFFECTIVE AND REACH A HIGHER PERCENTAGE OF THE TARGET GROUP THAN VACCINATION DAY CAMPAIGNS.

--THE PAHO STAFF LOCALLY HAS AN OUTSTANDING PROFESSIONAL IN DR. MAURICIO LANDAVERDE. DR. LANDAVERDE IS A HARD WORKING PERSON AND HAS BEEN VERY HELPFUL IN STIMULATING IMMUNIZATION PROGRAMS. DR. DE QUADROS OF PAHO, WASHINGTON HAS VISITED EL SALVADOR A FEW TIMES; HE HAS ALSO BEEN VERY HELPFUL.

--THROUGH THE HEALTH SYSTEMS SUPPORT PROJECT, A DIALOG WITH THE MINISTRY OF HEALTH HAS COME TO FRUITION. THE INCREASING COST EFFECTIVE UTILIZATION OF RESOURCES TO EXPAND RURAL AND URBAN COVERAGE OF IMMUNO-PREVENTABLE DISEASES IS MANIFESTED BY TWO MOH IMMUNIZATION INITIATIVES. "BLOQUEO" AND "RASTREO" ARE TWO NEW COMMUNITY-BASED TECHNIQUES INTRODUCED INTO EL SALVADOR WHICH HAVE EXPANDED IMMUNIZATION COVERAGE THROUGH THE RESOURCEFULNESS OF PAHO ADVISORS AND MOH REGIONAL DIRECTORS. UNICEF HAS ALSO BEEN PROVIDING PARTIAL SUPPORT

--OTHER DONORS USUALLY DON'T REPORT TO THE USAID UNLESS THE MISSION INSISTS ON CLARIFYING ANY CONFUSION THAT MAY ARISE.

--MOH HAS A SYSTEM FOR THE MONITORING COMMODITIES BUT THE

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TO "RASTREO"; BOTH TECHNIQUES ARE RESPONSIBLE FOR THE NEW
HOUSE TO HOUSE VACCINATION PROGRAMS WHICH HAVE BEEN
CARRIED OUT IN HIGH HEALTH RISK AREAS OF THE FIVE MCH
REGIONS.

THE IMPROVED COVERAGE HAS ALSO STIMULATED UTILIZATION OF
REGULAR MCH HEALTH CARE FACILITIES.

--THE USAID, VIA THE TWO LARGE AID SPONSORED HEALTH
PROJECTS (VISISA AND APSISA) ESTABLISHED THE CURRENT COLD
CHAIN SYSTEM FOR THE MINISTRY OF HEALTH. THE COLD CHAIN
SYSTEM INSTALLATION WAS FOLLOWED BY TECHNICAL EXPERTISE IN
MAINTENANCE PROVIDED THROUGH THE CURRENT HEALTH SYSTEMS
SUPPORT PROJECT (APSISA). THE TECHNICAL ASSISTANCE IS
ALSO IN CHARGE OF TRAINING PREVENTIVE MAINTENANCE CREWS TO
SERVICE COLD CHAIN EQUIPMENT INSTALLED AT THE CENTRAL AND
REGIONAL LEVELS OF THE MINISTRY OF HEALTH. HOWEVER, WE
SHOULD NOTE THAT DURING THE MONTHS OF JANUARY AND FEBRUARY
OF 1969, A MEASLES EPIDEMIC TOOK PLACE IN EL SALVADOR
THIS SITUATION WAS COMPLICATED BY THE FACT THAT THE TRIP
SWITCH OF THE MAIN MCH WALK-IN FREEZER FAILED TO START THE
BACK-UP DIESEL GENERATOR, THUS RUINING A TOTAL OF 135,000
DOSES OF UNICEF PURCHASED MEASLES VACCINES.

--RE SOCIAL COMMUNICATIONS FOR IMMUNIZATIONS, THE USAID
HAS DIRECTLY FINANCED EL SALVADOR'S MASS MEDIA CAMPAIGNS
FOR IMMUNIZATIONS AND OTHER CHILD SURVIVAL RELATED
INTERVENTIONS THROUGH CONTRACTS WITH LOCAL ADVERTISING
AGENCIES. THESE AD ACTIVITIES HAVE BEEN FINANCED VIA THE
APSISA PROJECT AND HAVE INCLUDED RADIO AND TV SPOTS AS
WELL AS PRESS RELEASES. ALSO, THE MINISTRY OF HEALTH HAS
A STRONG INTERPERSONAL PROMOTION IN THE PERIOD IMMEDIATELY
PRIOR TO EACH YEARLY VACCINATION DAY CAMPAIGN. WALKER

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PAGE 01 OF 02 PORT A 01207 00 OF 02 201310Z 7640 016177 AID1440 ACTION AID-00

PORT A 01207 00 OF 02 201310Z 7640 016177 AID OFFICER PROVIDE EFFECTIVE SUPERVISION AND COMMUNICATE WITH USAID STAFF IN AN EXEMPLARY FASHION.

ACTION OFFICE LADR-01 INFO PPOC-01 LAOP-02 LACA-02 SAST-01 PDPR-01 PPPB-02 GC-01 GCLA-01 ES-01 STHE-03 AAPF-01 FPA-02 RELO-01 AMAD-01 AAXA-01 MAY-01 /026 AB

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UNCLAS PORT AU PRINCE 01207

AIDAC

FOR LAC/OR/HM, B. SPAID

E.O. 12356: N/A SUBJECT: LAC/CA REGIONAL ACCELERATED IMMUNIZATION PROJECT (398-0547/597-0005) MID-TERM EVALUATION.

REF: STATE 042490

- MISSION HAS REVIEWED SCOPE OF WORK DESCRIBED IN REFTEL, FOUND IT TO BE EXTENSIVE AND QUESTIONS IF SUCH A HEAVY LOAD CAN BE CARRIED OUT IN 7 TO 10 DAYS.
- THE FOLLOWING IS SPECIFIC TO THE HAITI EXPANDED PROGRAM ON IMMUNIZATION.

A. PLANNING:

- THE HAITIAN MINISTRY OF HEALTH IS STRONGLY COMMITTED TO THE GOAL OF POLIO ERADICATION FROM THE AMERICAS BY 1990. USAID DOUBTS THIS IS PRACTICAL AND WILL INSIST THAT THE PUSH TO QUOTE ERADICATE UNQUOTE POLIO NOT COMPROMISE THE MORE IMPORTANT EFFORT TO PROTECT CHILDREN FROM MEASLES. FOR MORE THAN 2 YEARS POLIO VACCINE HAS BEEN ADMINISTERED TO CHILDREN UNDER THE AGE OF 5, ON SPECIFIC DAYS IN CROWDED URBAN SLUMS OF PORT-AU-PRINCE AND SEVERAL HEALTH REGIONS AND DISTRICTS. POLIO ERADICATION IS ONE OF THE SPECIFIC GOALS OF THE NATIONAL EPI STRATEGY.

- HAITI MINISTRY OF HEALTH HAS ELABORATED A FIVE YEAR PLAN WHICH IS REVISED EVERY YEAR FOR FINANCIAL ADJUSTMENT.

B. MANAGEMENT:

- JUST BEFORE THE FALL OF THE DUVALIER REGIME, A MEMORANDUM OF UNDERSTANDING WAS ELABORATED TO RATIFY ALL CONCERNED PARTIES' COMMITMENT TO EPI. DUE TO POLITICAL EVENTS, THIS DOCUMENT WAS NEVER SIGNED. HOWEVER, THE INTERNATIONAL COORDINATION COMMITTEE COMPOSED OF PAHO, UNICEF, ROTARY, FRENCH COOPERATION, REACH AND USAID MEETS ON A REGULAR BASIS. MEETINGS ARE SCHEDULED FOR EVERY THURSDAY AFTERNOON AND ARE CHAIRED BY THE PAHO REPRESENTATIVE.

- PAHO MANAGEMENT SYSTEM SEEMS TO BE WORKING EFFICIENTLY.

- INTERACTION AMONG PAHO STAFF AT ALL LEVELS IS HIGHLY EFFECTIVE. THE PROGRAM, SINCE ITS INCEPTION, HAS RECEIVED THE ASSISTANCE OF SEVERAL PAHO/W EXPERTS NAMELY: CIPO DE CUADROS, PETER GARASCO, JEAN MARC OLIVE ETC. IN HAITI, THE PAHO REP. AND THE PAHO EPI

- REPORTING REQUIREMENTS ARE SATISFACTORY.
- MISSION IS KEPT INFORMED OF THE EPI PROGRAM THROUGH REGULAR ICC MEETINGS AND BY OTHER MEETINGS HELD BY THE NATIONAL OFFICE IN CHARGE OF EPI (BCPP). MISSION RECEIVES COPIES OF ALL REPORTS AND OTHER DOCUMENTS RELATED TO EPI.

- PAHO SYSTEM FOR MONITORING, PROPER HANDLING AND UTILIZATION OF COMMODITIES PURCHASED WITH AID CENTRAL FUNDS IS SATISFACTORY.

- USAID/H IS CURRENTLY DESIGNING A 3 YEAR OPERATIONAL PROGRAM GRANT TO PAHO/H FOR THE AMOUNT OF DOLS 1.2 MILLION. MISSION ASSUMES THAT LAC REGIONAL FUNDS FOR HAITI PROGRAM WILL REMAIN AT SAME LEVEL.

C. FINANCIAL

- FINANCIAL REPORTING MAY BE ADEQUATE BUT NOT TIMELY.
- MISSION DOES NOT RECEIVED REPORTS.

- MISSION AND PAHO CAREFULLY FOLLOW AND ADHERE TO ALL BUDGET REVISIONS.

- MISSION BELIEVES THAT OTHER DONORS HAVE FULLY HONORED THEIR FUNDING LEVEL AND UNICEF MAY ACTUALLY HAVE DISBURSED MORE THAN PLANNED FOR FY 88. MISSION CANNOT PROVIDE AN ACCURATE ANSWER ON THE STATUS OF GOM COMMITMENT.

- NATIONAL COMMITMENTS TO VACCINE PURCHASE ARE BEING CURRENTLY NEGOTIATED.

- PROJECT MAY NEED ADDITIONAL TIME TO ATTAIN BASIC PROJECT TARGETS.

D. TECHNICAL

- PROJECT HAS GREATLY CONTRIBUTED TO IMPROVEMENT AND EXPANSION OF HAITI COLD CHAIN. SEVERAL REFRIGERATORS, ICE LINERS, COLD BOXES, VACCINES CARRIERS WERE BOUGHT UNDER THIS PROJECT AND DISTRIBUTED TO ALL LEVELS OF EPI STRUCTURE.

- TO ENHANCE SURVEILLANCE ACTIVITIES EPIDEMIOLOGISTS WERE TRAINED AND PLACED IN EVERY HEALTH REGION. PAHO EPI OFFICER AND EPIDEMIOLOGISTS TRACK ALL REPORTED POLIO CASES. WILD POLIO VIRUS NOW SEEMS TO ATTACK OLDER AGE CHILDREN. RECENTLY ONE CASE OF POLIO WAS REPORTED IN A FIFTEEN YEAR OLD CHILD IN THE NORTHERN REGION. DISCUSSIONS ARE BEING HELD TO ENLARGE SANITARY CORDONS TO INCLUDE 5-15 YEAR OLD SCHOOL AGE CHILDREN.

- PROJECT HAS GREATLY SUPPORTED HEALTH EDUCATION ACTIVITIES. SEVERAL IEC CAMPAIGNS HAVE BEEN CARRIED OUT. THE LAST NATIONAL VACCINATION CAMPAIGN MOBILIZED A LARGE NUMBER OF PEOPLE TO BRING CHILDREN TO HEALTH FACILITIES AND VACCINATION POSTS FOR IMMUNIZATIONS.

- FINANCING OF THE EPI PROGRAM FROM PURELY COMMUNITY OR GOM SOURCES WILL NOT BE POSSIBLE IN HAITI, GIVEN THE SEVERE ECONOMIC SITUATION IN THE COUNTRY, FOR THE FORSEEABLE FUTURE.

- UNICEF IS THE LEAD AGENCY SUPPORTING SOCIAL COMMUNICATION ON EPI IN HAITI. REACH PROVIDES A COMMUNICATION EXPERT WHO WAS VITAL TO THE SUCCESS OF

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PAGE 02 OF 02 PORT A 01207 00 OF 02 281318Z 7648 016177 A101448
THE PROGRAM TO DATE.

- A RESEARCH AGENDA WILL BE DEVELOPED TO BE CARRIED
OUT THIS FY. EMPHASIS WILL BE PLACED ON BEHAVIORAL
CHANGES TOWARD EPI MEASURES BY KAP STUDIES. MORE
INFORMATION WILL BE COMMUNICATED LATER.

- MULTI-ANTIGEN EPI DELIVERY SYSTEM (3 ANTIGENS) WAS
SUCCESSFULLY TESTED DURING LAST NATIONAL VACCINATION
CAMPAIGN. MCKINLEY

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AIDAC

FOR BARBARA SPAID, LAC/DR/HN

E.O. 12356: N/A
SUBJECT: LAC/CA REGIONAL ACCELERATED IMMUNIZATION
PROJECT (538-0643/597-0005) MID-TERM EVALUATION

REF: STATE 042490

MISSION HAS REVIEWED THE PROPOSED SCOPE OF WORK FOR
SUBJECT EVALUATION AND IS IN AGREEMENT WITH IT. WE
WOULD APPRECIATE RECEIVING COPY OF THE EVALUATION REPORT
WHEN IT IS COMPLETED. THANK YOU. WATSON

RECEIVED
BY LAC/DR/HN

FEB 21 1989

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UNCLAS QUITO 03003

AIDAC

FOR LAC/DR/HN, B. SPAID

E.O 12356: N/A
SUBJECT: LAC/CA REGIONAL ACCELERATED IMMUNIZATION PROJECT
(598-0643/597-0005) MID-TERM EVALUATION

REF: (A) TELCON SPAID/JONES-PATRON; (B) STATE 059475; (C)
STATE 042490

1. USAID/ECUADOR HAS DISCUSSED THE FOLLOWING
OBSERVATIONS WITH SPAID AND FITZSIMMONS (PAHO).

(A) MISSION WOULD APPRECIATE RECEIVING COPIES OF PAHO
QUARTERLY REPORTS. LAST REPORT RECEIVED WAS APRIL 1988.

(B) REPORTS ON COUNTRY ACTIVITIES SHOULD BE SHARED WITH
ALL DONORS AT COUNTRY LEVEL. DISCUSSION WITH FITZSIMMONS
REVEALED THAT ECUADOR HAD UNDERSPENT PAHO BUDGET. THIS
IS IMPORTANT FOR ICC DISCUSSION. DISPOSITION OF AID
FUNDED COMMODITIES IS UNCLEAR. MOH WAS UNAWARE THAT
VEHICLE WAS TO BE USED FOR EPI. CURRENTLY IS USED ONLY
BY PAHO LOCAL ADVISOR.

(C) VISITS FROM REGIONAL EPIDEMIOLOGIST, BERNARDUS GUNTER
ARE VERY HELPFUL FOR FOCUSING ACTIVITIES AND FOR PROBLEM
SOLVING. GUNTER USUALLY MAKES A POINT OF VISITING
USAID. THESE VISITS SHOULD BE MORE FREQUENT.

(D) MISSION AND MOH WOULD ALSO APPRECIATE VISIT FROM
PAHO/W PROJECT STAFF.

(E) MC NEEDS MORE ASSISTANCE DEFINING COLD CHAIN NEEDS.
WE UNDERSTAND THAT PAHO CAN ASSIST.

2. MISSION WILL GLADLY DISCUSS OBSERVATIONS WITH
EVALUATION TEAM. HOLWILL

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AIDAC

FOR LAC/DR/HN, BARBARA SPAID

E. O. 12356: N/A
SUBJECT: LAC/CA REGIONAL ACCELERATED IMMUNIZATION
PROJECT (598-0643/597-0005) MID-TERM EVALUATION

REF: (A) STATE 042490 (B) STATE 059475

1. USAID/JAMAICA HAS DISCUSSED THE SUBJECT PROJECT WITH THE JAMAICAN MOH AND OBTAINED THE FOLLOWING INFORMATION:
2. THE MOH HAS HAD DIFFICULTY IN ACCESSING THE PROJECT FUNDS FROM PAHO. ALTHOUGH THE GOJ SIGNED THE PROJECT AGREEMENT SOME TIME AGO THEY REPORT NOT RECEIVING FINAL APPROVAL FOR THIS FROM PAHO. THE REASONS ARE NOT CLEAR. DUE TO THIS FACT ONLY LIMITED SUPPORT HAS BEEN PROVIDED BY THE PROJECT TO DATE - I. E. ONE VEHICLE AND SUPPORT FOR A LOGISTICS OFFICER.
3. USAID WOULD ENCOURAGE THE EVALUATION TEAM TO ASSESS THE REASONS THAT THE JAMAICAN MOH HAS EXPERIENCED DIFFICULTY ACCESSING FUNDS AND RECOMMEND FOLLOW-UP ACTIONS.
4. THE EVALUATION TEAM MAY WANT TO CONTACT DR DEANNA ASHLEY, SENIOR MEDICAL OFFICER, MINISTRY OF HEALTH, AT 809-92-69221 IF FURTHER INFORMATION IS REQUIRED.
(DRAFTED: OHNP; COHN/ APPROVED: OHNP; RCOHN)
SOTIRHOS

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AGENCY FOR INTERNATIONAL DEVELOPMENT
UNITED STATES A. I. D. MISSION TO BELIZE
EMBASSY OF THE UNITED STATES OF AMERICA
BELIZE CITY, BELIZE, CENTRAL AMERICA

February 21, 1989

UNCLASSIFIED
MEMORANDUM

TO : Barbara Spaid, LAC/DR/HN

FROM : Mary Ellen Duffy Tanamly, GDO *MeD*

SUBJECT: LAC/CA Regional Accelerated Immunization Project
(593-0643/597-0005) Mid-Term Evaluation

REF. : STATE 042490

We feel that the subject project evaluation scope of work is quite comprehensive. As requested, our information on the specific points follow.

A. Planning:

1. Review of Regional Strategy - not done in Belize since initial planning meetings. Belize developed a Plan of Action 1988-1991, based on the regional documentation.
2. Review of Annual National Plans of Action - In addition to the overall Plan of Action 1988-1991, Belize has completed NPAs for calendar years 1988 and 1989, the latter being finalized at the end of January, 1989. These identify all donor inputs/resources quite well but do not do as well in identifying the constraints to achieving EPI targets. The NPAs are followed by all the donors (to a varying degree, depending on their inputs) and by the Government. Annual plans are reviewed and revised in Belize.

B. Management:

1. Regional ICC meetings: not applicable.
2. Donor ICC meetings have been held quarterly in Belize and are attended by the MOH, PAHO, UNICEF, USAID, and a representative of the Canadian Nurses' Association. The Rotary representative finds it difficult to attend meetings during normal working hours. We find these meetings to be quite useful as we review the quarter's progress, look at shifting activities as necessary and plan for the next quarter.

It is also valuable as the only quarterly review process for the MOH in child survival activities and we feel it keeps the MCH Director focused on the relationship of planning to implementation. In addition to a quarterly focusing on EPI itself by the MOH and the donors, these meetings have also provided another forum of support for the MOH Child Survival Coordinator.

A major coordination activity has been the development and implementation of the MCH Cost Study including EPI through the joint efforts of the MOH, PAHO, and USAID.

3. With a change in PAHO staff in the last year in Belize, PAHO focus on the EPI project has been varied because of the transition. However, in the past few months, the PAHO representative has been fairly supportive of the planned activities and has made many more efforts at coordination than we had previously experienced. Generally, though, with the exception of the jointly-funded cost study mentioned above, activities have been discrete by donor and so we see PAHO's interaction as minimal, except with the MOH. We assume that that interaction has been effective since training and supply targets for the EPI plan seem to have been met in a timely fashion.
 4. Reporting requirements: not applicable.
 5. USAID/Belize is kept informed of project progress through the formal ICC meetings and informally through meetings and phone calls. We cannot comment on adequacy of PAHO's systems for commodities purchased.
 6. Management of bilateral buy-ins: not applicable.
 7. USAID Mission demand for additional buy-ins: not applicable.
- C. Financial:
1. Reporting: not applicable.
 2. As far as we know, AID funds spent by PAHO/Belize are in accordance with the original budgeting guidelines.
 3. We feel that all other donors and the GOB have honored their funding commitments to this project. It should be noted, however, that the GOB has committed only recurrent cost resources (salaries, per diem, etc.) to this project and it has not taken on additional funding commitments in 1989 as we expected them to do, based on 1988 planning discussions.

4. As far as we can determine, national commitments for vaccine purchase are being met. However, the government's planning does not reflect the undocumented aliens who are using some health services (including EPI) and so they will come up short in vaccines as they reach their target coverages. Preliminary analysis of 1988 data shows continued lower coverage figures than expected, considering the project focus and inputs provided.

Our feeling is that this reflects the extremely limited human resources (rural health nurses) who administer vaccines in rural areas, a situation which has not been greatly helped by the provision of vehicles to increase the numbers of mobile clinics held, and the training on various aspects of EPI for the nurses. Since new RHNS will not be in place until late 1990, chances are low that coverage will be increased to 90 or 100% as planned through the GOB's present EPI strategy (vaccines only through health centers and mobile clinics with special efforts (one-time) focused on problem areas). Certainly Belize will have difficulty achieving even 80% coverage by the end of the project (1991) unless MOH agrees to trying out different strategies for low-coverage areas.

D. Technical:

1. TAG Meetings: not applicable.
2. The project in Belize has not strengthened the national laboratory.
3. CDC involvement: not applicable.
4. Cold chain equipment and training for specific personnel have been provided through the project, but it was recently determined that the nurses need refresher training on the cold chain. We feel that this came to light because of the focus on EPI, albeit through the coverage statistics.
5. We have not done well on routine surveillance activities in part because of general MOH problems with epidemiology, despite the MOH being able to track the case of polio that occurred in 1988 in Belize. We do not feel that there is an appropriately-trained MOH epidemiologist and the whole epidemiologic focus in the MOH is very weak. Recent attention to this area by the Director of Health Services to provide information on AIDS may also be beneficial to surveillance of other diseases. Belize in general has a problem with using information gathered for decision-making.

6. The project has supported health education activities through the MOH Health Education Bureau as well as through PVOs; these include posters, television and radio spots, and banners. These are supplemented by individual and group education sessions given by community-based workers.
7. The social communication strategy has been adapted to Belize's needs and seems to have had some effect. However, this area is quite weak in Belize and we feel that MOH staff involved still need basic training, a factor which limits their effectiveness in applying the strategy.
8. The only research planned in Belize is the cost study mentioned above. The information from this study will assist the MOH to define its recurrent and capital costs for EPI and other MCH programs for better planning with the GOB and donors. It is two quarters late but should be completed by June, 1989.
9. Studies/OR: as above.
10. Belize doesn't use the National Vaccination Day approach except as a time to target a specific problem area to deliver all vaccines. They cite its use nationwide as too costly for all types of resources even though the national campaign (more than one day) in 1986 produced coverage levels of over 80%.
11. We are interested in cost-effective approaches to increasing coverage since Belize's present strategies are not increasing coverage rates dramatically.

Belize has focused from the beginning on measles rather than polio as the leading wedge for a broader EPI delivery system and we feel that the planning and implementation process established for this project has helped focus the MOH's efforts on better EPI. This, of course, has a spreading effect onto other MCH programs and we are pleased for this.

Accelerated Immunization Project Evaluation

I. Background

The Accelerated Immunization Project is a multi-donor, five year effort supported by PAHO, A.I.D., Rotary International, UNICEF, and the IDB. Although the letter of agreement was signed between A.I.D. and PAHO in August 1986, the project did not begin until April 1987 after all five donors had signed formal agreements with PAHO. A.I.D. is committed to providing \$20.6 million over five years to this effort. To date A.I.D. has made available \$15,017,440 to PAHO for this project. Project expenditures as of December 31, 1988 total 10.4 million.

The Project seeks to eradicate poliomyelitis due to the wild polio virus in the Americas by 1990; expand coverage for other EPI vaccines; and contribute to sustainable infrastructures for the delivery of primary health care.

A mid-term evaluation will be carried out March 1-21, 1989 in accordance with the project agreement signed between A.I.D. and PAHO. The evaluation will be carried out by a four person team with combined expertise in epidemiology, immunization, economics/financial management, and evaluation. The team will receive orientation and review existing documentation for approximately one week in Washington, D.C. prior to carrying out a total of 7-10 days of field work in Guatemala, Bolivia and El Salvador. PAHO field office and USAID Mission concurrence will be sought prior to undertaking any field visits.

II. Evaluation Scope of Work

The evaluation team should review Project accomplishments to date within four major areas: planning, management, financial management, and technical components.

PLANNING:

--Review of the regional strategy and plan of action developed for the eradication of polio from the Americas by 1990; Is it being followed? Is it useful? Is there a Regional EPI Strategy and if so, how do the two strategies complement each other?

regional EPI strategy?

--Review of annual National Plans of Action (NPAs); How many NPAs are completed? Do they adequately identify resources and constraints to achieving EPI targets? Are NPAs being followed by donors as well as the national governments?

--Are all NPAs being reviewed and revised as necessary on an annual basis?

--Why were NPAs not developed for the Eastern Caribbean countries?

MANAGEMENT:

--How many Regional Inter-Country Coordination (ICC) meetings have been held? Based on a review of meeting minutes and recommendations, how fruitful have these meetings been?

--How many donor ICC meetings have been held in each country? How useful are they? What has been achieved or what has resulted from these meetings?

--Review of the coordination mechanisms and administrative/management procedures and systems instituted by PAHO to implement this project;

--How effective is the interaction among PAHO staff at all levels (i.e. Washington, inter-country and in-country) in terms of supervision and program management?

--Review of the reporting requirements of the project and the procedures in use to satisfy these reporting requirements both to A.I.D. and National governments;

--How are USAID missions kept informed regarding project implementation?

--Does PAHO have an adequate system developed for monitoring, proper handling and utilization of commodities purchased through this Project with A.I.D. funds?

--Review of the management of bilateral "buy-ins" under the Project.

--Is there sufficient USAID mission demand for additional "buy-ins" to warrant raising the \$20.6 million authorized funding level?

FINANCIAL:

--Is financial reporting adequate and timely?

--Are A.I.D. funds being spent in accordance with the budget revised on April 12, 1988?

--To what extent have other donors and National governments honored their funding commitments to this effort?

--Are national commitments to vaccine purchase (including PAHO's EPI revolving fund) being met and if not how will this ultimately impact on sustainability of national EPI programs?

--Based on Project expenditures and accomplishments to date, is the Project likely to require additional time in order to attain basic Project targets?

TECHNICAL:

- Have TAG meetings been held regularly? How successful have they been in leading to improved strategies for implementation? Have the TAGs been responsive to all three project objectives? Have recommendations from the TAGs been implemented/received adequate follow-up?
- To what extent has the Project strengthened national and regional laboratories by providing new diagnostic equipment and newer methods for polio virus isolation and characterization?
- How has CDC been involved in this Project vis-a-vis strengthening laboratory capability in the Region? (Cochi, due to his affiliation with CDC should not be involved in this particular evaluation point.)
- To what extent has the Project improved EPI maintenance in the Region?
- To what extent has the Project improved and expanded national cold chains through the provision of cold chain equipment in order to ensure that regular and routine service delivery is available country-wide.
- To what extent has the Project enhanced surveillance activities for prompt detection of all suspected cases of polio as well as the other EPI diseases so that immediate control measures could be implemented; to what extent is the routine surveillance information being used to improve decision making?
- To what extent has the Project supported health education activities aimed at generating greater demand for immunization services by changing the health attitudes of people?
- How has the social communication strategy, developed under this Project, been received and adopted by countries in the Region and by the donors, including AID?
- What is the research agenda and schedule for this Project? Is it on schedule?
- To what extent have studies and operational research efforts addressed problems affecting program performance?
- Which LAC countries currently utilize the national vaccination campaign day approach? Which are polio specific and which are general EPI approaches?
- Is there sufficient concern regarding the cost-effectiveness of the national vaccination day approach to warrant a study or operations research to address this issue?
- To what extent have targets been met against planned project output indicators as revised in May 1988 in Amendment #7, attachments D1 and D2?
- To what extent has the Project's initiative on polio eradication acted as a leading wedge to strengthen the broader multi-antigen EPI delivery system?

Both A.I.D. and PAHO will cable all field health officers and representatives for input prior to the start of the evaluation. In countries where there is no USAID presence, U.S. Embassies will be contacted. This information will be

provided to the evaluation team at the start of the evaluation. In addition, PAHO should prepare and make available to the team the following three tables:

1. Table I: an analysis by country, by antigen, by year (1986, 1987, 1988), of vaccination coverage in the Region for all children 0-1 year as well as IT for women of child-bearing age;

Table II: an analysis by country, by disease, by year (1986, 1987, 1988), of case incidence in the Region;

Table III: analysis by country, by year (1986, 1987, 1988) of trends in external and internal funding for EPI;

Table IV: analysis by year (1986, 1987, 1988) of trends within the overall Region in external and internal funding for EPI.

Thirty (30) copies of a draft report of the evaluation should be provided to the A.I.D. Project Manager for review by AID/Washington and USAIDs no later than April 7, 1989. A.I.D. will provide feedback to PAHO no later than May 31, 1989. The final draft should be provided to the A.I.D. Project Manager for final review by June 15, 1989. 75 copies of the final evaluation report should be provided to the A.I.D. Project Manager no later than June 30, 1989. All reports should be prepared in English and should begin with an executive summary, not to exceed three single spaced pages. In addition to the final evaluation report, the evaluation team is responsible for completing the A.I.D. standard evaluation forms which are attached.