EPI Newsletter

Expanded Program on Immunization in the Americas

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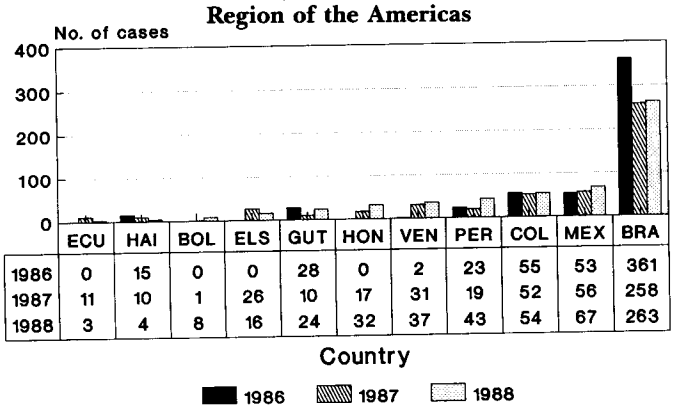
Polio in the Americas, Weeks 1–26, 1988

A total of 551 cases of polio have been reported from the Region of the Americas during the first semester of 1988 (Figure 1). In 1987, the total reported during the same time period was 491; and in 1986, it was 537. These totals constitute notification indicators, which, as can be seen, have not been altered considerably. Yet when comparing the proportion of confirmed cases for each year, marked differences can be observed that can be explained by the advances made in polio surveillance (Figure 2). In 1986, there actually were more cases confirmed than had been notified by week 26, and the proportion has declined between 1987 and 1988.

In order to truly compare disease ocurrence, it is necessary to look at confirmed cases that were reported in the first 16 weeks of each year, since there are ten weeks to investigate cases and assign final classification.

In 1988, 220 cases had been confirmed from those reported during the first 16 weeks, compared with 157 in 1987 and 306 in 1986. There were still 56 cases reported during this period that were pending final classification as of the first week of July, 1988. When these cases are distributed by week of onset, it is possible to observe that there was a sharp drop in 1987, with 120 cases compared to the 193 cases confirmed in 1986. In 1988 there are 109 cases, which seems to indicate that no significant changes have taken place in terms of disease ocurrence, compared with 1987. Figure 3 presents the cumulative curve, by week of onset for the first 11 weeks of 1986, 1987 and 1988.

FIGURE 1. Polio Cases Reported* by Country Weeks 1–26, 1986, 1987 and 1988 Region of the Americas

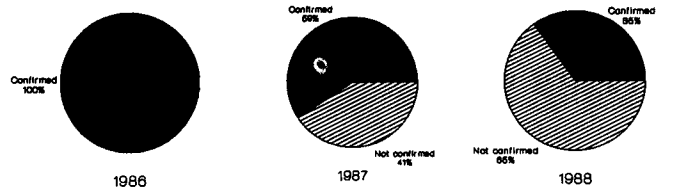


	ECU	HAI	BOL	ELS	GUT	HON	VEN	PER	COL	MEX	BRA
1986	0	15	0	0	28	0	2	23	55	53	361
1987	11	10	1	26	10	17	31	19	52	56	258
1988	3	4	8	16	24	32	37	43	54	67	263

* Include probable and confirmed

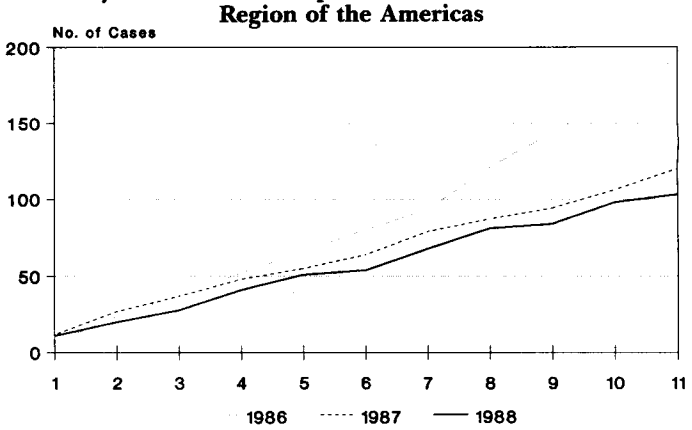
Source: Weekly telexes to PAHO

FIGURE 2. Proportion of Confirmed Polio Cases Weeks 1–26, 1986, 1987 and 1988, Region of the Americas



Source: Weekly telexes to PAHO

FIGURE 3. Cumulative number of Polio Cases Reported by Week of Onset, up to week 11, 1986 to 1988 Region of the Americas



Source: PAHO

In this issue:

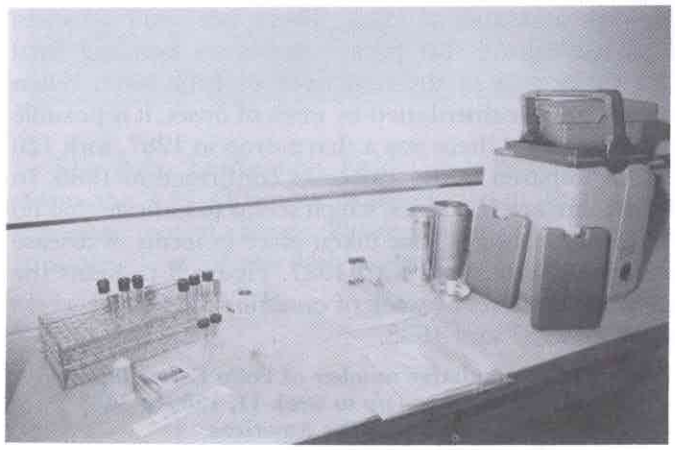
Laboratory Update

Specimen kits as the one shown in the photograph have been distributed to all countries in the Region in order to improve the appropriate shipping of polio samples both between and within countries and reference laboratories.

Following is a reminder of the guidelines for shipping specimens to the reference laboratories:

1. Specimens for both isolation and serological studies should be shipped to the reference laboratory frozen with dry ice, if possible.

2. Vials with rectal swabs or sera must be tightly closed with the caps held securely in place by a piece of adhesive tape. The tape must be tightly wrapped around the cap-vial junction in the direction of tightening of the cap.



Kits provided to laboratories and countries in the Region for the shipment of polio specimens through the laboratory network.

3. Vials should be wrapped individually in a piece of paper towel or newspaper and placed in a screw-capped specimen mailer. Stool containers should also be wrapped with paper.

4. Specimen mailers and stool containers should be placed in an insulated box with sufficient dry ice to maintain the specimens frozen during shipment. Allow 2.5 kilograms (5 pounds) for every 24 hours of transit time.

5. Fill any remaining space in the box with crumpled newspapers or similar material to serve as further padding for the specimens.

6. If dry ice is not available, the specimens should be shipped with frozen "cold packs". Extra care must be taken to be sure that the caps of all specimen containers are tight and securely held in place with tape, since the specimens will be in the fluid state during shipment and subject to leakage.

7. All specimen containers must be clearly labelled with the name of the patient, the type of specimen, and the date of collection.* Adhesive tape serves well for this purpose. The label should be printed with a marking device such that the printing remains legible even if it becomes wet.

8. After receipt in the reference laboratory, all specimens should be stored frozen ($-20°C$ or lower) until they are tested. CSF and autopsy specimens should be stored frozen at $-70°C$, if possible.

*A copy of the Case Investigation Form (see Appendix A, Polio Eradication Field Guide, Technical Paper No. 6, Pan American Health Organization, 1987) with complete information about each patient and his/her specimens *must* be included in the package.

Suggested Protocol for Surveillance of Acute Flaccid Paralysis in Children under 15 Years of Age

Background

As polio vaccination programs have become more and more successful throughout Latin America, and as the annual rate of poliomyelitis has dropped to low overall levels for the Region, it has become increasingly difficult to know whether acute flaccid paralytic events in children represent attacks of acute poliomyelitis, Guillain-Barré syndrome, or other neuromuscular afflictions.

For 1987, 650 cases of poliomyelitis were reported throughout Latin America. Using crude estimates based on a population of approximately 400 million individuals, and an estimate that approximately one-third of these cases will occur in children 15 years of age or less, it can be estimated that approximately 4,800 cases of Guillain-Barré syndrome will occur each year in Latin America. Of these, perhaps 1,600 cases can be expected to occur in children. If these crude estimates have valid-

ity, they suggest that Guillain-Barré syndrome occurs now more frequently than acute poliomyelitis in children throughout Latin America.

Although poliomyelitis and Guillain-Barré syndrome probably account for the majority of cases of acute flaccid paralytic illness among children in Latin America, there are also other causes. These need to be considered in any surveillance effort. Disorders to be included in the differential diagnosis are affections of the neuromuscular junction (infantile botulism, contaminated food botulism, juvenile myasthenia gravis, tick bite paralysis), acute myopathies such as dermatomyositis, acute polyneuropathies (mostly toxic, such as buckthorn berry intoxication, thallium intoxication, solvent neuropathies, and also diphtheric polyneuritis), and finally acute myelopathies other than those due to the poliomyelitis virus.

In order to document that poliomyelitis is actually disappearing or has disappeared, it is necessary to conduct ongoing surveillance of acute flaccid paralytic disorders in children and attempt to make a specific neurological diagnosis in as many as possible. For the purposes of epidemiological survey, it will probably suffice to make a diagnosis of: 1) poliomyelitis, 2) Guillain-Barré syndrome, 3) other.

Method of Procedure

The standard case investigation form adopted by PAHO/EPI should be used (see Annex A of the Polio Erradication Field Guide, PAHO, Technical Paper No. 6) to record the basic information about any case of acute paralytic illness in a child 15 years of age or less. The progression of paralysis should be recorded from onset until it ceases to advance, as should the presence or absence of fever during the onset. Cases should be investigated as early as possible in the illness.

Evaluation in the First 10-14 Days of Illness

Lumbar puncture is strongly recommended in every case, with a record made of the initial pressure, appearance of the fluid, cell count per cubic millimiter, protein and glucose determinations, and any specific tests for identification of responsible viruses as may be recommended. The presence of a pleocytosis favors an infectious origin, and a cell-free rise of protein favors Guillain-Barré syndrome. Recording of the neurological findings and symptoms and their rate of evolution is also essential.

Evaluation at 60 Days from Onset

This is a crucial evaluation and consists of both clinical examination and electrodiagnostic assessment.

Clinical Examination. A clinical and electrodiagnostic examination at 60 days is a key part of the evaluation of acute paralytic illness in children.

Neurodiagnostic Examination. An extension of the clinical examination is the electrodiagnostic assessment. This should be a physician-directed exam, and is used mainly to distinguish between disorders affecting the anterior horn cell (poliomyelitis) and those producing demyelination of peripheral nerve and roots (Guillain-Barré syndrome). Although the paralysis in some children with Guillain-Barré syndrome will have cleared completely by 60 days, it will not have in others. Therefore, electrodiagnostic examination at this time may be decisive.

It is recommended that motor nerve conduction velocity studies be done on three motor nerves, including the median, ulnar and peroneal nerves on one side of the body or the other. If there is residual weakness on only one side, that should be the side studied.

Examination at One Year

Clinical examination at one year is as important as the 60 day examination. Electrodiagnostic studies do not need to be repeated, but the clinical examination is essential. The same protocol employed at 60 days should be used at the one year examination. The majority of Guillain-Barré syndrome patients will exhibit no residual deficit at one year, although a few will have residual (permanent) deficit. Those with paralytic poliomyelitis can be expected to have focal atrophy and weakness at one year. Most other neuromuscular causes of acute paralytic illness should have cleared by one year.

For children with acute paralytic illnesses, assessed early on with lumbar puncture and cerebrospinal fluid examination at 60 days, and follow-up clinical examination at one year, the great majority will be diagnosable. In some patients, the diagnosis may not be clearly determinable even after this analysis. It is anticipated that new and unexpected causes of acute flaccid paralytic illness in children will emerge, although most will have clear cut diagnoses of either Guillain-Barré syndrome or of poliomyelitis.

Source: Adapted from the protocol developed for PAHO by Dr. A.K. Asbury, 29 February 1988.

Editorial Comment: This basic protocol, which was prepared as a result of recommendations made during the last TAG meeting, is being implemented in several pediatric reference centers throughout Latin America. Several countries have modified it, mostly by adding a visit six months following onset of paralysis. This type of study is expected to not only improve knowledge of the clinical aspects of poliomyelitis and Guillain-Barré syndrome in children under 15 years of age, but also to strenghthen cooperation between clinicians and epidemiologists and create a core "consultative" group that may assist professionals in other areas of the countries in the diagnosis and final classification of cases of acute flaccid paralysis.

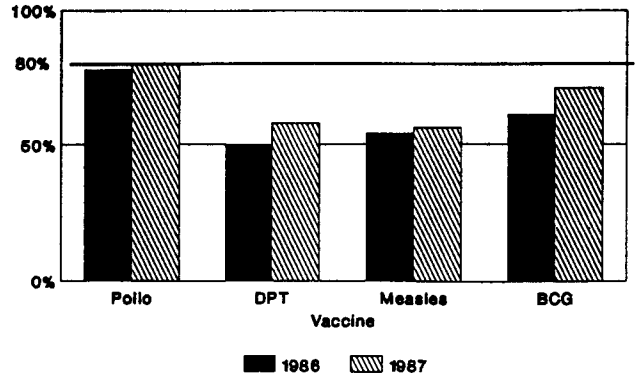
Vaccination Coverage in 1987

Overall coverages for the Region of the Americas during 1987 showed increases for all EPI vaccines when compared with 1986 and polio coverage reached 80 percent (Figure 1).

Coverages in the Caribbean sub-region have improved for all antigens; OPV coverage reached 80 percent in 1987, DPT 79 percent and BCG, 87 percent, only measles coverage remained under 80 percent, because Belize, Grenada, Guyana, Jamaica, Montserrat, Suriname and Trinidad and Tobago had coverages below that mark (Figure 2 and Table 1).

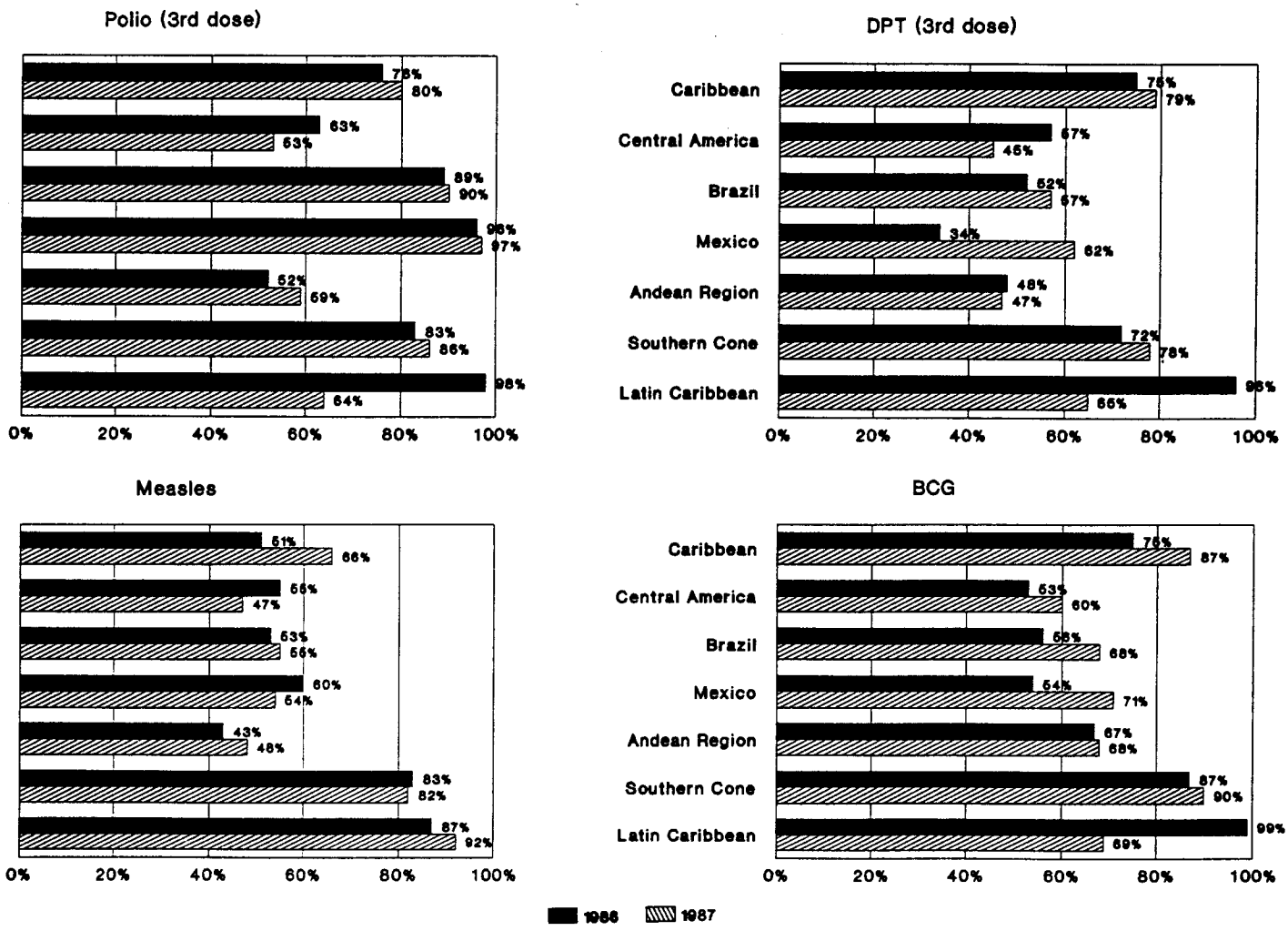
In Central America, vaccine coverage rates with all EPI antigens have shown an overall decrease, with the exception of BCG, which went from 53 percent in 1986 to 60 percent in 1987. This decrease is mostly due to the

FIGURE 1. 1986 and 1987 Regional Vaccination Coverage Rates Children Under One Year of Age Region of the Americas



Source: PAHO (provisional data)

FIGURE 2. 1986 and 1987 Vaccination Coverage by Sub-Region Children Under One Year of Age Region of the Americas



Source: PAHO (provisional data)
* 1986 data includes only Cuba
Brazil, Cuba, Mexico & Paraguay OPV coverage based on 2 doses
Costa Rica, Mexico, Cayman Islands, Guyana and Suriname measles data correspond to children one year of age

TABLE 1.
Vaccination Coverage in Children Under One Year of Age
Region of the Americas, 1987

COUNTRY	DPT 3rd dose %	POLIO 3rd dose %	BCG %	Measles
LATIN AMERICA				
Argentina	75	85	91	81
Bolivia	24	28	31	33
Brazil	57	90[1]	68	55
Chile	93	95	97	92
Colombia	58	82	80	59
Costa Rica	91	89	81	43[3,4]
Cuba	87	86[1]	96	99
Dominican Republic	80	79	...	71
Ecuador	51	51	85	46
El Salvador	53	57	55	48
Guatemala	16	18	34	24
Haiti	28	28	45	23
Honduras	58	61	66	57
Mexico	62	97[1]	71	54[4]
Nicaragua	43	85	93	44
Panama	73	74	89	78
Paraguay	58	93[1]	66	56
Peru	42	45	61	35
Uruguay	70	70	98	99
Venezuela	54	64	...	57
CARRIBBEAN				
Anguilla	92	99	99	81
Antigua & Barbuda	93	95	—	86
Bahamas	...	...	...	...
Barbados	79	68	...	...
Belize	69	69	92	64
Bermuda	89	89	—	83[2]
British Virgin Islands	96	99	77	80
Cayman Islands	90	90	76	91[2,4]
Dominica	95	95	98	87
Grenada	80	81	—	77
Guyana	67	77	69	52[4]
Jamaica	81	82	92	62
Montserrat	96	96	99	78[2]
St. Christopher/Nevis	96	98	—	91
St. Lucia	85	86	89	81
St. Vincent/Grenadines	97	96	90	91
Suriname	71	70	—	70[2]
Trinidad & Tobago	79	80	—	68
Turks & Caicos Islands	99	99	99	92

Source: Country reports to PAHO
... Data not available
—Vaccine not given in the National Program
[1] Coverage based on two doses of OPV
[2] MMR vaccine is used
[3] MR vaccine is used
[4] Measles data correspond to children one year of age

low coverages attained in Guatemala during 1987 (Figure 3). In this sub-region, coverages vary from 90 percent or better in Costa Rica for all antigens, to below 34 percent in Guatemala. Efforts should be made to improve the situation, particularly in Guatemala, El Salvador and Nicaragua, although the only country below the 50 percent mark for OPV is still Guatemala.

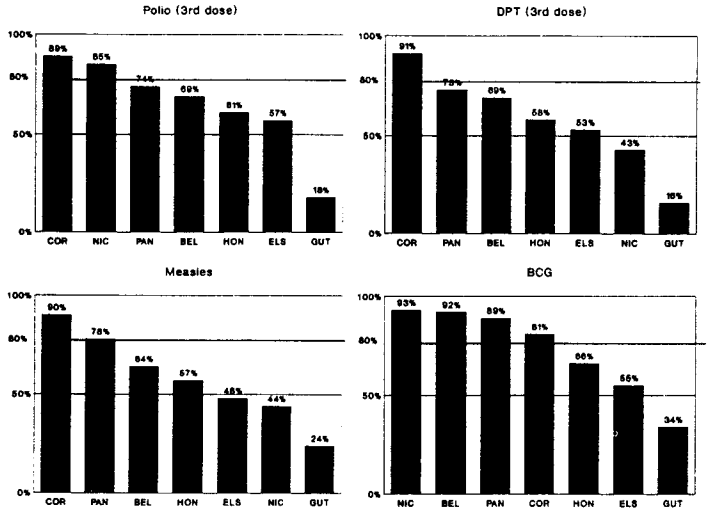
In Brazil and Mexico, vaccine coverage rates have continued to show improvement for OPV, DPT and BCG, but measles vaccine coverage has decreased in Mexico.

In the Andean Region, rates have shown improvement, with the exception of DPT coverage, which went from 48 percent in 1986 to 47 percent in 1987. When the situation is analized by country, it is apparent that efforts need to be stepped up in Perú and Bolivia, for all antigens, since the only time coverage exceeds 50 percent is for BCG in Perú (Figure 4). Colombia is the only country in this sub-region with OPV coverage above 80 percent. DPT and Measles vaccine coverage rates appear to have room for improvement in all countries.

The Southern Cone shows overall improvements in coverage in 1987, either approximating (78 percent with DPT) or surpassing 80 percent (Figure 5). Measles vaccine coverage remained at approximately the same level, from 83 to 82 percent.

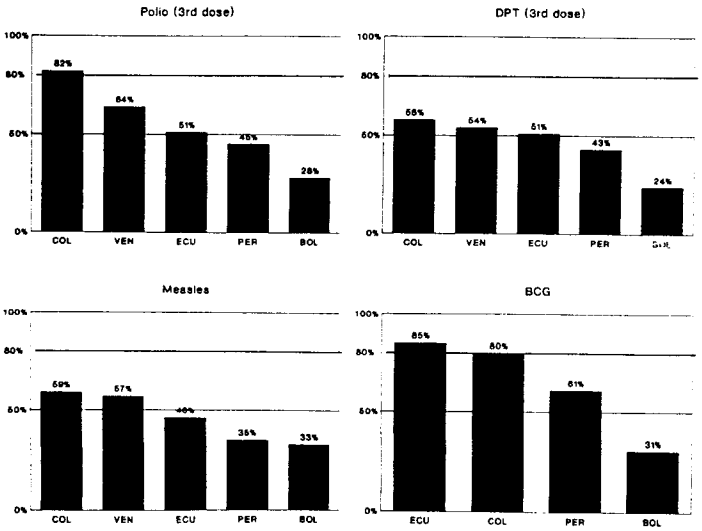
Coverage for the Latin Caribbean shows a decrease in 1987, with regards to 1986 which is explained by the fact that the 1986 data represented only Cuba (Figure 6).

FIGURE 3. 1987 Vaccination Coverage by Country Children Under One Year of Age Central America



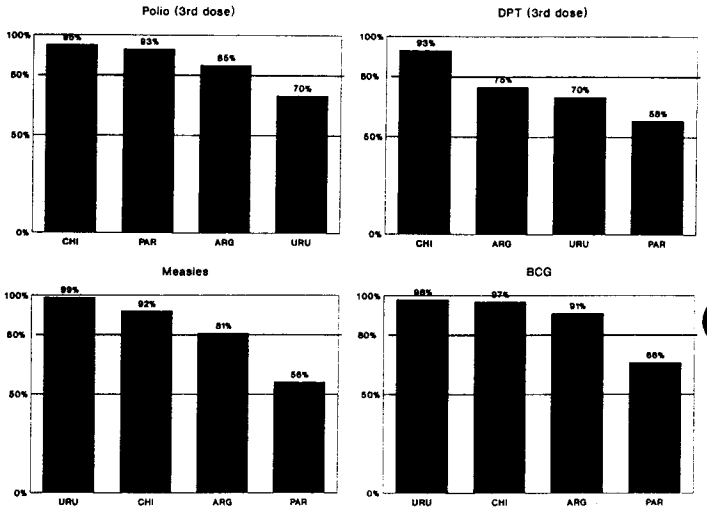
Source: PAHO (provisional data)
Measles data for Costa Rica correspond to children one year of age

FIGURE 4. 1987 Vaccination Coverage by Country Children Under One Year of Age Andean Region



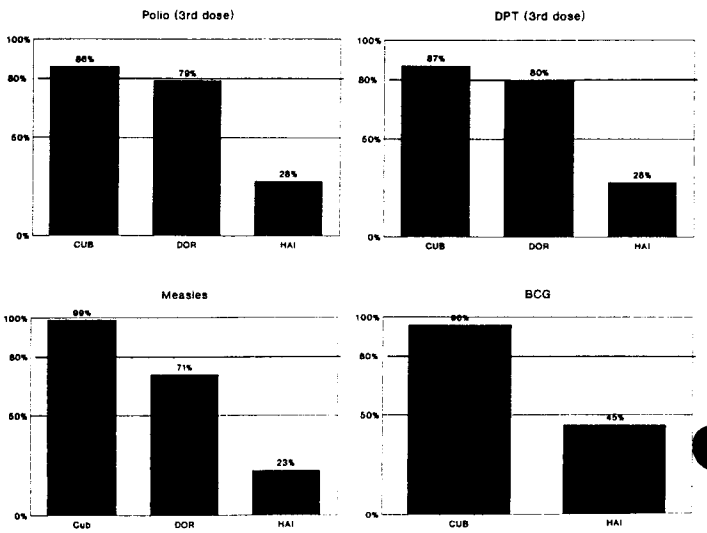
Source: PAHO (provisional data)

FIGURE 5. 1987 Vaccination Coverage by Country Children Under One Year of Age Southern Cone



Source: PAHO (provisional data)

FIGURE 6. 1987 Vaccination Coverage by Country Children Under One Year of Age Latin Caribbean



Source: PAHO (provisional data)
OPV coverage for Cuba based on two doses

Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, diphtheria and whooping cough from 1 January 1988 to date of last report, and for same epidemiological period in 1987, by country

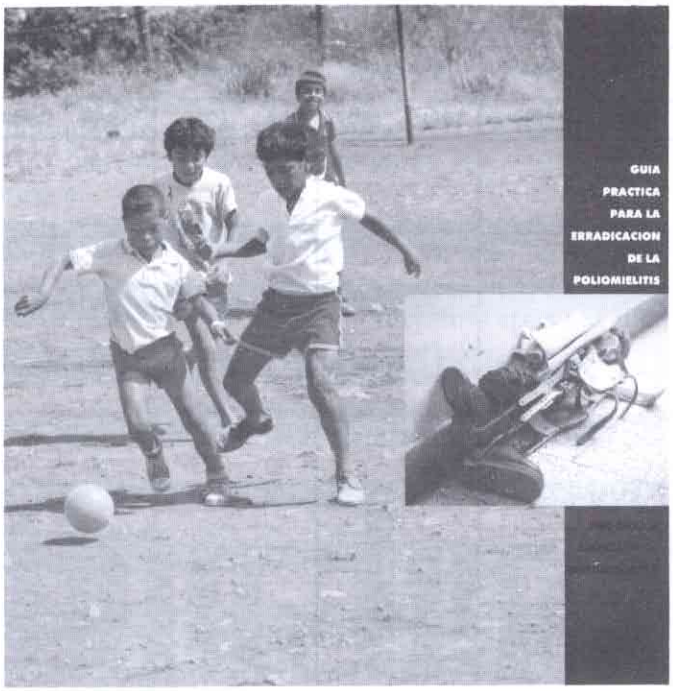
Subregion and country	Date of last report	Measles		Polio-myelitis§		Tetanus				Diphtheria		Whooping Cough	
						Non-neonatal		Neonatal					
		1988	1987	1988	1987	1988	1987	1988	1987	1988	1987	1988	1987
LATIN AMERICA													
Andean Region													
Bolivia	*	...	...	8	3	...	...	...	...	...	...	...	...
Colombia	*	...	...	54	29	...	...	...	...	...	...	...	...
Ecuador	26 Mar.	1 327	248	3	9	—	24	29	21	3	5	50	99
Peru	*	...	...	43	18	...	...	...	...	...	...	...	...
Venezuela	26 Mar.	3 938	5 987	37	19	—	—	5	2	1	—	136	237
Southern Cone													
Argentina	26 Mar.	921	755	1	—	—**	26**	...	...	3	—	1 705	417
Chile	23 Apr.	583	659	—	—	—	6	—	1	40	50	33	16
Paraguay	30 Jan.	31	...	—	—	3**	...	...	...	—	...	18	...
Uruguay	*	...	...	—	—	...	...	...	...	...	...	...	...
Brazil	*	...	...	263	149	...	...	...	...	...	...	...	...
Central America													
Belize	26 Mar.	15	128	—	—	—	—	—	—	—	—	—	—
Costa Rica	*	...	...	—	—	...	...	...	...	...	...	...	...
El Salvador	26 Mar.	122	68	16	22	...	15	1	3	—	2	11	50
Guatemala	30 Jan	11	16	24	5	6	5	1	0	0	0	26	8
Honduras	23 Apr.	294	81	32	3	...	9	4	2	—	—	30	93
Nicaragua	27 Feb.	71	163	—	—	—	...	—	1	—	—	19	19
Panama	*	...	...	—	—	...	...	...	...	...	...	...	...
Mexico	21 May	1 607	...	67	24	42	...	35	...	2	...	213	...
Latin Caribbean													
Cuba	30 Jan.	34	124	—	—	—	—	—	—	—	—	1	6
Dominican Republic	*	...	...	—	—	...	...	...	...	...	...	...	...
Haiti	30 Jan.	17	...	4	10	4	...	3	...	—	...	23	...
CARIBBEAN													
Antigua & Barbuda	21 May	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	23 Apr.	5	...	—	—	—	...	—	...	—	...	—	...
Barbados	26 Mar.	—	...	—	—	—	...	—	...	—	...	—	...
Dominica	27 Feb.	1	...	—	—	—	...	—	...	—	...	—	...
Grenada	18 Jun.	4	4	—	—	—	—	—	—	1	—	2	1
Guyana	26 Mar.	147	2	—	—	—	—	—	—	—	—	—	—
Jamaica	*	...	...	—	—	...	...	...	...	...	...	...	...
St. Christopher/Nevis	26 Mar.	1	...	—	—	—	...	—	...	—	...	—	...
Saint Lucia													
St. Vincent and the Grenadines	*	...	...	—	—	...	...	...	...	...	...	...	...
Suriname	26 Mar.	—	—	—	—	—	—	—	—	—	—	—	—
Trinidad & Tobago	23 Apr.	137	184	—	—	—	3	—	—	—	—	—	5
NORTH AMERICA													
Canada	30 Jan.	38	...	—	—	—**	...**	...	...	8	...	92	...
United States	27 Feb.	275	212	—	—	4**	3**	...	...	—	1	233	264

* No 1988 reports received.

**Tetanus data not reported separately for neonatal and non-neonatal cases.
Total tetanus data is reported in non-neonatal column.
Data for polio is through week 26 (ending 2 July 1988).

—No cases
. . .Data not available.

Polio Eradication Field Guide Available for Distribution



The Polio Eradication Field Guide is now available from the EPI Office in Washington, in English and Spanish, free of charge. Please write to the address on this Newsletter if you wish to receive a copy.

Global Eradication of Poliomyelitis by the Year 2000

The Forty-first World Health Assembly adopted Resolution WHA41.28 for the Global Eradication of Poliomyelitis by the Year 2000, during its May, 1988 meeting.

The action of the Health Assembly was in response to a call made by the Director-General during celebrations on the occasion of the fortieth anniversary of WHO and the tenth anniversary of Alma Ata to adopt this goal, which had also been cited by the Task Force for Child Survival in the "Declaration of Talloires" of 12 March 1988.

The resolution stated that the goal of eradication "represents both a fitting challenge to be undertaken now, on the Organization's fortieth anniversary, and an appropriate gift, together with the eradication of smallpox, from the twentieth to the twenty-first century..."

Within this context, the eradication of polio from the Americas by 1990 will be a milestone towards the global polio eradication goal.

The *EPI Newsletter* is published every two months, in English and Spanish, by the Expanded Program on Immunization (EPI) of the Pan American Health Organization (PAHO), Regional Office for the Americas of the World Health Organization (WHO). Its purpose is to facilitate the exchange of ideas and information concerning immunization programs in the Region in order to promote greater knowledge of the problems faced and their possible solutions.

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