# EPI Newsletter

## Expanded Program on Immunization in the Americas

Volume XI, Number 5 **IMMUNIZE AND PROTECT YOUR CHILDREN** October 1989


## US$100 REWARD

**By request of the XXXIV Directing Council of the Pan American Health Organization, the Director has established a reward of US$100 to be offered to the first person who reports in writing the first case of poliomyelitis which is subsequently confirmed to be due to wild poliovirus infection by laboratory confirmation, in a county or district previously free of wild poliovirus circulation.**

**Reports of suspect poliomyelitis cases can be made to the health facility nearest to where the case is ocurring.**

## Poliomyelitis in the Americas, 1989

### Poliovirus Surveillance

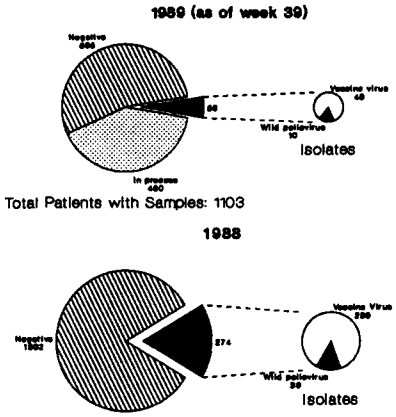
Up to week 39 of this year, 1 507 stool samples had been processed through the network of polio laboratories, 190 of which were found to be positive (13%) with 182 vaccine and eight wild poliovirus isolated (277 samples are still in the process of being analyzed). P3 wild virus have been isolated from Mexico, Colombia, and Venezuela, and P1 from Brazil and Colombia (See map below). In comparison, last year

**Wild Poliovirus Isolated**
**Region of the Americas, January to September, 1989**


In this issue:

there were 3 856 stool samples processed, with 235 poliovirus isolated (6%), of which 37 were wild (Figure 1).

**Figure 1. Poliovirus Surveillance Status of Stool Samples in the Americas**

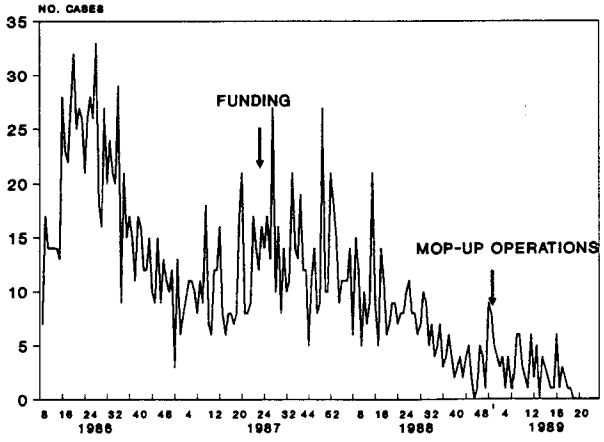



Source: Reports from the laboratories in the Polio Reference Network

## Confirmed Cases

During this year, 109 cases have been clinically confirmed, with 404 still pending final classification. During the first 39 weeks of 1988, 288 cases had been confirmed and 404 were pending. With this decrease in case numbers, no more than 150 polio cases are expected to be confirmed for the whole of 1989. Figure 2 shows the downward trend in the number of confirmed polio cases in the Region, by week of onset, up to week 28. The confirmed cases have been reported from 92 counties which constitute 0.6% of all the counties of Latin America.

**Figure 2. Week of Onset of Paralysis Confirmed Cases of Poliomyelitis Region of the Americas, 1986-1989***

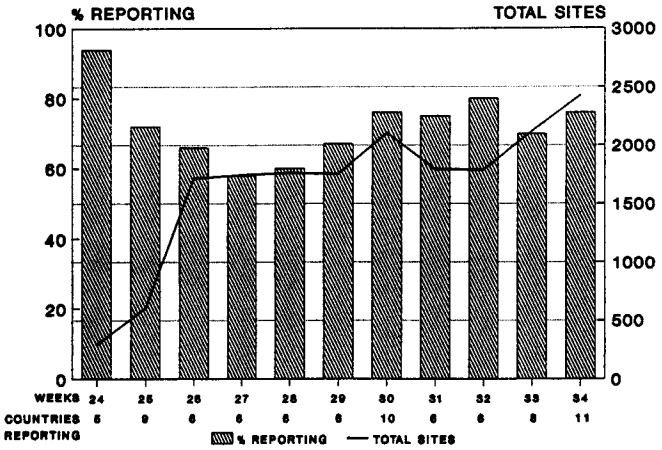



* Up to week 39 (404 cases pending final classification)
Source: PAHO

## Surveillance of Cases of Flaccid Paralysis

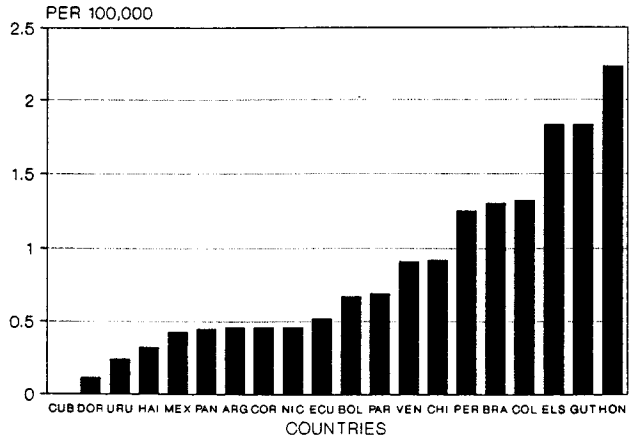
One of the major drives this year has been to implement weekly negative notification by all reporting health facilities, in order to ensure that all cases of acute flaccid paralysis occurring in children under 15 years of age are reported. Figure 3 shows the increase in number of units reporting between weeks 24 and 34 (from 317 in 5 countries to 2 422 in 11 countries). On the same line reporting completeness has stabilized to around 75%. The incidence rate of acute flaccid paralysis in the Region up to week 39 is of 0.93 per 100 000 children under 15 years of age. This rate, which is estimated to be around 1.5 per 100 000 in children under 15 months of age, varies greatly from country to country. These variations are interpreted as a reflection of the surveillance system's sensitivity to detect cases of acute flaccid paralysis. Figure 4 shows this variation, which went from 0.11 per 100 000 children under than 15 years in Dominican Republic to 2.23 in Honduras.

**Figure 3. Status of Weekly Negative Reporting of Cases of Flaccid Paralysis Region of the Americas, Weeks 24-34, 1989**




Source: Weekly Reporting to PAHO

**Figure 4. Incidence of Acute Flaccid Paralysis in Children Under 15 Years of Age Latin America, Weeks 1-39, 1989**




Source: PAHO

## Flaccid Paralysis Surveillance Indicators

The indicators used to follow up progress of surveillance of acute flaccid paralysis seem to have reached a plateau

between 1988 and 1989, with about 69% of the cases being reported within 15 days of onset of paralysis and about 50% of the stool samples taken within one week of onset.

**Monitoring Vaccination Coverage at the County Level**

The 1988 data corresponded to 3 522 counties in 16 countries of the Region and showed that 40% of them had OPV coverages above 80%, 29% between 50% and 79% and 30% had coverage rates below 50%.

**"Mop up" operation**

Containment activities up to week 39 were organized in 904 of the 1 326 counties where they had been planned, administering a total of 3 259 759 doses of OPV vaccine, thereby covering 77% of the target population of children under five years of age who were supposed to be targeted for the operation "mop-up".

**Summary**

A cursory analysis of the indicators presented above inspires confidence that the goal to interrupt transmission of the wild polio virus in the Region by the end of 1990, is attainable. But the battle is not won yet. In order to accomplish the objective, it is imperative that all the measures needed to sustain program activity and improve the speed of notification, stool collection and containment activities be taken. Also, every country in the Region must have a weekly negative reporting system for flaccid paralysis, and coverage must be monitored at the smallest geopolitical level possible.

# EPI Reviewed in Central America

The Fourth Central American Meeting to review advances in the EPI and polio eradication by 1990 was held from August 23 to 25, 1989 in the city of San Salvador, El Salvador. Participants included representatives from Belize, Costa Rica, El Salvador, Guatemala, Honduras and Panama, from the fields of epidemiology, virology, maternal and child health, and supervision at both the local and operational levels. Representatives from the Reference Laboratory for the subregion (INCAP) presented the data on the quality of the samples analyzed which is included in Table 1.

**Table 1. Conditions in which stool samples arrive at the INCAP Reference Laboratory 1988, 1989**

| Conditions in which stool samples arrive | COUNTRY OF ORIGIN | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Guatemala | | El Salvador | | Honduras | | Nicaragua | |
| | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 |
| Container | | | | | | | | |
| Adequate | | + | | + | | | | |
| Inadequate | + | | + | | | | | |
| No information | | | | | + | + | | |
| Ice | | | | | | | | |
| Present | + | + | + | + | | | + | + |
| Absent | | | | | | | | |
| No information | | | | | + | + | | |
| Quantity | | | | | | | | |
| Sufficient | + | + | + | + | | | | + |
| Insufficient | | | | | | | + | |
| No information | | | | | + | + | | |
| Information | | | | | | | | |
| Complete | | + | | + | | | | |
| Incomplete | + | | + | | + | | + | |
| No data | | | | | | + | | + |
| Number of samples per case | 1 | 2 or more | 1 | 2 or more | No data | No data | 1 | 1 |

The First Central American Meeting of Pediatric Neurologists took place at the same time. Among the principal aspects discussed, was the differential diagnosis of lower motor neuron syndrome and the importance of treating all cases of non-traumatic acute flaccid paralysis as probable cases of poliomyelitis.

Vaccination coverage, mop-up activities (see Table 2), the polio situation and indicators of the status of poliomyelitis surveillance were analyzed throughout the meeting, as was progress made in the studies of missed opportunities for vaccination and the identification of areas at risk for neonatal tetanus being conducted in some of the countries of the subregion.

**Table 2. Summary of Mop-Up Activities (First Round) Central America and Mexico, August 1989**

| | COUNTRIES | | | | |
|---|---|---|---|---|---|
| | ELS | GUT | HON | MEX | Total |
| Total counties to cover | 41 | 51 | 151 | 580 | 823 |
| Children < 5 yrs. | 200 665 | 516 713 | 382 817 | 2 495 649 | 3 595 844 |
| Counties covered | 41 | 23 | 151 | 580 | 795 |
| Total children <5 in counties covered | 200 665 | 75 984 | 382 817 | 2 495 648 | 3 155 114 |
| Homes visited | 155 258 | | | | 155 258 |
| Total population covered with first round | 144 379 | 69 012 | 198 345 | 1 796 866 | 2 208 602 |
| % population covered with first round | 71 | 90 | 51 | 71 | 70 |

Table 3 summarizes compliance with the agreements made during the Third Central American Meeting, held in Guatemala in February of this year (see *EPI Newsletter*, Vol. XI, No.1, February 1989).

Following is a list of the conclusions and recommendations of this fourth meeting of the Central American nations and Mexico:

1. Taking into account that only sixteen months remain for the fulfillment of the goals of universal vaccination of children and the eradication of poliomyelitis, it is indispensable that commitment and effort be renewed in order to increase coverage in the immediate future. Every country pledged to attain the goal of having 80% or better OPV coverage in children under one year of age in every one of its counties within the six months, and to make every effort to achieve the same with all EPI antigens. All countries should monitor vaccination coverage at the county level.

2. As the eradication of transmission of the wild virus approaches, the **strengthening of the epidemiological surveillance system** assumes critical importance, especially in relation to the cases of acute flaccid paralysis. All countries should expect a "base" rate of approximately one case of flaccid paralysis per 100,000 inhabitants under fifteen years of age. This indicator should be used to evaluate the functioning of surveillance in each country.

3. The presence of one single probable case should be considered a national emergency and methods of control should be as widespread as possible in the affected area.

4. The necessary steps must be taken to ensure that two stool samples, twenty-four hours apart, are taken from each case of acute flaccid paralysis reported and that they are shipped adequately to the reference laboratories.

5. Emphasis was again placed on the recommendation of the Seventh Meeting of the Technical Advisory Group on EPI and Polio Eradication (TAG), that the laboratories should provide results of stool sample analysis (including poliovirus characterization) within eight weeks of receiving the specimens (see *EPI Newsletter*, Vol. IX, No. 4, August 1989).

6. Health authorities have been advised to arrange in advance the timely performance of administrative procedures for the acquisition, receipt, distribution and application of vaccines.

7. All countries must ensure that the OPV used contains at least 600 000 $TCID_{50}$ for type 3, in accordance with the recommendation made at the Fifth TAG meeting, held in January 1988, in Lima, Peru (see *EPI Newsletter*, Volume X, No. 1, February 1988).

8. Rotary International should be approached for additional financial support in order to complete the mop-up operations where needed.

9. All countries must renew efforts to immunize all women of childbearing age with tetanus toxoid (including pregnant women) in all areas already identified as high risk. For those areas where measles outbreaks are expected, the recommendation was for aggressive steps aimed at increasing vaccination efforts in accordance with national plans.

10. All countries should implement strategies for eliminating false contraindication to vaccinations.

11. Operational research in areas such as missed opportunities for vaccination, cold chains, the incidence of flaccid paralysis, and the identification of areas at risk for neonatal tetanus, must be continued in order to improve the achievements of the program.

12. The exchange of information at a local level in border areas between countries was again stressed.

**Table 3. Compliance and Percent Compliance with Agreements made during the Third Central American Meeting, held in Guatemala City, Guatemala, in February 1989**

| COMMITMENT | COUNTRIES | | | | | | | PERCENT |
|---|---|---|---|---|---|---|---|---|
| | Belize | Costa Rica | El Salvador | Honduras | Guatemala | Mexico | Panama | |
| Coverages at the county level | NO | YES | YES | YES | YES | P | YES | 85 |
| Use tetanus toxoid during NVD's in risk areas | YES | N.A. | YES | YES | NO | YES | YES | 83 |
| Listing of "mop-up" counties distributed to leaders and rotarians | YES | N.A. | YES | YES | YES | N.A. | NO | 67 |
| Units reporting weekly | NO | NO | P | YES | P | P | P | 71 |
| Send stool samples to INCAP | YES | NO | YES | P | YES | N.A. | NO | 67 |
| Administering one OPV dose to newborns | NO | NO | YES | YES | YES | P | YES | 71 |
| Missed opportunities study | NO | YES | YES | YES | NO | YES | YES | 71 |
| Flaccid paralysis study | YES | YES | YES | YES | YES | YES | YES | 100 |
| Exchange of maps and names in Border areas | YES | NO | YES | YES | YES | YES | N.A. | 83 |
| Implement US$100 reward | NO | YES | NO | YES | NO | NO | NO | 28 |
| Resource descentralization at the operative level | YES | YES | YES | YES | YES | YES | YES | 100 |
| Monthly follow-up and monitoring of recommendations | NO | YES | YES | YES | YES | YES | YES | 85 |
| Use national resources to buy biologicals | YES | YES | NO | YES | YES | YES | YES | 85 |
| Cold chain evaluation | NO | YES | YES | YES | YES | YES | YES | 71 |
| % COMPLIANCE BY COUNTRY | 50 | 67 | 93 | 100 | 79 | 85 | 69 | |

N.A. Not applicable
P Partial compliance

# Cold Chain Survey in Peru

## Introduction

A cold chain survey was undertaken by the Peruvian Ministry of Health between November 1988 and June 1989.

The objectives of the cold chain survey were to:

-document the types of cold chain equipment being used and their operational condition;

-identify new cold chain equipment and requirements for spare parts;

-document the cost associated with the operation and maintenance of the cold chain;

-identify logistical and technical problems associated with the use of equipment or fuels;

-identify and quantify the transportation costs associated with outreach activities.

The survey prompted the drafting of a National Cold Chain Plan that should allow the authorities to better manage the cold chain and assist in its improvement. The framework of this activity was provided by the ultimate objective of the cold chain, which is to assure that every mother and child is vaccinated with a potent vaccine.

## Methodology

Of the 1,766 districts in Peru, 1,539 (or 87%) were visited by the survey team. The districts visited represent the three major geographical zones found in Peru: coastal, highland, and jungle.

The survey used two forms to collect the data. The first was an inventory form for collecting detailed information on existing equipment and logistical information on the cost of fuels and transportation. A four-page interview questionnaire was the second form used to identify logistical operation or management problems that could be impeding the operational effectiveness of the cold chain.

A study coordinator managed the field visits of five supervisors to each Health Department (UDE). These supervisors in turn trained groups of 2-5 persons in filling out the forms.

Survey results were entered into a computer program especially created for the survey that proved invaluable for the data analyses.

## Results

The survey documented the existence of 4,051 health facilities as follows: 153 hospitals, 747 health centers and 3,151 health posts. The interview was used only in 620 health establishments.

The survey documented the characteristics of the various types of cold chain equipment in use. Similarly, it identified additional equipment needed to complete the cold chain in Peru. The total estimated cost of new equipment and spare parts is estimated at US$1.5 million.

*Distribution of cold chain equipment* -- The survey documented that health facilities located in densely populated areas and/or having high ambient temperatures are the least likely to have the necessary cold chain equipment, while health facilities with small populations and/or located in a geography zone with a cooler climate are better equipped.

*Operational condition of refrigerators* -- Of the 2,667 refrigerators found in the health services of Peru, 1,290 (or 48.3%) are kerosene operated refrigerators, of which 2,175 (or 81.5%) were in proper working order. Only 492 (18.5%) were not in operating condition. An additional 267 refrigerators which were in working condition could not be used to make ice because they originally lacked the necessary freezer. Of the 492 refrigerators identified as not working almost all were kerosene-powered refrigerators.

*Availability of vaccine thermos and ice packs* -- The survey confirmed that 1,175 (29%) health facilities did not have a vaccine thermos and an inordinate number of health facilities (3,680, or 91%) did not have sufficient ice packs.

*Supply of fuel and spare parts* -- According to health workers the principal obstacle to maintaining a kerosene refrigerator in operation was the lack of a continuous supply of kerosene and in some instances the high cost of transportation of the kerosene. The major spare parts not supplied on a regular basis are for kerosene-operated equipment; glass lamps, wicks, burners, etc., are the spare parts most often cited as impeding the proper operation of equipment.

*Cost of fuel* -- The survey confirmed that a liter of kerosene had a cost ranging between US$0.04 and US$0.33, and that a tank of gas had a price range between US$1.00 and US$2.72. The total estimated annual cost for supplying fuels to all refrigerators including the 322 kerosene refrigerators to be procured is US$211,145. The study identified the need for procuring approximately US$15,540 worth of spare parts for existing equipment.

*Cost of vaccine distribution* -- The survey also confirmed that an estimated US$41,752 are needed to distribute the vaccine annually to all health facilities in Peru.

*Cost of outreach activities* -- It was established that 4,051 health facilities require that the health worker program outreach activities on a monthly basis. The average cost for a round trip fare using local transportation and per diem is US$2.02. Therefore, the absolute minimum budget required to support these outreach efforts is estimated at US$98,472. The survey report acknowledges that the costs for supporting outreach activities are incomplete and that the actual costs could be as much as 35% higher. Nevertheless, the study was able to arrive at a first cost estimate for

outreach activities and serves as a basis for improving the data. When the health workers were asked to identify the major impediments to increasing veccine coverage, the two principal ones were lack of funds for transportation and per diem.

*Cost of supervision, training, and maintenance* -- The lack of regular supervision contributes to the poor handling of cold chain equipment by the health workers, as well as the failure to detect early on problems with equipment, handling of vaccine, or other management problems. Concomitantly, the lack of proper servicing of equipment by trained technicians results in equipment failure, or at best, results in equipment that cannot maintain the proper temperature. Of the 492 refrigerators that were identified as out of order, 96% were out of order due to minor problems. To permit the proper servicing of equipment, the technicians will require that a budget be made available for their travel and per diem.

The survey estimated that US$6,000 would be required for supporting the travel of technicians. Likewise, the annual estimated cost for routine supervision of the cold chain was fixed at US$42,000.

Results also showed that 50% of health workers have never received user training on preventive maintenance of refrigeration equipment.

The National Cold Chain Plan recommends that training courses totalling US$74,400 dollars be programmed over a period of three years to cover costs for 12 Supervisory Courses and 140 one-day User Courses.

**Summary**

The chief outcome of the survey (at a total cost of US$91,000), was the preparation of a National Plan of Action which document the requirements for equipment and the cost associated with the operation and maintenance of the cold chain.

The survey identified that a total outlay of approximately US$1,914,846 would be required to improve the EPI cold chain.

Following is a breakdown of the estimated costs:

| | |
|---|---|
| Capital costs | |
| 1) New equipment* | $1,315,978 |
| 2) Spare parts, new equipment | 26,661 |
| 3) Tools for technicians | 15,450 |
| 4) Training courses | 74,000 |
| 5) New equipment to complement cold chain** | 144,580 |
| Subtotal | $1,576,669 |
| | |
| Recurrent costs | |
| 1) Supervision | 42,000 |
| 2) Technician travel | 6,000 |
| 3) Distribution of vaccine | 41,752 |
| 4) Per diem/Travel cost for outreach activities | 98,472 |
| 5) Fuel cost | 134,503 |
| 6) Spare parts for existing equipment | 15,450 |
| Subtotal | 338,177 |
| | |
| TOTAL | $1,914,846 |

* Refrigerators, cold boxes, freezers, thermometers
** Diesel electrical plants, outboard motors

**Editorial note:**

Peru was the second country to complete an exhaustive survey of their cold chain. Bolivia and Guatemala have recently completed similar surveys. Ecuador is now conducting its survey. The results of these surveys will be reported in future issues of this newsletter.

The major function of these surveys is to document the recurrent costs associated with the operation of the cold chain, including both the procurement and the delivery of the vaccines to outlying communities.

These studies will permit a more cost-effective use of existing and future equipment and will assist in making the necessary budget allocations. The challenge before the Ministry of Health is to improve upon this cost data and continually update it. Obtaining the additional funds on the part of the Ministry is perhaps a greater challenge given the budget constraints in Peru. These surveys are conducted with the technical assistance of PAHO and the financial assistance of UNICEF and USAID.

# PAHO Directing Council Approves EPI Resolution

The Directing Council of the Pan American Health Organization approved Resolution XI, regarding the Plan of Action for the Eradication of the Indigenous Transmission of Wild Poliovirus in the Americas, at its XXXIV Meeting held in Washington, D.C. on 28 September, 1989. In the Resolution, the Directing Council...

"Reiterates its thanks to USAID, the Inter-American Development Bank, UNICEF, CIDA/CPHA and Rotary International for the increased support to this program, and especially to Rotary International for its latest contribution, which helped intensify the "Mop-Up" operation."

"Calls the attention to all Member Countries that the program has entered a critical phase and that increased political commitment and resources will be needed if the program is to succeed, that there is no room for complacency, and that, therefore, the policies and strategies set forth in Resolution CD33.R14 of the XXXIII Meeting of the Directing Council (1988)--that all polio endemic coun-

# Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria, and whooping cough, from 1 January 1989 to date of last report, and for same epidemiological period in 1988, by country.

| Subregion and country | Date of last Report | Measles | | Poliomyelitis # | | Tetanus | | | | Diphtheria | | Whooping Cough | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Non Neonatal | | Neonatal | | | | | |
| | | 1989 | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 | 1988 | 1989 | 1988 |
| LATIN AMERICA | | | | | | | | | | | | | |
| Andean Region | | | | | | | | | | | | | |
| Bolivia | 1 Jul. | 223 | 615 | 2 | 0 | 13 | 19 | 66 | 46 | 5 | 5 | 321 | 193 |
| Colombia | 17 Jun. | 6 669 | 8 144 | 13 | 28 | 99 | 129 | 72[1] | 81[1] | 26 | 6 | 681 | 810 |
| Ecuador | 17 Jun. | 2 403 | 2 605 | 5 | 7 | 46 | 56 | 28 | 62 | 0 | 5 | 113 | 109 |
| Peru | 9 Sept. | 518 | 3 180 | 12 | 49 | 70 | 122 | 84 | 112 | 14 | 36 | 435 | 806 |
| Venezuela | 9 Sept. | 7 656 | 9 672 | 11 | 22 | 0 | 0 | 28 | 20 | 0 | 1 | 322 | 348 |
| Southern Cone | | | | | | | | | | | | | |
| Argentina**(v) | 29 Jul. | 1 411 | 1 493 | 0 | 2 | 36 | 35 | ... | ... | 5 | 3 | 1 451 | 2 358 |
| Chile | 15 Jul. | 7 611 | 2 306 | 0 | 0 | 7 | 9 | 0 | 2 | 18 | 88 | 155 | 45 |
| Paraguay | 9 Sep. | 88 | 568 | 0 | 0 | 57 | 55 | 12 | 64 | 7 | 11 | 270 | 664 |
| Uruguay (v) | 2 Sep. | 5 | 56 | 1 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 12 | 16 |
| Brazil | 30 Sept. | 10 570 | 10 300 | 39 | 75 | 1 084 | 1 258 | 213 | 228 | 615 | 849 | 6 058 | 6 480 |
| Central America | | | | | | | | | | | | | |
| Belize** | 26 Aug. | 5 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Costa Rica | 9 Sept. | 33 | 293 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 36 | 82 |
| El Salvador | 1 Jul. | 14 117 | 364 | 3 | 8 | 14 | 26 | 15 | 18 | 0 | 0 | 18 | 23 |
| Guatemala | 9 Sept. | 843 | 353 | 2 | 31 | 46 | 53 | 13 | 22 | 8 | 2 | 116 | 481 |
| Honduras | 1 Jul. | 574 | ... | 2 | 3 | 8 | ... | 8 | ... | 0 | 0 | 33 | 30 |
| Nicaragua | 9 Sept. | 68 | 130 | 0 | 0 | 24 | 32 | 11 | 12 | 0 | 0 | 206 | 37 |
| Panama | 31 Mar. | 81 | ... | 0 | 0 | 1 | ... | 1 | ... | 0 | ... | 28 | ... |
| Mexico** | 12 Aug. | 5 490 | 1 978 | 11 | 10 | 103 | 104 | 14 | 60 | 6 | 1 | 713 | 383 |
| Latin Caribbean | | | | | | | | | | | | | |
| Cuba | 17 Jun. | 6 | 112 | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 25 | 11 |
| Dominican Republic (v) | 29 Jul. | 490 | 292 | 0 | 1 | 25 | 21 | 3 | 7 | 14 | 34 | 186 | 32 |
| Haiti | * | ... | ... | 2 | 5 | ... | ... | ... | ... | ... | ... | ... | ... |
| CARIBBEAN | | | | | | | | | | | | | |
| Antigua & Barbuda | 8 Jul. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bahamas | 22 Jul. | 12 | 16 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Barbados | 15 Jul. | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dominica | 17 Jun. | 5 | ... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grenada | 19 Aug. | 0 | ... | 0 | 0 | 1 | ... | 0 | ... | 0 | ... | 0 | ... |
| Guyana | 25 Mar. | 3 | 147 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jamaica | 1 Jul. | 10 | ... | 0 | 0 | 1 | ... | 0 | ... | 1 | ... | 0 | ... |
| St. Cristopher/Nevis | * | ... | ... | 0 | 0 | ... | ... | ... | ... | ... | ... | ... | ... |
| St. Lucia | 17 Jun. | 3 | ... | 0 | 0 | 0 | ... | 0 | ... | 0 | ... | 0 | ... |
| St. Vincent & Grenadines | 29 Apr. | 0 | ... | 0 | 0 | 0 | ... | 0 | ... | 0 | ... | 0 | ... |
| Suriname | * | ... | ... | 0 | 0 | ... | ... | ... | ... | ... | ... | ... | ... |
| Trinidad & Tobago | 15 Jul. | 1 863 | 247 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 | 6 |
| NORTH AMERICA | | | | | | | | | | | | | |
| Canada**(v) | 29 Jul. | 10 383 | 410 | 0 | 2 | 2 | 1 | ... | ... | 2 | 11 | 570 | 414 |
| United Sates** | 12 Aug. | 9 189 | ... | 0 | 0 | 31 | ... | | ... | 1 | ... | 1 654 | ... |

* Country has not reported in 1989.
** Country does not report neonatal tetanus data separately.
# Data for polio includes only confirmed cases through week 39 (ending 30 September, 1989).
(v) Polio cases are vaccine-related.
(i) Polio cases are imported.
... Data not available.
1 Data for neonatal tetanus are through week 37, 1988 and 1989.

tries should hold national immunization days at least twice a year as a complement to their national immunization program and institute aggressive disease surveillance--should be continued, and non-endemic countries should ensure that their high levels of immunization are maintained."

"Requests that Member Countries, polio-endemic and non-endemic, take steps to establish a weekly reporting network of flaccid paralysis, including negative reporting, to permit the prompt detection of any suspected case of the disease, so that aggressive investigation and control measures can be instituted."

"Urges all Member Countries, particularly those still endemic for polio, to institute immediate "mop-up" operations as soon as a probable case is identified, and in all those districts which are at risk of polio transmission."

"Urges Member Countries to consider the progress already attained towards the goal of polio eradication and to build on this success by:

a) Intensifying those actions geared to the control of neonatal tetanus, particularly through vaccination of all women of child-bearing age in those areas already identified as at high risk;

b) Intensifying vaccination with measles and DPT vaccines;

c) Increasing further immunization coverage by routine health services, instituting measures to eliminate the missed opportunities for vaccination in all health facilities by offering to vaccinate any eligible children or women of childbearing age that visit these services."

"Requests that Member Countries and participating agencies decentralize their financial resources to the district level, in order that health workers in the local health systems have the required resources to implement promptly the measures necessary to improve coverage and interrupt the transmission of polio."

"Congratulates and supports the English-speaking Caribbean countries on their initiative aimed at the elimination of measles in their countries by 1995, and the similar initiatives of Canada, Cuba, and the United States of America."

"Requests that the Director:

a) Institute a reward of US$100 to the first person that reports in writing the first case of an outbreak (as defined in the Plan of Action) in a district for which subsequent laboratory tests confirm that the case was due to wild poliovirus;

b) Monitor the initiative of elimination of measles in the English-speaking Caribbean countries, Canada, Cuba, and the United States of America, because its success will be critical for the development of strategies for the elimination of measles from the whole of the Americas;

c) Maintain the same priority accorded so far to this program and to report to the XXIII Pan American Sanitary Conference in 1990 on the achievements of the targets that were established for this program."

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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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ISSN 0251-4729

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