

EPI Newsletter

Expanded Program on Immunization in the Americas

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IMMUNIZE AND PROTECT YOUR CHILD

February 1988

Polio in the Americas: First eight weeks, 1987 and 1988

The countries of the Americas reported 169 cases of poliomyelitis during the first eight weeks of 1988, compared with 73 cases during the same period in 1987. Figure 1 shows the weekly distribution of the reported cases.

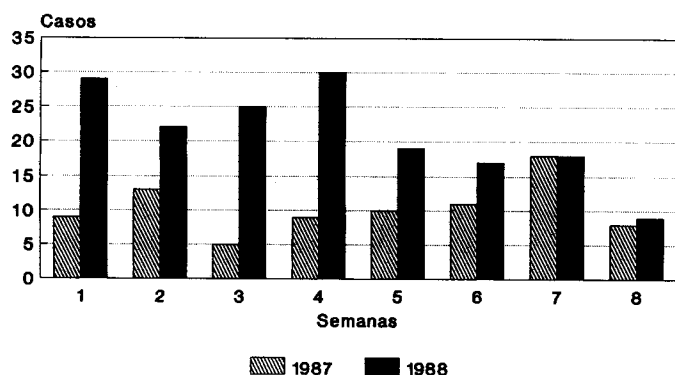
The increase in cases reported is partly due to the fact that at this point in 1988, the 1987 cases are all confirmed cases, whereas the 1988 cases are pending final classification.

The Polio Eradication Field Guide has been widely distributed during the early part of the year. It is ex-

pected that use of this important technical tool will enhance all epidemiological activities, including surveillance, control, follow-up and polio case classification.

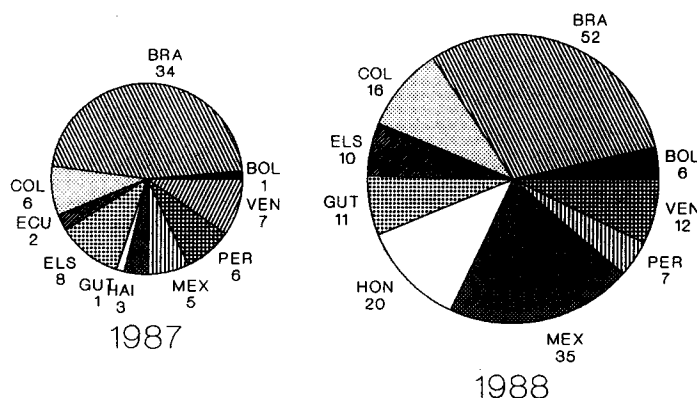
Figure 2 shows the distribution of cases reported by each country during the first eight weeks of 1987 and 1988. All countries, with the exception of Ecuador and Haiti, have reported more cases during the period this year than in the previous year.

FIGURE 1. Polio in the Americas Cases Reported, by Week Weeks 1-8, 1987 and 1988



Source: Weekly telexes to PAHO

FIGURE 2. Polio in the Americas Cases Reported, by Country Weeks 1-8, 1987 and 1988



Source: Weekly telexes to PAHO

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Fifth Meeting of the EPI Technical Advisory Group: Recommendations

The Fifth Meeting of the EPI Technical Advisory Group (TAG) took place from 26 to 29 January 1988, in Lima, Perú. It had the principal objective of reviewing the advances made in the EPI by the countries of the Andean Region and updating knowledge about the programs in those countries that have previously been analyzed by the TAG, such as Brazil, Mexico and the Central American countries. The meeting was used to review studies of flaccid paralysis that have taken place in Paraguay and Chile. Some operational studies carried out in Costa Rica (lameness surveys of school-aged children) and Nicaragua (survey of missed opportunities for vaccination) were also presented. In addition, there were updates about research being carried out in some countries, such as field surveys with new formulations of OPV vaccine, acellular pertussis vaccine and the Edmonston-Zagreb strain of measles vaccine.

An important part of the meeting was devoted to reviewing the present situation of the network of laboratories that support the program in several countries. The meeting was attended by representatives of UNICEF, Rotary International, AID and participants from nine countries, including the directors of the laboratories in the network, national EPI staff, EPI/PAHO staff and staff from other PAHO programs, and several short term consultants who support the development of the program at the regional and country level.

Many of the recommendations that follow have been made in previous TAG reports but bear repeating because they remain fundamental parts of the polio eradication effort and because many have not been fully implemented.

1. *Vaccination strategy and coverage.*

- a. National Vaccination Days (NVD's) with OPV should be adopted by those countries classified as infected by polio or at high risk. This is the most effective strategy for prompt interruption of wild poliovirus transmission.
- b. NVD's should include the administration of DPT, measles, and tetanus toxoid (for women of child-bearing age) to gain maximum health benefit from resources expended. Every effort should be made to ensure NVD's help to strengthen the entire EPI and lead to the development of permanent, ongoing immunization services.
- c. The continuing occurrence of cases in the peri-urban areas of many countries deserves special attention. These areas undoubtedly represent reservoirs of infection from which disease spreads to rural areas. Special intensive vaccination campaigns that target these areas are warranted.
- d. Advantage should be taken of every opportunity for vaccinating children. Immunization should be offered to every eligible child during every visit for health care.

2. *Surveillance and Investigation.* Surveillance remains the key element in disease control and eradication and must continue to have top priority. The improvements in quality and quantity of surveillance information are noteworthy; however, very few countries yet have fully adequate systems.

- a. Surveillance systems must be designed to obtain information on a weekly basis from all health units (including hospitals and rehabilitation units) where polio cases are likely to be seen. Each unit should be required to report weekly regardless of whether or not cases have been seen. A roster of reports by site should be kept to monitor compliance. The reporting network, which should include both public and private health care facilities, should be fully operational in all countries by the end of 1988.
- b. The case definitions/classifications developed by TAG should be used in all countries for both surveillance and reporting. Uniform criteria for confirming cases should be used, following the guidelines developed previously. Specifically, the TAG continues to recommend that the following be classified as confirmed cases of polio for epidemiologic purposes:
 - 1) all cases of acute flaccid paralysis with laboratory confirmation of polio;
 - 2) all cases of acute flaccid paralysis with residual paralysis at 60 days and without another specific diagnosis. Cases in persons under 15 years of age, diagnosed by clinicians as Guillian-Barre Syndrome (GBS) with residual flaccid paralysis at 60 days, should be classified as confirmed polio; and,
 - 3) all cases of acute flaccid paralysis who are lost to follow-up or who die within 60 days of onset.
- d. Cases of isolated facial paralysis should not be included in the list of suspected cases of polio requiring intensive investigation. A recent study shows that a substantial majority of cases of isolated facial paralysis are not caused by polio viruses. The TAG believes that the benefits derived from investigation of the many cases of facial paralysis to obtain the few cases of polio do not justify expenditure of the resources that would be required. Instead, efforts should be devoted to higher priority aspects of the program including investigation of cases of more generalized flaccid paralysis.
- e. Containment activities should be undertaken after preliminary classification and should not wait for final assessment.
- f. Final classification of cases must be made no later than 10 weeks after onset.
- g. It is recognized that the differential diagnosis of poliomyelitis on clinical grounds is complex,

especially when trying to differentiate polio from GBS. The problem can be minimized by the rapid notification and investigation of all suspected cases. Proper and timely collection of appropriate laboratory specimens can confirm the vast majority of polio cases. Laboratory specimens must be properly preserved and transported. The cold chain is as important for laboratory specimens as it is for vaccine.

- h. The difficulties in differentiating polio from GBS indicate the need for prospective studies of the clinical and epidemiological characteristics of both with the objective of developing a more specific case definition for polio while maintaining sensitivity. Prospective evaluation is critical so appropriate clinical histories can be taken, laboratory specimens collected, and diagnostic tests such as nerve conduction studies and electromyograms (EMGs) obtained on all cases. This will allow comparison of the characteristics of laboratory confirmed cases with cases that are not confirmed despite collection of the proper specimens at appropriate times. Given the importance of this study to the eradication effort, a careful protocol should be developed and reviewed by experts in the differential diagnosis of polio. The Asuncion group (Brazil, Bolivia, Uruguay, Argentina, and Chile) is given responsibility for the study. It is hoped that results will be available by the next TAG meeting.

3. *Laboratory support.* The laboratories play a critical role in the polio eradication effort. Rapid processing of specimens and feedback of results to epidemiologists and other health authorities are essential to surveillance and containment activities.

- a. Special efforts should be made to assure that a network of fully equipped, reliable laboratories is fully functional at the sub-regional level by March 1988. The current situation should be assessed and laboratories added or deleted from the network as needed. Pending administrative problems

should be solved as quickly as possible.

- b. High quality and reliability are required of all laboratories in the network. The laboratories should be evaluated periodically by having them perform serologic studies in a blinded fashion on coded specimens prepared to have specified titers. Similar tests for viral isolation should also be performed.
- c. If national laboratories are going to continue poliovirus work once the diagnostic laboratory network is operational, they must send duplicates of all polio specimens to the network laboratories.
- d. Arrangements for appropriate shipping and handling of laboratory specimens (and payment of shipping fees) should be in place before March 1988.
- e. Periodic meetings between epidemiologists and laboratory personnel should be set up to insure that all steps in the laboratory diagnosis from specimen collection to reporting of results run smoothly and to integrate the diagnostic expertise of both epidemiologists and laboratorians in determining the presence or absence of polio.
- f. The top priority for laboratories in the network is to determine whether the illness being evaluated is either confirmed as polio or not confirmed. Further studies to determine the precise etiology if the case is not confirmed as polio are of low priority.

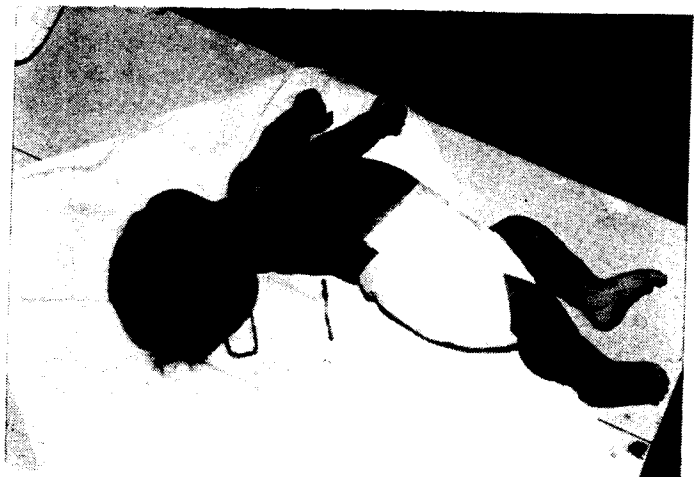
4. *Polio vaccine formulation.* Preliminary studies in Brazil suggest that seroconversion to type 3 poliovirus in trivalent OPV is low and that the low rate might be explained by the low quantity of the type 3 component (300,000 TCID₅₀), in some vaccines. Low seroconversion was overcome in part by raising the concentration of type 3 to 600,000 TCID₅₀. The TAG recommends that as soon as feasible, all purchases of trivalent OPV for the program contain approximately 600,000 TCID₅₀ of the type 3 component which may help improve seroconversion rates in other countries to type 3.

Tetanus Control

The VIII International Conference on Tetanus took place in Leningrad, 25-28 August 1987. Some 120 participants from 20 countries discussed papers relating to various aspects of tetanus.

Tetanus incidence has declined dramatically in industrialized countries due principally to the introduction of effective immunization programs, but also helped by improved standards of living and hygiene. Many industrialized countries continue to have important population groups who are inadequately immunized, such as adult women and the elderly.

In contrast, little impact on the incidence of tetanus has yet been achieved in developing countries (although there are some striking exceptions). WHO estimates that some 800,000 neonates and 400,000 older children and



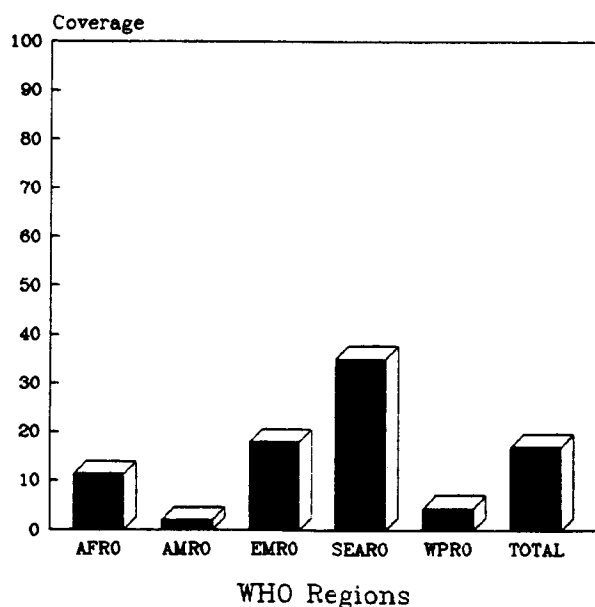
adults die each year from tetanus in developing countries.

To control neonatal tetanus, the Expanded Program on Immunization (EPI) emphasizes immunizing women of childbearing age (especially pregnant women), assuring hygienic delivery and post-delivery care, and reporting neonatal tetanus separately from other categories of this disease. Immunization coverage of pregnant women remains low (Figure 1). The EPI has not attempted to estimate the proportion of deliveries conducted in a hygienic manner in developing countries, but this would also seem to be low (Table 1). Some improvements are being seen in reporting neonatal tetanus as a separate category (Figure 2), suggesting increased awareness of this problem by national authorities.

Strengthening and acceleration of tetanus control/elimination efforts are needed. To support these actions, participants at the conference adopted the following resolution:

"The VIII International Conference on Tetanus, Recognizing that tetanus continues to kill some 800,000 infants and 400,000 children and adults each year in developing countries and that this disease remains a problem in many industrialized countries, particularly of elderly populations,
Affirms that tetanus is a completely preventable disease given the materials and methods available today;
Urges all countries to accept the challenge of eliminating tetanus from the world;
Notes that special priority should be accorded to the prevention of neonatal tetanus;
Supports the goal endorsed by the Regional Committee for Europe of the World Health Organization in 1984

FIGURE 1. Percentage of Pregnant Women Immunized with Two Doses of Tetanus Toxoid, by Regions, June 1987



Source: EPI, WHO

to, *inter alia*, eliminate neonatal tetanus from the Region by the year 2,000;

Encourages all countries where neonatal tetanus remains endemic to adopt the goal of reducing incidence below one case per 1,000 live births by 1990 and the goal of reducing incidence to zero by the year 2,000;

Notes that strategies to control and eliminate neonatal tetanus should cover a mix of approaches (see Annex 1) which include:

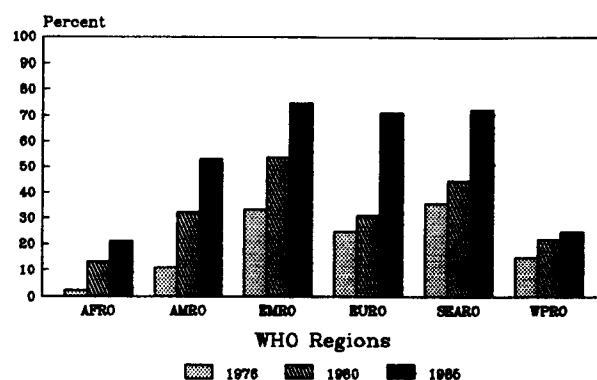
- immunizing all women of child-bearing age (with special emphasis on pregnant women and women known to belong to high risk groups;

TABLE 1. Percentage of Births Attended by Traditional Birth Attendants (TBAs) and Percentage of TBAs Trained in Selected Countries

REGION COUNTRY	Births attended by TBAs (%)	TBAs Trained (%)
AFRICAN		
Ethiopia	81	2
Liberia		7
Mali		23
Niger		77
Cameroon		75
AMERICAN		
Colombia	60	7
Ecuador	80	20
Guatemala		22
Haiti		36
Nicaragua		33
EASTERN MEDITERRANEAN		
Afghanistan	60	4
Lebanon	34	40
SOUTHEAST ASIAN		
Bangladesh	30	36
India	50-60	43
Indonesia	97	71
Maldives	80-85	49
Thailand		82
WESTERN PACIFIC		
Malaysia	47	46
Philippines	47	24

Source: EPI, WHO

FIGURE 2. Reporting of Neonatal Tetanus Cases, by Regions, for years 1976, 1980 and 1985



Source: EPI, WHO

- assuring hygienic delivery and umbilical cord care through training and supervision of birth attendants; and,
- investigating cases to determine what action could have prevented them;

Suggests that industrialized countries adopt active immunization strategies to minimize the number of adults, especially the elderly, who remain susceptible to tetanus;

Calls for continuation of basic and operational research to further improve and simplify tetanus prevention strategies and methods;

Asks the organizers of the IX International Conference on Tetanus to consider including in the Agenda a review and discussion of the impact of control/elimination efforts, with special emphasis on the elimination of neonatal tetanus.

Annex 1

Action recommended for consideration by national health authorities to improve control of neonatal tetanus (NT):

1. General Strategies.

1.1 Revise the national immunization action plan.

Determine NT incidence if the magnitude of the problem is not known, either by reviewing available data or by conducting special surveys.

Set or review/revise immunization and disease reduction targets if the magnitude of the problem is known.

Define and implement immunization strategies to reach women living in areas where the incidence of the disease is very high.

Widen the target groups for TT immunization to include:

- all women of child-bearing age, including pregnant women, regardless of the month of pregnancy,
- school children at school-entry and school leaving, if resources can be made available.

1.2 Launch special programs to eliminate NT from urban or rural areas where incidence is especially high.

1.3 Improve maternity and post-natal care:

Identify, train and supervise birth attendants,

Include in the tasks of birth attendants checking the immunization status of pregnant women and promotion of TT immunization.

2. Immunization Strategies.

Any woman of child-bearing age visiting any governmental or non-governmental health facilities who is considered susceptible to tetanus should be offered immunization whatever the reason for the visit (bringing a child for immunization, attending an MCH clinic, or private clinic).

TT immunization should be offered routinely at convenient times and places and offered at special sites or special occasions, such as market places and other occasions at which women gather.

Tetanus immunizations administered to the mother should be recorded on the child's immunization record and on a card kept by the mother or on a maternity record.

Mass immunization campaigns should be organized in high risk areas which cannot be served through routine services.

Women's groups, religious and community leaders, and school children should be used to promote TT immunization of women of child-bearing age in the community and to increase awareness that tetanus of the newborn can be prevented by TT immunization and proper care of the umbilical cord at delivery.

TT immunization for women should be included in specific accelerated immunization efforts such as immunization days or weeks.

3. Immunization schedule for women of child-bearing age.

The following TT immunization schedule should be adopted:

The first dose of TT at first contact or as early as possible during pregnancy.

The second dose of TT, four weeks after the first dose.

The third TT dose 6 to 12 months after the second dose or during the subsequent pregnancy. The third dose is an important part of the basic immunization. This immunization schedule protects mothers and their newborns for at least 5 years. If it has not yet been given as a part of postnatal care, it can be given at the subsequent pregnancy, when the mother brings her child for immunization or when she is seeking medical care for any reason.

A fourth TT dose should be given at least one year after the third or during the subsequent pregnancy. This dose will protect mother and future newborns for at least 10 years.

A fifth TT dose should be given at least one year after the fourth or during the subsequent pregnancy. This dose will provide life-long protection.

If only a first TT dose has been administered during pregnancy, the second dose should be given at the time of delivery or when the mother brings her child for the first immunization.

4. Monitoring and Surveillance.

Make NT a notifiable disease in reports of all health facilities.

Carry out investigation of cases of NT to determine why cases occurred and what action could be implemented to prevent future cases.

Report routinely TT immunization by target population by age group and by dose (TT1, TT2, TT3 and boosters).

Always include evaluation of the TT immunization

status of mothers in immunization coverage surveys for children.

Source: Expanded Program on Immunization, WHO (To be published in the Weekly Epidemiological Record).

Second Meeting of Southern Cone Nations on Polio Eradication

The individuals in charge of immunization and polio eradication programs in the Southern Cone Nations (Argentina, Chile, Paraguay and Uruguay), Bolivia and Brazil met in Foz de Yguazú, Brazil from 8 to 10 December 1987, with PAHO/EPI technical staff, representatives of several of the authorities of the states of Brazil (Santa Catarina, Paraná, Matto Grosso, and Acre) that border these countries and representatives of the Ninth Sanitary Region of Paraguay. Also present were representatives of Rotary International.

The principal objective established was to follow-up on activities carried out in the different countries between July and December 1987. Specifically, those relating to the strengthening of epidemiological surveillance activities directed at determining the presence or absence of polio cases in the Southern Cone.

The progress made between the first and second meetings (see EPI Newsletter, Volume IX, Number 4, August 1987) by some of the countries present, was notable (Table 1). It is noteworthy that the implementation of the activities agreed upon at the July 1987 Asunción meeting, resulted in the discovery of polio cases in three Southern Cone countries that had not reported cases in 11, 3 and 2 years, respectively. This is an indicator that the strategies are efficacious and should be adjusted to ensure effective control measures. The analysis of vaccination coverage data by district or municipality identified areas subject to greater risk due to low coverages, which could also be pointing to deficits in the health infrastructure. This type of analysis must be broadened to include other conditionants that may be contributing towards making these high-risk areas.

The general recommendations included:

1. The municipality/district coverage data analyzed should be reported as soon as possible to the local levels, so that appropriate corrective measures may be taken.
2. All the cases identified as sudden flaccid paralysis should be identified as *probable polio* cases and should be subject to detailed clinical, laboratory and community level epidemiological investigation.
3. Containment activities should be initiated immediately after a probable case has been identified.
4. In the absence of laboratory data, all cases of sudden flaccid paralysis, not due to trauma, who have evidence of sequelae after 60 days, should be clinically confirmed as polio.
5. EMGs and muscle conduction speed tests may be used to support polio diagnosis and enhance its specificity.

6. There may be paralytic polio cases which evolve and recover without sequelae and therefore, confirmation of these cases should be considered if there are positive laboratory and epidemiological data.
7. Cases diagnosed as Guillain Barré Syndrome, but with positive laboratory results (poliovirus isolation and/or seroconversion), should be confirmed as polio.
8. Containment activities should be evaluated with the purpose of ensuring that they are within the guidelines established in the Polio Field Guide. Furthermore, a protocol should be developed for evaluating the *impact* of containment activities on the circulation of wild poliovirus. These two studies could take place in Brazil, where the frequent use of containment activities allows for enough comparisons to make analysis possible.
9. As polio eradication becomes imminent, coordination among neighboring countries assumes a more significant importance. It is therefore recommended that the necessary mechanisms be investigated for improving across-the-border coordination in case investigation and control measures.

TABLE 1. Accomplishment of activities resulting from the First Meeting of Southern Cone Nations

	ARG	BOL	BRA	CHI	PAR	URU
Coverage at the local level	—	x	x	x	x	x
Percentage of health centers that submit weekly reports	—	—	—	—	—	—
Negative weekly reporting of polio cases	—	x	x	—	x	—
Carry out epidemiological surveillance courses	x	x	x	—	x	—
Standardized case definitions	x	x	x	x	x	x
Study of GBS cases	—	x	x	x	x	—
Coordinate interventions in border areas	—	—	x	—	x	—
Active search for cases in high-risk areas	—	x	x	—	—	—

Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria and whooping cough, from 1 January 1987 to date of last report, and for same epidemiological period in 1986, by country

Subregion and country	Date of last report	Measles		Polio-myelitis§		Tetanus				Diphtheria		Whooping Cough	
						Non-neonatal		Neonatal					
		1987	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987	1986
LATIN AMERICA													
Andean Region													
Bolivia	*	...	...	5	4	...	...	...	...	...	...	...	...
Colombia	*	...	...	138	63	...	...	...	...	...	...	...	...
Ecuador	15 Ago.	721	...	10	20	70	...	54	...	7	...	255	...
Peru	25 Apr.	375	...	47	38	8	...	12	...	1	...	314	...
Venezuela	10 Oct.	16 556	10 280	69	27	3	73	13	12	2	3	764	2 560
Southern Cone													
Argentina	10 Oct.	3 695	...	1	—	63**	...	...	...	9	...	1067	...
Chile	10 Oct.	1 936	8 685	—	3	13	15	3	—	153	179	31	28
Paraguay	05 Dic.	1 219	549	—	—	48	43	38	47	14	18	176	133
Uruguay	07 Nov.	986	46	—	—	3	3	—	—	—	—	346	923
Brazil	15 Ago.	42 297	47 117	333	612	949	1 259	256	349	924	1 119	11 077	15 911
Central America													
Belize	02 Jan.	224	...	—	—	—	...	—	...	1	...	—	7
Costa Rica	15 Aug.	3 426	1 263	—	—	1**	1**	...	...	...	—	100	75
El Salvador	12 Sept.	276	167	53	23	32	25	14	25	2	—	120	287
Guatemala	18 Jul.	276	...	19	33	49**	...	...	...	—	...	141	...
Honduras	05 Dec.	935	485	15	6	14	44	6	13	—	—	335	214
Nicaragua	18 Jul.	509	1 458	—	—	...	...	...	...	2	...	161	279
Panama	10 Oct.	208	2 967	—	—	—	3	—	2	—	—	—	28
Mexico	05 Dec.	2 691	8 060	102	66	264	246	...	—	21	21	745	1 086
Latin Caribbean													
Cuba	12 Sept.	733	2 810	—	—	5	13**	—	...	—	...	91	293
Dominican Republic	07 Nov.	417	...	—	2	74	...	6	...	67	...	128	...
Haiti	*	...	...	12	36	...	...	...	...	...	...	...	...
CARIBBEAN													
Antigua & Barbuda	10 Oct.	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	02 Jan.	42	85	—	—	—	—	—	—	—	—	—	—
Barbados	05 Dec.	2	2	...	...	1	3	—	—	—	—	—	1
Dominica	05 Dec.	78	...	—	—	1	...	—	...	—	...	—	...
Grenada	02 Jan.	6	...	—	—	—	—	—	—	—	—	1	...
Guyana	10 Oct.	2	...	—	—	2	...	—	...	—	...	—	...
Jamaica	18 Jul.	...	...	—	—	...	...	...	...	1	...	20	...
St. Christopher/Nevis	*	...	...	—	—	...	...	...	...	...	...	...	...
Saint Lucia	07 Nov.	4	7	—	—	—	—	—	—	—	—	—	—
St. Vincent and the Grenadines	15 Aug.	—	...	—	—	...	...	...	...	...	...	...	...
Suriname	12 Sept.	4	20	—	—	1	—	—	...	—	—	—	—
Trinidad & Tobago	05 Dec.	407	2 637	—	—	3	12	—	—	—	—	12	14
NORTH AMERICA													
Canada	21 Nov.	2 021	14 749	—	—	4**	4**	...	...	4	4	996	2 082
United States	02 Jan.	3 588	...	—	8	40**	...	...	...	3	...	2 529	...

* No 1987 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 52 (ending 2 January 1988).

—No cases

...Data not available.

Monitoring of Safety and Efficacy of EPI Vaccines in Individuals with HIV Infection or Clinical AIDS

The recommendations concerning immunization of individuals with HIV infection or with clinical AIDS which were endorsed by the EPI Global Advisory Group in November 1986 remain standard EPI policy (See EPI Newsletter Vol. IX, No. 1, February 1987).

Efforts are underway to establish prospective studies of HIV infected individuals and individuals with clinical AIDS in which, among other things, response to immunization and response to diseases included within the EPI can be monitored.

While these studies are being undertaken, it will also be important to look actively for any information which might suggest that our current recommendations should be modified. In particular, any individual with clinical AIDS who receives one of the EPI vaccines should be actively followed so that any unexpected adverse reactions can be documented and reported. It will also be relevant to know how many individuals with clinical AIDS have been immunized without having an adverse reaction.

Information concerning the clinical severity of the EPI diseases in individuals with clinical AIDS should also be sought.

The EPI of WHO suggests that contacts be established with the Ministry of Health in at least one country in the Region which contains a well staffed hospital which is

either handling AIDS patients at present or would be a likely facility to do so if AIDS appears in the country. Efforts should be made in collaboration with the Ministry to establish a sentinel system in this facility in which all cases of clinical AIDS who receive an EPI vaccine are recorded by age, type of vaccine and dose and a note made of any adverse reactions which are seen in the subsequent month. The frequency of these reports is yet to be determined, although, at least in the beginning, a monthly report might be appropriate.

Any death of an individual with clinical AIDS which is thought to be vaccine-associated should be reported immediately to the Ministry of Health and by them to PAHO. A case-report on the death, providing as much evidence relevant to its relation to immunization as possible should be requested.

You will appreciate that the above might represent a minimum level of surveillance for adverse vaccine reactions associated with clinical AIDS, and it may be that either in the Regional Office or at country level, far more extensive systems are already in operation. The countries should provide any information available about any existing system and we will endeavor to share any information we receive concerning activities in other Regions.

Source: EPI, WHO

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References to commercial products and the publication of signed articles in this newsletter do not constitute endorsement by PAHO/WHO, nor do they necessarily represent the policy of the Organization.

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