EPI Newsletter

Expanded Program on Immunization in the Americas

Volume X, Number 5 **IMMUNIZE AND PROTECT YOUR CHILDREN** October 1988

Polio Surveillance in the Americas

Every week of the year, PAHO receives telexes reporting all polio cases which have been reported to the central levels from each country in the Region (see Table 1). This is how the polio situation, surveillance and case follow-up are evaluated and monitored.

The Technical Advisory Group (TAG) recommended this strategy of weekly notifications (even in the absence of cases). Furthermore, it recommended that negative reporting should be implemented in each country at the level of every reporting site.

Table 1. Confirmed Polio Cases and Probable Cases under Investigation, by Week Reported, 1988; Total and Cumulative Number of Cases Reported in 1987.

COUNTRY	1987		1988		Wks. 1 - 4		Wks. 5 - 8		Wks. 9 - 12		Wks. 13 - 16		Wks. 17 - 20		Wks. 21 - 24		Wks. 25-28		Wks. 29-32		Wks. 33-36		Wks. 37-40	
	Tot.	Cum.	Conf.	Prob.	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P	C	P
Argentina	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bolivia	4	4	3	3	2	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Brazil	236	186	83	218	4	0	8	0	16	2	8	2	10	5	11	17	17	28	8	50	0	55	1	59
Canada	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CAREC	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Chile	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Colombia	114	80	49	26	9	0	4	0	8	0	3	0	8	0	4	0	6	0	3	5	4	10	0	11
Costa Rica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cuba	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dom. Rep.	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecuador	10	10	4	10	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	0	0	6	0	4
El Salvador	54	43	15	5	4	0	3	0	1	0	1	0	2	0	1	0	1	1	2	0	0	1	0	3
Guatemala	22	12	30	18	3	0	1	0	2	0	1	0	3	0	6	0	6	0	5	1	2	7	1	10
Haiti	12	12	4	0	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Honduras	15	9	19	13	3	0	2	0	3	0	3	0	2	0	0	0	0	0	5	0	1	7	0	6
Mexico	80	62	30	60	5	0	4	1	6	0	4	0	7	0	1	3	3	2	0	17	0	22	0	15
Nicaragua	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Panama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Peru	45	28	33	24	1	0	1	0	5	0	4	1	7	1	4	2	7	2	1	5	2	5	1	8
Uruguay	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
U.S.A.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Venezuela	39	28	33	17	1	0	8	0	5	0	5	0	6	0	2	0	4	0	2	3	0	5	0	9
TOTAL	635	475	303	400	32	0	33	1	50	3	30	3	45	6	29	23	44	33	28	83	9	118	3	130

Source: PAHO

In this issue:

Third Meeting on the Eradication of Poliomyelitis from the Countries of the Southern Cone

The third meeting of the "Asunción Group" took place in Asunción, Paraguay, from 14 to 16 September, 1988. Participants included representatives of the countries of the Southern Cone (Argentina, Chile, Paraguay, and Uruguay), Bolivia, Brazil, and PAHO technical staff. The main purpose of the meeting was the evaluation of the activities which had been agreed upon at the second meeting of the Group, which had been held 8 to 10 December, 1987 in Foz de Iguazú (see *EPI Newsletter*, April, 1988).

It is important to point out that since the last meeting, the 41st World Health Assembly adopted Resolution WHA41.28 for the global eradication of poliomyelitis by the year 2000 (see *EPI Newsletter*, August, 1988). Because of the experiences thus far accumulated, the Region of the Americas will spearhead this global effort. Inter-Regional exchange will be reinforced and the EPI will receive added resources. The Global Plan for polio eradication states that the European Region and the Region of the Americas should be certified as free of polio by the year 1995.

One of the most effective indicators of poliovirus circulation identified thus far in the Region of the Americas, is the number of infected counties and OPV coverage in each (see page 5). Of the 14,636 counties or similar geopolitical units in the endemic countries of the Region, the number of infected ones has decreased from 566 in 1986, to 453 in 1987 and 176 for the first 35 weeks of 1988.

Regarding the development of surveillance, it is noteworthy that the Regional average interval between onset of paralysis and reporting was still 36 days, and only 28% of the cases had had fecal samples and both acute and convalescent sera taken. These facts highlight the importance of having a more active surveillance. Every case must have had all the samples that are necessary for adequate laboratory investigation.

Each country presented reports detailing the status of surveillance and investigation. Following these presentations and discussions, specific country recommendations were made. In general, there was more achivement of the activities recommended at the second meeting than there was between the first and second meetings. Important strides were made by all countries regarding reporting and case investigation, even though follow-up and sample collection and shipment remains weak in some.

The recommendations made at the second meeting were still found to be valid and worthy of consideration by all countries. The following are emphasized:

1. The coverage data by county and/or district or department that were analyzed, must be informed immediately to the local levels, in order that corrective measures can be taken.
2. All the cases identified as flaccid paralysis of sudden onset must be reported as probable cases of polio and should be subjected to detailed clinical, laboratory and epidemiological investigation.
3. In the absence of laboratory data, all cases of sudden flaccid paralysis of non-traumatic origin, that have sequela at 60 days from onset, must be clinically confirmed as polio.
4. Nerve conduction velocity studies may be used to support a polio diagnosis, as a means of increasing the specificity of the diagnosis.
5. Although some paralytic polio cases may evolve towards complete recovery, i.e. no sequela, they must be confirmed as polio cases when laboratory and epidemiological data are positive.
6. Those cases that have been diagnosed as Guillain-Barré Syndrome, but present positive laboratory results (poliovirus isolation and/or seroconversion) must be confirmed as polio.

The Group made the following additional recommendations:

1. During this stage of the program, it is of utmost importance that in all countries present at the meeting, fecal and serum samples be collected, packaged and shipped within the time frame necessary for accurate processing by the reference laboratories. The need for collecting *two stool samples or rectal swabs within 24 to 48 hours* is stressed.

2. Vaccination activities must take place in those districts or counties that have been identified as having low coverage, and special care should be given to densely populated semi-urban areas.

3. Countries must consider organizing a National Consultative Commission that can assign final classification to those probable cases that are especially hard to reclassify although clinical, laboratory and follow-up data are available.

4. Negative reporting must be established in all countries, at the level of all those establishments that may see suspected polio cases. The central level should implement monitoring of this weekly reporting.

5. The existence of a single probable case should trigger immediate immunization activities.

6. For the following meeting, it is recommended that countries standardize their presentations, in order to facilitate comparisons. Also, a session should be added that will allow for the presentation and discussion of probable cases from several countries, specifically their final classification criteria. It was also suggested that the TAG approach this subject at its next meeting, to be held during the first week of November, 1988.

7. The next meeting will be in Uruguay, in June, 1989.

Measles in the United States, 1987

Introduction

In 1987, a provisional total of 3655 measles cases was reported to CDC, a 42% decrease from the 6282 cases reported in 1986(1)(Figure 1). The 1987 incidence rate was 1.5 cases/100,000 population, compared with 2.7 cases/100,000 population in 1986.

Detailed information was provided to CDC's Division of Immunization, Center for Prevention Services, on 3652 cases. Of these, 3312(90.7%) met the standard clinical case definition for measles,* and 1106(30,3) were serologically confirmed. The usual seasonal pattern was observed, with the peak number of cases occurring from February through May (weeks 4-24)(Figure 2).

There were 76 outbreaks (i.e., five or more epidemiologically related cases), which accounted for 3165 (86.7%) cases. Seven outbreaks with more than 100 cases each accounted for 1877 (51.4%) cases. Eighty-three cases (2.3%) were known to be imported from other countries. Of these, 44 were in U.S. citizens. An additional 88 (2.4%) cases were epidemiologically linked to imported cases within two generations of onset in the index patient.

In 1065 (19.2%) cases, the patients were 5 years of age (Table 1); 482 (13.2%) were 15 months of age (297 children 12 months of age 185 children 12-14 months of age). The 15 to 19 year age group accounted for 28.7% of all cases. The incidence rate of measles decreased from 1986 to 1987 in all age groups. The highest incidence rates occured in 0-4 year-olds and 15-19 year-olds.

Table 1. Age distribution and estimated incidence rates* of measles - United States, 1986 and 1987.

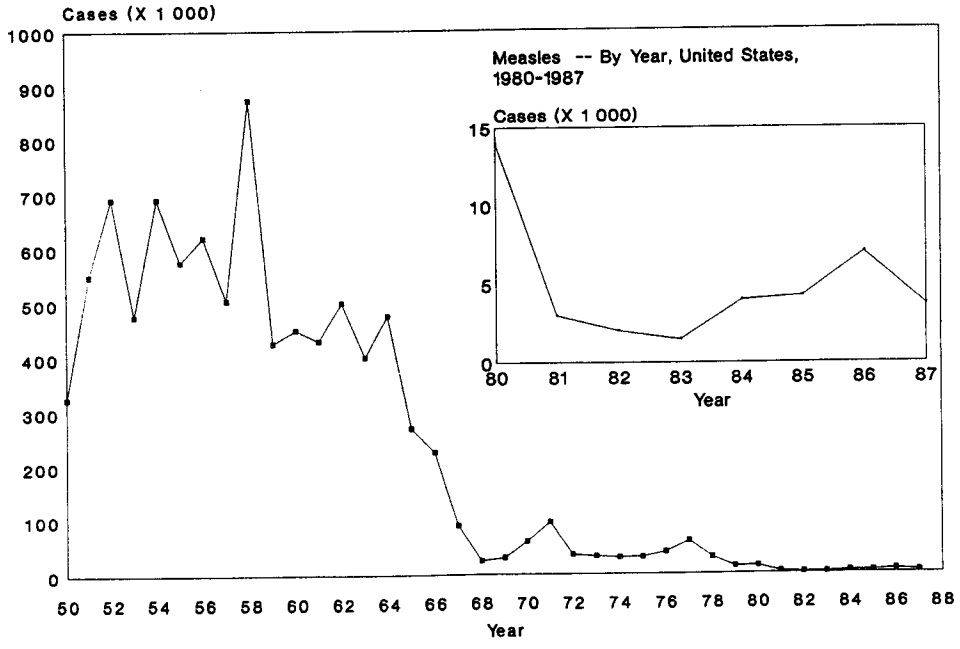
AGE (yrs.)	1986 No.	1986 %	1986 Rate	1987[1] No.	1987[1] %	1987[1] Rate	% CHANGE
0-4	2 454	(39,2)	13,0	1 065	(29,2)	5,9	-54,6
5-9	675	(10,8)	3,9	337	(9,2)	1,9	-51,3
10-14	1 313	(21,0)	8,1	717	(19,6)	4,3	-46,9
15-19	1 168	(18,7)	6,3	1 047	(28,7)	5,6	-11,1
20-24	290	(4,6)	1,4	205	(5,6)	1,0	-28,6
>25	336	(5,4)	0,3	281	(7,7)	0,2	-33,3
Unknown	19	(0,3)	-	-	-	-	
Total	6 255	(100,0)	2,7	3 652	(100,0)	1,5	-44,4

* Cases per 100 000 population.
[1] Provisional data.

Complications were reported in 445 (12.2%) cases. Otitis media was reported in 209 (5.7%) cases; diarrhea, in 159 (4.4%); pneumonia, in 91 (2.5%); and encephalitis, in five (0.1%). Two hundred eighty-four (7.8%) of the reported patients were hospitalized. Four measles-attributable deaths were reported (death-to-case ratio of 1.1 deaths per 1000 cases) (2,3).

* Fever at or above 38.3°C (equal to greater than 101°F); generalized rash lasting 3 or more days; and at least one of the following: cough, coryza, or conjunctivitis.

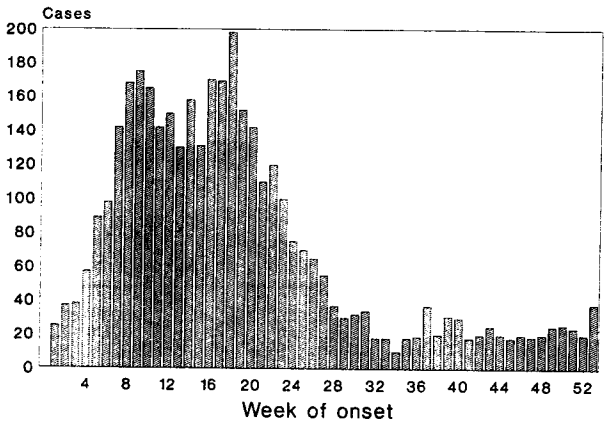
Figure 1. Measles, by year, United States of America, 1950 - 1987



Source: PAHO

Source: Morbidity and Mortality Weekly Report, Vol. 37, No. 34, September 2, 1988, pg. 527.

Figure 2. Measles cases, by week of rash onset, United States, 1987



Of the 2451 (67.1%) patients for whom setting of transmission was reported, 1296 (52.9%) acquired measles in primary or secondary schools; 153 (6.2%), in medical settings; 141 (5.8%), in colleges or universities; 72 (2.9%), in child day care; 503 (2.0%), at home; and 286 (11.7%), in a variety of other settings.

A total of 1734 (47.5%) patients had been vaccinated on or after the first birthday, including 609 (16.7%) who were vaccinated at 12-14 months of age. One hundred sixty-nine (4.6%) had a history of vaccination before the first birthday, and 1749 (47.9%) were unvaccinated. Of the 2101 school-aged children 5-19 years of age, 1506 (71.7%) had been adequately vaccinated, including 579 (27.6%) who were vaccinated at 12-14 months of age. In contrast, of the 1065 preschool-aged children 0-4 years of age, 153 (14.4%) had been adequately vaccinated, including 20 (1.9%) vaccinated at 12-14 months of age (Table 2).

Table 2. Age distribution and preventability of measles cases - United States, 1986 and 1987.

AGE	1986			1987*		
	Total.	Preventable No,	%	Total	Preventable No.	%.
< 15 months	1229	0		526	0	
16m - 4 years	1225	1019	(83,2)	539	345	(64,0)
5 - 9 years	675	237	(35,1)	337	64	(19,0)
10 -14 years	1313	318	(24,2)	717	117	(16,3)
15 - 19 years	1168	372	(31,8)	1047	224	(21,4)
20 -24 years	290	213	(73,4)	205	124	(60,5)
25 -29 years	170	119	(70,0)	146	127	(87,0)
30 or more years	166	0		135	9	(6,7)
TOTAL	6236	2278	(36,5)	3652	1010	(27,7)

* Provisional data for 1987.
[1] In 1986, preventability status is not known for 19 cases.

Measles cases are classified as preventable or non-preventable. A case is defined as preventable if it occurs in a person for whom vaccine is indicated by current recomendations (4.5). Of the 3652 cases, 1010 (27.7%) were classified as preventable (4) (Table 2). From 1986 to 1987, the absolute number and proportion of cases that were preventable through vaccination decreased in all age groups except those 25 years of age. The highest proportion of cases that were preventable through vaccination occurred in adults 25-29 years old and in children 16 months to 4 years old.

In contrast, fewer than one fifth of cases in school-age children 5-19 years of age were preventable through vaccination. However, 40.1% of all preventable cases occurred in this age group.

A total of 2642 cases were classified as nonpreventable. Of these, 1718 (65.0%) were in persons who had been vaccinated on or after the first birthday; 526 (19.9%) were in children too young for routine vaccination (16 months of age); 216 (8.2%) were in persons with medical contraindications or exemptions under state law; 126 (4.8%) were in persons older than the recommended age for vaccination (born before 1957); 45 (1.7%) were international importations in non-U.S. citizens; and 11 (0.4%) were in persons with a prior physician diagnosis of measles (Table 3).

Table 3. Classification of measles cases, United States, 1987.

CLASSIFICATION TOTAL PREVENTABLE	No.	%	% NON-
Non Preventable			
Persons < 16 months	526	14,4	19,9
Persons born before 1957	126	3,5	4,8
Adequately vaccinated[1]	1718	47,0	65,0
Prior physician diagnosis	11	0,3	0,4
Non-US citizens	45	1,2	1,7
Exemptions	216	5,9	8,2
Medical (22)			
Religious (59)			
Philosophic (108)			
Nonspecific (27)			
Subtotal	2642	72,3	100,0
Preventable	1010	27,7	
TOTAL	3652	100,0	

* Provisional data.
[1] Does not include four adequately vaccinated patients born before 1957 and 12 adequately vaccinated patients under 16 months of age.

Discussion

The decrease in number of cases reported in 1987 reverses the trend of annual increases in measles incidence since the record-low year 1983, when 1497 cases were reported. The number of cases reported in 1987 represents a 99% reduction from the prevaccine era. Incidence rates in 1987 decreased from 1986 in all age groups; the largest decrease was in children 5 years of age. The overall decline observed in 1987 has continued into 1988; the provisional 1988 case count through week 27 is aproximately 40% below the 1987 level. Reasons for the decline in measles may be multiple; secular trends, exhaustion of susceptibles in some areas from which large numbers of cases have previously been reported, or fewer importations in 1987.

As in previous years, almost one third of cases reported were classified as preventable, i.e., patients were elegible for vaccination but unvaccinated. Many of these cases occurred

in preschool-age children living in inner-city areas. Innovative strategies are needed to increase immunization levels in these populations.

Most cases reported in 1987, however, were classified as unpreventable and occurred in school-aged children who had been vaccinated on or after the first birthday. Most of these cases probably result from primary vaccine failure, i.e., the failure to seroconvert following vaccination; there is little epidemiologic evidence to indicate that secondary vaccine failure rate of 5% (range 2%-10%) may provide enough susceptibles to sustain an outbreak among highly vaccinated populations (6) in some settings. Moreover, persons vaccinated at 12-14 months of age at slightly higher risk for measles than are persons vaccinated at 15 months (7).

The four deaths reported in 1987 are the first measles-attributable deaths reported to the Division of Immunization since 1985. All deaths occurred in immunocompromised patients, including two children with AIDS. Since large measles outbreaks have occurred in areas with high prevalence of humman immunodeficiency virus (HIV) infections and since HIV-infected persons appear to be at increased risk for serious complications (3), the Immunization Practices Advisory Committee (ACIP) recomend that asymptomatic HIV-infected children be vaccinated with measles, mumps, and rubella (MMR) vaccine and that consideration be given to vaccinating symptomatic HIV-infected children (8).

A group of expert consultants was recently convened by CDC to consider the problem of continuing measles transmission in the United States. The consultants felt that the goal of measles elimination should be pursued. They reviewed the two predominant patterns of measles: 1) measles in unvaccinated preschool-aged children - a failure to implement the current strategy, and 2) infections in adequately vaccinated school-children - a failure of the current strategy. These two patterns require different solutions. Increased efforts are needed to vaccinate preschool-aged children. Vaccination schedules may need to be modified in selected high-risk areas. Proposed changes include lowering the recommended age for routine vaccination and/or instituting a two-dose schedule. Aggressive revaccination strategies may also be necessary to control outbreaks among highly vaccinated school-age populations. These recommendations are being evaluated by ACIP. In the meantime, efforts should continue to ensure that all susceptible persons are vaccinated and that appropriate surveillance and outbreak-control procedures are practiced.

References

1. CDC. Measles - United States, 1986. MMWR 1987;36:301-5.
2. CDC. Measles - United States, first 26 weeks, 1987. MMWR 1988; 37:53-7.
3. CDC. Measles in HIV-infected children, United States. MMWR 1988; 37:183-6.
4. CDC. Classification of measles cases and categorization of measles elimination programs. MMWR 1983;31:707-11.
5.. Immunization Practices Advisory Committee. Measles prevention. MMWR 1987;36:409-18,423-5.
6. Gustafson TL, Lievens AW, Brunell PA, Meollenberg RG, Buttery CMG, Schulster LM. Measles outbreak in a fully immunized secondary-school population. N Engl J Med 1987;316:771-4.
7. Orenstein WA, Markowitz L, Preblud SR, Hinman AR, Tomasi A, Bart KJ. Appropriate age for measles vaccination in the United States. Dev Biol Stand 1986;65:13-21.
8. Immunization Practices Advisory Committee. Immunization of children infected with human immunodeficiency virus-supplementary ACIP statement. MMWR 1988;37:181-3.

Source: CDC. Measles - United States, 1987. MMWR 1988; 37:527-31.

Monitoring Coverage at the County Level: a Way to Strengthen Local Health Systems

The Technical Advisory Group (TAG) for polio eradication held its last meeting in Lima, Perú, in February, 1988 (see *EPI Newsletter*, Volume X, Number 1). Among the conclusions and recommendations formulated at this meeting was the following:

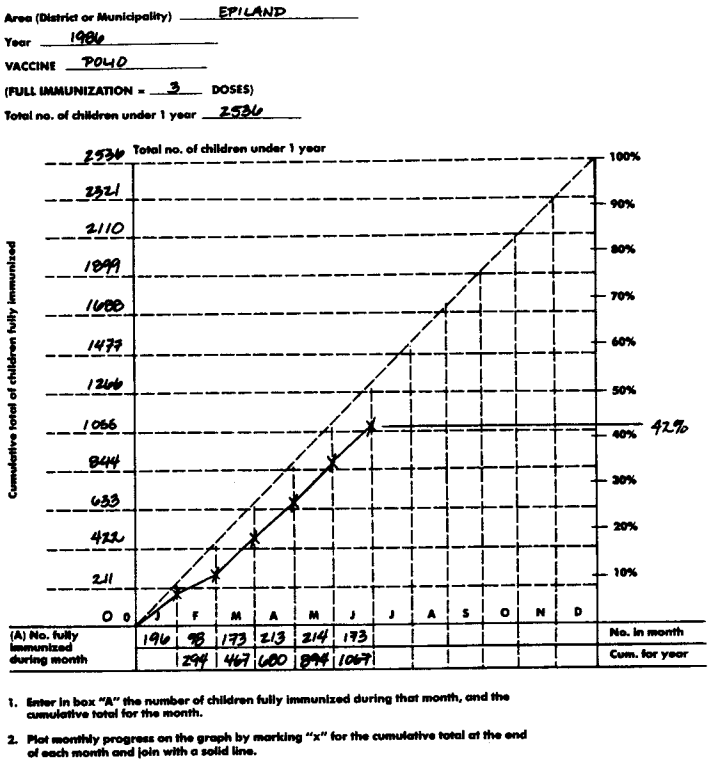
"Successful implementation of the eradication strategy will also require strengthening of the information systems so that problems in the program can be identified on a continuing basis, solutions developed and executed, and results evaluated. Detailed study of the gaps in the program must be undertaken with the aim of eliminating them."

"...Coverage levels should be measured at municipal, county, and district levels to identify pockets of susceptibles to be targeted for special vaccination programs..."

This means that counties or districts must periodically evaluate vaccination coverage and plan special efforts directed at extending coverage to areas where it is below 80%. Special vaccination cycles could be planned for these instances.

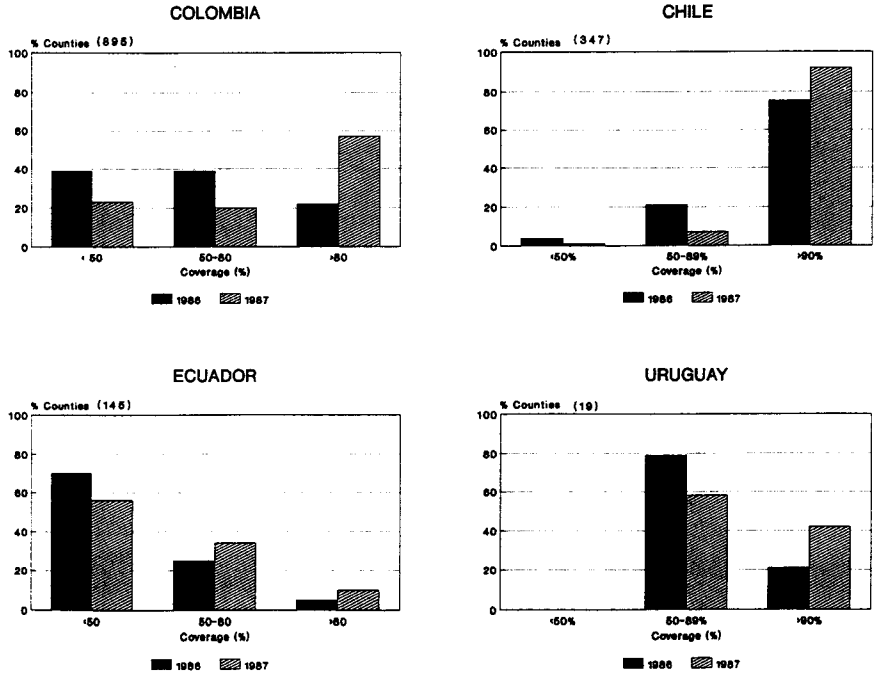
Each county must estimate the annual population of children below the age of one who will be targeted for vaccination during the following year. This will be done at the beginning of each calendar year. The population requiring annual protection will then be divided by 12, in order to obtain the monthly immunization target. This number can also be used to monitor the monthly progress of immunization coverage, by means of a graphic representation as the one presented in Figure 1.

Figure 1. Graph to monitor coverage in children under one year of age



Some countries in the Region have begun to monitor coverage at the county level, as can be observed in Figure 2. This evaluation instrument has allowed services to establish priorities that allow for the reinforcement of immunization activities in the high risk areas. It also gives the local health services a better understanding of events in their catchment area and therefore allows for more appropriate measures to be taken to strengthen their structure.

Figure 2. OPV coverage by county: Colombia, Ecuador, Uruguay, and Chile, 1986 and 1987.



Source: PAHO

Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, tetanus, 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	*	...	...	3	4	...	...	...	...	...	...	...	...
Colombia	16 Jul.	7 236	...	49	84	123	...	73	...	6	...	761	...
Ecuador	18 Jun.	2 599	496	4	10	58	49	64	37	5	5	107	219
Peru	16 Jul.	1 606	...	33	30	48	...	50	...	15	...	248	...
Venezuela	18 Jun.	7 786	11 274	33	30	1	1	9	8	1	7	254	1
Southern Cone													
Argentina	16 Jul.	1 438	1 477	-	-	34**	50**	...	...	75	9	2 318	741
Chile	16 Jul.	2 306	1 036	-	-	9	7	2	2	88	95	45	16
Paraguay	23 Apr.	89	89	-	-	24	17	12	13	5	7	171	52
Uruguay	10 Sept.	60	392	-	-	2	3	-	-	-	-	16	348
Brazil	16 Jul.	6 963	37 405	288	194	1 128	813	182	223	680	792	5 458	9 843
Central America													
Belize	13 Aug.	66	206	1	-	-	-	-	-	-	1	-	-
Costa Rica	27 Feb.	97	...	-	-	-	...	-	...	-	...	4	...
El Salvador	26 Mar.	122	68	15	44	-	15	1	3	-	2	11	50
Guatemala	*	...	...	30	12	...	...	...	...	...	...	...	...
Honduras	23 Apr.	294	81	18	9	-	9	4	2	-	-	30	93
Nicaragua	27 Feb.	71	163	-	-	-	-	-	1	-	-	19	19
Panama	16 Jul.	133	...	-	-	47	...	20	...	1	...	381	...
Mexico	21 May	1 607	...	33	64	42	...	35	...	2	...	213	...
Latin Caribbean													
Cuba	30 Jan.	34	124	-	-	-	-	-	-	-	-	-	-
Dominican Republic	*	...	...	-	-	...	...	...	...	...	...	...	...
Haiti	30 Jan.	17	...	5	12	4	...	3	...	...	...	23	...
CARIBBEAN													
Antigua & Barbuda	21 May	-	-	-	-	-	-	-	-	-	-	-	-
Bahamas	23 Apr.	5	-	-	-	-	-	-	-	-	-	-	-
Barbados	16 Jul.	-	2	-	-	-	-	1	-	-	-	-	-
Dominica	27 Feb.	1	-	-	-	-	-	-	-	-	-	-	-
Grenada	18 Jun.	4	4	-	-	-	-	-	-	1	-	2	1
Guyana	26 Mar.	147	2	-	-	-	-	-	-	-	-	-	-
Jamaica	*	...	...	-	-	...	...	...	...	...	...	...	...
St. Christopher/Nevis	26 Mar.	1	-	-	-	-	-	-	-	-	-	-	-
St. Lucia	*	...	...	-	-	...	...	...	...	...	...	...	...
St. Vincent & Grenadines	*	...	...	-	-	...	...	...	...	...	...	...	...
Suriname	23 Apr.	4	4	1	-	-	-	-	-	-	-	-	-
Trinidad & Tobago	18 Jun.	201	247	-	-	2	3	-	-	-	-	5	7
NORTH AMERICA													
Canada	16 Jul.	355	...	-	-	1**	-**	...	...	13	...	378	...
United States	27 Feb.	2 325	3 372	-	-	39**	33**	...	...	-	3	2 027	1 903

* No 1988 reports received.
** Tetanus data not reported separately; total tetanus data is reported in non-neonatal column.
# Data for polio includes confirmed cases through week 41 (ending 15 October 1988)

- Zero
... No data available

Actions Needed to Control Neonatal Tetanus

Immunize all women of childbearing age including pregnant women:

- Previously unimmunized pregnant women should receive at least two doses with an interval of at least four weeks, the second dose at least two week before delivery.
- Give up to five doses of Tetanus Toxoid (TT) to provide lifelong immunity.
- Open a vial of TT even if only one woman is to be immunized.
- Provide an immunization card for each immunized woman.

Immunize at the following sites:

- At child immunization clinics. 74% of the infants of the Region are receiving three doses of polio vaccine. Mothers of these children should be receiving at least two doses of TT.
- At antenatal clinics. Give TT at the first antenatal visit. Many staff still do not know that TT can be given safely even in the first months of pregnancy.
- At family planning clinics.

Immunize women in contact with health facilities for any reason:

- Women in high risk groups often use curative services more than preventive services. Screen all women attending curative services for TT status and immunize when needed.

Provide TT immunization as part of mass campings:

- During mass immunization compaigns, at least those mothers who bring their children should be immunized.

Carry out missed opportunity surveys:

- In curative care facilities and immunization clinics to find out when and where opportunities to immunize women are missed.
- During a supervisor's visit to clinics.
- As part of program evaluation.

Monitor what is happening:

- Record each dose of TT given on the woman's home-based immunization record card.
- Make neonatal tetanus (NNT) a reportable disease throughout the health services.
- Report TT immunization administered by target populationg and by dose.
- Assess the status of NNT at all administrative levels every 6 months (province, district and health center), by reviewing data on reported cases, results of case investigations, results of missed opportunity surveys, and, reported TT coverage.

Investigate each case of NNT notified:

- Determine where and why the case was not prevented, and implement actions which will prevent the occurence of similar cases. Regions within countries often vary as to what are the key reasons for cases occuring. Identifying these reasons enables managers to plan effective interventions at national and local levels.

Inform key people:

- Tell parents, teachers, school children, politicians, religious leaders, popular figures, community leaders and non-gubernmental organizations how successful TT can be in preventing NNT.

Alert staff:

- Discuss with all types of medical staff the importance of the program and identify how each can contribute to it.
- Include information on NNT and TT in health education material.

Source: EPI/WHO Update. September. 1988.

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.

Editor: Ciro de Quadros
Assistant Editors: Peter Carrasco
Roxane Moncayo Eikhof
Jean-Marc Olivé ISSN 0251-4729

Expanded Program on Immunization
Maternal and Child Health Program
Pan American Health Organization
525 Twenty-third Street, N.W.
Washington, D.C. 20037
U.S.A.