

EPI Newsletter

Expanded Program on Immunization in the Americas

Volume X, Number 2

IMMUNIZE AND PROTECT YOUR CHILD

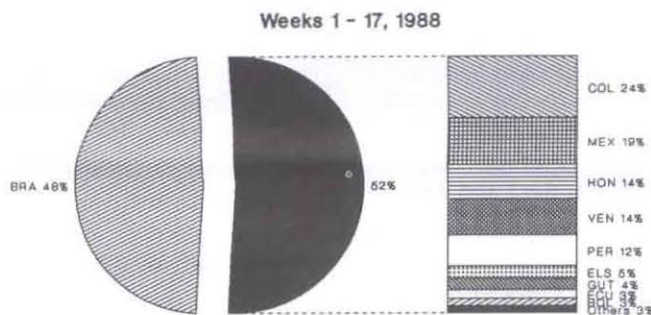
April 1988

Polio in the Americas, Weeks 1 to 17, 1988

A total of 480 cases of poliomyelitis have been reported in the Region of the Americas through April 30, 1988. During 1987, 323 cases had been reported in the same time period. Although the proportion of cases reported by each country has remained relatively stable, countries are generally reporting more cases in 1988 than they did in 1987 (Figures 1 and 2).

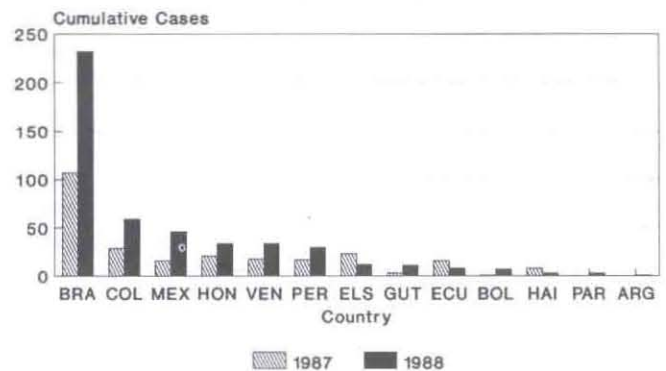
Of the cases reported so far in 1988, only 77 have been confirmed, compared with 175 in 1987. The increased number of probable cases reported in 1988 reflects increased awareness and surveillance activities in all countries, and the increased number of confirmations in 1987 is mostly due to the large number of cases confirmed in Brazil (Figure 3).

FIGURE 1. Polio in the Americas, Percent Distribution of Reported Cases*, by Country.



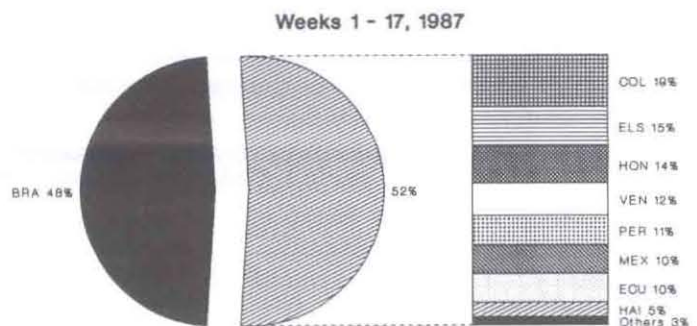
* Include probable and confirmed cases.
Source: Weekly telexes to PAHO.

FIGURE 2. Cumulative Polio Cases Reported* by Country Weeks 1 - 17, 1987 and 1988, Region of the Americas



* Include Probable and confirmed cases.
Source: Weekly telexes to PAHO.

FIGURE 3. Number of Confirmed Cases of Polio as of Week 17, 1987 and 1988, Countries of the Americas



Source: Weekly telexes to PAHO.

In this issue:

Polio in the Americas, Weeks 1 to 17, 1988	1
Epidemiology of Non-Vaccination: Missed Opportunities Study in Nicaragua	2
Lameness Survey Among School-aged Children in Costa Rica	4

Central American Countries Meet to Review Polio Eradication Efforts in the Region	5
Reported Cases of EPI Diseases	7
St. Vincent Issues Postage Stamps on Child Care	8

Epidemiology of Non-Vaccination: Missed Opportunities Study in Nicaragua

Introduction

Nicaragua was able to eradicate polio in 1982 due to the fact that coverage with polio vaccine was considerably increased with the Popular Health Campaigns (PHCs). However, coverage with other antigens, namely DPT and measles vaccines although also augmented, has not yet reached levels which would allow for effective control of these diseases, especially in children under one year of age. Estimated national DPT and measles coverage was 38 and 50 percent in 1986. This was consistent with data from a seroepidemiological study carried out in 1984, which yielded a 50 percent seropositivity rate in children between 12 and 23 months of age. The National Directorate of Vaccine Preventable Diseases shifted its strategy in 1985 to immunizing all children who attend health posts for any reasons. This research project was meant to determine if these vaccination opportunities are being utilized and, if not, the reasons why they are being missed. A secondary purpose was to estimate coverage with BCG, DPT, OPV and measles vaccines in children who visit health posts and centers for any reasons and compare this coverage with overall coverage among children of the same age who live in the same geographic area.

Methodology

Twelve health areas were selected, which corresponded to the six areas with the highest and lowest coverages in 1986. Each area was surveyed and all children between the ages of one and 35 months who visited health posts where the EPI is active, on three consecutive days, were included. The investigators interviewed the mothers (or other person accompanying the child) outside the center or post.

One of the following was checked for each vaccine dose:

- administered before this visit
- administered during this visit
- not administered, but not necessary either because of the child's age or because the previous dose was received less than four weeks before this visit
- necessary but not administered

When vaccine administration was called for, but not done, the reasons for non-administration were noted. If there was more than one cause for postponement, two or more could be registered and the principal cause was selected according to the following priorities when the data was consolidated:

- the child was just accompanying the visitor
- no room in schedule
- need for immunization was not established
- no vaccine available
- background
- disease present

Results

A total of 3,276 children between the ages of one and 35 months were surveyed. Fifty two percent (1,705) of these interviews took place in health centers. Results revealed marked differences in terms of the numbers of children seen at the different health posts, which in turn, reflects variations in the type of care provided by these health posts. Lesser distinctions were found in terms of age distribution, with children under one year of age representing around half of the population surveyed and the proportions diminishing as age increased (Table 1). Seventy-five percent of the children surveyed had their vaccination cards available for inspection.

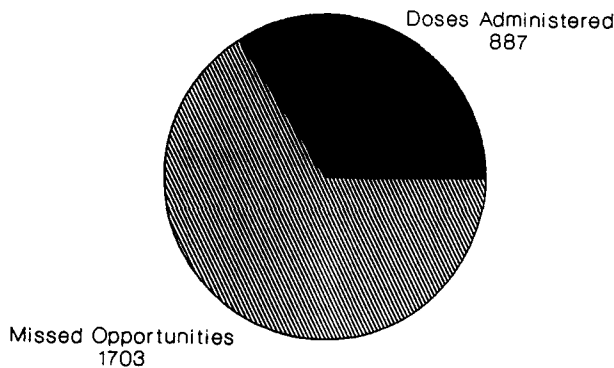
TABLE 1. Children Surveyed, by Region, Health Area and Age Group

AREA	1-5		6-11		12-17		18-23		24-35		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
I-02	110	25.2	104	23.9	63	14.4	50	11.5	109	25.0	436	100.0
I-07	100	20.5	111	22.7	80	16.4	60	12.3	137	28.1	488	100.0
II-04	87	29.9	92	31.6	37	12.7	30	10.3	45	15.5	291	100.0
II-18	42	27.5	28	18.3	25	16.3	23	15.0	35	22.9	153	100.0
III-01	66	24.4	61	22.6	45	16.7	31	11.5	67	24.8	270	100.0
III-09	78	28.8	72	26.6	43	15.9	28	10.3	50	18.4	271	100.0
IV-06	48	26.4	50	27.5	36	19.8	28	15.4	20	11.0	182	100.0
IV-14	43	24.3	50	28.2	21	11.9	22	12.4	41	23.2	177	100.0
V-1-5	61	29.2	48	23.0	38	18.2	20	9.6	42	20.1	209	100.0
V-02	32	20.4	36	22.9	30	19.1	20	12.7	39	24.8	157	100.0
VI-01	80	21.1	97	25.5	75	19.7	37	9.7	91	24.0	380	100.0
VI-02	79	30.2	67	25.6	44	16.8	17	6.5	55	21.0	262	100.0

Source: Dirección Nacional de Enfermedades Transmisibles, Ministerio de Salud, Nicaragua

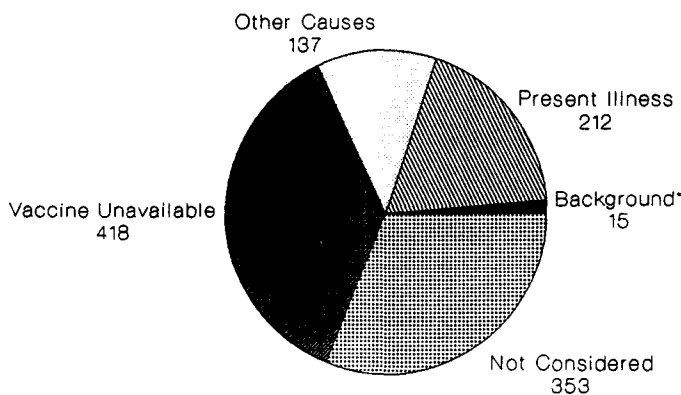
There should have been 2,590 doses administered among the children surveyed, of which 66 percent (1,703) were missed (Figure 1). A total of 1,125 children did not receive vaccine; 418 (37%) because there was none available, 353 (31%) because they were not considered as eligible for vaccination, 212 (19%) because they were sick and 152 (13.4%) for other reasons (Figure 2). DPT is the vaccine for which most opportunities are missed (31%), followed by measles vaccine (26%) (Figure 3).

FIGURE 1. Doses Administered and Missed Opportunities for Vaccination among Children 1 to 35 Months of Age, Nicaragua, 1987



Source: Missed Opportunities Survey, Ministry of Health, Nicaragua.

FIGURE 2. Causes for not Administering Vaccine among Children not Vaccinated, Nicaragua, 1987



* Includes adverse reactions to previous vaccinations, history of convulsions or of having had the illness.

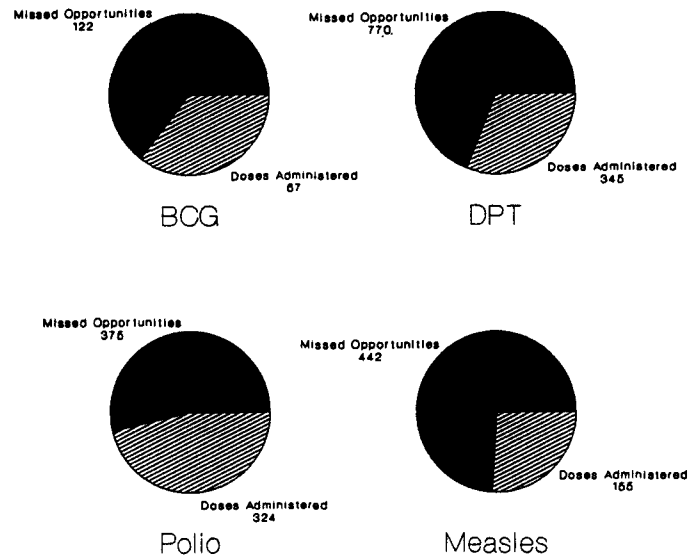
Source: Missed Opportunities Survey, Ministry of Health, Nicaragua.

Of the 212 children who were not vaccinated for being sick, 79 had fever, 65 had respiratory infections, 58 had diarrhea, 15 had upset stomachs which caused vomiting, 9 were malnourished and 39 were suffering from unspecified clinical symptoms.

When coverage rates for the children 12 to 23 months of age interviewed at the health post, were compared with those seen at home, the latter were found to be significantly lower. This difference was greatest for DPT and least for BCG.

Overall coverage was found to increase with age, reaching a ceiling between 6 and 11 months of age for

FIGURE 3. Doses Administered and Missed Opportunities by EPI Antigen, Children 1 to 35 Months, Nicaragua, 1987



Source: Missed Opportunities Survey, Ministry of Health, Nicaragua.

BCG and 18 and 23 months for DPT, measles and polio vaccines. It remained high in the higher age groups.

Discussion

The children's age distribution was expected and reflects the greater demand on care placed on the health system by children during their first year of life. The samples studied are representative of all children between one and 35 months of age who visit health posts and centers in each area. The distribution of children by health units reflects use of the establishments by the population.

The findings regarding actual doses administered are below expectations and probably reflect a rather stable situation since results are consistent throughout the majority of the areas and the surveys were done during a time when the antigens were available. This would mean that the findings are important since they reveal that substantial increases in coverage can be attained if vaccination opportunities are better utilized. The causes of missed opportunities found could be addressed at the local level. The lack of vaccine supply, which could have been related to a structural deficiency in the cold chain, turned out to be, in the vast majority of cases, due to neglect.

Although with problems, it would be possible to estimate the number of vaccine doses required to immunize all the children who visit health posts every trimester, by multiplying the average number of missed opportunities times 60. This calculation would allow for a better appreciation of the magnitude of the problem and the researchers recommend that each area should do this, for every antigen.

Regarding the lower coverage found among the children seen on the home visits, this should be considered as an indicator that certain areas need additional vac-

ination posts or that vaccination campaigns should be carried out every three months in the less protected communities. On the other hand, those areas with low coverage as yielded by surveying the health posts or whose coverage is not higher than the one found through the home visits, should emphasize the use of all vaccination opportunities in children attending the health centers or posts with an EPI.

Conclusions

Eleven of the twelve health areas included in this survey were found to have administered less than half the vaccine doses needed to the children who visit health posts and centers. The number of missed opportunities is an indicator of the existence of excellent opportunities to increase coverage, especially with DPT and measles

vaccine, by using simple and inexpensive measures such as vaccinating the children who visit health posts for other reasons.

Source: National Directorate of Communicable Diseases, Ministry of Health, Nicaragua.

Editorial Note: This is the first study of missed opportunities for vaccination conducted in the Region of the Americas. The issue it highlights may be similar in the other countries. Such studies should be conducted by the other countries in order that the problem may be identified and corrective measures applied. The Nicaragua study included participants from the Ministry of Health (Leonel Argüello, Carolina Siu, María Haydee García, Clara López, Ana Cecilia Silva, Mercedes Ruiz, Marcia Espinoza, Jenny William, Sara Valle, Lastenia Benavides, Lesbia García A., Gregoria Monge, María Teresa de Matus, Rosa María Flores, Martha Palma, Auxiliadora Quezada, Ileana Bustamante, Teresa Hernandez, Margarita Silva) and the PAHO (Alberto Ascherio).

Lameness Survey Among School-aged Children in Costa Rica

The last case of poliomyelitis reported in Costa Rica was in 1974 and no cases have been detected through the routine surveillance system since then. This has led to the assumption that the indigenous transmission of poliomyelitis has been interrupted in Costa Rica. A lameness survey was conducted among the children enrolled in school, in order to ascertain whether this was the case. The survey followed a standard protocol which was developed by the Ministry of Public Health, with the collaboration of the PAHO. The protocol was directed at identifying children born after 1974, presently enrolled in the national school system and detecting, among these children, any lameness that could be considered to be a sequela of poliomyelitis.

A sample of 40 schools was taken from a listing from the Ministry of Public Education, of all the public urban schools of Costa Rica. The sampling technique used the school codes and their enrollments and added them using random intervals. Following is a list of the schools included, by province:

<u>PROVINCE</u>	<u>No. OF SCHOOLS</u>
San José	22
Alajuela	4
Cartago	4
Heredia	4
Guanacaste	2
Puntarenas	2
Limón	2

The survey was included in the 1987-1991 EPI Plan of Action and was carried out in accordance with the protocol submitted. It took place in two stages; the first of which began on 30 September 1987 by visiting the principals of the 40 schools. They were briefed regarding the survey and were asked to complete a form detailing the age ranges, sex, and number of children in each class in their school, and the names of all the lame children,

including those who had dropped out of school.

Twenty-six schools had children with some form of lameness, ranging from one to ten children per school. An appointment was set up with each of these children and their parents. During this interview, the parents were asked to complete a clinical history and examination form.

A total of 79 lame children were found, 6 of whom had two diagnoses. They were classified as follows:

<u>DIAGNOSES</u>	<u>No. OF CASES</u>
Congenital diseases	71
Cerebral palsy	13
Hip displacement	13
Club foot	8
Genu valgum	8
Hemiparesis and hemiplegia	6
Myelomeningocele	3
Spina bifida	1
Genu varum	1
Various arthropathies	3
Others	15
Trauma	9
Tumors	1
Others	4

There were no cases found that were clinically compatible with a diagnosis of poliomyelitis, which provided epidemiological support to the hypothesis that no polio sequela would be found among school-aged children, since there had been no cases in Costa Rica since 1974.

All cases were found to have received complete vaccination schedules, including polio vaccination. None of the children had received less than three doses of polio vaccine, with the majority having had four or five. This is consistent with Article 153 of the General Health Law, which stipulates since 1974 that it is a prerequisite for annual school enrollment that children present vaccina-

tion certificates with proof of receiving the recommended doses and boosters.

Considering that the total number of children enrolled in urban public schools is 164,381, the sample included 35,631, that is, 21.68 percent of the total target population. Since 79 cases of lameness were found, this constitutes a prevalence rate in the sample of 222 cases per 100,000 student. If this prevalence rate were used with the total enrollment, it would yield 365 cases of lameness due to multiple causes, but none due to poliomyelitis.

Furthermore, 100 percent of the cases found had been adequately studied and treated, mainly in the National

Children's Hospital Dr. Carlos Sáenz Herrera and the National Rehabilitation Center.

No lame children were found who had dropped out of school; there was only one case who had moved to another school and was visited at home. Also, there were no cases who were not enrolled in school.

Source: Dr. Carlos Eduardo Cedeño Carvajal and Lic. Marcela Fajardo Jiron, Ministry of Health, Costa Rica.

Editorial Note: This is the first such survey being conducted in the Region of the Americas. The results seem to confirm the fact that Costa Rica has had no outbreaks of poliomyelitis since 1974. A similar survey has been conducted since in Panama, which has yielded similar results.

Central American Countries Meet to Review Polio Eradication Efforts in the Region

On 8 and 9 February 1988 health personnel from El Salvador, Guatemala, Honduras, and Nicaragua, and representatives of the international agencies collaborating in the acceleration of EPI and the eradication of poliomyelitis met in Esquipulas, Guatemala. The meeting was convened to review progress in attaining the goals of universal childhood immunization and issues relating to surveillance and polio eradication. Also, participants discussed coordination strategies that may help in the achievement of these goals in their countries

(Table 1).

TABLE 1. Polio Vaccination Coverage in Children Under One Year of Age and Cases of Polio, by Country, 1987

COUNTRY	COVERAGE	NO. OF CASES
El Salvador	58%	55 ¹
Guatemala	21%	21 ²
Honduras	63%	12 ²
Nicaragua	81%	—

Source: PAHO

1. Confirmed

2. Probable and confirmed cases

— Zero

A status report of the program was presented for each country. Participants concluded that notable advances have been made in the improvement of immunization programs and in implementing the strategies for polio eradication (Table 2). However, experiences to date indicate that new strategies need to be developed, both to extend the scope of immunization services and to promote and sustain popular demand for immunization.

The activities outlined in Table 3 were proposed with a view to formulating operational recommendations to accelerate poliomyelitis eradication activities and to facilitate their follow-up and evaluation. It was further understood that these activities should be shared by the participating countries and form an integral part of the plans of action of each country. Adjustments to these plans of action should be effected with the EPI Inter-agency Coordinating Committees in each of the countries.

Finally, the group agreed on disseminating these recommendations throughout all levels of the health sector, and to hold a meeting to monitor implementation of these recommendations from 6 to 8 July, 1988 in Honduras.

TABLE 2. Activities Carried Out in 1987, as Stated in the Plan of Action

INDICATORS	SALVADOR	GUATEMALA	HONDURAS	NICARAGUA
Celebration of vaccination days	YES	NO	YES	YES
Coverage by Municipalities	YES	Yes for border areas. In process at the national level	NO	YES
Percentage of weekly negative notification	85%	NO	NO	90%
Collection of samples for laboratories	69%	75%	87%	100%
National Multi-sectoral Committee	YES	YES	YES	YES
Use of Community Volunteers	YES	YES	YES	YES
Epidemiological Bulletin	YES	YES	YES	YES
Polio Erad. Training Epi. Surv.	YES	YES	Partial	NO
Interruption Activities	71%	65%	Data not presented	Not Applicable
Days Programmed for 1988	YES	YES	YES	YES
Epidemiological Invest. of suspected cases	85%	100%	92%	100%
Processing of samples referral laboratory	—	—	—	—

TABLE 3. Actions Recommended to Accelerate Polio Eradication Activities

STRATEGY	ACTIONS RECOMMENDED		
	COUNTRIES	BORDERS	INDICATOR
Increase and maintain high vaccination coverage	Carry out at least 2 national vaccination days around April 10 and May 22 each year to complement activities of the natural program	Same as for country	2 national vaccination days per country
	Eliminate lost vaccination opportunities by taking advantage of all contacts of children with the health system to vaccinate them	Same as for country	Reduction of dropout rate and increase in coverage
	Establish in each case through PAHO and UNICEF a mechanism to insure vaccination of all children living in refugee camps according to EPI standards Propose a cease fire in conflict areas during national vaccination days	Same as for country	Information on achievements in camps
Improve epidemiological surveillance	All probable cases of poliomyelitis in border departments notified immediately by telex through PAHO to neighboring country to take joint action	Use telephone if justified by case	Notify 100% of probable cases
	Implement weekly negative notification in all health establishments in the four countries	Ditto	Incorporate 25% of the establishments in each trimester of 1988
	Take adequate samples of all probable cases and send them immediately to INCAP	Ditto	All cases must have samples
	Use Field Guide indicators to evaluate progress of surveillance	Ditto	Data on indicators recommended in Field Guide
	Processing of samples in the laboratory	Ditto	No. samples processed
	Exchange of country epidemiological bulletins	Ditto	Bulletins exchanged
Active control of outbreaks	Control of outbreaks should not be limited only to the neighboring area but should include the widest possible area according to epidemiological risk criteria in the affected country and should be carried out as soon as possible using all social mobilization resources to the maximum. It should be carried out simultaneously on both borders	Health services in border areas will accept referrals of probable polio cases originating in the neighboring country and will initiate immediate control measures in their community	Interruption as a result of cases detected
		Epidemiological Units of their respective countries will be notified simultaneously	

Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria and whooping cough,
for 1987 and 1986, by country

Subregion and country	Date of last report	Measles		Polio-myelitis§		Tetanus				Diphtheria		Whooping Cough	
		1987	1986	1987	1986	Non-neonatal		Neonatal		1987	1986	1987	1986
						1987	1986	1987	1986				
LATIN AMERICA													
Andean Region													
Bolivia	02 Jan.	975	346	5	4	56	18	48	20	16	15	510	439
Colombia	02 Jan.	20 538	5 180	115	64	235	130	184	119	45	23	3 272	2 055
Ecuador	02 Jan.	1 537	839	11	20	105	88	81	74	18	11	312	907
Peru	02 Jan.	4 652	3 362	54	39	153	88	148	99	54	75	1 536	1 787
Venezuela	02 Jan.	19 261	14 164	45	27	8	146	18	26	2	4	915	3 428
Southern Cone													
Argentina	02 Jan.	6 890	6 448	1	—	76**	71**	...	...	10	14	1 722	1 952
Chile	02 Jan.	2 652	12 365	1	—	18	16	3	3	168	268	45	36
Paraguay	02 Jan.	1 360	430	—	—	56	51	49	60	18	19	261	111
Uruguay	02 Jan.	1 190	188	—	—	11	4	—	—	—	—	384	1 095
Brazil	02 Jan.	57 968	117 851	276	612	1 558	2 447**	371	...	1391	1804	15 177	23 946
Central America													
Belize	02 Jan.	224	49	—	—	—	—	—	—	1	—	—	7
Costa Rica	02 Jan.	987	4 534	—	—	7**	...	...	...	—	—	132	153
El Salvador	02 Jan.	405	278	55	23	40	43	26	39	2	6	162	561
Guatemala	02 Jan.	400	1 650	18	33	78**	64**	...	...	—	—	53	509
Honduras	02 Jan.	977	603	13	6	15	47	7	24	—	—	344	331
Nicaragua	02 Jan.	792	2 550	—	—	32	91	12	28	3	—	293	470
Panama	02 Jan.	1 885	4 103	—	—	7	3	5	9	—	—	45	38
Mexico	02 Jan.	2 776	9 824	81	66	277	302	34	57	31	28	763	1 268
Latin Caribbean													
Cuba	02 Jan.	858	3312	—	—	6	14	—	—	—	—	103	342
Dominican Rep.	02 Jan.	499	501	—	2	76	37	7	8	89	51	149	219
Haiti	02 Jan.	3 630	109	12	36	85	85	41	41	3	3	307	307
CARIBBEAN													
Antigua/Barbuda	02 Jan.	—	—	—	—	—	—	—	—	—	—	—	—
Bahamas	02 Jan.	42	85	—	—	—	—	—	—	—	—	—	—
Barbados	02 Jan.	2	2	—	—	3	3	—	—	—	—	—	1
Dominica	02 Jan.	82	...	—	—	1	...	—	...	—	...	—	...
Grenada	02 Jan.	6	...	—	—	—	...	—	...	—	...	1	...
Guyana	02 Jan.	22	...	—	—	2	...	—	...	—	...	—	...
Jamaica	02 Jan.	35	30	—	—	1**	5**	...	...	2	6	20	21
St. Christopher/Nevis	*	...	...	—	—	...	...	...	...	...	...	...	...
Saint Lucia	02 Jan.	4	...	—	—	—	...	—	...	—	...	—	...
St. Vincent and Grenadines	02 Jan.	1	...	—	—	—	...	—	...	—	...	—	...
Suriname	02 Jan.	5	...	—	—	2	...	—	...	—	...	—	...
Trinidad & Tabago	02 Jan.	441	...	—	—	3	...	—	...	—	...	12	...
NORTH AMERICA													
Canada	02 Jan.	14 585	15 046	—	—	4**	4**	...	...	4	5	1 827	2 296
United States	02 Jan.	3 588	6 282	—	3	40**	64**	...	...	3	—	2 529	4 195

* No 1987 reports received

** Tetanus data not reported separately for neonatal and non-neonatal cases
Total tetanus data is reported in non-neonatal column.

—No cases

...Data not available

St. Vincent Issues Postage Stamps on Child Care

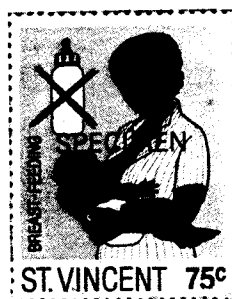
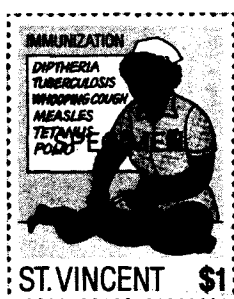
On 10 June 1987, the Government of St. Vincent and the Grenadines issued four postage stamps on child care. The four stamps were locally designed and depicted Immunization, Oral Rehydration, Breast-Feeding and Growth Monitoring.

St. Vincent and the Grenadines has been promoting primary health care within the limits of its resources and in accordance with the Alma-Ata Conference declaration of September 1978. As part of this declaration, child care is getting its due attention. Traditional promotional methods and media are used to encourage mothers to use the health facilities and obtain maximum care and guidance for their children's healthy growth. Their Annual Baby Show continues to be a success, both from the relatively large number of participants and the high

standard of health achieved by them. Among other things in the Show, babies are judged by their general appearance, alertness, weight for age, immunization status, breast feeding history and parent's knowledge of oral rehydration.

To further support the National Program, a law was also passed in 1982 requiring all children to be fully immunized before they are allowed to enter any school. The stamp release is very innovative and shows the commitment and importance that the Government of St. Vincent and the Grenadines has placed on child care for her future development.

Reported by: Yvonne Labbay, EPI Manager, St. Vincent and the Grenadines and Henry Smith, Immunization Officer, PAHO/WHO.



Postage stamps on early child care issued by St. Vincent and the Grenadines.

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.

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.

Editor: **Ciro de Quadros**
Assistant Editors: **Roxane Moncayo Eikhof**
Peter Carrasco

Contributors to this issue: **Henry Smith**

ISSN 0251-4710



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.