EPI Newsletter

Expanded Program on Immunization in the Americas

Volume XIV, Number 6 **IMMUNIZE AND PROTECT YOUR CHILDREN** December 1992

Progress in the Worldwide Polio Eradication Effort

Following the initiative taken by the Pan American Health Organization (PAHO) in 1985, the World Health Assembly in 1988 committed the World Health Organization (WHO) to the global eradication of poliomyelitis by the year 2000. The global plan of action has incorporated a number of strategies successfully used by PAHO. These include: 1) ensuring sustained high immunization coverage in all areas; 2) intensive surveillance of acute flaccid paralysis; 3) intensified immunization activities in high risk areas, including outbreak responses, mopping up, and national immunization days; and 4) development of a laboratory network.

The global eradication initiative has been handicapped by a number of issues, among which the most important are the need for financial resources to purchase vaccines, support the development of a laboratory network, and provide support and expertise to local staff responsible for investigating and controlling outbreaks. Despite these constraints, much progress has been made globally.

In 1990, an estimated 150,000 cases of poliomyelitis were occurring annually in 70 countries where the disease is still endemic (Figure 1).

The emphasis for polio eradication in the **African Region** has been directed toward increasing EPI coverage, strengthening surveillance and responding to the occurrence of AFP cases. Targets for OPV3 coverage are 80% by 1993 and 85% by the end of 1995. Six island countries and three continent countries are regularly reporting "zero incidence". These include Lesotho, Rwanda, Seychelles, Swaziland, and Zimbabwe. By mid-September 1992, a total of 440 polio cases had been reported from 28 countries (61%). The total number cases reported in 1991 was 1814 from 37 countries.

In 1991, the reported OPV3 coverage for one year-old children in the **Eastern Mediterranean Region** was 79%. Sixteen countries in 1991 reported a total of 2032 polio cases in the Region, a 43% increase over the number of cases (1422) reported in 1990. This increase is attributed mainly to improved surveillance. In 1991, Pakistan accounted for 56% of the Region's total number of cases, followed by Egypt 30%, Iraq 5%, and Iran 3%. Nearly all countries have developed a plan of action for polio eradication.

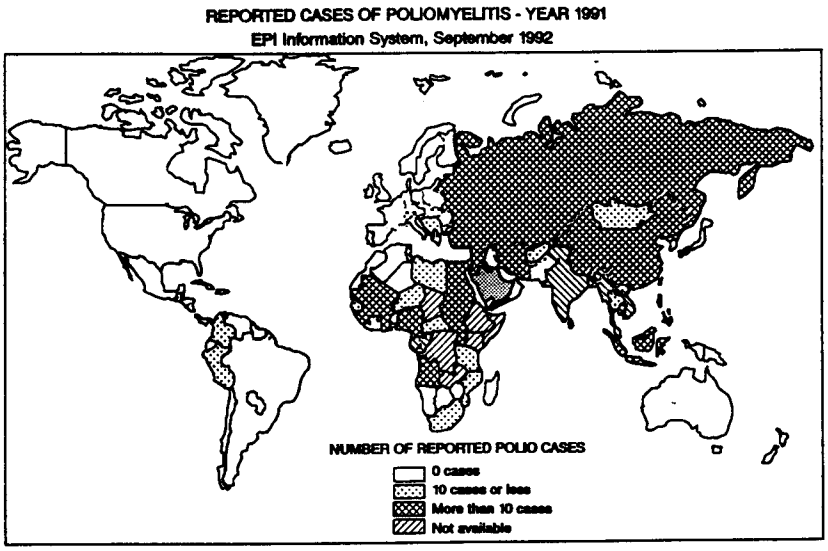
In the **Southeast Asian Region** in 1991, OPV3 coverage was 84%. Of the 6651 polio cases reported in the Region in 1991, India reported 6020 (91%). India is beginning to introduce the use of such surveillance indicators as completeness and timeliness of AFP case investigations. Of the 11 countries, three reported "zero incidence" (Bhutan, DPR Korea, and Maldives). Significant progress is being made in the Region in the development of a polio laboratory network.

With the exception of tetanus toxoid for pregnant women, by 1990 in the **Western Pacific Region** EPI coverage for all antigens exceeded 90%. The impact of the strategies implemented for polio eradication in the Western Pacific Region is illustrated by the decrease in the number of countries reporting polio cases, from 12 in 1980 to 5 in 1992. The reported number of polio cases in the Region decreased from 5963 in 1990 to 2615 in 1991.

In this issue:

Much of this improvement can be attributed to enhanced polio eradication activities in China. With the exception of Cambodia, all other countries showed a similar decline. Remarkable progress has been made in the Region through the use of supplementary immunization activities such as national and subnational vaccination campaigns. All countries have well developed Plans of Action. The major obstacle is lack of resources to purchase the needed doses of vaccine required.

Polio is still endemic in the eastern **European Region**. From 1990 to 1991 OPV3 coverage decreased in Russia from 81% to 79%, in Lithuania from 89% to 86%, Yugoslavia 89% to 76%. Although overall polio seems to be declining (48 reported polio cases through end of August 1992 compared 65 reported over a similar period 1991), several countries remain endemic: Bulgaria, Croatia, Romania, Yugoslavia, Armenia, Azerbaijan, Georgia, Russia, Turkey, Kazakhstan, Krygyzstan, Tajikistan, Turkmenistan, and Uzbekistan.



In September 1992, the Netherlands reported an outbreak of polio among members of a religious group that refuses immunization services. The index case (paralysis onset 9/16/92) is 14 year-old boy who traveled to Germany and Belgium during the three weeks before the onset of paralysis, but did not travel to known polio-endemic areas. To date 25 confirmed polio cases have been reported in the Netherlands. Four (16%) of these had meningitis without paralysis. No cases have occurred among persons who are not members of the religious group. Wild-type 3 poliovirus was isolated from the cases and partial genomic sequencing demonstrated that the virus is closely related (95% nucleotide homology) to a 1991 isolate from southern Asia.

Since this religious group also exists throughout the Americas and its members frequently travel back and forth, countries of the Western Hemisphere are on alert for importations. Attempts to educate and immunize members of this religious group are being made. The 1979 outbreak in the United States and Canada clearly illustrated the risk for unvaccinated members of religious groups who have direct or indirect contact with members of Dutch religious groups among whom poliovirus is circulating.

In the **Region of the Americas,** more than one year has passed since the last case of acute flaccid paralysis was confirmed. This polio case was a two year boy from Junin, Peru with a date of paralysis onset of August 23, 1991. Community surveys to check for the presence of poliovirus among healthy children and in sewage will be conducted to help verify that "silent" transmission of wild poliovirus is not occurring in high-risk areas in the Americas in which no more paralytic polio is being reported.

The Pan American Health Organization is cautiously optimistic that the eradication goal has been achieved. To ensure this success in the Americas and that importations of wild polioviruses from other Regions are detected and controlled early, renewed emphasis must be given to the collection of two adequate stool specimens from every case of acute flaccid paralysis and its contacts, within 15 days of onset of paralysis. Given this situation, it is important that the other Regions intensify their efforts toward global eradication in order to protect their own populations as well as reduce the risk of importation of wild poliovirus into the Americas.

Sources:

1) World Health Organization. Expanded Program on Immunization Global Advisory Group: 15th Meeting 12-16 October 1992, Jakarta, Indonesia. Jakarta: WHO, 1992 (Ref. doc. EPI/GAG/92/Doc#3-Doc#10).

2) Office of the Chief Medical Officer, The Netherlands. Polio in the Netherlands, 1992. Weekly Record 1992; Nov. 3, 1992.

3) Centers for Disease Control. Poliomyelitis - Netherlands, 1992. MMWR 1992;41:775-778.

Southern Cone Countries Examine Immunization Programs

The VIII Meeting of the "Asunción Group" met from 2 to 4 September 1992 in Buenos Aires, Argentina, to review progress in the immunization program and polio eradication efforts in Southern Cone countries, Bolivia and Brazil, and progress in vaccination coverage for other EPI diseases.

Representatives from Rotary International, UNICEF, and PAHO joined delegates from each of the countries to review the levels of compliance with epidemiologic surveillance indicators for acute flaccid paralysis, progress in reducing measles and neonatal tetanus, and the possibility of starting to take the steps required to certify the eradication of poliomyelitis.

Wild poliovirus has not been isolated in the Southern Cone since 1985, in Bolivia since 1986, or in Brazil since 1989. The eradication of wild poliovirus cannot be certified, however, without taking several steps recommended by the International Poliomyelitis Eradication Certification Committee. The most important among these are: adequate stool sample analysis of cases and contacts, periodic evaluation of surveillance indicators by each country, the creation of national commissions to gather and review the data that will be presented to the International Committee, and establishing warning systems that will alert neighboring countries when cases are detected in border areas.

With the exception of Paraguay and Bolivia, all of the countries in the subregion have achieved coverage rates above 85% for measles vaccination of children under one year of age. Interepidemic intervals are increasing in all countries. For the first time, the countries represented were able to present coverage data at the "municipio" (county) level, and some of them have targeted risk groups within those counties.

Neonatal tetanus is well on the way to being eliminated. Paraguay and Argentina nonetheless still have several well-defined risk areas, and Chile has a small focus in which 3 cases occurred in 1991. Uruguay has had no cases since 1982. Brazil reports around 300 cases yearly. Bolivia and Paraguay have identified their risk areas and have begun targeted vaccine coverage with Tetanus Toxoid.

Given that the subregion is so close to achieving the elimination of neonatal tetanus, the meeting recommended that the countries adopt a policy of vaccinating all women of childbearing age living in risk areas with at least two doses of tetanus toxoid. Rotary International played an important role in expanding coverage with EPI vaccines, especially in the area of transportation and cold chain, vaccination promotion, and AFP reporting.

The next Southern Cone meeting will take place from 15 to 17 September, 1993, in Brazil, EPI/PAHO.

Source: Final Report, VIII Meeting of the Southern Cone Countries, Buenos Aires, Argentina, September 1992, EPI/PAHO.

Criteria for AFP Surveillance	Degree of Compliance to Week 30/92					
	Bolivia	Argentina	Chile	Paraguay	Uruguay	Brazil
1. Weekly negative reporting 90% or more.	80	72	62	91	83	95
2. All probable cases investigated within 48 hours of reporting.	96	95	13	100	100	87
3. Minimum AFP reporting rate of 1 x 100 000 < 15 years.	1.7	0.9	1.4	1.1	1.1	0.9
4. 80% of cases with 2 samples taken within 15 days of onset of paralysis.	86	56	47	80	50	64
5. Percent of cases with investigation of 5 or more contacts.	96	19	10	95	0	30
6. Percent of cases with mop-up < 72 hours.	96	0	---	60	---	7
7. Percent of cases with follow-up < 70 days.	96	44	33	35	100	5

---No Data

Improving the Cold Chain

Several national immunization programs store vaccines in use household refrigerators that are produced locally or in neighboring countries. However, many of these refrigerators do not meet standards that ensure maintaining temperatures within the range required to keep the vaccines properly. Furthermore, users often do not handle the biologicals in the prescribed manner.

It is estimated that no more than 50 to 70 percent of household refrigerators meet the specifications to ensure adequate temperatures, if and when they are installed to obtain maximum operating performance, that is:

- Placing them in areas where the ambient temperature does not exceed 28 degrees centigrade;

- Guaranteeing a permanent and stable source of electrical energy.

In areas where the ambient temperature exceeds 30 degrees centigrade, the operational capacity of certain units is seriously affected, making them unfit to store vaccines.

These observations were confirmed through a PAHO/WHO program of refrigerator trials carried out by the cold chain Focal Point at the University of Valle (UNIVALLE) in Cali, Colombia.

UNIVALLE conducted a refrigeration trial with several refrigerators produced in Latin American countries. Except for a few, the refrigerators did not meet the requirements set out by PAHO/WHO. All the refrigerators had "holdover" times that were too short. Holdover time is time that a refrigerator maintains a temperature from 0 to 10 degrees centigrade after a power failure; the PAHO/WHO holdover time standard is six hours. Furthermore, many household refrigerators did not maintain an even temperature distribution when cold packs were placed in them. UNIVALLE and PAHO/WHO tested ways to improve the performance of these refrigerators so that the countries could use them effectively.

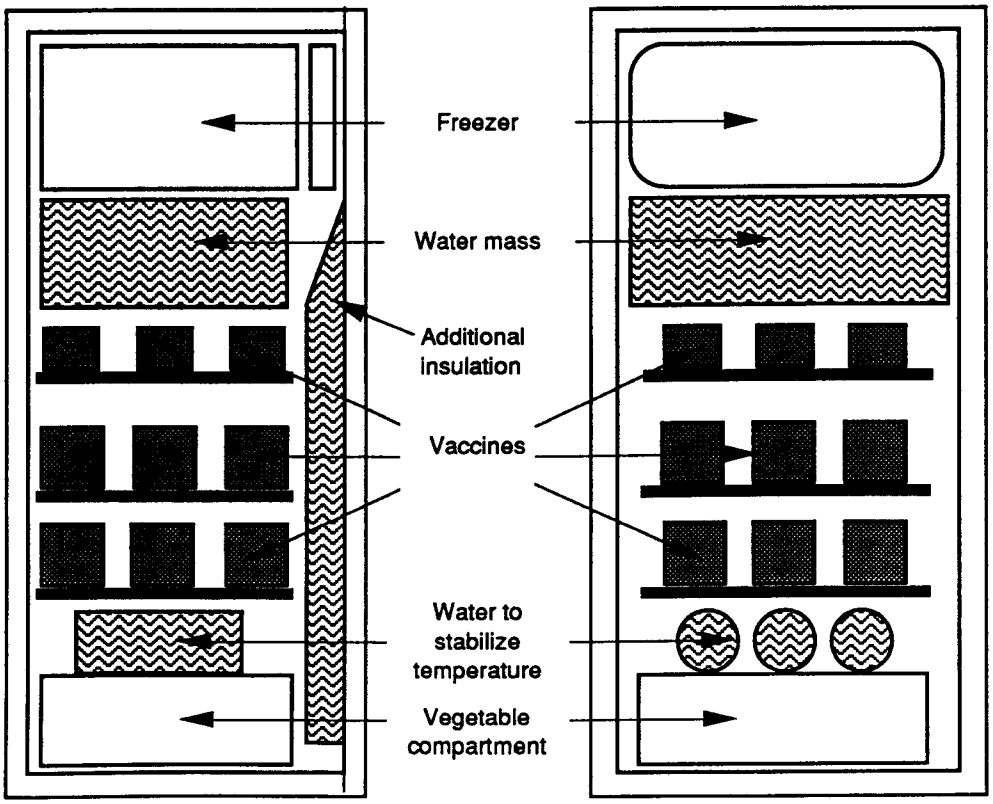
Modification to improve operative performance of domestic refrigerators

The use of simple methods made a noticeable improvement in the efficiency and performance of household refrigerators, as follows:

* Increased length of time a refrigerator could hold the internal temperature in the event of equipment or power failure.

* Good stability and uniform distribution of the internal temperature.

* Adequate storage temperatures despite marked fluctuations in the ambient temperature.



Side view
Fig. 1.

Front view
Fig. 2.

The adaptations and modifications can be carried out easily by using materials that are available in health establishments. They can be made by the user and/or the personnel responsible for the cold chain since they do not require special technical knowledge.

The following steps are involved:

1. The first step is to place insulation in all the empty spaces on the inside of the door which is normally fitted with shelves for jars and bottles. This increases the insulation of the door, which is the part most prone to heat transfer. The insulation (styrofoam or polyurethane) can be acquired inexpensively in sheet form at local stores, or by using insulation material from discarded cold boxes available at health establishments.

The quantity and weight of the insulation used is determined by the size of the cavities on the inside of the door.

The insulation material should be cut and used to fill all the empty spaces. The joints or connections should be covered with adhesive tape or other similar material, to make the edges of the door smooth and to protect the insulation material from humidity.

2. The second step is to instal cold packs to form a mass of water or "cold accumulator" under the refrigeration element (evaporator) in the space where the defrosting tray is usually located.

The cold packs that will form the water mass should be placed in a wire basket or similar implement that is approximately the same size as the space available in the equipment that is being adapted.

The number of cold packs for the "cold accumulator" can be determined by the user and will depend primarily on the refrigerator capacity. In the trials, the water load distributed in the cold packs varied between 7.8 and 13.4 kilos, due to the size of the units.

To correctly place and secure the basket a safe and practical support is needed; it can be created by using the tracks and supports of the defrosting tray or by placing plastic or aluminum rods as support elements on top of the cabinet.

The most practical solution is to adapt the basket so that it can slide exactly onto the tracks that support the defrosting tray. If this procedure is chosen, the exact measurements of the defrosting tray can be used as a reference. The procedure chosen depends on the ingenuity of the user, but it should be clear that the purpose of this step is to provide a "thermic mass" to accommodate abrupt temperature changes that occur in all household refrigerators when the door is opened, when it is loaded with cold packs to be frozen, during power failures, etc.

3. The third step is to place several bottles of water in the lower part of the cabinet (on top of the vegetable compartment) as recommended in cold chain manuals. As in the previous step, the purpose is to provide a thermal element and maintain the uniform distribution of the internal temperature of the refrigerator.

The quantity of water may vary and will depend on the size and capacity of the unit. In the trials, 6 liters of water were distributed as discussed above. Once the process is complete, the system should be tested to see how well it works. The user or person who carried out the modification should evaluate the work and the performance of the unit and depending on the findings, determine the most appropriate action to take, considering that some refrigerator units may have technical limitations.

Figures 1 and 2 show the arrangement of the modification. All of the single-door refrigerators can be adapted

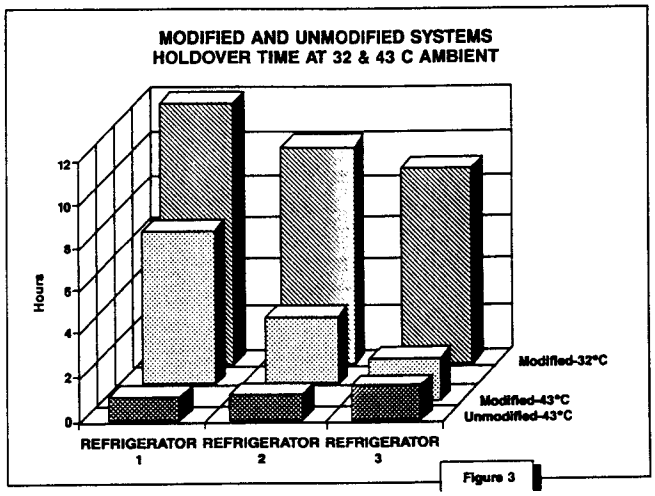


Figure 3

and modified with ease and the trials have demonstrated that the adapted units provide acceptable performance. Because of the difference in design and other limitations, double-door refrigerators are not suited for vaccine storage.

In Figure 3, the difference can be observed in the performance of 3 domestic refrigerators at ambient temperatures of 32 degrees centigrade and 43 degrees centigrade, before and after modification. With the modifications indicated, the systems that were able to sustain the internal temperature for an average of 2.5 hours after they stopped running increased this time substantially to more than five hours.

This achievement with simple methods is significant because the modified refrigerators were able to ensure the preservation of the vaccines in those regions where the power interruptions occur with frequency.

PAHO-WHO recommends all action of new refrigerator units for vaccine storage be duly analyzed prior to acquisition to determine and select those whose performance and quality are most adequately suited for the cold chain. There is not one ideal refrigerator especially manufactured for this purpose, however, some merit consideration because of their technical characteristics.

With regard to the other complementary cold chain units and elements, the recommendation is to select those whose efficiency has been proven in laboratory tests. The catalogue "Cold Chain Product Information Sheets" of WHO-UNICEF is very useful in these cases.

It is worth noting that the modifications presented will not necessarily improve performance of low quality household refrigerators.

Additional information on trials and tests related to refrigerator modification and adaptation to improve operative performance may be solicited at the following address: Ing. Rafael Niño, Laboratorio Camara Ambiental/OPS/OMS, Ciencias Termicas, Universidad del Valle, Apartado Aéreo 25360, Cali, Colombia.

Risk for Vaccine-Associated Paralytic Poliomyelitis

Oral polio vaccine (OPV) has been considered to be one of the safest and most effective antigens available for immunization. Previous experience in the United States and other countries indicates that the risk of vaccine-associated paralytic poliomyelitis (VAPP) is approximately one case per 2.5 million doses of OPV distributed. The purpose of this report is to provide a brief update on work in progress to estimate the risk of VAPP in the Americas. Because data in the Polio Eradication Surveillance System (PESS) does not adequately define contact vaccine-associated paralytic poliomyelitis, this analysis focuses solely on defining the risk of recipient VAPP.

Presently, PAHO defines a case of recipient VAPP as a patient with acute flaccid paralysis (AFP) with residual neurologic sequelae compatible with poliomyelitis present at 60 days after paralysis onset, who had received OPV within 30 days prior to paralysis onset, and who had vaccine-like poliovirus isolated from stool specimens collected after paralysis onset. The requirement of stool isolation of vaccine-like poliovirus was intended to make the case definition highly specific; however, sensitivity may have been compromised because cases without adequate stools were excluded. Any assessment would then underestimate the risk of VAPP. Therefore, for purposes of this study we defined cases of recipient VAPP to be patients with AFP with residual neurologic sequelae at 60 days after paralysis onset, who had received OPV 4-30 days prior to paralysis onset.

PESS data from 1989-1991 were used for this analysis. Overall risk was calculated by dividing the number of recipient cases of VAPP in 1989-1991 by the number of doses of OPV distributed during this period. Because the risk of VAPP is much greater for the first dose of OPV, the risk associated with the first dose was also estimated. This was accomplished by using the birth cohort for the three years as the denominator (assuming that all children receive at least one dose of OPV).

A total of 102 cases of VAPP were identified using the case definition. Overall risk of recipient VAPP was estimated to be 1 case per 4.2 million doses of OPV distributed. Of the 102 cases of VAPP identified from 1989-1991, 26 were associated with the first dose. The risk of VAPP associated with the first dose of OPV was estimated to be one case per 1.5 million first doses of OPV. The estimated risk for first dose VAPP in Latin America compares closely with the U.S. estimates of risk for first dose OPV recipients during 1980-1989, one case per 1.3 million first doses distributed in the U.S.

Of the 102 cases of VAPP, 23 (23%) had vaccine-like polioviruses isolated from their stools. Of the 23 cases with isolates, 11 (48%) had type 2, and five (22%) had mixtures of vaccine-like polioviruses (two with types 1 and 2, and three with mixtures of all three types).

The inclusion of cases without vaccine-like poliovirus isolates provides a more accurate reflection of the true risk of recipient VAPP in Latin America. While these are provisional data pending final analysis, the program should consider expanding the case definition of recipient VAPP to include those cases with the epidemiologic criteria but who lack the laboratory criteria. Because the polio compatibility of residual neurologic sequelae cannot be assessed with the PESS data base, the requirement of sequelae may to some extent overestimate the number of cases of VAPP.

Source: Estimates of the Risk for Vaccine-related ParalyticPoliomyelitis in Latin America, 1989-1991, Andrus, J.A., Strebel, P., Olivé, J-M ,de Quadros, C.A. (unpublished).

DPT Vaccine Injection

Unlike the vaccine manufacturers, who usually suggest a range of areas suitable for injection, PAHO has more specific recommendations:

For intramuscular injections (DPT and DT): the anterolateral aspect of the upper thigh. This is the largest muscle in the target age infants. Needles used for intramuscular injection should be at least 3/4 inch (20mm) long; that is, long enough to reach the substance of the muscle. If the needle is too short or is not inserted deep enough, it will not reach the substance of the muscle and the vaccine will be deposited in the subcutaneous region. This may cause local irritation and inflammation, particularly if the vaccine contains an adjuvant.

Hepatitis B vaccine is also given intramuscularly and can be administered at the same time as any of the other vaccines. However, it is normal to choose the opposite limb for the second injection: for example, if DPT is given in the left thigh, the Hepatitis B would be given in the right thigh. Compatibility studies have not been completed so Hepatitis B vaccine should not be mixed in the syringe with another vaccine.

For subcutaneous injections (measles): also the upper thigh, or the deltoid are of the upper arm. As the child becomes older, the deltoid muscles become better developed.

The buttocks should not be used for injection of vaccines because until the child has been walking for some time, the gluteal region consists mostly of fat. There is also a small, but unnecessary risk that the sciatic nerve might be damaged.

Source: Volume 92.2, August 1992 of *Technet News*.

Reported Cases of EPI Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria, and whooping cough, from 1 January 1992 to date of last report, and the same epidemiological period in 1991, by country.

Subregion and country	Date of last Report	Measles		Poliomyelitis #		Tetanus				Diphtheria		Whooping Cough	
						Non Neonatal		Neonatal					
		1992	1991	1992	1991	1992	1991	1992	1991	1992	1991	1992	1991
LATIN AMERICA													
Andean Region													
Bolivia	22 Aug.	756	803	0	0	24	1	17	34	12	4	67	56
Colombia	11 Jul.	2 218	8 136	0	8	32	102	39	66	1	8	310	904
Ecuador	5 Sept.	3 043	796	0	0	32	41	50	46	6	3	239	430
Peru	29 Aug.	13 645	393	0	1	38	30	65	70	5	2	125	46
Venezuela	8 Aug.	7 271	14 466	0	0	33	73	13	36	1	0	223	859
Southern Cone													
Argentina	8 Aug.	6 626	6 648	0	0	42	26	3	4	2	2	1 113	1 410
Chile	15 Feb.	198	166	0	0	2	3	0	0	2	1	21	11
Paraguay	8 Aug.	156	216	0	0	12	21	9	0	2	1	88	68
Uruguay	29 Aug.	175	839	0	0	4	3	0	0	0	0	37	42
Brazil	8 Aug.	4 896	19 546	0	0	619	725	144	157	171	409	1 996	4 588
Central America													
Belize	22 Aug.	5	7	0	0	1	0	0	1	0	0	0	2
Costa Rica	3 Oct.	2 100	1 698	0	0	...	1	...	0	...	0	9	14
El Salvador	8 Aug.	330	539	0	0	30	32	16	9	0	0	15	62
Guatemala	25 Jul.	49	116	0	0	6	14	8	3	0	1	84	47
Honduras	1 Aug.	23	95	0	0	8	...	7	4	0	0	52	10
Nicaragua	15 Aug.	2 112	2 437	0	0	13	18	6	5	0	0	178	38
Panama	27 Jun.	471	1 968	0	0	3	1	3	0	0	0	23	6
Mexico	29 Aug.	587	4 117	0	0	98	118	75	51	0	0	46	118
Latin Caribbean													
Cuba	7 Nov.	...	18	0	0	...	1	...	0	...	0	...	1
Haiti	...	...	...	0	0	...	...	...	...	...	...	31	4
Dominican Republic	11 Jul.	4 558	324	0	0	18	24	2	3	7	9	...	...
CARIBBEAN													
Antigua & Barbuda	27 Jun.	0	0	0	0	0	0	0	0	0	0	0	0
Bahamas	27 Jun.	0	0	0	0	0	1	0	0	2	0	0	0
Barbados	15 Aug.	0	0	0	0	1	4	0	0	0	0	0	0
Dominica	24 Oct.	3	2	0	0	0	0	0	0	0	0	0	0
Grenada	27 Jun.	0	2	0	0	0	1	0	0	0	0	0	0
Guyana	24 Oct.	4	2	0	0	0	0	0	0	0	0	0	0
Jamaica	24 Oct.	38	243	0	0	3	5	0	0	0	1	0	14
St. Kitts/Nevis	24 Oct.	1	5	0	0	0	0	0	0	0	0	0	0
St. Vincent	27 Jun.	0	2	0	0	1	1	0	0	0	0	0	0
Saint Lucia	24 Oct.	17	6	0	0	0	0	0	0	0	0	0	0
Suriname	27 Jun.	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad & Tobago	27 Jun.	5	83	0	0	5	7	0	0	0	1	0	4
NORTH AMERICA													
Canada	1 Oct.	2 954	5 647	0	0	2	0	0	0	2	2	521	1 857
United States	31 Oct.	2 154	9 015	0	0	27	11	0	0	4	1	2 310	2 303

... Data not available.

First Ladies Support Elimination of Neonatal Tetanus

In 1989, the World Health Assembly of the World Health Organization resolved to eliminate neonatal tetanus throughout the world by 1995. WHO estimates that 700 thousand children die of this illness each year in the world. In Latin America, with the exception of Chile, Costa Rica, Cuba and Uruguay, it is estimated that 10 thousand newborns die of this illness each year.

Although it is an infectious disease, there is no public outcry for action regarding neonatal tetanus since it is not transmitted from person to person, it does not occur as an epidemic, and it affects almost exclusively indigent populations. The principal challenge, therefore, lies in the ability to create a general awareness of the severity of this disease and, above all, the ease with which it can be prevented by vaccinating the vulnerable women of childbearing age. Unfortunately those who are most in need of this preventive action are those who have the least access to health services.

Special mobilization efforts are required to reach these vulnerable populations. Acknowledging this situation, the First Ladies of Latin America and the Caribbean reiterated their support for this effort in a meeting held in Cartagena de Indias, Colombia, from 23-25 September 1992. In the Declaration of Cartagena, signed by the participants, they pledge to "support the actions that may be necessary to eliminate neonatal tetanus in the Region by 1995." The work document of the meeting establishes the specific activities to be completed in this regard. Among these activities, they will offer leadership in promoting the mobilization of resources from governmental and private sectors, and they will promote campaigns through mass media for the dual purpose of mobilizing the target population and achieving higher coverage of the program.

Participants in the meeting included the First Ladies of Barbados, Bolivia, Colombia, Costa Rica, Chile, Ecuador, Jamaica, St. Kitts and Nevis, Santa Lucia, Suriname, Trinidad and Tobago and Venezuela as well as female representatives of the governments of Argentina, Cuba, El Salvador, Guatemala, Mexico, Panama, Paraguay and Peru.

Source: Final Report, Meeting of the First Ladies of Latin America and the Caribbean, Cartagena, Colombia, September 1992.

News Briefs

Chile: In September of this year the Health Programs Division of the Ministry of Health published the first number of the newsletter entitled Vigilancia Epidemiológica, Parálisis Fláccida Aguda, which covers the epidemiological weeks 1-8 of this year. In it the epidemiology department of the Ministry announces that the last case of polio was reported in 1975, "this is the reason why our country is in the process of accrediting that it maintains an epidemiological surveillance that is strict enough to guarantee that there has been an interruption in the circulation of wild virus in our territory." The purpose of the newsletter is to complete the phase of epidemiological surveillance that corresponds to feedback and dissemination of results. It will be published every two months and will include the results of surveillance and the indicators for the accreditation of polio eradication. To request copies, please fax your request to: Epidemiological Department, Ministry of Health, Chile, FAX 6384377.

The *EPI Newsletter* is published every two months, in Spanish and English 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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