EPI Newsletter

Expanded Program on Immunization in the Americas

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Bolivia Benefits from PAHO/World Bank Partnership

The Government of Bolivia, with the collaboration of the Pan American Health Organization and the World Bank, has prepared a project aimed at strengthening its national immunization program. Objectives of this collaboration are to increase vaccination coverage of vaccines included in the national immunization program, and introduce new and other vaccines of public health importance in the routine schedule. This specific partnership will be implemented under the framework of a new World Bank initiative, which seeks for a broader approach to partnerships and to the management of the development process.

*Source:*PAHO/D.Downie

The PAHO/World Bank collaboration in immunization is part of a 10-year Health Sector Reform project in Bolivia in the amount of US$ 100 million. The entire project, to be implemented in three phases, of three-year duration each, will improve coverage and quality of service networks, empower communities to improve their health status, and strengthen local capabilities to respond to health needs. The immunization component to be carried out during the first phase, between 1999- 2002, will be financed by a loan of the World Bank (US$ 6.5 million), and grants from the United States Agency for International Development (USAID), the Japan International Cooperation Agency (JICA), the Government of Belgium, UNICEF and the Inter-American Development Bank (US$4.5 million.) The Government of Bolivia's support for the project will be in the amount of US$ 9 million over the course of three years.

During Phase I, the Health Sector Reform Project will focus on five departments which account for 81% of the total population in Bolivia, and where currently four fifth of deaths among children occur. During this stage the country's immunization program will be revamped and new vaccines will be introduced.

The PAHO/World Bank partnership will address broader issues of sustainable vaccine introduction to guide the particular Bolivia situation, as well as place the necessary institutional and financial mechanisms that support an effective and equitable national immunization program, and which make use of all partners' comparative advantage.

Bolivia's National Immunization Program

The Government of Bolivia has made the reduction of maternal and child mortality a key part of its health sector strategy. The precarious health situation in the country stems in part from the weaknesses of key basic services. While there has been substantial construction of health centers, which increased by 50% during the 1990s, including in isolated rural areas, there remain important problems in the delivery of public health services.

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Since 1996, immunization coverage has fallen in the country due to institutional weaknesses in the health delivery system. Information systems are not reliable. The level of national financing toward immunization programs has not been consistent in the past few years, and there is a marked trend toward relying on donor contributions to fund national immunization activities. An evaluation of the Bolivia's National Immunization Program carried out by PAHO in October, 1998 also shows the impact of decentralization on immunization programs as the country puts in place new decentralized financial and administrative systems to manage health programs, including immunization. This has caused delays, especially in the allocation of resources.

In 1995, Bolivia enacted a law of Administrative Decentralization and in 1996, a Law of Popular Participation. Both laws transfer decision-making and resources to the local levels. However, in practice there has been confusion about the responsibilities of the various institutions assigned to the delivery of health services, and there are no clear mechanisms in place to transfer and manage these financial resources. This has left immunization programs without sufficient support to carry out routine activities and to quickly respond to emergency situations. Bolivia's vaccination coverage has consequently declined and its ability to respond to outbreaks has diminished. This was evident during the recent measles and yellow fever outbreaks, which have found the country without adequate stocks of vaccines to deal promptly with the situation.

Table 1
Impact indicators for Bolivia's Health Sector Reform Project
Immunization Component

Indicators	Coverage			Baseline (expected) 96-98) *SNIS*	Goals			
	1996	1997	1998 ***		1999	2000	2001	2002
Coverage DPT3 dose*	73%	80%	71%	75%	82%	--	--	--
Coverage Pentavalent ** (DPT-HB-Hib)						65%	75%	85%
# of municipalities with DPT3 coverage < 80%	230	174	221	212	170			
# of municipalities with pentavalent coverage <80%						170	119	83
National financing of EPI (Millions of dollars)			0.5	0.5	2.5	3	3.5	4

* 1999, last year of vaccination with DPT3
** Pentavalent vaccine will be introduced in 2000 and replace DPT
*** Preliminary data /SNIS – National Health Information System

In the past 10 years, Bolivia has reported over 400 cases of yellow fever, which represents 30% of all cases reported in the Region of the Americas (see February 1999 issue of the *EPI Newsletter*). Cumulative vaccination coverage of the total population during those years has only been around 35%. The country's vaccination strategy for controlling the disease has been primarily that of mass vaccinations of all individuals in affected areas following an outbreak. In order to provide immediate protection to residents in enzootic areas, and to prevent the introduction of yellow fever into nearby urban areas infested with *A. aegypti*, PAHO has recommended that all individuals living in both areas be vaccinated with yellow fever vaccine. The introduction of the vaccine in children's routine immunization schedule in enzootic areas would also have had a significant impact on the reduction of yellow fever cases. The establishment of a comprehensive vector control program has been recommended to keep the density of *Aedes aegypti* low in urban areas.

Bolivia lags behind in the incorporation of some vaccines now being used widely in the Region of the Americas, which could significantly reduce infant mortality. For example, the introduction of the vaccine against invasive diseases due to *Haemophilus influenzae* type b has been estimated to reduce infant mortality by 2 to 3% by the second year of usage, because of its impact on meningitis and respiratory diseases. Vaccination against hepatitis B could also have a rapid and significant impact in endemic areas.

PAHO's collaboration for the medium-term immunization plan

As part of the project's preparation, the Government of Bolivia and PAHO, with the support from the Bank's International Development Agency (IDA), have prepared a five-year immunization plan that responds to the problems mentioned above in three lines of action:

1. **Institutional strengthening of the national immunization program to improve the adoption and implementation of immunization policies.** Beginning in 1999, Bolivia's Finance Ministry is committed to a substantial increase in the support for immunization, and to the creation of a specific budget line to cover recurrent costs of vaccines and syringes. During the next three years, the project will support the establishment of lines of periodic direct reporting between the immunization programs and the Health Minister. A National Committee on Immunization Practices will be formed with the participation of the countries' scientific societies. The immunization team at the central level will be strengthened by adding two professionals to the one now in place, and short-term technical assistance as needed. Five epidemiologists will be detailed to critical departments. Training and supervision activities will be carried out at all levels. New administrative and procurement processes will be established. With immunization targets included within performance agreements, lines of communication between the center and departments will be strengthened, and specific responsibilities will be established to reinforce accountability. Social communications systems will be established, including the identification of communication problems with indigenous groups. Basic norms and practices for safe injections will be implemented for the management and disposal of syringes and needles.
2. **Strengthening of health services to improve coverage and to introduce other vaccines.** As part of the

general support of health services, technical administrative capacity will be strengthened. Systems will be established to identify and respond to municipalities with low coverage. The country's routine vaccination schedule will be expanded to include vaccinations against *H. influenzae* type b (Hib), and hepatitis B. In endemic zones, vaccinations against yellow fever will be included. Measles vaccines will be replaced by a combined measles, mumps, and rubella (MMR) vaccine. Furthermore, Hib, diphtheria, pertussis and tetanus (DPT) and hepatitis-B vaccines will be replaced by a combined (pentavalent) vaccine that includes the five antigens (see Table 1) simultaneously, thereby reducing the cost of delivery, the number of injections and the amount of wastage. The cold chain will be strengthened, including the construction or remodeling of a national warehouse and five departmental warehouses. Where necessary, local equipment will be renovated, and storage capacity increased as required by the new vaccines. Safe syringe practices will be implemented with the acquisition of auto destruct syringes and safety boxes for the disposal of syringes and needles.

3. **Strengthening of information and surveillance systems.** The weaknesses of the current information system will be closely studied, and a more precise system for registering coverage will be implemented. Also, available information will be placed to greater use. These actions will be coordinated with other projects and other subcomponents investing in Bolivia's surveillance system, and with the Basic Health Insurance, which has the capacity of improving incentives for the implementation of an enhanced information system.

Monitoring and Evaluation

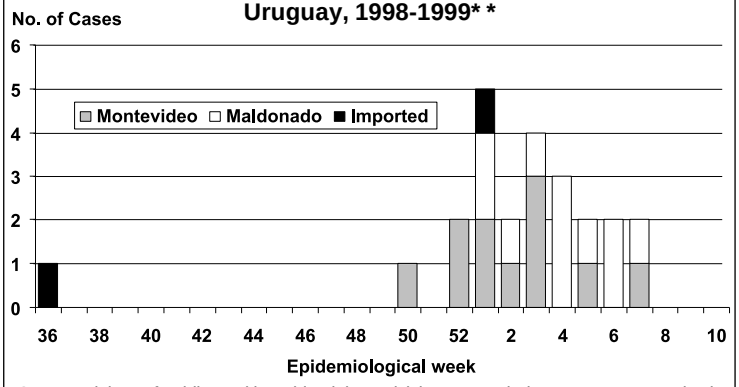
The implementation of the overall World Bank project will be monitored by the use of eight indicators. Given the importance of immunization, both directly and indirectly - as an indicator of overall effectiveness of health services, three of the eight indicators are related to immunization: 1) Coverage of DPT3 dose in 1999 and coverage with pentavalent 3 vaccine by the year 2000; 2) Number of municipalities with DPT3 coverage <80% and the number of municipalities with pentavalent 3 coverage <80% by 2000; 3) National financing of immunization programs (see Table 1).

Good Surveillance is Key to Measles Eradication

The goal behind PAHO's recommended vaccination strategy for measles eradication is to maintain the number of susceptible population at the lowest possible level. After the countries have carried out their mass *catch-up* campaign and progress towards measles eradication, implementing the other two elements of the strategy, *keep-up* and *follow-up* vaccination are extremely important in maintaining the number of susceptibles at the lowest level. *Obtaining vaccine coverage better than 95% in every district of any given country is imperative for these vaccination activities to be effective.*

As countries reach these milestones, the number of measles cases should dramatically drop. At this point, timely reporting and rapid investigation of each suspected measles case becomes critical to detect further circulation of measles virus in an area. Rapid case investigation of each suspected measles case will allow health workers to determine the source of infection and define the chain(s) of transmission when more than one case occurs in a specific geographic area. Establishing the source of infection is necessary to determine whether the case is due to an importation, or it will confirm that the case is due to indigenous transmission. If there is more than one case of suspected measles in a defined area, establishing the chain(s) of transmission is extremely important, because one can arrive at the source for continued measles transmission, take corrective actions and institute the necessary changes to avoid future program failure.

Figure 1
Confirmed measles cases in 4 chains of transmission by epidemiological week
Uruguay, 1998-1999* *



* *Source:* Ministry of Public Health, Epidemiology Division, Expanded Program on Immunization

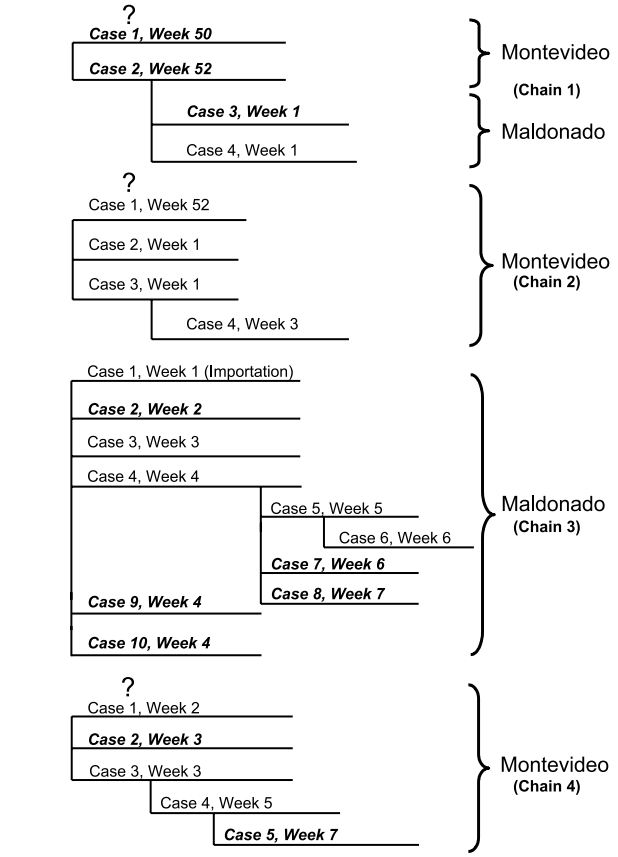
Figure 1 below shows a measles outbreak recently detected in Uruguay. As can be seen, there is a void of epidemiological information and data between the first measles case, which was imported from a neighboring country in week 36, 1998, and the subsequent detection of additional cases commencing in week 50. In 1997, Uruguay reported only one confirmed measles case due to an importation. In week 1 of 1999, another importation was detected along with the other cases for the same period. Because surveillance was not optimal, the reasons for continued transmission of the measles virus were not established. Therefore, the source for the cases occurring at the beginning of week 50 is unknown. However, by the time the second imported case of measles occurred and was hospitalized, measles surveillance was heightened and the surveillance team was able to identify 23 cases that formed four chains of transmission (see Figure 2.) It was determined that in all but one of the four chains, a health worker was either a person transmitting measles infection to others, or the receptor of the infection.

There are 11 cases not shown in Figure 2 that could not be associated with any chain of transmission. However, the investigation of these cases has shown, that they had either traveled to infected areas (mainly by bus), or were employed in businesses associated with tourism, and had come in contact with tourists coming from neighboring endemic countries. The date of onset for these 11 cases all occurred within weeks 1-7, 1999. Furthermore, of the 35 cases only five occurred in children between 0-5 years of age, and there were no cases in the 6-20 years age group. This indicates that the *catch-up* and the *follow-up* campaigns implemented by the Ministry of Health were effective.

From Figure 1 the measles outbreak appears short-lived. This is due to the fact that Uruguay has maintained its pool of susceptibles to an absolute minimum by maintaining vaccine coverage greater than 95% in all phases of the measles eradication strategy (*catch up, keep up*, and *follow up*.) Uruguay obtained 95% coverage in their last *follow up* campaign carried out in November 1998, and in their routine immunization program (*keep up*). In order to control the outbreak, the Ministry of Health implemented the following PAHO recommendations: 1) strengthening of surveillance activities in the entire country by alerting departmental health authorities; 2) measles vaccination of all children ages 6-11 months with a booster at 15 months in the entire country; 3) request that all children 14 years and under who were not vaccinated during the last mass campaign be vaccinated against measles; 4) vaccination of all people working in border crossing areas; 5) vaccination of public and private health workers in the department of Montevideo and Maldonado.

From the above, it can be concluded that PAHO's strategy, if implemented in *full* and coupled with aggressive investigation of suspected measles cases, will assure that measles virus transmission is tracked down until it has nowhere to hide.

Figure 2
Chains of measles transmission in two departments of Uruguay, December 1998 - February 1999



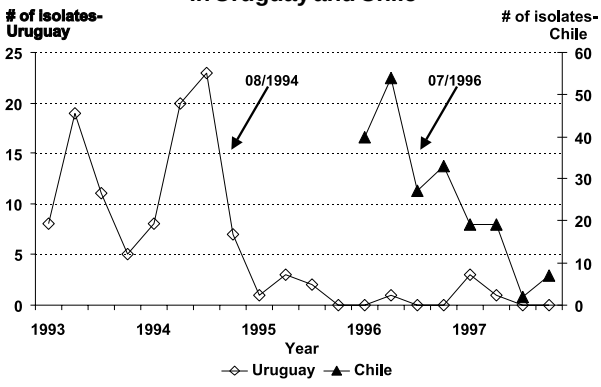
Total cases in 4 chains = 23 (66%)
ITALICS = Health Worker, N =10 (29%)
Total cases in outbreak, N = 35

Source: Ministry of Public Health of Uruguay, Division of Epidemiology, Prevention and Control of Diseases, National Immunization Program.

Introduction of Hib Vaccine in the Americas: Lessons Learned

By December 1999, 81% of all the newborns in the Americas (75% in Latin America and the Caribbean) will have *Haemophilus influenzae* type b vaccine (Hib) as part of their regular immunization schedule. The introduction of the vaccine in the Region has been remarkably successful and fast, considering that the first conjugated vaccines against this pathogen were only licensed in the United States, Canada and Europe in 1991.

Figure 1
Impact of Hib vaccination in Uruguay and Chile

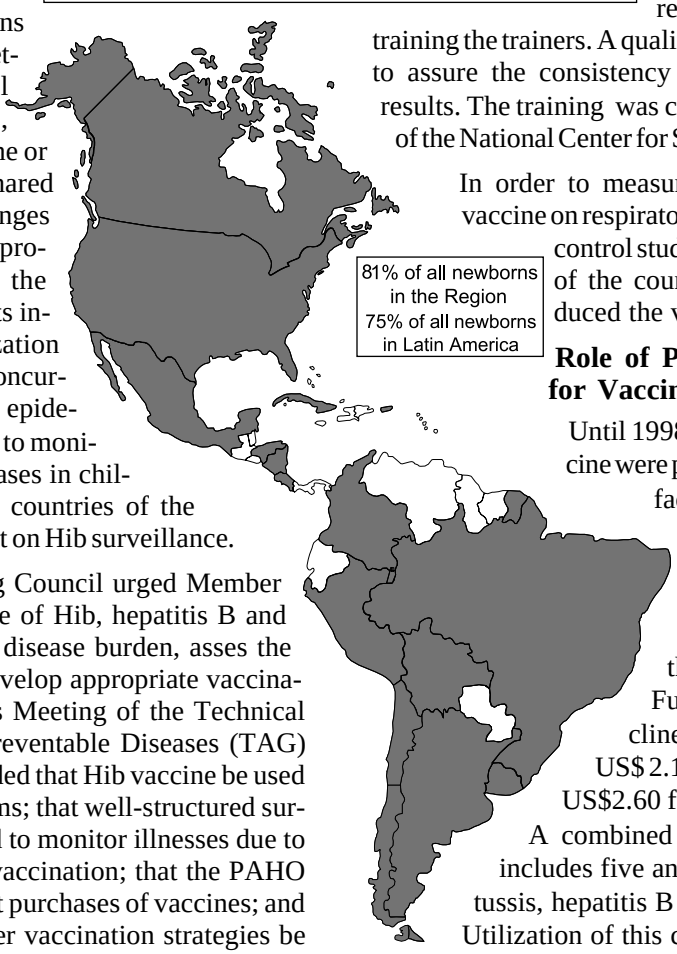


In 1994, Uruguay decided to include Hib vaccine in their regular immunization program. The decision was made based on the information available on meningitis diseases from the meningitis surveillance system implemented years before in the country, together with the need of an immediate response due to the increasing awareness of these diseases among concerned parents and the medical profession. Under almost similar circumstances, Chile introduced Hib vaccine in 1996. The introduction was facilitated by the fact that several clinical trials with these vaccines had been conducted in the country and health authorities were aware of their safety, efficacy and effectiveness. Two different strategies were followed in both countries mainly because of the increased cost of Hib vaccine to the national immunization programs. Uruguay vaccinated all children under the age of four years, indicating three doses for children under 6 months of age, two doses for children between 7 months and one year of age, and one dose for children above one year of age. A booster dose was also given to children after one year of age. Chile vaccinated children at 2, 4 and 6 months of

age, without a booster. The impact of Hib vaccinnation on the incidence of the disease in Uruguay and Chile can be seen in Figure 1.

By the end of 1996, PAHO took a leading role in promoting the establishment of Hib surveillance in the Region, as well as in evaluating its possible introduction in routine immunization programs. This decision was reinforced by results from clinical studies with Hib vaccine in Gambia that indicated that the pathogen can be responsible for up to 20% of radiologically confirmed pneumonia. Relevant information regarding the vaccine and the disease were distributed to the countries by PAHO field staff, through articles in the *EPI Newsletter* and presentations at regional and sub-regional meetings organized by PAHO. At all these sub-regional meetings, countries introducing Hib vaccine or considering its introduction shared their experiences. These exchanges became an important forum to promote the vaccine throughout the Americas, and they stimulated its introduction in routine immunization schedule in many countries. Concurrently, the establishment of an epidemiological surveillance network to monitor invasive pneumococcal diseases in children under the age of 5 in six countries of the Region also had a positive impact on Hib surveillance.

Figure 2
Hib utilization in the Americas, 1999



In 1997, PAHO's Directing Council urged Member States to strengthen surveillance of Hib, hepatitis B and MMR, to accurately determine disease burden, asses the impact of these vaccines and develop appropriate vaccination strategies. During PAHO's Meeting of the Technical Advisory Group on Vaccine-Preventable Diseases (TAG) held that year, it was recommended that Hib vaccine be used in regular immunization programs; that well-structured surveillance systems be established to monitor illnesses due to Hib and to measure impact of vaccination; that the PAHO Revolving Fund be used for joint purchases of vaccines; and that a careful evaluation of other vaccination strategies be done, e.g. reduced dose or reduced number of doses.

By 1998, more countries had integrated Hib vaccine in their immunization program: Argentina, Colombia, Costa Rica, Cayman Island, Netherland Antilles, Aruba, British Virgin Islands, Bermuda, Bahamas, Antigua and Barbuda, Anguilla, Guadaloupe and Martinique. The Social Security of Mexico was vaccinating its children, and Peru used a special vaccination strategy that targeted the lower socioeconomic population.

Improved surveillance

Since the 1997 TAG meeting, PAHO has taken some important steps aimed at strengthening the surveillance system initiated for *S. pneumoniae* with the technical (epidemiology and laboratory) and financial support of the Canadian International Development Agency (CIDA). At a meeting in Nicaragua in February 1998, with the participation of epidemiologists, and laboratory personnel from Central America, a generic protocol was developed for the surveillance of bacterial pneumonia and meningitis. The goal of this surveillance system is the establishment of a network of sentinel hospitals in the Region that would initially monitor diseases due to *H. influenzae*, and *S. pneumoniae*, and later would include *N. meningitidis.* In order to standardize the microbiological procedures followed by public health laboratories, a series of training workshops were conducted which relied primarily in the concept of training the trainers. A quality control system was developed to assure the consistency and quality of the laboratory results. The training was conducted with the collaboration of the National Center for Streptococcus (Alberta, Canada).

In order to measure the possible impact of Hib vaccine on respiratory infections (pneumonia), case-control studies will be implemented in some of the countries that have recently introduced the vaccine.

Role of PAHO's Revolving Fund for Vaccine Procurement

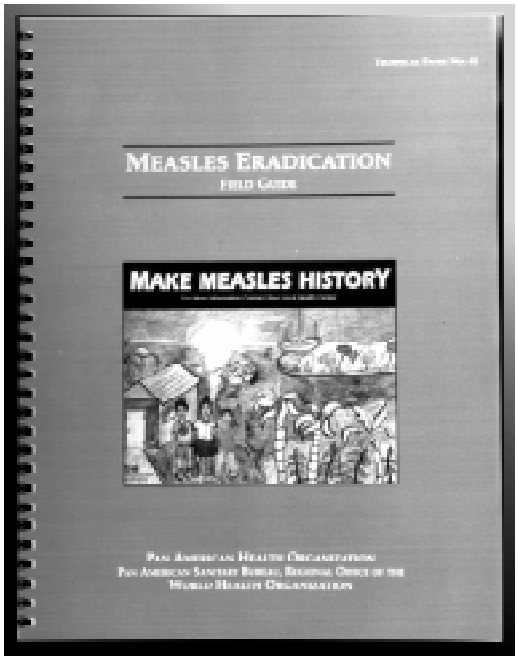
Until 1998, most countries using Hib vaccine were purchasing it directly from manufacturers and paying prices that ranged between US$ 4.50 to US$8.50, At the end of 1998, with increased number of doses purchased by some countries through the PAHO Revolving Fund, there was a dramatic decline in the price per dose to a low of US$ 2.18 for the liquid formulation, and US$2.60 for the freeze-dried formulation. A combined vaccine is also available that includes five antigens: tetanus, diphtheria, pertussis, hepatitis B and Hib at a price of US$3.50. Utilization of this combined (pentavalent) vaccine will also have an important impact in the prices of the monovalent Hib and DTP-Hib combined vaccines, as they have to become more competitive. Furthermore, the simultaneous administration of five antigens in one injection reduces delivery costs, and helps with vaccination compliance and coverage.

The experiences shown above should serve as a template for future introduction of vaccines, such as the pneumococcal conjugate vaccines, rotavirus or other vaccines of public health importance in the Region. Countries should start collecting epidemiological data, strengthen surveillance systems for these vaccine-preventable diseases, as well as raise awareness of the disease burden.

PAHO Publishes Measles Eradication Field Guide

The Pan American Health Organization has released the *Measles Eradication Field Guide*. The publication, both in English and Spanish, contains information about all aspects of the disease, including measles epidemiology, clinical aspects, measles vaccines, vaccination strategy for measles eradication, surveillance, and laboratory diagnosis.

During the 24th Pan American Sanitary Conference in 1994, Member Countries established the goal of measles eradication by the year 2000. In 1995, at PAHO's 38th Meeting of the Directing Council, the Ministers of Health of the Americas unanimously approved the Measles Eradication Plan of Action prepared by the Organization.



The *Measles Eradication Field Guide* provides health authorities, medical officers and other health personnel involved in measles eradication at national, state and local levels with a step-by-step manual for setting up and implementing measles eradication activities. This guide incorporates experiences acquired by the countries of the Americas over the past seven years, but it can be used by any country working towards the control or eradication of measles. It emphasizes appropriate vaccination and surveillance strategies that are required to eradicate measles, and to continually monitor progress towards that goal. Some of the measures described may need to be adapted to local conditions.

PAHO acknowledges the outstanding accomplishment of all health workers in the Americas involved in measles eradication activities. In confronting the formidable challenge of eradicating one of the most infectious and lethal agents known to man, these persons have persevered and continued to learn from their experiences. It is hoped that the lessons learned from the measles eradication experience in the Americas can be adapted and applied in all countries and Regions of the world and that the ultimate goal of global measles eradication can be achieved.

*To obtain a copy of the **Measles Eradication Field Guide** (Technical Paper No. 41), please contact the local PAHO Country Office, PAHO 's Publication Office or the Division of Vaccines and Immunization at 525 23rd Street N.W., Washington, DC 20037, or e-mail us at HVP/HQ@PAHO.ORG.*

Polio Surveillance, 1999*

As of epidemiological week No.9 (March 6) the proportion of countries complying with the key indicators for certification of polio eradication in less when compared to the same epidemiological week in 1998. Only one country complies with all the indicators in both years, and eight countries comply with three indicators in 1998, compared to 4 in 1999.

The rate of at least 1 case of acute flaccid paralysis (AFP) per 100,000 children under 15 years of age (adjusted at the end of the year) is met by three countries in 1999, (Ecuador, Chile and Colombia). These countries only have 12% of all children under 15 years of age in Latin America and the Caribbean. As of the epidemiological week 9, there are 13 countries reporting a total 125 AFP cases, in comparison with 1998, when 277 cases were reported by 19 countries.

Given that this indicator measures the sensitivity of the surveillance system to detect wild poliovirus circulation, it can be concluded that 88% of the population in Latin America and the Caribbean are currently residing in countries with a surveillance system with low sensitivity. **This will not allow for the prompt detection of circulating virus in case an importation occurs.**

A year prior to the eradication of polio worldwide, countries in the Americas should reactivate their AFP surveillance to prevent the re-seeding of the disease in the Region.

AFP Surveillance Indicators, 1999*

Country	80% weekly reporting units	80% of cases investigated within 48 hours	80% of cases with 1 adequate stool sample taken	AFP Rate ≥ 1:100,000 in children < 15 years
Ecuador				
Chile				
Honduras				
Nicaragua				
Panama				
Brazil				
CAREC				
Colombia				
El Salvador				
Peru				
Bolivia				
Dominican Republic				
Haiti				
Venezuela				
Argentina				
Costa Rica				
Cuba				
Guatemala				
Mexico				
Paraguay				
Uruguay				

* Data as of 6 March 1999
Source: HVP/PAHO (PESS)

Reported Cases of Selected Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria, and whooping cough, from 1 January 1998 to date of last report, and the same epidemiological period in 1997, by country.

Country/Territory	Date of last report	Measles				Polio		Tetanus				Diphtheria		Whooping Cough	
		Confirmed 1998			Confir-med*			Non Neonatal		Neonatal					
		Labo-ratory	Clini-cally	Total	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1997
Anguilla	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Antigua & Barbuda	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Argentina	13-Mar	7,397	...	7,397	125	0	0	9	24	0	4	1	0	29	638
Bahamas	13-Mar	0	0	0	1	0	0	1	0	0	0	0	0	0	0
Barbados	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Belize	13-Mar	0	0	0	0	0	0	...	2	...	1	...	0	...	0
Bermuda	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	3
Bolivia	13-Mar	986	0	986	7	0	0	6	18	9	14	8	3	44	138
Brazil	13-Mar	1,458	677	2,135	52,284	0	0	...	58	...	74	...	32	...	101
British Virgin Islands	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Canada	13-Mar	12	0	12	579	0	0	...	3	...	...	...	1	772	3,688
Cayman Islands	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	1
Chile	13-Mar	4	0	4	58	0	0	5	4	1	0	0	0	561	825
Colombia	13-Mar	5	23	28	67	0	0	12	21	21	24	2	3	311	425
Costa Rica	13-Mar	0	2	2	26	0	0	1	3	0	0	...	0	29	30
Cuba	13-Mar	0	0	0	0	0	0	4	1	0	0	0	0	0	0
Dominica	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Dominican Republic	13-Mar	10	0	10	1	0	0	12	27	0	0	25	25	20	2
Ecuador	13-Mar	0	0	0	0	0	0	40	68	24	25	21	21	243	235
El Salvador	13-Mar	0	0	0	0	0	0	12	4	0	2	0	0	4	2
French Guiana	...	...	...	...	...	0	0	...	...	...	...	...	...	...	...
Grenada	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Guadeloupe	13-Mar	2	0	2	116	0	0	...	...	...	...	...	...	...	...
Guatemala	13-Mar	0	1	1	8	0	0	...	...	6	8	0	1	432	567
Guyana	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Haiti	13-Mar	0	3	3	0	0	0	...	0	50	33	0	0	...	0
Honduras	13-Mar	0	0	0	5	0	0	18	11	6	1	0	0	59	191
Jamaica	13-Mar	1	0	1	0	0	0	3	6	0	0	0	0	0	4
Martinique	...	...	...	...	0	0	0	...	...	...	...	...	...	...	...
Mexico	13-Mar	0	0	0	0	0	0	148	169	25	44	0	0	188	593
Montserrat	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Netherlands Antilles	...	...	...	...	...	0	0	...	...	...	...	...	...	...	...
Nicaragua	13-Mar	0	0	0	0	0	0	10	14	0	1	0	0	6	84
Panama	13-Mar	0	0	0	0	0	0	3	2	0	1	0	0	226	109
Paraguay	13-Mar	70	0	70	143	0	0	9	28	8	15	0	0	10	27
Peru	13-Mar	3	7	10	95	0	0	88	63	14	36	2	2	2,490	989
Puerto Rico	13-Mar	0	—	0	0	0	0	...	...	...	...	...	...	...	...
St Vincent/Grenadines	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
St. Kitts/Nevis	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
St. Lucia	13-Mar	0	0	0	0	0	0	...	1	...	0	...	0	...	0
Suriname	13-Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad & Tobago	13-Mar	0	0	0	1	0	0	0	1	0	0	0	1	0	1
Turks & Caicos	13-Mar	0	0	0	0	0	0	...	0	...	0	...	0	...	0
United States	13-Mar	89	—	89	138	0	0	34	41	...	...	1	5	5,799	5,411
Uruguay	13-Mar	2	0	2	2	0	0	2	1	0	0	0	0	1	12
Venezuela	13-Mar	0	4	4	27	0	0	46	65	7	7	0	0	609	973
TOTAL		**10,039**	**717**	**10,756**	**53,683**	**0**	**0**	**463**	**635**	**171**	**290**	**60**	**94**	**11,833**	**15,049**

... Data not available.
— Clinically confirmed cases are not reported.
* Laboratory and clinically confirmed cases.

PAHO Establishes Division of Vaccines and Immunization

On March 1, 1999, the Pan American Health Organization established the Division of Vaccines and Immunization (HVP). The new Division, grown out from the former Special Program for Vaccines and Immunization, will work towards improving the criteria for the adoption of policies governing immunization programs, and the development and production of high quality vaccines in the Region.

The Division will support Members Countries in their efforts to deliver equitable vaccination programs in the Americas, and, whenever warranted, to introduce additional vaccines in routine immunization programs in a sustainable way.

HVP's technical cooperation will emphasize two lines of action:

Expanded Program on Immunization (HVI)

- Strengthen and support national surveillance systems for vaccine-preventable diseases that operate in conjunction with adequate laboratory support systems, through the expansion of the regional network of diagnostic and quality control laboratories.
- Promote the application of new techniques to improve regional disease surveillance, and develop electronic networks that make it possible to increase the speed with which suspected cases are reported and confirmed.
- Expand and improve vaccinations carried out by the public and private sectors, including non-governmental organizations (NGOs).
- Develop and strengthen public health laboratories and national, subregional and regional diagnostic laboratory networks.
- Support the vaccine supply and procurement systems to contain costs and increase availability of priority vaccines.

Vaccine Technology Access (HVA)

- Support sub-regional and regional mechanisms for the regulatory harmonization of vaccines and promote the adoption of vaccine safety standards.
- Support the formulation of national and institutional research and health technology (vaccines) policies that will permit the development of the knowledge and technologies (vaccines) necessary for taking effective action in public health.
- Determine the disease burden and ensure cost-effective inclusion of vaccines against *Haemophilus influenzae* type b, measles and rubella, or measles, mumps and rubella within the basic vaccination schedule.
- Promote research and development of vaccines, in collaboration with public sector laboratories, ensuring that local vaccine production is economically and technically viable and adheres to good manufacturing practices, as well as national and international norms and standards.
- Promote the consortium of public laboratories that produce vaccines, to adopt good manufacturing practices, and continue the regional certification process for vaccine producers.

The *EPI Newsletter* is published every two months, in Spanish and English by the Division of Vaccines and Immunization (HVP) 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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