EPI Newsletter

Expanded Program on Immunization in the Americas

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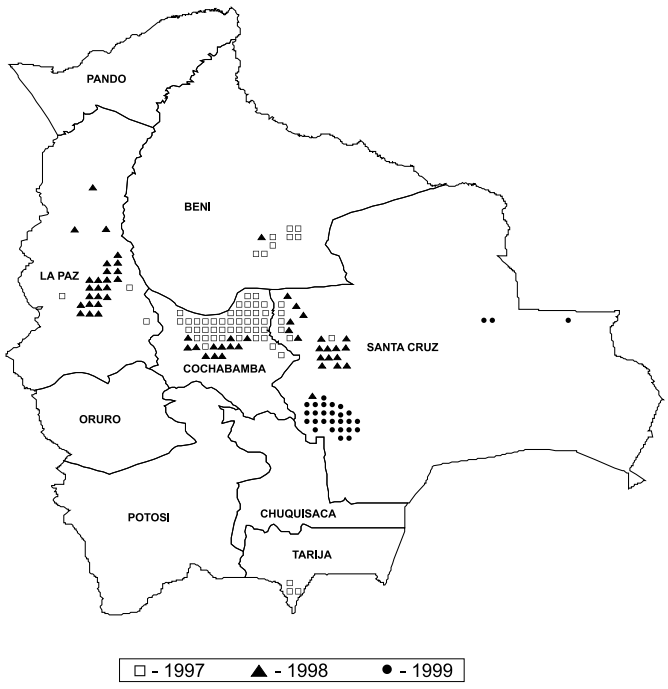
Sylvatic Yellow Fever Outbreak in Bolivia

In January 1999, Bolivia notified a sylvatic yellow fever outbreak. A provisional total of 29 cases have been reported nationally since the beginning of the year, all occurring in rural settings of the Department of Santa Cruz. The area reporting most cases is localized 120-200 km south of the city of Santa Cruz de la Sierra between the provinces of Cordillera (45%) and Vallegrande (45%). Of the cases reported 23 (80%) are male and 6 (20%) are female. Age distribution of these cases is 82% over 15 years of age, 11% are 10 to 15 years, and 7% less than 10 years. Twenty-seven cases were not vaccinated against yellow fever and two had an unverified history of vaccination. As of mid-February, there have been 10 deaths.

A mass immunization campaign of all age groups residing in outbreak areas was started immediately after the confirmation of the first reported cases. In the Department of Santa Cruz, 30,000 vaccinations have already been given in municipalities surrounding the outbreak, thereby increasing the vaccination coverage to over 90% in these counties.

In the past 10 years, Bolivia has reported over 400 cases of yellow fever, representing 30% of all cases reported in the Region in the same period. Prior to 1998, the majority of notified cases were clinically confirmed, but currently all cases have been confirmed by laboratory, or are epidemiologically linked to a laboratory confirmed case. The last yellow fever outbreak in Bolivia occurred in 1991, subsiding after a mass immunization campaign was undertaken. With 10 to 20 annual cases reported between 1992 and 1995, the number of cases reported increased to 30, 63 and 57 for the years 1996, 1997, and 1998, respectively. In 1997, cases of yellow fever were seen in the Departments of Cochabamba (68%), Beni (13%), and Santa Cruz (10%). In 1998, affected areas included the lowlands of the Departments of La Paz (44%), western provinces of the Department of Santa Cruz (33%) and northern provinces of the Department of Cochabamba (21%). The epidemiologic picture suggests an initial spread of yellow fever from the savannas/forests of Beni to the lowlands of La Paz and Cochabamba. The current direction of the disease is in a south and southeastward pattern through the Inter-Andean Valleys regions of Santa Cruz (Figure).

Figure
Cases of Yellow Fever by Department, Bolivia
1997-1999



Source: Ministry of Health, Bolivia.

Recent cases present a similar epidemiologic profile to those in previous yellow fever outbreaks: Cases are pre-

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dominantly male and their age is usually older than 15 years (mean age of 20-25). These findings are similar to past sylvatic (jungle) yellow fever outbreaks, since young males tend to be individuals who venture into forested areas to work, where they become infected with yellow fever. Bolivia's vaccination strategy for controlling the disease has been primarily that of mass vaccinations of all individuals in affected areas following an outbreak. So far, Bolivia has received donations and loans of yellow fever vaccine from neighboring countries for the control of the current outbreak. The cumulative 10 year yellow fever vaccination coverage of the entire country has only been 35% of the total population.

Source: Ministry of Health, Bolivia

Editorial Note: The yellow fever virus can be transmitted in sylvatic and urban cycles. In the sylvatic cycle of South America, primates are the reservoirs of the virus, and its circulation is maintained between monkeys usually by the mosquito genera *Haemagogous and Sabethes*.[1] The transmission to man occurs when he penetrates the enzootic forest areas for work. Thus, yellow fever in South America can be considered an occupational disease. Man is considered the dead end host in this cycle, since he does not participate in the transmission of the virus to other primates.

The urban yellow fever cycle can be started when a human being infected with the virus in the jungle travels to an urban environment, where the *Aedes aegypti* mosquito is present. The transmission between Man-Aedes-Man, which characterizes the urban cycle, begins when the *A. aegypti* mosquito feeds on a viremic human being, thereby infecting itself with the yellow fever virus present in the human blood. After a period of 9 to 12 days, the *A. aegypti* would be able to transmit the virus to other human beings.[2]

Although no case of urban yellow fever has been reported in the Region since 1942, more than 1,900 cases of sylvatic yellow fever have been notified from Bolivia, Brazil, Colombia, Ecuador, and Peru for the past 10 years. Venezuela and French Guiana, which have not reported any cases of yellow fever since the 1980s, notified several cases in 1998 [3] (See Table). Together, Bolivia and Peru account for 80% of all cases in the Americas. Nevertheless, notified cases do not represent the real incidence of the disease due to underreporting.

The widespread dissemination of the *A. aegypti* mosquito throughout the Region increases the threat of the re-urbanization of the disease. Such a possibility occurred during the Peruvian outbreak in 1995, when many yellow fever cases were hospitalized in cities infested with *A. aegypti*.[2] The same situation also occurred during the 1998 outbreak in Roraima, Brazil, when two laboratory confirmed cases were in the urban area of Boa Vista, the state capital, where there is an infestation of *A. aegypti*. The current situation in Santa Cruz de la Sierra, where *A. aegypti* is also present, raises the possibility of the re-urbanization of the disease.

This threat can be aggravated even more by the importation of another *Aedes* mosquito, *A. albopictus*, to Brazil from Asia. The *A. albopictus* mosquito is capable of transmitting yellow fever virus. But more importantly, the *A. albopictus* is able to adapt to both forest and urban conditions, and may serve as a bridge between the sylvatic and urban cycles of yellow fever.

The seriousness of the current yellow fever situation in the Region requires a firm commitment by countries to a strong and effective strategy for controlling this disease. This strategy would seek to avoid future cases and prevent any possibility of the re-urbanization of yellow fever.

PAHO Recommendations

PAHO has recommended the following measures for the control and prevention of yellow fever:

- Countries must achieve 100% vaccination coverage for populations living in enzootic yellow fever zones as soon as possible
- Countries must incorporate yellow fever vaccination for children less than 1 year of age into the basic vaccination schedule, and it should be administrated jointly with measles vaccine

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. aegypt*i, all individuals living in both areas should be vaccinated with yellow fever vaccine. To increase vaccination coverage, a mass ("catch-up") campaign should be conducted. Vaccination coverage of at least 80% is necessary to prevent further disease outbreaks.[4]

Maintainance of high levels of vaccination

The incorporation of yellow fever vaccine into routine child immunization programs is fundamental to achieving high vaccination coverage and reducing the number of outbreaks.

Outbreak response

In general, vaccination campaigns implemented during yellow fever outbreaks are effective only if applied early in the outbreak. Outbreak response planning, training, and preparedness are for containing the spread of the disease. The integration of yellow fever surveillance in the regular Expanded Program of Immunization will result in more rapid response to any emergency situation.

Detection, reporting and investigation of suspected cases

Improved yellow fever surveillance is critical for effective and timely case identification, and for adequate outbreak control response. All cases of fever with jaundice and/or hemorrhage should be investigated. An investigation, complete with blood and/or tissue samples should begin with any individual who lives or has traveled to a yellow fever endemic zone and develops sudden fever (>38^{o}C), and one or more of the following clinical manifestations [2].

- jaundice
- bleeding from the nose, gums or skin

Table
Number of reported yellow fever cases and deaths, 1985-1998

	1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998*	
	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D	C	D
Bolivia	53	37	26	19	23	18	12	12	107	87	50	38	91	54	22	18	18	14	7	7	15	15	30	21	63	47	57	39
Brazil	7	5	9	8	16	14	21	14	9	3	2	1	15	8	12	8	66	17	18	5	4	2	15	13	3	3	34	15
Colombia	5	5	6	6	17	9	7	7	1	1	7	7	4	4	2	2	1	1	2	2	3	3	8	4	6	6	0	0
Ecuador	1	-	-	-	-	-	-	-	-	-	12	6	14	9	16	13	1	-	-	-	1	1	8	8	31	4	3	1
F.Guiana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Peru	59	44	118	98	179	170	195	166	120	100	17	17	27	15	67	40	89	47	61	25	499	192	86	34	44	20	160	49
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	4
Total	**125**	**91**	**159**	**131**	**235**	**211**	**235**	**199**	**237**	**191**	**88**	**69**	**151**	**90**	**119**	**81**	**175**	**79**	**88**	**39**	**522**	**213**	**147**	**80**	**147**	**80**	**268**	**109**

* Provisional data C = cases D = deaths
Source: Ministries of Health

- blood in vomit, stool or urine

Also, an epidemiological investigation should be carried out in all sudden death cases due to hemorrhagic febrile disease.

The proportion of asymptomatic to symptomatic cases is 1:2, while the ratio between mild-asymptomatic disease to severe disease is 7:1[5]. Cases notified, therefore, represent only a fraction of the yellow fever problem. Testing for yellow fever in all icteric patients would increase the detection of the disease. In icteric patients, once hepatitis, malaria, leptosporosis and hemorrhagic dengue fever are ruled out by specific serologic laboratory studies, samples should also be tested for yellow fever. In 1998, PAHO and laboratories within the greater Amazon region established a network of laboratories for the surveillance of emerging infectious diseases. The surveillance of yellow fever by this network will enhance the response to control future outbreaks in this region.

Vaccine Supply

Yellow fever vaccine is highly efficacious. The administration of a single dose of yellow fever will confer immunity in greater than 95% of persons vaccinated and is protective for at least 10 years.[6] The vaccine is safe, inexpensive and reliable. Due to the difficulty in mobilizing large quantities of vaccines in short period of times, it is critical to effectively plan and order vaccines in advance to ensure an adequate supply for routine vaccinations and outbreak control. An emergency stock should be kept in all countries at all times.

Vector Control

A comprehensive vector control program should be established by countries to keep the density of *A. aegypti* low in urban environments.[2] This approach will also benefit the prevention of dengue outbreaks.

Conclusion

The threat of urbanization of yellow fever underscores the importance of implementing immediate control measures of the disease in the Region. To date Trinidad &Tobago and French Guiana have introduced yellow fever in their routine national program for immunization. Peru and Brazil are vaccinating against yellow fever as part of the routine childhood immunization program in enzootic areas. For 1999, Brazil is scheduled to vaccinate approximately 100 million people of all ages living in north, central west, and northeast areas of the country, where yellow fever is endemic or contiguous with areas high in *A. aegypti* infestation. Guyana is also planning to introduce yellow fever in their national immunization program and to promote a catch-up campaign. With the collaboration of PAHO, Bolivia has recently developed a five-year plan to strengthen its immunization program. This initiative will be financed in part by the World Bank and includes plans to increase vaccination coverage of all age groups living in enzootic areas and to introduce yellow fever vaccine in the routine national immunization program.

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5 Vasconcelos PFC, Rodrigues SG, Degallier N, et al. An epidemic of sylvatic yellow fever in the southeast region of Maranhao state, Brazil, 1993-4: Epidemiologic and entomologic findings. Am J Trop Med Hyg 1997; 57:132-37.

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Evaluation of the Bahamas' MMR Campaign

From July to December of 1997, the Bahamas carried out its first mass measles, mumps and rubella campaign (MMR) targeting the population between the ages of 4 to 40 residing in 19 islands. New Providence and Grand Bahama account for 68% of the total population in the Bahamas. The objectives of the campaign was to keep the country free of measles, interrupt rubella virus transmission and prevent further cases of congenital rubella syndrome (CRS), by eliminating susceptible populations for rubella, as well as eliminating susceptible populations for mumps infection. Since the campaign, no cases of measles and rubella have been reported, in spite of the fact that the Island receives over one million tourists every year. In July of 1998, the Ministry of Health of the Bahamas requested that PAHO/SVI carry out an evaluation of the MMR campaign. Given the shortage of manpower, the campaign was extended up to May 1998, in an attempt to reach the entire target population.The following is a summary of the evaluation report.

Measles and Rubella Situation

In 1996 the country's fever and rash surveillance system identified one case of rubella; since then there have been 13 laboratory-confirmed cases of the disease. During 1998 four women gave birth to babies with congenital rubella syndrome, three of which died from complications due to CRS within three, five and 15 months of their birth. A large pool of susceptible individuals that could potentially contract rubella was expected, since there had never been a vaccination program targeting adults. In April 1997, the Bahamas also reported its first laboratory confirmed measles case in seven years due to an importation.

In order to prevent outbreaks of both measles and rubella, the Ministry of Health conducted an MMR campaign between July and September of 1997. *Mop-up* operations were carried out during the months of October and December, 1997. The MMR campaign targeted the population (both female and male) between 4 and 40 years on the 19 family islands. All persons were immunized, except those individuals with a documented history of two doses of MMR vaccine and/or medical contraindications. Estimated target population for the MMR campaign was initially 180,980 (1995 midyear projection), but 27,800 showed adequate vaccination prior to the campaign, and the number was adjusted to 153,180. Approximately, 80% of the target population or 122,844 are in the work force, and 30,296 (20%) are in the age group 4 to 14 years.

The campaign was carried out in four phases: Phase I: targeted postnatal mothers; Phase II: targeted young adults 17 to 18 years of age, who were graduating from high school in June, 1997; Phase III: targeted work-sites (40% of the target population); and Phase IV: targeted school-aged children (5 to 16 years of age.) MMR vaccine from two laboratories were used, a total of 5000 single-dose vials from a laboratory producing an MMR strain containing the Jeryl Lynn mumps strain, and the remaining doses in ten-dose vials were supplied from another laboratory containing the Leningrad-Zagreb mumps strain.

Safe Syringe Practices

Single use disposable syringes and biohazards containers were supplied to clinics and vaccination teams. Some of the family islands used large plastic bottles found at clinics. An information sheet was provided to health workers addressing safe syringe practices. On the islands of Grand Bahama and New Providence, where incineration facilities exist, all used sharps were disposed using this method. On islands with no incineration facilities used syringes and needles were disposed of by burning or burying.

A post-campaign survey confirmed that 97% of all health workers had not re-capped used sharps and 100 % of all health care workers responded that they had not heard or seen any accidental needle sticks. Results for the supervisors were the same.

Vaccination Coverage

Coverage attained in the MMR campaign for the target population of 153,180 was 67.4% (103,170). Analysis of survey data from the capital city of New Providence, Nassau, indicate that 26% of the population in the age group 25-40 remain unvaccinated (Table1).

Table 1
Vaccination Coverage of the Bahamas MMR Campaign

Age Group	Population [i] Targeted	Population Vaccinated	% Coverage
4 - 14 years	30,296	29,218	96%
15 – 24 years	50,084	31,127	62%
25 – 40 years	72,800	42,825	59%
TOTAL	153,180	103,170	67%

[i] The denominator has been adjusted to account for the number of persons with documented history of having received two doses of MMR vaccine.

Surveillance of Adverse Reactions

Given the scope of the campaign and the inclusion of MMR vaccine in adults for the first time in the Americas, special training was given to health workers to strengthen surveillance activities for adverse reactions. Information coming from previous MMR vaccination campaigns of children 0-14 years of age in countries outside the region had reported an increased rate of aseptic meningitis in children receiving MMR vaccine containing the Urabe mumps strain. PAHO's evaluation of the campaign sought to document the experience of MMR vaccination in mass campaigns, particularly in adults, to address the issue of adverse reactions and provide clear technical guidelines for other countries.

A total of 212 adverse reactions were reported to the Ministry of Health after receiving a dose of MMR vaccine (Table 2). Approximately 62 % of the cases were females;

with a male to female ratio of 1:1.65. The most common events reported were: parotitis, n =123, with a rate of 120 reports per 100,000 persons immunized, followed by rash and itching, n = 41. Most cases of parotitis (80%) were in adults. No cases of anaphylactic reaction were reported. There were five cases presenting an allergic reaction that needed hospitalization, one of these requiring overnight stay. Only one case of aseptic meningitis was reported, giving a rate of 0.96 per 100,000 vaccinated persons. This case was transitory--temporary condition with no sequelae.

Vaccination during Pregnancies

The surveillance system put in place for monitoring adverse reactions identified 33 women who had been accidentally vaccinated during the first trimester of their pregnancy in the Grand Bahama. Of these women, 15 met the criteria of having a specific date written in their maternal records or a vaccination card for having received a dose of MMR vaccine. All 33 delivered normal, healthy newborns. Hospital dockets from Princess Margaret Hospital in Nassau also confirmed that seven women who had been accidentally vaccinated in the first trimester gave birth to normal, healthy babies.

Table 2
Frequency Distribution of Adverse Events during MMR Campaign, Bahamas, 1997

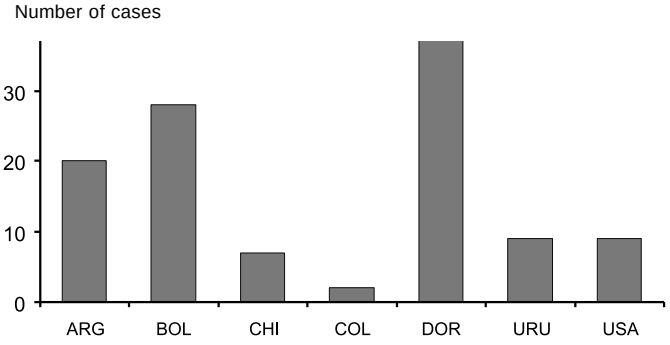
Types of Adverse Events	Frequency of Adverse Events	Rate Per/100,000 Vaccines	Average Time between vaccination and Event (Days)
Parotitis	123	120	14
Rash/Itching	41	40	6
Fever	28	27	13
Headaches	25	24	6
Respiratory/Symptoms	19	19	10
Fever/Rash	15	15	5
Malaise/Myalgia	15	15	6
G.I. Symptoms	11	11	1
Arthralgia/Arthritis	9	9	4
Orchitis	3	3	17
Aseptic meningitis	1	.96	29

Source: SVI Evaluation Report, July 1998. For a complete copy of the evaluation, please contact the Ministry of Health in the Bahamas, or the Special Program for Vaccines and Immunization in Washington D.C., USA.

Update: Measles in the Americas

For the first six weeks of 1999, there have been 114 confirmed measles cases reported from seven countries (Argentina, Bolivia, Chile, Colombia, Dominican Republic, Uruguay and the United States) in the Region (Figure). Up to February 13, the Dominican Republic has reported 34% of all cases to date. This outbreak was detected in mid-December 1998, but the first cases appeared to have occurred early November 1998. Investigation of the outbreak is underway, to determine possible sources of infection. The preliminary investigation of this outbreak indicates that the majority of the 39 confirmed cases occurred in non-vaccinated individuals that were eligible for vaccination. Therefore, these cases were preventable. The last laboratory-confirmed case of measles in the Dominican Republic occurred in 1997 in a tourist.

Figure
Countries reporting confirmed measles cases
Region of the Americas, 1999*



* Data as of 13 February
Source: Measles Eradication Surveillance System/PAHO

Bolivia's year end data show a total of 985 confirmed cases for 1998. Up to February 13, 1999, a total of 122 confirmed cases have been reported, of which the majority of cases are found in the Departments of Cochabamba and Santa Cruz. Investigation of the outbreak in Cochabamaba (1998-99) shows that 85% of all confirmed cases are in children under five years of age (n=156) who were not vaccinated during the *follow-up* campaign held in 1998. Vaccination efforts have been slow in this department, especially in the large urban areas of the city of Cochabamba. As a result the Ministry of Health is conducting an aggressive *mop-up* effort, in order to reduce the number of susceptibles to measles.

All countries in the Region must monitor the build-up of suscepitbles as a result of either low vaccination coverage in routine programs or a less than adequate coverage in *follow-up* campaigns. In addition, maintaining a sensitive surveillance system and implementing aggressive case investigations of all suspected measles cases is critical if a country is to confront possible importations of measles from neighboring countries or from other regions of the world where the disease circulates widely. These steps should prevent the re-establishment of measles virus circulation in the Region. In Bolivia, the first cases of confirmed measles were due to importations from a neighboring country with a measles outbreak, and in the Dominican Republic measles importation is also strongly suspected.

AFP Surveillance – 1994, 1997 and 1998

It has been seven years since the last case of poliomyelitis was detected in the Region of the Americas, and four years since the certification of the eradication of the disease. The challenge remains to maintain a sensitive surveillance system for acute flaccid paralysis (AFP). When the rest of the world initiates the process of certification of the global eradication of polio, the countries in the Americas will once again be evaluated.

The table below shows current country compliance with the key indicators for certification of polio in 1997 and 1998, compared to the performance of the same indicators in 1994, the year polio was certified as eradicated by an international commission. The number of countries meeting the criteria for each indicator is decreasing year by year, with the exception of one indicator (percentage of cases investigated within 48 hours of notification). During 1998, Chile, Nicaragua, Peru, Colombia and Honduras complied with all four indicators. Haiti and Uruguay complied with only one indicator and Argentina with none.

In order to evaluate the quality and results of an investigation, the indicators monitoring percentage of investigated cases within 48 hours of notification (of which 18 of the 20 countries complied in 1998), must be analyzed in conjunction with the indicator monitoring the percentage of adequate stool samples taken (only 10 countries are in compliance), and the analysis of whether all the critical information is available in the investigation forms (65% of AFP cases have the five general data** and 26% of the AFP cases have the seven clinical data*** available).

Table
AFP Surveillance Indicators, 1994, 1997 and 1998*

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		
	1994	1997	1998	1994	1997	1998	1994	1997	1998	1994	1997	1998
Argentina												
Bolivia												
Brazil												
Chile												
Colombia												
Costa Rica												
Cuba												
Dominican Republic												
Ecuador												
El Salvador												
Guatemala												
Haiti												
Honduras												
Mexico												
Nicaragua												
Panama												
Paraguay												
Peru												
Uruguay												
Venezuela												
Total Countries	**18**	**17**	**13**	**17**	**18**	**18**	**11**	**12**	**10**	**18**	**12**	**11**

- Meet criteria (1994) - Meet Criteria (1997) - Meet Criteria (1998)

* Data as of 13 February 1999

** *General Data:* Date of onset; date of notification; date of follow up; age; and number of doses

*** *Clinical data :* fever, days from onset of paralysis to full progression; type of progression; sequelae; atrophy; diagnostic; and paralysis; proximal/distal

Source: SVI/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			Confirmed* 1997			Non Neonatal		Neonatal					
		Laboratory	Clinically	Total		1998	1997	1998	1997	1998	1997	1998	1997	1998	1997
Anguilla	2-Jan	0	0	0	0	0	0	...	...	...	0	...	0	...	0
Antigua & Barbuda	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Argentina	2-Jan	7,397	...	7,397	125	0	0	9	18	0	3	1	0	29	321
Bahamas	2-Jan	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Barbados	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Belize	2-Jan	0	0	0	0	0	0	...	2	...	1	...	0	...	0
Bermuda	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Bolivia	2-Jan	986	0	986	7	0	0	11	2	7	7	6	1	32	77
Brazil	2-Jan	1,458	677	2,135	52,284	0	0	...	58	...	13	...	32	...	101
British Virgin Islands	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Canada	2-Jan	12	0	12	579	0	0	...	2	...	...	...	1	772	2,415
Cayman Islands	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Chile	2-Jan	4	0	4	58	0	0	5	4	1	0	0	0	561	321
Colombia	2-Jan	5	23	28	67	0	0	0	18	3	17	2	2	81	15
Costa Rica	2-Jan	0	2	2	26	0	0	1	2	0	0	...	0	29	10
Cuba	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Dominica	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Dominican Republic	2-Jan	10	0	10	1	0	0	5	17	0	0	3	4	7	1
Ecuador	2-Jan	0	0	0	0	0	0	10	42	14	19	17	17	136	148
El Salvador	2-Jan	0	0	0	0	0	0	0	3	0	2	0	0	0	2
French Guiana	...	...	...	...	...	0	0	...	...	...	...	...	...	...	...
Grenada	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Guadeloupe	2-Jan	2	0	2	116	0	0	...	...	...	...	...	...	...	...
Guatemala	2-Jan	0	1	1	8	0	0	0	5	4	6	0	0	377	92
Guyana	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Haiti	2-Jan	0	3	3	0	0	0	...	0	1	0	...	0	...	0
Honduras	2-Jan	0	0	0	5	0	0	5	5	2	1	0	0	23	121
Jamaica	2-Jan	1	0	1	0	0	0	3	0	0	0	0	0	0	1
Martinique	...	...	...	...	0	0	0	...	...	...	...	...	...	...	...
Mexico	2-Jan	0	0	0	0	0	0	123	104	25	20	0	0	139	292
Montserrat	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Netherlands Antilles	...	...	...	...	...	0	0	...	...	...	...	...	...	...	...
Nicaragua	2-Jan	0	0	0	0	0	0	1	10	0	0	0	0	0	41
Panama	2-Jan	0	0	0	0	0	0	1	1	0	1	0	0	226	85
Paraguay	2-Jan	70	0	70	143	0	0	9	24	8	11	0	0	10	24
Peru	2-Jan	3	7	10	95	0	0	87	60	14	35	2	2	2314	962
Puerto Rico	2-Jan	0	—	0	0	0	0	...	...	...	...	...	...	...	...
St Vincent/Grenadines	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
St. Kitts/Nevis	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
St. Lucia	2-Jan	0	0	0	0	0	0	...	0	...	0	...	0	...	0
Suriname	2-Jan	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Trinidad & Tobago	2-Jan	0	0	0	1	0	0	...	2	...	0	...	0	...	0
Turks & Caicos	2-Jan	0	0	0	0	0	0	...	1	...	0	...	0	...	0
United States	2-Jan	89	—	89	138	0	0	34	41	...	...	1	5	5,799	5,411
Uruguay	2-Jan	2	0	2	2	0	0	...	0	...	0	...	0	...	10
Venezuela	2-Jan	0	4	4	27	0	0	15	18	2	6	0	0	241	393
TOTAL		**10,039**	**717**	**10,756**	**53,683**	**0**	**0**	**319**	**441**	**81**	**142**	**32**	**64**	**10,776**	**10,843**

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

Official French Position on Hepatitis B Vaccination

The following is a letter spelling out the official position of the French Ministry of Health regarding the vaccination against hepatitis B (HB) in France. The French Ministry decided to issue this letter due to misinterpretations by the mass media, which have resulted in confusion by the public.

On October 1, 1998 (see World Health Organization position in October issue of the ***EPI Newsletter*** 1998) the French Ministry of Health announced a decision to suspend routine hepatitis B immunization of adolescents in French schools, while continuing the immunization of infants and high risk adults. The decision followed concerns, despite lack of scientific evidence establishing a causal relationship, that hepatitis B immunization might be linked to the development or flare-up of demyelinating diseases such as multiple sclerosis (MS), and came in the wake of enormous pressure from anti-vaccine groups.

With the assistance of external experts in neurology, epidemiology, immunology and public health, WHO carefully reviewed the scientific evidence on whether hepatitis B vaccine can cause demyelinating diseases such as MS. Based on this review, WHO concluded that there was no available scientific data to demonstrate a causal association between HB immunization and central nervous systems diseases, including MS.

Since 1981, over 1 million doses of hepatitis B vaccine have been used with an outstanding record of safety and efficacy, and the vaccine is 95% effective in preventing the development of the chronic carrier state of hepatitis B. HB vaccine is the first vaccine against a major human cancer, as it is the chronic carriers of hepatitis B who are at high risk of death from cirrhosis of the liver and liver cancer.

Text of official letter from French Ministry

Subsequent to a meeting of experts during which all the studies carried out in France of adverse events following hepatitis B vaccination were examined, on October 1, 1998 the Secretary of State for Health and Welfare decided the following:

- To maintain the recommendation that children should be vaccinated against hepatitis B
- To maintain the recommendation that adolescents receive a dose of hepatitis B vaccine, if they were not vaccinated in the past
- To maintain the recommendation that adults at risk should be vaccinated against hepatitis B, in conformity with the opinion issued in July 1998 by the Technical Committee on Vaccination
- To maintain the obligation for health professionals to be vaccinated against hepatitis B.

The only change that has been announced relates to the strategy for adolescents; it has been decided to temporarily suspend vaccination campaign in secondary schools. The reason for the change is that the conditions under which campaigns are conducted do not allow adequate explanations to be provided (i.e. parents are not present at school vaccinations), particularly in light of the publicity given to the hypothetical adverse effects of vaccination which has undermined the population's confidence in hepatitis B vaccination.

Source: Director-General for Health, Ministry of Employment and Solidarity, France, January 29, 1999.

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

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