



# EPI Newsletter

## Expanded Program on Immunization in the Americas

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IMMUNIZE AND PROTECT YOUR CHILDREN

December 1993

### Region Acts to Check Importations

*During an outbreak of poliomyelitis in the Netherlands in 1978, wild poliovirus was imported from there to Canada and the USA. Several cases of polio occurred as a result. Another outbreak occurred in Holland in late 1992 among members of a closed religious community that refuses vaccination (see EPI Newsletters Vol. XIV, 1992, No.6, and Vol. XV, 1993, No. 3). As a precautionary measure to prevent its spread, from January to April, 1993, Canadian health authorities carried out an active search in known high-risk communities with ties to the Netherlands. No paralysis was found, but the imported poliovirus (wild type 3) was detected in stool samples taken from members of these communities.*

*When Canadian health authorities reported these findings in May, PAHO issued alerts to all countries in the hemisphere. Rotary International collaborated enlisting the support of its national chapters. By September, most of the countries of the Region had taken steps to ensure that no importations of wild poliovirus had occurred. Reports are still outstanding from Argentina, Brazil, Costa Rica, Cuba, Dominican Republic, Ecuador, Paraguay, and Venezuela.*

*The following is a brief summary of the steps that have been taken. No evidence of any importations has been found.*

#### English-speaking Caribbean and Guyana

Senior national health ministry authorities and Rotary PolioPlus chairmen were fully briefed on the outbreak in the Netherlands and the Canadian findings. Careful screening in individual countries found no religious groups that refuse to be vaccinated. Even in Jamaica, where three religious communities with ties to the Netherlands exist, they do not refuse vaccination. Health workers nonetheless reviewed the immunization cards of all children under the age of 15 years living in those communities. All had been properly vaccinated.

Given these findings and the fact that OPV-3 coverage rates range from 74% to 100% of children under the age of 1 year in 1992, national authorities in the English-speaking Caribbean decided that no special mass campaigns are required.

In Guyana no at-risk groups were identified.

#### Haiti

Three religious communities with ties to the Netherlands were identified and informed about the situation in Canada and the risk of importations. The Haitian communities do not refuse to be vaccinated. Stool samples taken from children and adults were found to be negative for poliovirus.

#### Central America

In Guatemala, stool samples taken from communities potentially at risk showed no poliovirus. The communities accept vaccination and were found to have an OPV3 coverage rate of 75.7% among children under five years of age.

In Honduras, health personnel met with regional religious leaders, surveyed vaccination coverage rates in children under 15 years of age, conducted a stool survey among religious groups with Canadian or European ties, and initiated a mass campaign to vaccinate children under 5 years old with OPV, whether or not they had been vaccinated previously. None of the religious communities identified refuse vaccination and they averaged an 80% coverage rate for children under 5 years old. Mop-up vaccination campaigns held in May and June boosted the nationwide coverage rate to 82% for children under 5 years old. Special epidemiologic surveillance measures have been instituted in municipalities that have coverage rates below 80%.

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In *Nicaragua*, health workers and members of Rotary International collaborated closely to identify religious groups that might be at risk, contacted their leaders, and mapped population movements, coverage rates, and morbidity data due to vaccine-preventable diseases. By July, 30% of the country's districts had responded. Only one community refusing vaccination was found.

*Panamanian* authorities established that no individuals associated with the outbreak in the Netherlands or the Canadian communities had visited the country since the outbreak. No further measures were reported.

In *El Salvador*, a national survey identified six religious communities that might be at risk. Further investigation found that they do not refuse to be vaccinated, however. Their demographic characteristics, travel patterns, morbidity profile, vaccination coverage rates, and AFP rates were analyzed. Stool samples were negative for poliovirus. As a precaution, a vaccination campaign with OPV and an active search for cases of AFP were carried out in the communities and surrounding areas.

## Mexico and Belize

*Mexico* was the first country to take measures to ensure that no importation had occurred directly from Holland or through Canada (see EPI Newsletter, Volume XV, No.3, June 1993). Further investigations were carried out among closed religious communities in the states of Coahuila, Chihuahua, Durango, Zacatecas, Campeche, Tamaulipas, and Quintana Roo. Of the 439 stool samples only 49 are still being analyzed. The rest were negative, had other enteroviruses, or had vaccine virus.

Mexican health workers found that there were communities potentially at risk living along the border with Belize, which was alerted.

In exemplary intercountry cooperation, *Belize's* investigation of the Cayo and Orange Walk border districts was carried out jointly with Mexican health authorities. The travel patterns, AFP rate, and OPV vaccination coverage of at risk communities were analyzed. Stool samples were taken from 1 of every 10 individuals who had family members who had traveled recently to Canada, and from an infant whose family objects to vaccination. None of the other community members have objections to OPV, although they do not accept measles vaccine.

Joint follow-up by Mexico and Belize will include periodic stool sampling among risk groups, monitoring coverage rates, and promoting vaccination with OPV among all age groups. Health professionals belonging to the communities are assisting in the endeavor.

## Andean Countries

Health authorities in *Bolivia* issued a nationwide alert, inventoried communities that might be at risk, reviewed the data with the Interagency Coordinating Committee, and found no groups that refuse to be vaccinated.

Several closed communities that refuse to be vaccinated were found in *Colombia*, in the departments of Antioquia,

Caldas, Guajira, and Narino. Stool samples were taken from a total of 46 stool samples were taken. No wild poliovirus has been detected so far, although not all had been processed at the time this Newsletter went to print.

*Peruvian* health workers at the national and departamental level have searched for religious communities that may be at risk. No closed communities that refuse vaccination have been detected to date. Should they be, stool samples will be collected from children under 5 years of age and an active search for cases of AFP will be conducted in surrounding areas.

## Southern Cone

*Brazilian* health workers surveyed the entire country and identified closed religious communities that might be at risk in 8 states. They took stool samples from several hundred healthy children. Laboratory results are pending. A full report will be issued in a future issue of this Newsletter.

EPI personnel were placed on alert in *Chile*. No at-risk groups were identified.

In *Uruguay*, a search throughout national health districts found no groups that refuse vaccination for religious or other reasons. Even communities with ties to groups in other countries that object to being vaccinated were found to accept vaccination in Uruguay.

*Source:* Reports from respective national health ministries and PAHO/WHO country epidemiologists.

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## Panama: Whooping Cough Outbreak

An outbreak of whooping cough (pertussis) has occurred in several districts of Panama that have low DTP coverage rates. As of epidemiologic week 40 (9 October) 137 cases had been reported, of which 125 occurred in the northern districts of Chiriqui Grande and Bocas del Toro, bordering Costa Rica. Both districts are considered high risk areas.

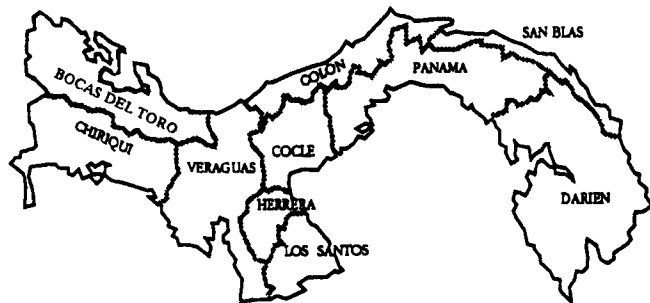
Panamanian health authorities issued an alert to regional health directors, epidemiologists and hospitals, in which they were instructed to proceed on a priority basis to vaccinate infants older than 2 weeks, with a month-long interval between doses.

The alert specified the following case definition:

- Suspected pertussis: cough lasting 14 days or more.
- Probable pertussis: paroxysms of cough with vomiting or inspiratory drowning.
- Confirmed case: isolation of *Bordetella pertussis*, hemogram leukemoid reaction, or contact with a probable or confirmed case.

## EPI Reviews

Case investigators are to search for symptomatic contacts, record the vaccination status of both cases and family members, and attempt to isolate the *Bordetella pertussis* bacterium using the Bordet-Gengou culture.



Children under the age of 7 who have been in contact with a case and have not had the full course of DTP vaccine are to be kept out of nurseries and schools until they have completed antibiotic treatment. A fourteen-day regimen of erythromycin is recommended for household contacts.

*Source:* Whooping Cough Outbreak in Bocas del Toro, Circular Bulletin, Department of Epidemiology, Ministry of Health, Panama.

### Editorial Note:

In 1992, only 32% of the municipalities in Panama had DTP1 coverage rates above 90%. Nine percent had DTP3 coverage rates below 50%, and 58% had DTP3 coverage rates ranging between 50 and 79%. In mid-1993, 26% had DTP1 coverage rates above 90%, 8% had DTP3 coverage rates below 50%, and 44% had DTP coverage rates between 50 and 79%. The areas where the outbreak is taking place have had DTP3 coverage rates consistently below 50%.

DTP coverage rates are one of the best indicators of access to health services, and municipalities in which they are low tend to be underserved. Unvaccinated children and those who have received less than the full schedule of three doses may become seriously ill. Maternal antibodies to pertussis are not transferred and infants are therefore susceptible shortly after birth.

Much work remains to be done to improve surveillance for whooping cough throughout the Region, a task that is hampered by difficulties in diagnosing it, especially when it occurs in children who are younger than 6 months.

The outbreak in Panama underscores the importance of adopting a standard case definition throughout the Americas. Adopting a uniform definition would improve surveillance data and analysis significantly, since pertussis is one of the most poorly reported vaccine-preventable diseases.

Simultaneously, the outbreak serves as a reminder that maintaining high coverage rates and eliminating missed opportunities for vaccination is critical and countries should not be lulled into complacency by improving averages.

*The countries of the Andean Region, the Southern Cone, and Brazil recently held their yearly EPI review meetings. Brief summaries of the final reports are presented below. The full reports may be obtained by sending requests to the editor of the EPI Newsletter.*

### Southern Cone, Bolivia and Brazil

Representatives of Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay met in Porto Alegre, Brazil from 14 to 16 September 1993 to review the status of their polio eradication, neonatal tetanus control, and measles elimination efforts. The meeting was presided by Dr. Joao Batista Risi, Jr., a member of the Technical Advisory Group (TAG). Rotary International, UNICEF, and the Government of Mexico were also represented.

Overall, it was noted that the polio eradication effort has had a major impact in raising coverage levels for all EPI antigens.

### Poliomyelitis

The latest case of poliomyelitis caused by wild poliovirus in these countries occurred in Brazil in 1989. Except for Argentina and Brazil, all of the countries have formed National Eradication Certification Commissions, whose job it will be to review national surveillance data and ensure that the criteria for certification have been met. So far, only Paraguay satisfies all five surveillance indicators.

The quality and packaging of stool samples sent to laboratories for analysis has improved, although some samples are still arriving without their proper epidemiologic identification number.

It was concluded that since the countries of the Southern Cone have not isolated wild poliovirus for so long and OPV coverage rates are high, its countries should take the lead in the American Region certification effort. This will require that their Commissions are properly constituted and that the respective health ministries provide them with the information they require to document the status of the eradication campaign and the steps that remain to be taken. The Commissions' findings should in turn be submitted to PAHO/WHO to be forwarded to the International Certification Commission for Polio Eradication. Special note was made that it is important to ensure that all cases of acute flaccid paralysis are investigated within 48 hours, have two stool samples taken within 14 days of the onset of paralysis, and have five contact stools tested. Countries were urged to take steps to guarantee that stool samples arrive at the laboratories properly identified, refrigerated, and in sufficient amounts to be analyzed.

### Neonatal Tetanus

To reach the goal of eliminating neonatal tetanus by 1995, the countries must concentrate on reaching all women of child-bearing age living in high-risk areas in each district or municipality and vaccinating them with tetanus toxoid. To date only Bolivia keeps records of such special vaccina-

tion outreach programs that go well beyond routine health services. Other countries register the vaccination of pregnant women, a measure that contributes to neonatal tetanus control but will not achieve elimination. The need to fine-tune the definition of risk groups and hence use vaccine supplies wisely in densely populated high-risk areas was discussed. Such problems notwithstanding, the number of cases of neonatal tetanus reported each year has declined steadily.

### **Measles**

Argentina, Brazil and Chile have held national vaccination campaigns to reach the 1 to 14 year-old age group, with a success rate of around 96%. They are now in the process of establishing rash and fever surveillance. Paraguay is the only country of the Region that has seen a rise in the number of cases of measles. Since measles there could be imported to neighboring countries, meeting participants underlined the importance that both Paraguay and Uruguay carry out national campaigns. Bolivia has scheduled its campaign for April, 1994.

It was recommended that those countries that have embarked on a measles elimination program should maintain 100% coverage levels for each cohort of children under 1 year of age. Sufficient vaccine supplies must be guaranteed to make this possible. Countries should document all measles outbreaks, analyze their epidemiologic traits, and notify neighboring countries when they occur at border sites.

### **Andean Countries**

The Andean subregion meeting took place in Santa Marta, Colombia, from 18 to 19 October. Delegates from the health sectors of Bolivia, Colombia, Ecuador, Peru, and Venezuela participated, and Rotary International and PAHO/WHO were represented.

Vaccination coverage levels for 1993 are projected to remain roughly at the levels of 1992, demonstrating that sustainability has so far been achieved. However, 63% of the municipalities still have measles vaccination coverage rates below 80%, which is unsatisfactory if the transmission of the disease is to be cut short.

### **Poliomyelitis**

The countries set September 1994 as the date by which all would seek to have met the surveillance indicators the International Commission for the Certification of the Eradication of Poliomyelitis considers criteria for success.

The last wild poliovirus was detected in Peru in 1991, in Colombia in 1991, Ecuador in 1990, Venezuela in 1989, and in Bolivia in 1987. Laboratories are averaging an enterovirus isolation rate of above 15% for stool samples from all of the countries, which indicates that the samples are being gathered and transported properly. Quality control tests run by PAHO and CDC also found the laboratories' cultures techniques to be satisfactory.

It was recommended that special attention be paid to high risk population groups (those that refuse to be vaccinated) to prevent importations from circulating. Other coun-

tries were urged to follow Bolivia and Ecuador's example of providing rewards, with Rotary International funding, for whomever first reports a case of acute flaccid paralysis that turns out to be caused by wild poliovirus. All of the countries are expected to have constituted national commissions for polio eradication certification by the end of the current year.

### **Neonatal Tetanus**

The Andean Region has witnessed a drop in the frequency of neonatal tetanus along with an improvement in the investigation of cases. Emphasis was placed at the meeting on defining women of child-bearing age in densely populated risk areas, who require special tetanus toxoid vaccination programs. It was agreed that health authorities should be urged to allocate the resources required for this and that efforts should continue to identify new risk areas.

### **Measles**

The number of cases of measles has dropped in recent years, but the Andean Region still accounted for 75% of all measles reported in the Americas in 1993. Of the 3,426 districts reporting for 1992, 64% had coverage levels below 80%. Colombia and Peru undertook national mass vaccination campaigns targeting children aged 9 months to 14 years. They achieved 96% and 66% coverage rates, respectively. Bolivia, Ecuador and Venezuela will soon initiate similar campaigns.

PAHO urged that the countries involved also assign sufficient resources to ensure that rash and fever surveillance gets under way as soon as possible. To make feedback possible, it was recommended that weekly national measles surveillance bulletins be issued.

### **Caribbean Managers Meeting**

The Tenth EPI Sub-Regional Managers' Meeting will be held in Tobago on 22-26 November. Nineteen countries are expected to attend. They will present and complete their respective national immunization plans.

The main issues will be the elimination of measles by 1995 and the certification of the eradication of wild polio virus from the Region. Immunization against diphtheria, pertussis, tetanus, poliomyelitis and measles are routinely given in all 19 countries. Further improving the quality and increasing the coverage of these antigens among children under one year of age is one of the main objectives of the meeting. EPI managers and health centers will be encouraged to estimate their target immunization populations and monitor progress on a monthly basis, using the special reporting form developed by CAREC.

Promotion of proper storage, handling and utilization of vaccines at all levels of the EPI, training and re-training of all the EPI staff, and health education to encourage community participation in immunization coverage, will also be discussed.

*Source:* Final Report, V Andean EPI and Polio Eradication Review Meeting, 18-19 October, 1993, Santa Marta, Colombia. Final Report, IX Meeting of the Southern Cone Countries, 14-16 September, 1993, Porto Alegre, Brazil. EPI in the English-speaking Caribbean and Suriname, A Review of Activities in 1992 and Programme for 1993.

# Handling Damaged Vaccine

In the October 1993 issue of the *EPI Newsletter* the article titled "Monitoring a Refrigerator's Temperature" appeared on page 8. The accompanying table was filled in with the number of days that varying temperatures were registered in a refrigerator from a fictitious health establishment (see Table 1). The article presented the reader with a list of possible problems and steps to the refrigerator's temperature performance. However, it did not provide the reader with guidelines regarding what to do with vaccine (DPT,TT,DT) that has been damaged, exposed to heat, or frozen. In the case of heat exposure there is no way to confirm visually whether or not there has been a loss of potency.

**Table 1. Ranges of Monitored Temperatures**

| Temperature (0°C)  | Days |
|--|------|
| 10°C - 1°C   | 2    |
| 0°C - 8°C  | 48   |
| 9°C - 10°C   | 10   |
| 19°C - 30°C  | 0    |
| % within range*  | 80   |
| <b>Observations:</b><br>Total days analyzed = 60 days<br>% within range = 48 divided by 60 days<br>* % within range is the percent of days that the refrigerator maintains optimal temperatures. |      |

The purpose of this article is to offer suggestions to health workers who experience a cold chain failure that they believe has damaged stored vaccine. Table 2 lists the criteria for determining if the number of doses involved justify retesting the vaccine. Vaccine potency testing is a lengthy and costly procedure, so the number of doses that justifies the process is rather large. Smaller quantities than the number of doses shown in Table 2 should be disposed of if there is strong reason to believe or if data show that the vaccine may be damaged.

Vaccine like DPT, DT, and TT that has been frozen erroneously can be checked by a *simple shake* test to determine whether the toxoids have been damaged. At tempera-

tures below -3 degrees Centigrade there is a strong risk that vaccines will have been damaged. If the data show that this is the case or you suspect it strongly, follow these instructions, selecting a vial that has been frozen:

\* shake the vial vigorously

\* set it on top of a table and answer the following questions, checking off the appropriate box:

| QUESTION   | yes | no |
|--|-----|----|
| 1) liquid vaccine contains floccules or is granular in appearance  |     |    |
| 2) after 15 minutes the liquid separates, and sediment collects at the bottom of the vial                                      |     |    |
| 3) after 30 minutes there is almost a complete separation, consisting in clear liquid and a pellet of sedimentation of vaccine |     |    |
| 4) after one hour the vaccine is completely sedimented and when you tilt the vial the pellet of sedimentation hardly moves     |     |    |

If you have answered yes to all questions or to the last three questions, the vaccine has been frozen and should be discarded or retested if the number of doses involved is large enough to warrant it.

Finally, if the temperature data recorded confirm that the vaccine in the refrigerator has been exposed to temperatures between +10 and +12 degrees Centigrade for several (3-7 days), there probably has been little damage done to the vaccine and it can be used safely if it is known to meet PAHO/WHO requirements. Most importantly, action should be taken to correct the temperature of the refrigerator by following the actions suggested in the article in the October 1993 issue of this newsletter. **In addition, the person responsible for the vaccine refrigerator should check the thermostat setting!** If the temperature history of the vaccine shows that it has been exposed to high temperatures (greater than +12 degrees Centigrade) for long periods of time (over 7 days), the vaccine should not be used until the supervisor is consulted and the decision is made whether to test it or dispose of it.

**Table 2. Minimum Quantity of Vaccine Justifying Potency Testing**

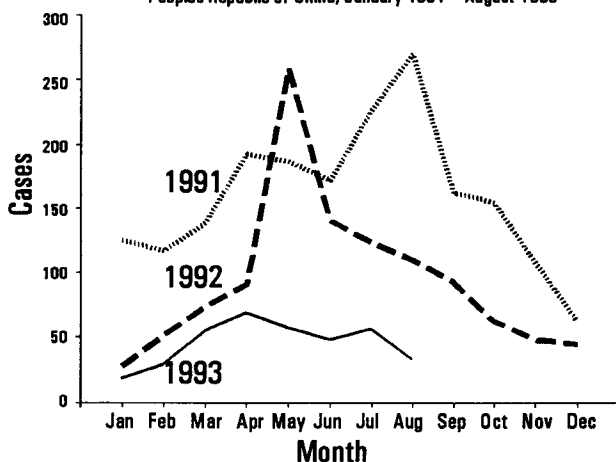
| Vaccine   | Number of doses justifying a test                  | Number of doses needed for a test | Time when report is expected (in months) | Conditions of transport |
|---|--|-----------------------------------|--|-------------------------|
| Poliomyelitis (oral)<br>Measles (freeze-dried)<br>Yellow fever (freeze-dried) | 20 000   | 20                                | one month                                | from 0°C to +8°C        |
| BCG (freeze-dried)  | 20 000   |                                   | three months                             |                         |
| Diphtheria-pertussis-tetanus  | 200 000  |                                   |  |                         |
| Tetanus Toxoid  | 50 000   |                                   |  |                         |
| Hepatitis B   | 10 000   |                                   |  |                         |
| Poliomyelitis (inactivated)   | Until potency test is established<br>Do not retest |                                   |  |                         |

# China Holds National Immunization Days

The People's Republic of China will begin a massive campaign to eradicate poliomyelitis by 1995. Beginning in December, 1993 it will conduct National Immunization Days that target approximately 100 million children under the age of four years to receive oral poliovirus vaccine in each of two separate rounds of vaccination.

Because of the large population in China (approximately 21% of the world's population) and the proportion of worldwide poliomyelitis cases occurring there, the Chinese vaccination initiative is crucial to the global eradication effort. In 1990, of the total 21,627 poliomyelitis cases reported to WHO, 6085 (23.4%) occurred in China; in 1992, however, the number reported by China decreased to 1181 (7.7%) of 15,445 total cases. The absolute and relative decreases in poliomyelitis in China have been associated with the initiation of supplementary vaccination activities by an increasing number of provincial health departments. These activities have been conducted in addition to routine vaccination of children with three doses of OPV at ages 2, 3 and 4 months.

FIGURE 2. Reported poliomyelitis cases from routine notifiable diseases reporting system, by month  
Peoples Republic of China, January 1991 - August 1993

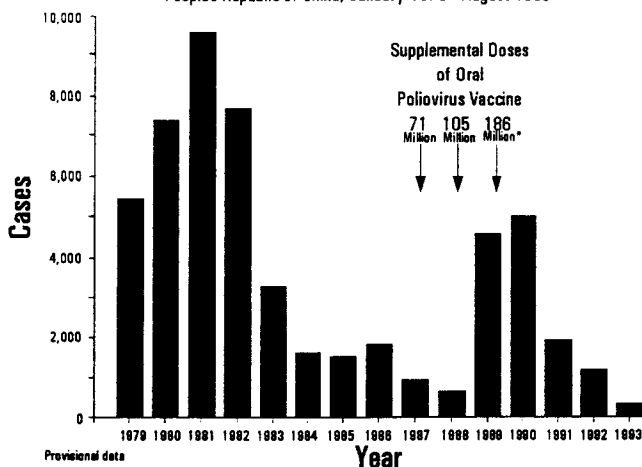


Supplemental vaccination activities in China have included administering one or two extra doses of OPV to young children (generally those aged <4 years) at 1-2 month intervals during the low-incidence season for poliomyelitis (i.e., December-April). The number of provinces conducting the WHO-recommended two rounds of supplemental vaccination activities during low-incidence season increased from six of 30 during 1991-92 to 25 provinces during 1992-93. As a consequence, the number of supplemental doses of OPV administered during the low-incidence season increased from 71 million during 1990-1991 to 186 million during 1992-93 (Figure 1). During January-August 1993, 348 poliomyelitis cases were reported through the notifiable diseases reporting system, compared with 877 cases during January-August 1992; in addition, there was no characteristic summertime seasonal increase in reported cases during 1993 (Figure 2).

Although reported cases of poliomyelitis in 1993 have occurred throughout China, a high proportion have been reported from southern provinces. Of the 348 cases reported

through August 1993, 107 (31%) were from one southern province (Guangdong); in addition, 231 (66%) have been reported from six southern provinces (Fujian, Guangdong, Guangxi, Guizhou, Hainan, and Jiangxi), which comprise 19% of the population of China.

FIGURE 1. Reported cases of poliomyelitis and doses of vaccine administered by year  
Peoples Republic of China, January 1979 - August 1993



**Editorial Note:** The plan for implementing National Immunization Days in China is based on three factors: 1) the success of the provincial supplemental vaccination activities, 2) concerns about the potential accumulation of susceptible children since the nationwide poliomyelitis outbreak during 1989-1990 (Figure 1) in parts of China still not adequately covered by previous provincial supplemental vaccination activities, and 3) the goal of eradicating poliomyelitis from the Western Pacific Region (WPR) of WHO by 1995. China and other member countries in the WPR have committed to eradicate poliomyelitis by 1995. Only five of the 29 countries in the region (Cambodia, China, the Lao People's Democratic Republic, Philippines, and Vietnam) continue to report endemic poliomyelitis--of the 1908 cases that occurred in this region since 1992, 1191 (62%) were reported from China.

The apparent elimination of wild poliovirus infections in the Americas and the substantial progress already achieved in the WPR underscore the feasibility of achieving this goal in WPR and other regions of the world. The successful implementation of National Immunization Days will assist WHO and member countries in the global application of the strategies for eradication recommended by WHO. Additional National Immunization Days in China are planned for 1994-1995 and 1995-96. The success of such public health efforts is dependent on the support and collaboration of organizations from the public and private sectors including, for example, the Ministry of Public Health, health departments in each of the Chinese provinces, Rotary International, the Japanese International Cooperation Agency, WHO, and the United Nations Children's Fund (UNICEF).

Source: National Poliomyelitis Immunization Days--People's Republic of China, 1993, Morbidity and Mortality Weekly Report, November 5, 1993, Vol. 42, No. 43, U.S. Centers for Disease Control and Prevention, U.S. Department of Health and Human Services.

# Reported Cases of Selected Diseases

Number of reported cases of measles, poliomyelitis, tetanus, diphtheria, and whooping cough, from 1 January 1993 to date of last report, and the same epidemiological period in 1992, by country.

| Subregion and country  | Date of last Report | Measles  |       |           |       | Poliomyelitis |      | Tetanus      |      |          |      | Diphtheria |      | Whooping Cough |       |
|------------------------|---------------------|----------|-------|-----------|-------|---------------|------|--------------|------|----------|------|------------|------|----------------|-------|
|                        |                     | Reported |       | Confirmed |       |               |      | Non Neonatal |      | Neonatal |      |            |      |                |       |
|                        |                     | 1993     | 1992  | 1993      | 1992  | 1993          | 1992 | 1993         | 1992 | 1993     | 1992 | 1993       | 1992 | 1993           | 1992  |
| <b>LATIN AMERICA</b>   |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| <b>Andean Region</b>   |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| Bolivia                | 9 Oct.              | 1 161    | ...   | ...       | ...   | 0             | 0    | ...          | ...  | 16       | ...  | 11         | ...  | 67             | ...   |
| Colombia               | 9 Oct.              | ...      | ...   | ...       | ...   | 0             | 0    | ...          | ...  | 60       | ...  | ...        | ...  | ...            | ...   |
| Ecuador                | 9 Oct.              | 2 303    | ...   | ...       | ...   | 0             | 0    | 85           | ...  | 61       | ...  | 10         | ...  | 147            | ...   |
| Peru                   | 2 Oct.              | 1 244    | ...   | ...       | ...   | 0             | 0    | 76           | ...  | 85       | ...  | 4          | ...  | 450            | ...   |
| Venezuela              | 18 Sept.            | 14 961   | 8 163 | ...       | ...   | 0             | 0    | ...          | ...  | 15       | 18   | 0          | 1    | 374            | 294   |
| <b>Southern Cone</b>   |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| Argentina              | 31 July             | 2 817    | ...   | ...       | ...   | 0             | 0    | 19           | ...  | 5        | ...  | 1          | ...  | 791            | ...   |
| Chile                  | 10 July             | 1        | ...   | ...       | ...   | 0             | 0    | 8            | ...  | 1        | ...  | 8          | ...  | 473            | ...   |
| Paraguay               | 3 July              | 627      | 128   | ...       | ...   | 0             | 0    | 29           | 11   | 18       | 7    | 3          | 2    | 135            | 79    |
| Uruguay                | 31 July             | 7        | 171   | ...       | ...   | 0             | 0    | 2            | 3    | 0        | 0    | 0          | 0    | 13             | 29    |
| Brazil                 | 12 June             | 1 187    | ...   | ...       | ...   | 0             | 0    | 456          | ...  | 74       | ...  | 119        | ...  | 1 779          | ...   |
| <b>Central America</b> |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| Belize                 | 16 Oct.             | 16       | 25    | 0         | ...   | 0             | 0    | ...          | 1    | ...      | ...  | ...        | ...  | ...            | 0     |
| Costa Rica             | 16 Oct.             | 468      | ...   | 162       | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| El Salvador            | 16 Oct.             | 78       | ...   | 35        | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Guatemala              | 16 Oct.             | 276      | ...   | 17        | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Honduras               | 16 Oct.             | 87       | ...   | 13        | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Nicaragua              | 16 Oct.             | 418      | ...   | 327       | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Panama                 | 16 Oct.             | 278      | 479   | 90        | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Mexico                 | 16 Oct.             | 550      | 493   | 115       | 493   | 0             | 0    | 120          | 127  | 72       | 110  | 0          | 0    | 122            | 90    |
| <b>Latin Caribbean</b> |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| Cuba                   |                     | 0        | ...   | ...       | ...   | 0             | 0    | 0            | ...  | 0        | ...  | 0          | ...  | 0              | ...   |
| Haiti                  |                     | ...      | ...   | ...       | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Dominican Republic     |                     | ...      | ...   | ...       | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| <b>CARIBBEAN</b>       |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| Antigua & Barbuda      | 16 Oct.             | 1        | 2     | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Bahamas                | 16 Oct.             | 2        | 16    | 0         | 0     | 0             | 0    | ...          | 0    | ...      | 0    | ...        | 0    | ...            | 3     |
| Barbados               | 16 Oct.             | 24       | 15    | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Dominica               | 16 Oct.             | 13       | 8     | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Grenada                | 16 Oct.             | 8        | 10    | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Guyana                 | 16 Oct.             | 26       | 42    | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Jamaica                | 16 Oct.             | 48       | 84    | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| St. Kitts/Nevis        | 16 Oct.             | 4        | 9     | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| St. Vincent            | 16 Oct.             | 2        | 6     | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Saint Lucia            | 16 Oct.             | 19       | 35    | 0         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Suriname               | 16 Oct.             | 9        | 16    | 1         | 0     | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | ...            | ...   |
| Trinidad & Tobago      | 16 Oct.             | 43       | 58    | 0         | 0     | 0             | 0    | ...          | 7    | ...      | 0    | ...        | 0    | ...            | 1     |
| <b>NORTH AMERICA</b>   |                     |          |       |           |       |               |      |              |      |          |      |            |      |                |       |
| Canada                 | 24 April            | 95       | ...   | ...       | ...   | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | 1 238          | ...   |
| United States          | 04 Sept.            | ...      | 1 875 | 234       | 2 116 | 0             | 0    | ...          | ...  | ...      | ...  | ...        | ...  | 2 820          | 1 588 |

... Data not available.

# Global Advisory Group: Immunization Needs Strengthening

*The XVI EPI Global Advisory Group held its annual meeting in Washington, D.C. from 11 to 15 October. More than 90 participants from around the world took part in discussing the main issues: the eradication of polio by the year 2000, the elimination of neonatal tetanus and significant reduction of measles by 1995, immunization in urban areas, control of hepatitis B, and vaccine self-sufficiency. The final report will be issued at the end of 1993 by EPI/WHO, Geneva. The salient conclusions and recommendations are paraphrased below.*

Approximately 2.9 million childhood deaths due to measles, neonatal tetanus, and pertussis, and about 400,000 cases of paralytic poliomyelitis are prevented each year at current levels of immunization. The World Bank has identified immunization as one of the most cost-effective public health interventions. Yet 2 million children continue to die annually from vaccine-preventable diseases. Additional resources are urgently required to meet national vaccine coverage targets. The GAG was concerned by the failure to move beyond the 80% coverage target achieved in 1990. Low immunization coverage is a recipe for trouble, as the diphtheria epidemics in certain Eastern European countries demonstrate. In settings where the primary care infrastructure and management is not yet fully developed, the delivery of immunization should not be delayed awaiting their completion.

National governments should urgently identify reasons for persistently low or decreasing coverage and design solutions. Vaccination coverage and disease incidence should be assessed ward-by-ward in urban areas, with special attention to "hard-to-reach" populations, such as transient or displaced persons.

At the same time, sustainability through vaccine self-sufficiency should be fostered. Vaccines should be considered a strategic commodity for development. Donors should assist countries in this process through such means as the Vaccine Independence Initiative and especially should ensure funds for sufficient vaccine to accelerate progress toward global polio eradication.

Polio-endemic countries adjacent to zones apparently free of polio should be a high priority to receive technical and financial assistance.

Where neonatal tetanus is concerned, the GAG recommended that priority external assistance be given to countries in which 80% tetanus toxoid coverage of women of childbearing age has not been achieved in risk areas. Success in reaching the 1995 target was defined as achieving a rate of less than 1 case of neonatal tetanus for every 1,000 live births in every district of every country.

Measles, one of the greatest killers of children in history, continues to cause significant death and disease. Routine coverage with measles vaccine of 90% or more in the first year of life is essential for its control. Reaching the children of the urban poor requires special efforts. Mortality from measles can be reduced by proper management and all severe cases in areas with high case-fatality rates should be treated with vitamin A.

As for Hepatitis B, the GAG recommended that countries with a high burden of the disease should add HB vaccine to their immunization programs without jeopardizing the regular purchases of other priority vaccines.

*Source: Draft Summary of Conclusions and Recommendations, Expanded Programme on Immunization Global Advisory Group, 11-15 October 1993, Washington, D.C.*

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