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FINAL REPORT

FIFTH MEETING OF THE TECHNICAL ADVISORY GROUP ON
ERADICATION OF POLIOMYELITIS IN THE AMERICAS

LIMA, PERU

26-28 JANUARY 1988

I. INTRODUCTION

The Fifth Meeting of the Technical Advisory Group (TAG) of EPI was held from 26 to 29 January 1988 with the fundamental purpose of reviewing the advances in EPI in the countries of the Andean Region and updating knowledge of the programs in the countries that had previously been studied by TAG, such as Brazil, Mexico, and the countries of Central America. Advantage was taken of the meeting to review certain studies on cases of flaccid paralysis that were carried out in Paraguay and Chile. Some operational studies carried out in Costa Rica (lameness survey in school children) and Nicaragua (survey on lost opportunities for vaccination) were also presented. In addition, knowledge of some research being carried out in some countries was updated, such as field studies with polio vaccine with new formulas, acellular pertussis vaccine, and measles vaccine from the Edmonston-Zagreb strain.

A significant portion of the meeting was devoted to review of the current situation of the laboratory network that supports the program in the various countries. Attending the meeting were representatives of UNICEF, Rotary International, AID, and 70 participants from nine countries, including the directors of the laboratories of the aforementioned network, national EPI staff and EPI/PAHO staff, staff from other PAHO programs, and several short-term consultants who support development of the program at the regional and country levels.

The meeting was presided by Donald A. Henderson, president of the TAG. The secretary was Ciro de Quadros. The Agenda and List of Participants may be found in Annex I and II, respectively.

2. SUMMARY OF COUNTRY REPORTS

BOLIVIA

In 1987, 11 suspected cases were reported, of which four were confirmed. The seven discarded cases received the following diagnoses: traumatic genu (1), post-chicken pox polyradiculoneuritis (1), Guillain-Barré Syndrome (GBS)(3), favorable evolution without further diagnosis (2).

Two feces samples were taken; one gave a negative result and the other produced no result.

Coverage with OPV in children under one year of age was 28% for 1987.

COLOMBIA

In 1987, 190 cases were reported; 55 were subsequently discarded, 81 confirmed, and 54 were still pending final classification. The greatest number of confirmed cases was found in the departments of the Atlantic Coast, which have morbidity rates approximately five times higher than the departments of the Sierra.

Of the cases confirmed in children under five, 16% had received three or more doses of OPV and 43% had not received any dose; 58% of the cases were confirmed by laboratory (isolation and/or serology); and 3% were confirmed only by the presence of sequelae.

Polio Type 1 was isolated in 26 cases; Type 2 in one case, and Type 3 in 12 cases.

Seventy percent of the 55 discarded cases had a final diagnosis: including 12 cases of Guillain-Barré Syndrome, of which seven correspond to children under five years of age.

In 1987 three National Vaccination Days were organized; in two of them only OPV was administered. Coverage with the third dose of OPV in children under one year of age was 82%.

ECUADOR

In 1987, 29 cases were reported, of which 10 were confirmed as paralytic poliomyelitis. The province of Guayos was the most affected, with nine cases, especially the urban fringe area of the city of Guayaquil.

The age group of greatest incidence was that of children under one year of age, in which a coverage of 47% was attained with third doses of OPV, with a drop-out rate of 42% between first and third doses.

Beginning in Epidemiological Week 2, 24 suspected cases were reported. All were investigated, 21 were classified as probable, and of these 10 were confirmed.

Six cases were confirmed by isolation or serology plus sequela; one by isolation or serology; one by sequela; one by epidemiological nexus with another case; and one by death.

Of the seven cases confirmed by laboratory (viral isolation in feces), three were poliovirus Type 1, two Type 2, and two Type 3.

Complete vaccination schedules were administered in 30% of the cases.

Investigation in most of the cases was performed within the first 24 hours after they were reported; the period of time between the onset of paralysis and care in a health establishment was quite long in many cases, from zero up to 32 days.

PERU

In 1987, 79 cases of polio were reported, 37% were discarded, 48% confirmed, and 15% remain as probable.

Of the reported cases, 80% occurred in the Department of Lima, which has 40% of the country's population. The other cases occurred throughout the country.

Coverage of vaccination in children under one year of age in 1987 is even lower (34%) than in 1986 (50%).

VENEZUELA

In 1987, 98 probable cases of poliomyelitis were reported, of which 35 were confirmed, 45 discarded, and 18 cases are pending final classification.

With the exception of two states and a territory, the cases occurred throughout the entire territory of Venezuela; 37% had received three or more doses of OPV and 22% had not.

Eighteen cases were confirmed to have sequelae 60 days after the beginning of the disease and 13 cases had some laboratory confirmation (isolation or serology). All types of poliovirus circulated in the country (poliovirus Type 1 in four cases, Type 2 in one case, and Type 3 in four cases).

Diagnosis of Guillain-Barré Syndrome was the most frequent among the discarded cases (13 cases).

Apparently, in accordance with administrative data, coverage with the third dose of OPV in children under one year of age is diminishing; it was 57% for 1986.

BRAZIL

In 1987, 690 cases were reported in Brazil. As of the third week of 1988, 282 (44.5%) of them had been confirmed. When compared with 1986, these figures represent a reduction of 54% in the number of cases and 57% in incidence. There still remain 96 cases (13.9%) pending final classification, all reported after week 44.

Of the cases confirmed, 67% were in the northeastern region.

Investigation is carried out within 48 hours after the notification in 83.3% of the cases.

Type 3 accounted for 61.6% of isolated poliovirus, Type 1 for 19.7%, and Type 2 for 15.1%.

Of the confirmed cases, 36.8% had received complete doses of vaccine. Laboratory examinations were used as criteria for confirmation in only 26.2% of the cases.

Of the discarded cases, 31.4% were diagnosed as Bell's paralysis, 16.8% as Guillain-Barré Syndrome, and 8.6% from other enteroviruses. The remaining percentage received other diagnoses.

Facial paralysis in Rio Grande do Norte:

Analysis of the data from epidemiological surveillance of polio in Brazil showed that the proportion of notifications of acute paralysis with a single clinical picture of isolated facial paralysis increased markedly in 1987 in comparison with 1986. However, in Rio Grande do Norte this proportion showed one case of isolated facial paralysis for each case of acute paralysis without reported facial involvement. This phenomenon is not due to an increased selective rate of the report of cases of isolated facial paralysis in Rio Grande do Norte. On the contrary, the marked differences between cases of isolated facial paralysis and confirmed cases of polio without facial involvement suggest that an outbreak of facial paralysis occurred owing to causes other than the poliovirus. In general, cases of isolated facial paralysis have an average age of 4.5 years and have received three doses more of polio vaccine than confirmed cases of polio without facial involvement.

Although 58% of the cases of isolated facial paralysis reported a history of previous infections that are recognized as being associated with facial paralysis, it cannot be determined if such infections had a causal relationship to subsequent cases of paralysis.

The results of laboratory examination for the polio enteroviruses in the cases of isolated facial paralysis in Rio Grande do Norte and of the expanded analysis of all cases of isolated facial paralysis reported in Brazil in 1987 are still pending.

GUATEMALA

The Ministry of Health reported 43 cases of flaccid paralysis during 1987. Of these 43 cases, 16 were confirmed as polio, 21 were discarded, and 6 were classified as probable. In order to confirm the 16 cases, clinical and epidemiological criteria were used, since neither serology or virus isolation techniques were used.

Vaccination coverage remains very low.

HONDURAS

In 1987, 61 cases of acute flaccid paralysis, compatible with poliomyelitis were reported, five of these cases have been confirmed: 3 with positive culture (2 poliovirus Type 1 and 1 poliovirus Type 3), 1 for lack of follow-up, and 1 by death without follow-up.

At the time of the meeting, five cases remained as probable and 51 had been discarded.

The regions of the country that made most reports are 3 and 4, which are also those that have the least coverage of vaccination with OPV.

It was found that 75% of the reported cases had received three or more doses, whereas in confirmed cases it was 60%.

Samples were taken in 87% of the reports, but no facilities exist for processing them.

MEXICO

Mexico continues to extend its surveillance system to all localities in its territory. During 1987, 174 cases of flaccid paralysis were reported. Of these, 50 were confirmed as polio and 10 continue pending classification. Of the 114 cases classified as discarded, 47 (41%) were identified as Guillain-Barré. Twenty-eight cases never received final diagnosis. Thirty-nine cases were discarded by virtue of other etiologies. Only in one case of the 50 confirmed as polio could poliovirus be isolated. These data indicate that problems still exist, especially in the areas of management of samples and the use of laboratory diagnosis to confirm cases. Complete research of cases and follow-up is also deficient.

CHILE

During the period of time between 1 January and 30 November 1987 a total of 64 cases of flaccid paralysis were reported, of which 67.8% had a history of complete vaccination.

Seventy-three percent of the cases were subjected to viral study; in 70.3% a cytochemical-bacteriological study of the cerebrospinal fluid was performed, and in 15.6% an electromyographic study and measurement of conduction speeds were performed. Only ECHO and Coxackie viruses were isolated. In one case, the titres of poliovirus Type 3 quadrupled.

Nine cases died and five were diagnosed as Guillain-Barré. In accordance with the criteria established by the Polio Eradication Field Guide, one of the patients who died--who could only be evaluated clinically--would be what has been defined as a confirmed case of poliomyelitis as long as investigation of the cases of flaccid paralysis in 1987 has not been concluded.

Vaccine coverage was evaluated for each commune in the country. For 1986, of the 335 communes in the country, 100 (29.9%) had coverage under 80% for the third dose of DPT and Polio, and 140 (41.8%) had coverage of less than 90% for measles. For the first half of 1987, 31 communes (9.3%) and 150 (44.8%) have low coverage respectively for the third dose of DPT, polio, and measles vaccines.

In 1986, only 1.5% of the total population of children under one year of age did not complete the vaccination schedule with DPT-OPV. It has been observed that in the third region of the country there is a concentrated accumulation of susceptibles, a situation that should be addressed by the corresponding health services.

PARAGUAY

A national retrospective study of acute flaccid paralysis was carried out in children under 15 years of age from January 1986 to July 1987. Thirteen probable cases of polio were identified and located, of which 10 cases were diagnosed as GBS, two as post-infectious neuropathy, and one as Bell's facial paralysis.

Analysis of vaccine coverage revealed that 71.5% of the 225 districts of the country have polio vaccination coverages of more than 90% in children under four years of age.

3. SUMMARY OF REPORTS OF REFERRAL LABORATORIES

Argentina

The Referral Laboratory of Argentina, Virus Department of the Carlos G. Malbrán National Institute of Microbiology, received samples from the Argentine provinces, and beginning in October 1987 began to receive samples from Paraguay.

During 1986 samples from 13 patients with acute flaccid paralysis were received, none of these was confirmed as polio. A fecal sample was received for each case, with no isolation of poliovirus in any of them.

Only three cases sent a second sample of serum, which presented stable titres for poliovirus by neutralization.

Coxsackie B5 was isolated from the fecal sample of one case.

During 1987, samples were received from 21 patients, of which six were from Paraguay.

Fifteen fecal samples were received, with poliovirus Type 1 isolated in one case and confirmed by the clinic from the Province of Buenos Aires.

Eight pairs of sera were studied by neutralization, six with stable titres, one with mobilization of titres for polio 1 and 2 in the confirmed case, and one with discrepant results owing to contamination of the sera.

Brazil

The Department of Virology of the Oswaldo Cruz Institute of Rio de Janeiro acts as a national reference center for enteroviruses and collaborates in supporting the National Network for Diagnosis of Poliomyelitis, which includes eight laboratories.

In 1986, 478 fecal samples were analyzed and 198 polio samples were isolated (56 Type 1, 16 Type 2 and 126 Type 3), which constitutes 41.3% of isolation. In 1987, 134 polio samples were isolated (17 type 1, 13 type 2 and 53 type 3), yielding a 38.1% rate of isolation.

In 1986, 283 matched samples were examined of the cases confirmed and 55.9% were obtained from seroconversion. In 1987 there was 47.5% of seroconversion starting from the study of 156 matched samples. This indicates a clear-cut difference in the rate of conversion according to whether samples are collected within or outside ideal time periods.

In addition, 23 samples from patients were examined sent from Bolivia, Paraguay, and Peru. Three samples of polio 3 and one of polio 1 were isolated out of a total of 10 samples of feces.

The samples in the country beginning in 1985 were isolated by means of monoclonal antibodies and, beginning in September 1987, by probes. With the two methods, nearly 480 and 120 samples were examined respectively. Generally speaking, good concordance was obtained, except for Type 2, where there were conflicting results.

CAREC

Polio diagnosis was carried out as part of the virology services provided to the 18 English-speaking countries of the Caribbean and Suriname, members of CAREC. As part of this program, diagnostic service is also

provided to the Dominican Republic and Haiti, which are the only countries that reported cases of polio in 1987.

Samples were analyzed of 11 suspected cases from Suriname. Two of them showed antibody titres of 1/3/0 for polio 1 in the sera of the acute phase and the convalescent phase. Polio was not isolated. Twenty-two matched sera were also analyzed, in addition to 19 individual sera from contacts or other cases of disease of the central nervous system. Six of the matched and five of the individual sera showed neutralizing titres of 1/320 for polio 1, and one from a four-year old child with meningo-encephalitis showed titres of 1/640 in three samples of serum. Haiti sent samples of nine cases from a school for disabled children that had been diagnosed in 1985 and 1986. The samples of sera sent in 1987 showed high titres for polio 1 in seven cases. The other two cases occurred in November 1987, and high titres of polio 1 and polio 2 were obtained from the samples of one of them.

Polioviruses were also isolated in cases that had not been diagnosed as polio, eight of Type 1, two of Type 2, and two of Type 3, from children with respiratory disease or gastroenteritis.

ECHO virus, Coxsackie A and B virus, adenovirus, and mumps virus were isolated in cases diagnosed with disease of the central nervous system from Barbados, Jamaica, Suriname, and Trinidad.

Colombia

Between January 1984 and December 1987 the Virology Laboratory of the National Institute of Health of Bogotá confirmed 103/539 cases of paralytic poliomyelitis as caused by poliovirus 1 (50), poliovirus 2 (17), poliovirus 3 (28), and indeterminate infection by poliovirus (8).

Some of the confirmed cases were illustrated and the phenomenon of nonspecific serological conversions was presented. The results of differentiation within strains were shown using a group of monoclonal antibodies prepared in the Pasteur Institute in Paris, and the level of lack of protection against poliovirus of the probable cases studied in the laboratory was discussed. In 1987, 39/192 cases were diagnosed, which represents 48% efficiency in the confirmation of paralytic poliomyelitis.

In addition, five strains of nonpolio virus were isolated that are in the process of identification.

INCAP

In 1987 the Dr. Leonardo Mata Laboratory of the Institute of Nutrition of Central America and Panama (INCAP) received from PAHO all the supplies and most of the laboratory equipment requested initially. The laboratory technician still has not been assigned by the Ministry, and two staff

members of INCAP participated in the Course on Technology of DNA Probes carried out at the CDC/Atlanta in August 1987.

Tissue cultures, culture media, and other reagents were provided to the laboratories of the Department of Epidemiology and Hygiene of Nicaragua.

A group from El Salvador visited the laboratory to be updated on the diagnosis of poliomyelitis. Samples of feces and matched sera were received from 33 patients in Guatemala and from 21 patients in El Salvador.

Mexico

During 1986-1987, the Department of Virology of the Institute of Health and Tropical Diseases of Mexico City received samples of 105 cases occurring in 1986 and of 126 cases occurring in 1987, for a total of 231 cases studied.

In 1986 there were 10 viral isolations of cases from eight states, among which are the Federal District, Jalisco, and Chiapas. The predominant serotype was 1, with five isolations. In two cases serotype 2 was recovered and in one case serotype 3.

By 1987 only one isolation of serotype 2 was recovered, in a case that was already in frank recovery and that had received trivalent oral vaccine five days before the taking of a sample of fecal matter that was sent to the laboratory.

Positive results were found by serology in 22 cases with a predominance of response toward serotype 1 in 10 of them. In 1987 seropositivity was found in three cases.

4. SUMMARY OF SOME STUDIES PRESENTED

Field studies with OPV

The expanded program on immunization has continued studies on better possible formulation for TOPV in tropical areas as a response to the clinical study carried out in Pernambuco, Brazil, in August 1986 (See summary of the 4th meeting of the TAG, Guatemala).

At the beginning of 1988 random selection will be made of 3,000 newborns in the northeast of Brazil, in Gambia, and in Indonesia. These children will receive four doses of TOPV with different concentrations of polio virus Types 1, 2, and 3. Four different vaccines will be evaluated and the serological response to each dose will be studied. At the next meeting of the TAG the preliminary results of the study will be presented.

Lost opportunities: Case study in Nicaragua

In order to estimate the vaccination opportunities lost in children from 1 to 35 months of age who go to first-level health units and to determine the reasons for nonapplication of the biologicals, 12 surveys were carried out in six regions of the country. Among the 3,276 children surveyed, 2,590 doses of vaccine should have been administered, of which 887 (34%) had actually been administered, a consequent loss of 1,703 vaccinations (66%). The most frequent reasons for nonvaccination were lack of vaccine (37%), failure to determine the need for vaccines (31%), and disease (19%). The results were presented and discussed with the health personnel at the local and regional level in order to identify and implement the most timely corrective measures.

Lameness survey in Costa Rica

The last case of poliomyelitis reported in Costa Rica was in 1973. In order to confirm the nonexistence of sequelae of poliomyelitis a proposal was made to conduct a lameness survey in the urban primary schools of the country using the protocol developed by WHO (EPI/79/GEN1 and EPI/GAG/83/WP.10).

Beginning with a list of all the primary schools in the country a sample was selected of 40 schools representing the 269 schools in the country (15%, encompassing 35,631 children or 22% of all children in primary schools.

Seventy-nine lame children were detected, and it could be concluded, from clinical history and clinical examination, that in no case were the sequelae compatible with poliomyelitis. In 82% of the cases the etiology of the lameness was attributable to congenital diseases; 12% to trauma; 1% to tumor processes, and 5% to other diagnoses. All these cases had received complete schedules had been duly studied and rehabilitated in the National Children's Hospital and in the National Rehabilitation Center.

As a result lame children were found among the children in the community or who had dropped out of school.

5. CONCLUSIONS AND RECOMMENDATIONS

Substantial progress has been made since the countries of the Americas resolved in 1985 to eradicate polio from the hemisphere by 1990. Notable achievements have occurred during the nine months since the last meeting of the TAG in Antigua, Guatemala in April 1987. Many countries have improved the quality of their information systems. Reported overall coverage for polio vaccine reached 81% in 1986. Despite increased surveillance activities, the total reported cases of paralytic polio actually decreased in 1987. While the reported number of cases increased in 1987 over 1986 in some countries, the increase was not unexpected given the intensification of surveillance. Following TAG recommendations, 13 countries during 1987 planned and carried out National Vaccine Days to improve coverage. All countries have developed National EPI Plans of Action covering the five-year period 1987-1991.

Momentum, interest, and commitment on the part of many countries would appear consistent with meeting the goal of eradication by 1990. However, such commitment is not present in all countries and some critical program elements have not been adequately implemented. The TAG is particularly concerned that the laboratory has not played the important role it should in the timely confirmation of polio cases. Much of the responsibility rests with field personnel. There are problems in almost every aspect of laboratory diagnosis from the collection of specimens to the processing and interpretation. In many cases, too much time elapses between the onset of symptoms and the collection of samples. All too frequently, specimens have not been properly preserved and long delays occur between collection and arrival at the laboratory. Breakdowns in communication between epidemiologists and laboratory personnel have led to improper specimen handling and failure to provide the necessary clinical information for proper interpretation of results. The TAG also is concerned that critically needed high quality laboratory support is not universally available to the program. It regrets that the goal of processing all samples in a timely fashion by a network of fully equipped, reliable laboratories at the sub-regional level by the end of 1987, a goal which was established at the last meeting in Antigua, Guatemala, has not been achieved. Specimens have been processed by a variety of laboratories outside the network including some of uncertain quality. Delays in reporting results by laboratories in many areas have hampered reaching a timely diagnosis. This is at least in part caused by the failure of some laboratories to focus primarily on determining the presence or absence of polio virus or infection. It is hoped that many of the above problems will be resolved when the complete laboratory network becomes operational in the near future.

Less than three years remain before the target date for polio eradication. Each country should assess the current status of its program without delay to determine what changes should be made in program elements to accelerate progress towards this goal. The strategy for eradication remains unchanged:

- 1) achieving and maintaining high vaccination coverage,
- 2) intensive surveillance and active case investigation; and,
- 3) aggressive containment.

As for achieving and maintaining high vaccination coverage, the TAG believes that the Plan of Action for the Eradication of Polio for the Americas by 1990 is still appropriate. Those countries that are still endemic for polio should hold, routinely, at least twice a year, National Vaccination Days (NVDs) with OPV to assure rapid increases in coverage and interruption of wild polio virus transmission. Furthermore, the utilization of NVDs which is the key for polio eradication and program acceleration should include the administration of DPT, measles, and tetanus toxoid vaccines so that this opportunity to increase overall EPI coverage is not missed.

The success of NVDs in interrupting polio transmission and increasing EPI coverage will require intensive planning of the logistics involved as well as strong social mobilization which can succeed only in a national effort. Finally, a decision to discontinue NVDs should be made only

when the basic health infrastructure is able to sustain the same level of EPI coverage and maintenance of polio-free status. These policies and strategies have been endorsed by previous TAG meetings and recently by the ICC through its Joint Declaration of October 1987.

Reports from the Andean Sub-region at this meeting illustrate the need for program acceleration. For example, while Bolivia, Ecuador, and Peru have made some progress in improving disease surveillance, immunization coverage remains low, drop-out rates high and their programs, particularly in Peru, will need to enhance rapidly activities toward improving coverage within the epidemiologic strategies outlined above.

Successful implementation of the eradication strategy will also require strengthening of the information systems so that problems in the program can be identified on a continuing basis, solutions developed and executed, and results evaluated. Detailed study of the gaps in the program must be undertaken with the aim of eliminating them.

This problem solving approach should be applied to all three components of the strategy. Efforts should be made to determine who is not being vaccinated, why, and where. Coverage levels should be measured at municipal, county, and district levels to identify pockets of susceptibles to be targeted for special vaccination programs. Assessment of the impact of missed opportunities (failure to give vaccine to an eligible child at the time he or she interacts with the health care system) can potentially be used to convince health care providers to change practices and offer vaccine at every opportunity to all in need.

Each confirmed case of polio should be viewed as a program failure. Information on cases should be analyzed to determine why they occurred, specifically whether they represent failures to vaccinate (the unvaccinated or partially vaccinated) or vaccine failures (the adequately vaccinated). Evaluation of unvaccinated and partially vaccinated cases should focus on identifying means of improving coverage while cases in the vaccinated should focus attention on eliminating risk factors for vaccine failure such as a faulty cold chain.

The quality of the information system itself needs evaluation. As coverage levels increase, polio incidence should decrease. Failure to observe such a relationship should stimulate enquiry into the validity of both coverage and surveillance information.

Many of the recommendations above and to follow have been made in previous TAG reports but bear repeating because they remain fundamental parts of the polio eradication effort and because many have not been fully implemented.

1. Vaccination strategy and coverage.

- a. National Vaccination Days (NVDs) with OPV should be adopted by those countries classified as infected by polio or at high risk. This is the most effective strategy for prompt interruption of wild poliovirus transmission.

b. NVDs should include the administration of DPT, measles, and tetanus toxoid (for women of childbearing age) to gain maximum health benefit from resources expended. Every effort should be made to ensure NVDs' help to strengthen the entire EPI and lead to development of permanent, ongoing immunization services.

c. The continuing occurrence of cases in peri-urban areas of many countries deserves special attention. These areas undoubtedly represent reservoirs of infection from which disease spreads to rural areas. Special intensive vaccination campaigns that target these areas are warranted.

d. Advantage should be taken of every opportunity to vaccinate children. Immunization should be offered to every eligible child during every visit to a health care unit.

2. Surveillance and Investigation. Surveillance remains the key element in disease control and eradication and must continue to have top priority. The improvements in quality and quantity of surveillance information are noteworthy; however, very few countries yet have fully adequate systems.

a. Surveillance systems must be designed to obtain information on a weekly basis from all health units (including hospitals and rehabilitation units) where polio cases are likely to be seen. Each unit should be required to report weekly regardless of whether or not cases have been seen. A roster of reports by site should be kept to monitor compliance. The reporting network, which should include both public and private health care facilities, should be fully operational in all countries by the end of 1988.

b. The case definitions/classifications developed by TAG should be used in all countries for both surveillance and reporting. Uniform criteria for confirming cases should be used, following the guidelines developed previously. Specifically, the TAG continues to recommend that the following be classified as confirmed cases of polio for epidemiologic purposes:

- 1) all cases of acute flaccid paralysis with laboratory confirmation of polio;
- 2) all cases of acute flaccid paralysis with residual paralysis at 60 days and without another specific diagnosis. Cases in persons under 15 years of age, diagnosed by clinicians as Guillian-Barre Syndrome (GBS) with residual flaccid paralysis at 60 days, should be classified as confirmed polio;
- 3) all cases of acute flaccid paralysis who are lost to follow-up or who die within 60 days of onset.

d. Cases of isolated facial paralysis should not be included in the list of suspected cases of polio requiring intensive investigation. A recent study shows that a substantial majority

of cases of isolated facial paralysis are not caused by polio viruses. The TAG believes that the benefits derived from investigation of the many cases of facial paralysis to obtain the few cases of polio do not justify expenditure of the resources that would be required. Instead, efforts should be devoted to higher priority aspects of the program including investigation of cases of more generalized flaccid paralysis.

e. Containment activities should be undertaken after preliminary classification and should not wait for final assessment.

f. Final classification of cases must be made no later than 10 weeks after onset.

g. It is recognized that the differential diagnosis of poliomyelitis on clinical grounds is complex especially when trying to differentiate polio from GBS. The problem can be minimized by the rapid notification and investigation of all suspected cases. Proper and timely collection of appropriate laboratory specimens can confirm the vast majority of polio cases. Laboratory specimens must be properly preserved and transported. The cold chain is as important for laboratory specimens as it is for vaccine.

h. The difficulties in differentiating polio from GBS indicate the need for prospective studies of the clinical and epidemiologic characteristics of both with the objective of developing a more specific case definition for polio while maintaining sensitivity. Prospective evaluation is critical so appropriate clinical histories can be taken, laboratory specimens collected, and diagnostic tests such as nerve conduction studies and electromyograms (EMGs) obtained on all cases. This will allow comparison of the characteristics of laboratory confirmed cases with cases that are not confirmed despite collection of the proper specimens at appropriate times. Given the importance of this study to the eradication effort, a careful protocol should be developed and reviewed by experts in the differential diagnosis of polio. The Asuncion group (Brazil, Bolivia, Uruguay, Argentina, and Chile) has been given responsibility for the study. It is hoped that results will be available by the next TAG meeting.

3. Laboratory support. The laboratories play a critical role in the polio eradication effort. Rapid processing of specimens and feedback of results to epidemiologists and other health authorities are essential to surveillance and containment activities.

a. Special efforts should be made to assure that a network of fully equipped, reliable laboratories is fully functional at the sub-regional level by March 1988. The current situation should be assessed and laboratories added or deleted from the network as needed. Pending administrative problems should be solved as quickly as possible.

b. High quality and reliability is required of all laboratories in the network. The laboratories should be evaluated periodically

by having them perform serologic studies in a blinded fashion on coded specimens prepared to have specified titers. Similar tests for viral isolation should also be performed.

c. If national laboratories are going to continue poliovirus work once the diagnostic laboratory network is operational, they must send duplicates of all polio specimens to the network laboratories.

d. Arrangements for appropriate shipping and handling of laboratory specimens (and payment of shipping fees) should be in place before March 1988.

e. Periodic meetings between epidemiologists and laboratory personnel should be set up to assure that all steps in the laboratory diagnosis from specimen collection to reporting of results run smoothly and to integrate the diagnostic expertise of both epidemiologists and laboratorians to determine the presence or absence of polio.

f. The top priority for laboratories in the network is to determine whether the illness being evaluated is either confirmed as polio or not confirmed. Further studies to determine the precise etiology if the case is not confirmed as polio are of low priority.

4. Polio vaccine formulation. Preliminary studies in Brazil suggest that seroconversion to type 3 polio virus in trivalent OPV is low and that the low rate might be explained by the low quantity of the type 3 component, 300,000 TCID₅₀, in some vaccines. Low seroconversion was overcome in part by raising the concentration of type 3 to 600,000 TCID₅₀. The TAG recommends that as soon as feasible, all purchases of trivalent OPV for the program contain approximately 600,000 TCID₅₀ of the type 3 component which may help improve seroconversion rates to type 3 in other countries.

