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PAN AMERICAN HEALTH ORGANIZATION

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NINTH MEETING OF CARIBBEAN EPI MANAGERS

FINAL REPORT

Guadeloupe, French West Indies
9-13 November 1992

EXPANDED PROGRAM ON IMMUNIZATION

Revision 1

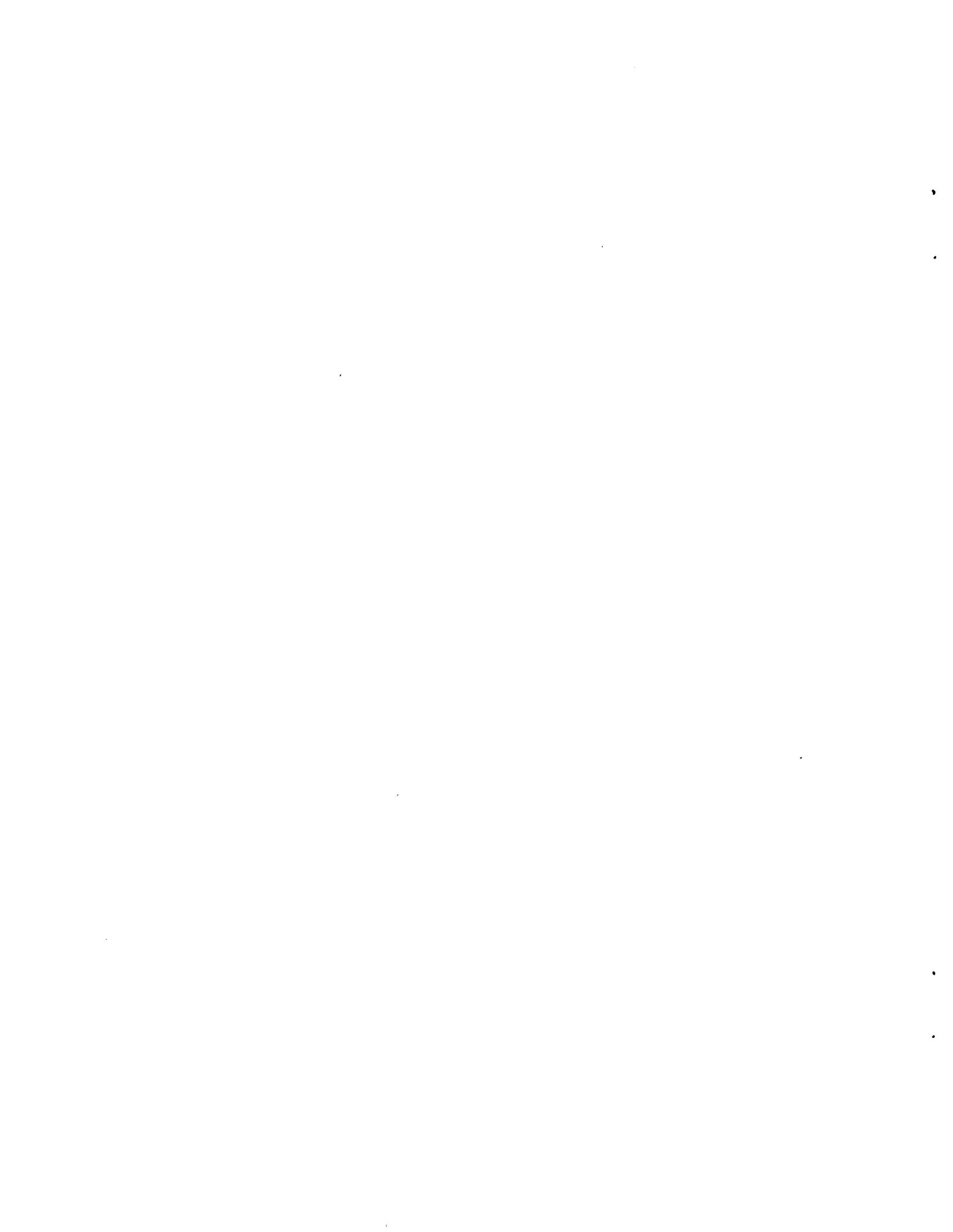


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I. Introduction

The Ninth Meeting of the Caribbean EPI Managers was held in the Department of Guadeloupe, France, from 9-13 November 1992. This was a historical meeting for several reasons: a) about fourteen months have elapsed since the occurrence of the last case of poliomyelitis in the entire Western Hemisphere. The case of paralytic poliomyelitis detected 23 August 1991 in Junin, Peru, may have been the last one in the Region of the Americas; b) since surveillance for measles was started in September, 1991, only two cases (imported) of measles were confirmed by laboratory in the whole of the English speaking Caribbean and Suriname; c) immunization coverage levels reached an all time high in the Caribbean and the Americas; and d) last, but not least, this was the first time that such a meeting was held in the French Caribbean.

Participants at the Meeting were welcomed by Dr Halmond Dyer, the PAHO Caribbean Program Coordinator, on behalf of the PAHO Director, Dr Carlyle Guerra de Macedo and the event was officially inaugurated by Ms Agnes Tantin, Representative of the President of the General Council of Guadeloupe and Dr Colette Roure, representative of the Ministry of Health of France. Dr Peter Figueroa, member of the PAHO/EPI Technical Advisory Group and Dr Max Theodore, EPI Manager for the General Council of Guadeloupe, co-chaired the Meeting and Dr Ciro de Quadros, PAHO's Immunization Advisor and Mr Henry Smith, PAHO's Immunization Officer for the English speaking Caribbean and Suriname served as Secretaries.

The Meeting was attended by over 80 participants from the 18 countries from the English speaking Caribbean, Suriname; the French Departments of Guadeloupe, Martinique and Guiana; and the countries of Netherland Antilles, Curacao and St. Maarten. Representatives of several NGOs, including Rotary and Lions International were also in attendance. Finally, technical personnel from PAHO and its Caribbean Epidemiology Center, UNICEF, CPHA, the French Cooperation in Health and the Commonwealth Secretariat were active participants in the Meeting.

II. Objectives of the Meeting

The main objective of the Meeting was to review the overall implementation of the EPI in the Caribbean, in particular, the efforts towards the elimination of measles by 1995. In this respect the meeting focused on the various aspects of surveillance activities now being implemented by most countries. This included the identification of the obstacles that may still be impeding the achievement of the targets of the program. It also addressed the issues pertaining to the eventual certification of absence of wild poliovirus transmission in the Region.

Additional objectives focused on the analysis of the implementation of the 1992 Plans of Action and the preparation of the 1993 Plans, including the analysis of financial resources needed for its implementation.

III. Conclusions and Recommendations

Besides the various topics that will be discussed in the subsequent sessions of this Report, it is important to state from the outset the tremendous progress made by every country towards the organization and implementation of a surveillance system for detection of suspected measles cases. In one year, the countries of the English speaking Caribbean and Suriname went from a phase in which no active surveillance was available to what now may be one of the most sophisticated systems in the world. This system, which is being used to improve surveillance for rubella and dengue will certainly be fundamental to upgrade the existing national surveillance system for other diseases as well. This single fact attests to the high level of commitment of these countries towards the target of measles elimination set by the Ministers of Health of the CARICOM.

The immunization programs in the French Departments of Guadeloupe, Martinique and Guiana and in the Dutch Speaking islands of Curacao and St. Maarten were also reviewed. While in general these areas present high levels of coverage, surveillance systems are not entirely developed at the same level as in the English speaking Caribbean and Suriname. Guadeloupe has launched an aggressive measles surveillance system starting with a workshop in March 1992 and Curacao is planning similar activity for 1993.

It was a general conclusion that the exchange of disease surveillance information amongst the English speaking Caribbean and Suriname and the other Caribbean areas is fundamental for the ultimate elimination of measles and control of other communicable diseases.

During the meeting the countries were divided into four working groups to review the major impediments in advancing their national immunization programs. Group reports were prepared which identified the following problems most common to all:

- * Lack of participation by the private physicians in measles surveillance and reporting of EPI diseases in general.
- * Lack of sufficient social communication materials both written and visual.
- * Lack of both human and financial resources for producing social communication materials.
- * Better supervision coupled with additional resources are

required for improving program performance.

- * The cold chain can still be improved by replacing old equipment and procuring additional equipment, especially back generators. Regular maintenance of refrigerators was stressed as needing improvement.

All country work plans took these problems into consideration and specific activities were proposed to solve them.

1. Immunization Coverage

Overall, immunization coverage continues to increase in the countries of the English speaking Caribbean and the Suriname. (Figure 1). However, it was reported by some countries that coverage has dropped or remained stationary. In some instances this was due to temporary lack of vaccine supply. Ministries of Health should be aware of their responsibility of ensuring sufficient funds in their national budgets. In some countries there is no specific vaccine budget. Vaccines are included in the budget with drug/medicine items. It may be that drugs are purchased and sufficient funds are not left for the purchase of vaccines. It is recommended that each country establish a separate line item in their budgets for vaccine supply and incorporate the Plans of Action prepared at this meeting in their budget process.

Many countries are not achieving a general immunization coverage of above 90% in all counties. This indicates the pockets of unvaccinated children may still exist in some urban poor areas and remote inaccessible ones. This is of particular importance in relation to measles, because these groups of susceptibles may maintain pockets of transmission or generate outbreaks in the event of likely importations. Countries should identify these pockets and vaccination activities should be aggressively implemented to prevent such an occurrence.

As far as the elimination of measles is concerned, these pockets of susceptibles may be one of the most important potential problems. It is clear, that due to the fact that the measles vaccine is not 100% effective and that most often coverage is short of 100%, susceptibles will build up, and quite rapidly in the bigger countries. It is therefore of paramount importance that the pool of susceptibles be identified and that decisions be made as to which actions are most appropriate to reduce or eliminate these pools. All countries will have to analyze this situation in the next twelve months with respect to their countries and this analysis should be presented to the 1993 meeting for discussion and decision on future strategies.

2. Poliomyelitis Eradication

The English speaking Caribbean and Suriname have not reported any poliomyelitis case since the last outbreak in Jamaica, in 1982. Surveillance for acute flaccid paralysis has improved in comparison with previous years, with more stool specimens being studied at the CAREC Virology Laboratory. For 1992 the region is projected to attain a rate of acute flaccid paralysis per 100,000 population under 15 years of age of approximately 0.7 . This represents an improvement when compared with 1991, but it is still short of the minimum rate of 1 per 100,000 which should be expected. Therefore, it is recommended that surveillance for acute flaccid paralysis be intensified in order that the region can enter its phase of certification of poliomyelitis eradication. It is also recommended that a Caribbean Commission on Certification of Polio Eradication be established to collect the necessary information for analysis by the International Certification Commission.

3. Measles Elimination Initiative

3.1 Update on Incidence

504 suspected measles cases were reported between September 1991 and October 1992. Of these, 405 (80%) were investigated and only two cases were confirmed by laboratory diagnosis. One case was a definite importation from outside of the Caribbean; for the other case, the source of infection could not be definitely identified, but there were strong indications of a source from outside of the region. Therefore, no indigenous cases of measles were detected in the region since surveillance was established. However, of the 405 cases which were thoroughly investigated, 124 were lost to follow up during this same period. Using the new case classification (See 3.3), these cases are classified as COMPATIBLE (**Figure 2**). Therefore, while it seems that transmission may have been interrupted, it is impossible to assure that low levels of transmission have been totally eliminated in some of the countries, particularly Belize, Guyana, Jamaica, St. Lucia, Suriname, and Trinidad and Tobago, which accounted for 97% of these compatible cases. The presence of compatible cases in the system represents a failure of surveillance and is one of the critical areas that need to be corrected in the next few months.

3.2 Surveillance System

A total of 539 reporting units are now incorporated in the surveillance system and its weekly mandatory reporting of negative or suspected cases. Approximately 85% of these units are reporting regularly. It is important to note that in some countries, the private medical practitioners are not yet fully incorporated in the system and it is felt that it would be important that additional efforts be made to achieve this objective. In a region that is

practically free from indigenous transmission with a very heavy influx of outside tourists, it is likely that cases of fever and rash illnesses will be first seen by a private medical practitioner. Therefore, their participation in the system is highly important. Some countries are having very good progress with their incorporation and the key for its success is good coordination, training with permanent contact and feed back.

Another aspect that merits action is the evaluation of the surveillance system in respect to the ZERO reporting. It is crucial that ZERO actually reflect the absence of suspected measles cases and not the routine submission of a negative reports. Periodic audits of clinical records may be necessary for verification of zero reporting.

The importance of social communication with regards to educating the public to bring ill children with rash and fever to the attention of medical providers has to be stressed. Posters displaying this concept should be developed

3.3 Case Classification

In spite of the fact that measles surveillance in the Caribbean has only 14 months of implementation, considerable experience has been accumulated. Analysis of data presented in the meeting, particularly from Jamaica, indicates that the case definition could be modified at this stage, to increase its sensitivity and specificity. It is therefore recommended that the following case definitions be adopted by all countries:

*** Rash Illness with fever**

Any rash-like illness with fever

*** Suspected Case**

- History of a generalized blotchy rash lasting 3 or more days AND;
- History of fever (38 C/ 101 F) or more. If not measured, "HOT" to touch, AND;
- One of the following: cough, coryza or conjunctivitis. OR
- Measles disease is suspected by attending health professional.

Operationally, the case should be reported as soon as is suspected (even before three or more days of rash) and the first blood specimen collected even before 8 days have elapsed from onset of rash. Smaller countries may wish to include in the first reporting cases that only present "rash with fever". This may decrease specificity but will increase sensitivity; in such a case, analysis should be made for those cases that fall in the defined category of "suspected case".

*** Confirmed Case**

A CONFIRMED case is a Suspected Case with one or more of the following:

- Laboratory confirmation
- Epidemiological linkage to another confirmed case
- Death after suspected measles illness

*** Compatible Case**

A COMPATIBLE case is a Suspected Case which is lost to follow-up.

If the disease has developed in an individual who has returned from travel to another country within 21 days prior to onset of illness and there has been no other known exposure to measles cases locally, the case is classified as IMPORTED.

3.4 Outbreak Response and Control

As the number of susceptibles build up (vaccination coverage is not 100% and vaccine efficacy is also not 100%) this may be the most critical component of the program in the months to come. Any single case, either indigenous or imported could generate sizeable outbreaks if they are not properly investigated and contained promptly. It is therefore important that some steps be taken to avoid such a problem. Below there is a suggested list of critical steps that are re-emphasized as fundamental for this phase of the program:

* as soon as report of a suspect case is received, the patient or parent of the patient should be informed during the clinic visit that a nurse will be coming to see them at their home. Explain about the measles elimination program, and why a home visit is necessary.

* arrange for a time to visit the family when all the family is expected to be in the home, this might mean a night time visit if necessary.

* on the field visit take Measles Case Investigation Forms and vaccine. Only suspected cases should have their blood drawn (and only for the first 3 cases in an outbreak if more than one case is detected).

* first, ask about additional cases in the home, adjacent homes or in the neighborhood. Remember that some cases may be in either the incubation period or just starting the illness with only fever and a cold present. It is important that the families know who to contact if a rash should come out. In addition, a visit/call should be made every 2 days for a period of two weeks to ask about any new cases occurring. The family should be advised to keep the patient at home and to keep the number of visitors to a minimum as possible until the rash disappears.

* second, ask the family if they know where the patient got the illness from. You will have to explain the incubation period to them, and that after the exposure occurred it takes between 1 and 2 weeks before the symptoms start. Remember that the case may have been exposed to someone who may have not had rash present. This is important as measles is highly contagious even before the rash appears.

* visit all adjacent homes (e.g. in a radius of 100 to 1000 yards around the case or in the same block or neighborhood) personally to ask whether any cases of rash and fever have occurred during the previous month. Also check the immunization status of all children under 15 years of age.

* check out any reports of either Rash-illnesses or general fever-colds. It may be necessary to request other clinics to go to the home of such possible sources to see if there had been a rash illness occurring and to fully investigate the case.

* in addition, pre-schools, nurseries, schools, church groups, etc., in the area should be visited and an attempt made to find out if any rash illnesses have been occurring.

* vaccinate or re-vaccinate immediate household members, and any neighbors or play groups, schoolmates, who had been directly exposed to the case during the illness. This usually includes children from 9 months to 14 years of age. [If necessary remember to take vaccination consent forms so that the teachers can get them to the parents for permission to vaccinate]

* send out pamphlets or word-of-mouth throughout the neighborhood and other pre-schools and schools that there is a suspected measles case, and that anyone under 15 years of age who has not been vaccinated or received only one dose of vaccine when older than 6 months of age will need a vaccination now.

- * if 2 additional suspect cases occur in the same general area, a widespread measles vaccination campaign is called for. This is where everyone in one geographic area between 9 months and 15 years is to be vaccinated regardless of immunization history. If some of the cases are occurring in older age groups then the age limit will have to be increased.

- * call local private medical doctors to inform them about the cases and to see if they have seen any cases of rash illness.

- * obtain the convalescent specimen 2-3 weeks later.

3.5 Laboratory Support

For the period September, 1991 to October, 1992, 504 cases of suspected measles cases have been reported to PAHO. Of these, only 394 cases had blood samples taken, of which only 181 had paired samples. Only two measles cases were confirmed by the laboratory. 60 samples were positive for rubella and 8 for dengue, while 324 were negative for measles, rubella and dengue.

The average interval between date of onset of rash and collection of S1 was less than 8 days, while the interval between collection of S1 and S2 was 25 days. More importantly, the delay between collection of S1 and receipt at the laboratory was on average 27 days. Greater efforts should be made to shorten the time span between collection of specimen and shipment to the laboratory. Results were given by the laboratory on an average of 4 days after receipt of specimen. (Table 1).

In relation to stool specimens for investigation of wild poliovirus, the PAHO/CARE laboratory received two stool specimens from 13 of the 18 cases of Acute Flaccid Paralysis (AFP) reported from the English speaking Caribbean and Suriname. 18 contact stools were received. The results showed only two specimens positive for poliovirus: one a vaccine strain and the other is pending characterization. Three stool samples were positive for other enterovirus.

It is recommended that stool specimens be collected from at least five contacts under five years of age of each case of AFP. This will be important as the region enters its phase of certification of eradication and is also a recommendation of the International Certification Commission.

4. Rubella Vaccination Strategy

Review of rubella immunization has shown that while almost all countries (17 of 19) are using some form of rubella vaccine in their routine programs, only half of the countries have formulated specific rubella policies. It is recommended that all countries that are using rubella vaccine (either alone or as a component of

MMR) develop national policies that aim to interrupt rubella virus circulation and to protect any susceptible women. A combined approach, immunizing young children, school girls and adult women is the most effective strategy.

Most of the countries are already using MMR vaccine but rubella virus is clearly still circulating in the Caribbean with reported and laboratory confirmed cases. This finding reinforces the need to ensure that no women enter the child bearing period still rubella susceptible. All contacts with adult women should be used to promote rubella immunization, preferably before pregnancy is contemplated.

Surveillance of rubella and its consequences needs to be improved. Women do not appear to be aware of the possible significance of rashes in pregnancy, nor would such rashes necessarily be appropriately investigated. Health education for women should be improved to promote rubella immunization and to warn of the importance of even mild rashes in pregnancy. Cases of Congenital Rubella Syndrome (CRS) may be failing to be reported: pediatricians and obstetricians should be involved in CRS/Rubella surveillance.

5. Seroprevalence and Seroconversion to MMR in St. Lucia

Seroconversion for measles, mumps and rubella following routine administration of MMR vaccine in public health clinics in St. Lucia was evaluated in 280 children 9 to 15 months of age. The vaccine contained 5000 TCID50 of Edmonston-Zagreb measles virus, 4000 TCID50 of Leningrad-Zagreb mumps virus and 4000 PFU of RA27/3 rubella virus. Antibody was measured by ELISA before vaccination and 6 weeks or more after vaccination.

Measles prevaccination (maternal) antibody was found in 2% of the 6 to 15 month old children (N=452); 8% of these children had rubella prevaccination antibody. Mumps prevaccination antibody was found in 6% of the 9 to 15 month old children (N=286). While rubella prevaccination antibody declined from 13% to 4% between the 6 and 11 month old children, a similar trend was not observed for measles and mumps antibody. Seroconversion is shown below:

Seroconversion by Vaccination Age (Months)					
	9	10	11	12-15	TOTAL
Antigen	N=100	N=100	N=50	N=30	N=280
Measles	90%	92%	96%	94%	92%
Mumps	87%	88%	90%	87%	88%
Rubella	87%	93%	98%	91%	91%

The trend of higher seroconversion with increasing age was statistically significant for children whose mothers had a history of measles disease (P=0.02) but not for those without disease. Seroconversion was significantly lower among children with prevaccination antibody compared to those without antibody (measles: 71% x 93%, mumps: 71% vs 89%, rubella: 71% vs 93%).

Although seroconversion for measles and rubella appeared related to age at immunization, seroconversion for mumps showed little trend with age. The choice age for immunization should consider the optimal seroconversion, the risk of exposure to circulating virus, the morbidity associated with disease and the programmatic issues, such as drop out rates.

6. Hepatitis B Control

A review of the epidemiology of Hepatitis B was conducted by a PAHO/EPI consultant during 1992, in close coordination with PAHO/CAREC. The Report of this review was distributed during the meeting. The general conclusion of the review was that, due to the low prevalence of Hepatitis B in the English speaking Caribbean (with exception of St. Kitts/Nevis) the introduction of routine vaccination with Hepatitis B vaccine is not warranted at this moment. However, introduction of this vaccine should be considered for health workers at increased risk (e.g., laboratory technologists or others exposed to and handling blood).

Additional studies are recommended to further increase the knowledge of the epidemiology and impact of this disease in the area. Finally, the Report states that, if any country decides to introduce this vaccine, this should be done as an integral part of the present national immunization programs.

7. Hemophilus influenza b: Issues on Vaccine Introduction

Haemophilus influenzae b (Hib) causes a spectrum of invasive disease; the commonest presentation is meningitis, accounting for two thirds of cases. The mortality is around 5% and the risk of permanent sequelae such as brain damage, epilepsy or deafness is 10 to 30%. Other presentations include epiglottitis, septicaemia, osteomyelitis, septic arthritis and cellulitis. Several studies have confirmed that one child in every six hundred acquires invasive Hib disease before the fifth birthday. The peak age of infection is between 6 and 12 months; invasive Hib declines after the first birthday and is rare after 4 years.

Conjugate Hib vaccines - Hib polysaccharide conjugated to a carrier protein - are now available and have been shown to be safe and effective when administered at the same time as EPI antigens. Three doses of Hib vaccine are needed for children under one year of age; one dose is sufficient for children over one year.

Hib vaccine has been introduced into routine use in the UK following an extensive educational campaign which is targeted at health professionals and parents of young children. Over the first year of the campaign, all children under four years will be called for Hib immunization scheduled using computer generated invitations. This catch-up program has been designed to ensure that the youngest children - those at highest risk - are invited first; the numbers of children invited to each session has been carefully balanced to ensure that clinics and routine services are not overloaded. Over the first year of the campaign, an extra five million immunizations are anticipated.

At present, Hib vaccine is very expensive. Before embarking on introduction of Hib vaccine into routine use, it is essential that there should be surveillance of Hib disease to identify its burden and then evaluate the cost implications. Once this is done, national health authorities must then decide on their priorities for allocation of resources.

8. Social Mobilization and NGO Participation

NGOs are essential to the overall strategy of social and economic development of their countries. In this regard, their support to the efforts being made by their health sector and by EPI in particular are critical. NGO's expressed concern about sustaining EPI as a part of national development and hence see that creating effective partnerships among governments and within communities as being very crucial.

There was a very important contingent of NGO representatives at the meeting. These were integral part of the country delegations, in a demonstration of a good level of coordination at country level. This coordination follows the recommendations of the 1991 meeting. The Commonwealth Secretariat and CPHA were praised for the support they have given to this participation and integration of the NGO teams at the country level.

The group further recommended that additional efforts be made to improve even further the coordination at country level, through the organization of national coordinating committees, or other mechanisms that ensure proper and promptly exchange of information. Such mechanisms could include the preparation of needs assessment at the district level, as carried out in Grenada. The needs assessment survey serves a basis for identification of areas where local NGOs can form partnerships with the health authorities for the possible solution of problems. Another major area is the training and education programs initiated by the Ministries of health, which should consider the inclusion of NGO representatives in those aspects that they have been working together and where they can make further contribution. Another recommendation for

strengthening NGO's role within the EPI is by the preparation of project proposals for the mobilization of resources to support ongoing or newly identified activities.

9. Financial Analysis of 1993 Plans of Action

All countries have presented and discussed their 1993 Plans of Action, outlining all the technical components and activities, including the cost per activity and area of action. The total cost for the EPI in the English speaking Caribbean and Suriname is in the order of US\$10.1 million, approximately the same as for 1992. The following is the distribution of these funds by source of funding, as requested by the national representatives. It may be noted that funds from the external agencies are not yet committed at the meeting and this will require further negotiations at the country level.

National funds	US\$8,924,900 (86%)
PAHO (Including CPHA Grant)	349,800
CPHA bilaterally	606,400
UNICEF	340,900
Rotary International	124,000
Other	17,300
TOTAL	10,363,300

The funds from the external agencies are being requested for the following areas of action:

Biological and Logistics	US\$ 265,900
Cold Chain	153,100
Training	167,100
Social Mobilization	320,000
Operating Costs	276,500
Supervision	38,000
Surveillance	113,700
Research	45,300
Evaluation	76,800
TOTAL	1,438,400

10. Future Meeting Plans

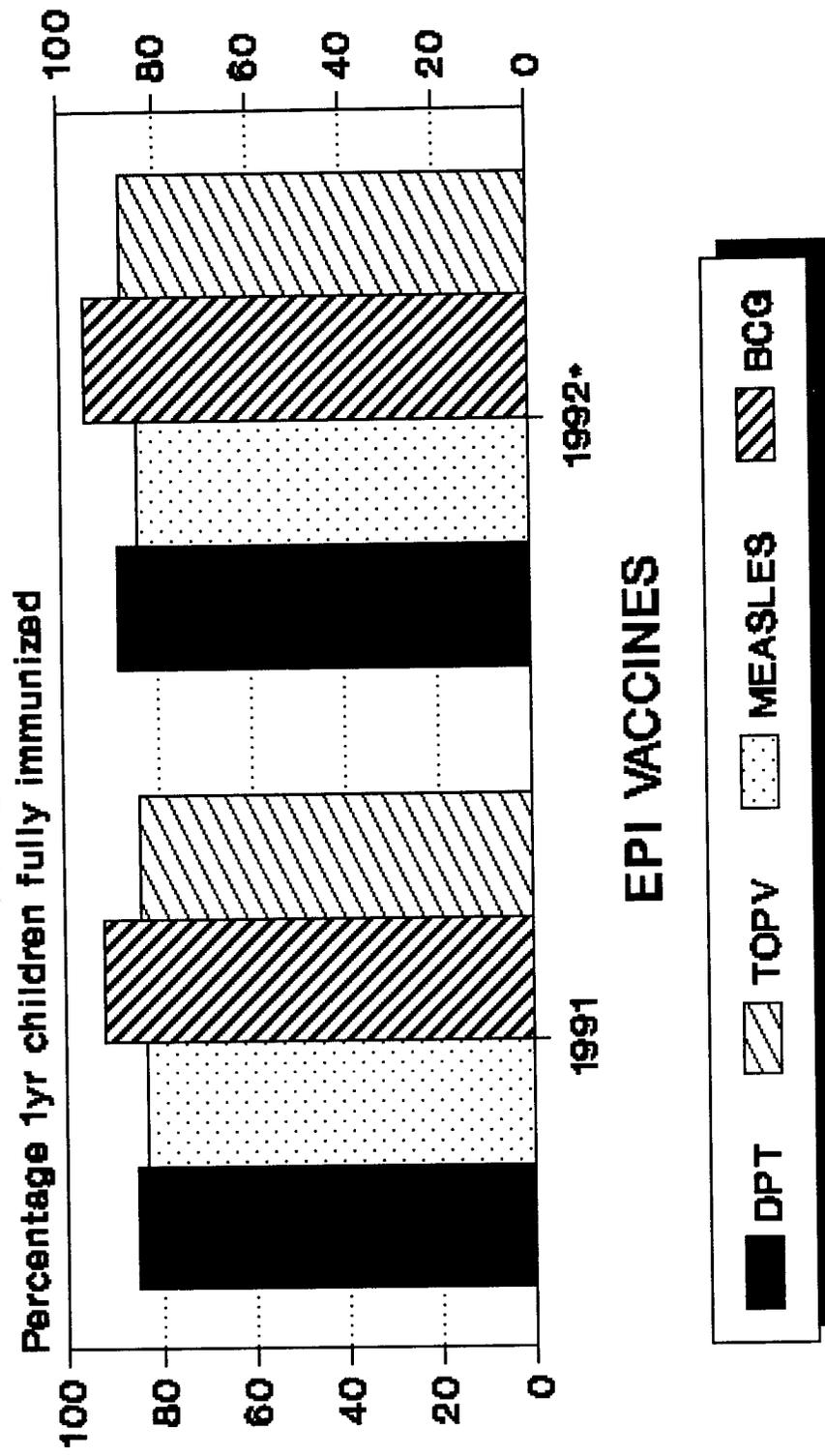
The next meeting will be held in November, 1993 in Tobago, Trinidad and Tobago. It was recommended that at the next meeting participants from other Caribbean countries or areas not attending the 1992 meeting be also invited. These include Cuba, Haiti, Puerto Rico (USA) and the Dominican Republic.

(ID Doc. GUAD-2)

VACCINATION COVERAGE EPI VACCINES 1991 -1992*

ENGLISH-SPEAKING CARIBBEAN AND SURINAME

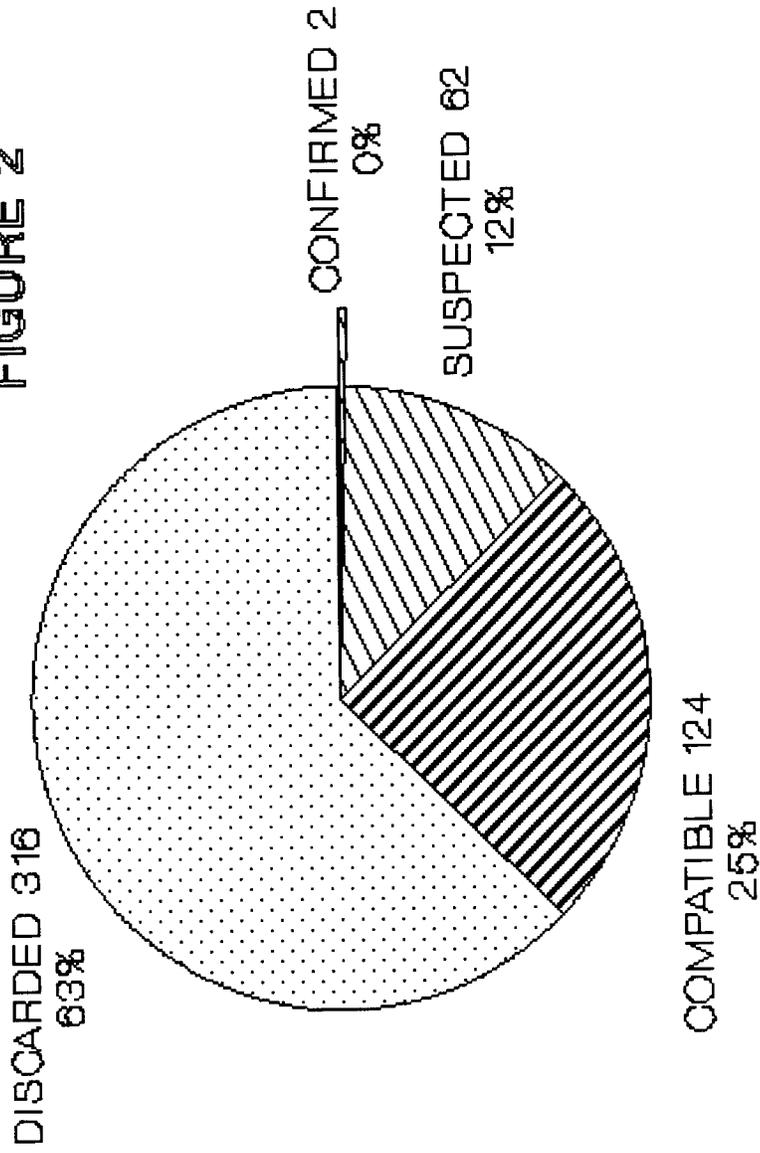
FIGURE 1



SOURCE: MINISTRIES OF HEALTH
* ESTIMATED 1992

MEASLES ELIMINATION SURVEILLANCE SYS. CASE DISTRIBUTION BY CLASSIFICATION WEEK 37/91-WEEK 42/92.

FIGURE 2



SOURCE: MINISTRIES OF HEALTH
MESS PAHO/GAREC

TABLE 1

TIMELINESS OF SUSPECTED MEASLES CASE NOTIFICATIONS

MEAN NUMBER OF DAYS BETWEEN DATES (RANGE)

ENGLISH-SPEAKING CARIBBEAN AND SURINAME

	WEEK 39/91 - WEEK 52/91	WEEK 01/92 - WEEK 42/92	WEEK 39/91- WEEK 42/92
RASH ONSET DATE AND REPORT DATE.	2 (0 - 19)	7 (3 -32)	5 (3 -32)
RASH ONSET DATE AND WHEN FIRST SPECIMEN TAKEN.	7 (0 - 51)	9 (0 - 32)	8 (0 - 32)
INTERVAL BETWEEN FIRST AND SECOND SPECIMEN	20 (14 - 38)	30 (16 - 82)	25 (16 - 82)
REPORT DATE AND WHEN CAREC RECEIVED FIRST SPECIMEN.	33 (0 -178)	21 (0-75)	27 (0-178)
DATE CAREC RECEIVED FIRST SPECIMEN AND WHEN RESULTS AVAILABLE.	5 (1 - 6)	4 (1 - 6)	4 (1 - 6)

SOURCE:MESS EPI/PAHO, CAREC.

