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Comprehensive Family Immunization
Family and Community Health Area



TWENTY SIXTH MEETING OF THE CARIBBEAN EPI MANAGERS

FINAL REPORT

St. Kitts and Nevis
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TWENTY SIXTH CARIBBEAN EPI MANAGERS' MEETING

I. Introduction

The 26th Caribbean EPI Managers' Meeting was held at the St. Kitts Marriott Resort, Basseterre, St. Kitts and Nevis, from 9-12 November 2009. The meeting was attended by over 80 persons from 20 Caribbean Epidemiology Centre (CAREC) Member countries, French Guiana, Martinique, Canada, and the USA, as well as international agencies such as the U.S. Centers for Disease Control and Prevention (CDC) and the Canadian Public Health Agency (CPHA). Attendees included participants from the Ministry of Health, the World Health Organization Headquarters (WHO), the Pan American Health Organization Headquarters (PAHO), and CAREC and PAHO Offices in Barbados and Suriname. Participants during the opening ceremony also included principals of primary schools and officials of the Ministry of Health and other Government ministries.

The opening ceremony was chaired by Dr. Patrick Martin, Chief Medical Officer, Ministry of Health, St. Kitts and Nevis. The National anthem was performed by Mr. Javern Richardson and prayer and exhortation by Reverend Isaiah Phillip. Dr. Jon Andrus, Deputy Director, PAHO, Mr. Peter Carrasco, Policy Advisor, IVB/WHO, Dr. Rudolph Cummings, Programme Manager, Health Sector Development, CARICOM, Guyana, Mr. John Fitzsimmons, Deputy Director, Global Immunization Program, CDC, Mr. Gaby Jabbour, Director of Immunization Program, CPHA, and Dr. Beryl Irons, CAREC Representative, gave greetings and remarks. The Caribbean subregion has been very successful with eliminating diseases through vaccination. Countries have maintained very high vaccination coverage and continue to be trendsetters and beacons in the field of immunization. Their Governments remain committed and continue to play pivotal roles in providing appropriate resources for the immunization programme.

The keynote address was given by the Honourable Minister of Health, Mr. Rupert Herbert. He stated that St. Kitts and Nevis considered it an honour to host this meeting, as it is the first Caribbean EPI Managers' Meeting since a new virus and a new vaccine have become available in the world. The Expanded Program on Immunization (EPI) is a successful and solid programme that ensures that the population is well served with safe and effective vaccines. St. Kitts and Nevis takes pride in the fact that the country has universal coverage for the administered vaccines. There is no development without a primary health care system and the EPI is pivotal to social and economic progress. Technical cooperation and support of PAHO, CAREC, and other international agencies have been invaluable and underscores the principles of equity and solidarity. Although the Caribbean countries are faced with challenges and crises, they have been able to weather the storms.

Participants were also entertained by the talented Minister of Health who gave a rendition on the steel pan. A minute of silence was kept in remembrance of two retired and deceased (2009) EPI Managers –Ms. Ivy-Jean Benjamin (Antigua/Barbuda) and Ms. Diana Francis-Delaney (St. Kitts/Nevis). The vote of thanks was then ably done by EPI Manager, Ms. Marguerite O'Brien-France.

A. Purposes of the Meeting

1. To share experiences and lessons learned at the regional, sub-regional, and national levels in order to enrich collective understanding, build on the successes, refine strategies, and offer solutions when deficits are detected;

2. To provide scientific, technical, and programmatic updates in order to ensure that immunization managers are positioned to answer relevant questions from Ministries and other stakeholders; and
3. To review current plans and outcomes and to develop new plans for the future, because planning and evaluation are important managerial elements for enhancing performance, mobilizing resources, and guaranteeing financial sustainability.

B. Objectives of the Meeting

The specific objectives of the 26th annual meeting of the Caribbean EPI Managers are as follows:

1. To discuss the situation and response to the pandemic and seasonal influenza;
2. To maintain heightened surveillance of influenza and severe acute respiratory infection (SARI) surveillance in selected countries;
3. To analyze and evaluate the status of measles, rubella, and CRS elimination in the countries;
4. To sustain the eradication of wild poliovirus in each country;
5. To follow-up on poliovirus containment issues for the region;
6. To analyze the status of the EPI programme in each country;
7. To discuss the introduction of HPV vaccine and surveillance issues for the countries;
8. To discuss the introduction of vaccines such as pneumococcal and rotavirus in the EPI in countries, including strengthening of the surveillance systems;
9. To discuss status/improvement of surveillance of events supposedly attributable to vaccination or immunization (ESAVIs);
10. To set the targets and objectives of each country with respect to immunization coverage and reduction of morbidity and mortality from the EPI diseases for the year 2010;
11. To update information on selective scientific topics of common interest to countries in relation to immunization, delivery service, and surveillance of measles/rubella and other EPI diseases; and
12. To develop an action plan with a specific budget for each activity for each country to achieve the targets and objectives set for 2010.

C. Status of Caribbean Public Health Agency (CARPHA)

CAREC is currently in a transition phase as it seeks to refocus its efforts on the core public health functions such as surveillance and epidemiology, including laboratory services that directly support surveillance. The strengthening of CAREC should provide the best possible basis for the development of the Caribbean Public Health Agency (CARPHA).

The presentation sought to familiarize the participants with the history of the development of the process leading to the formation of CARPHA. First, the Universal Study was commissioned in 2001. It then led to the 2007 decision of the Caribbean Community (CARICOM) Heads of Government to rationalize the existence of five agencies: CAREC, Caribbean Food and Nutrition Institute (CFNI), Caribbean Environmental Health Institute (CEHI), Caribbean Health Research Council (CHRC), and Caribbean Regional Drug Testing Laboratory (CDRTL). The Mission, Vision, Structure, and Governance for CARPHA have been developed. The structure envisions a functional model of operation with surveillance being the area of greatest technical interest. The Director will work with an Executive Board that will report to CARICOM's Council for Human and Social Development (COHSOD). The EPI Managers will continue to meet as a technical advisory body to the director of CARPHA.

The Government of Trinidad and Tobago has offered to host the CARPHA physical facilities. The management team is currently in the process of costing the implementation and operation of CARPHA and development of human resource requirements. The Steering Committee will seek the approval of Heads of Governments to go ahead with CARPHA's implementation as early as March 2010.

RECOMMENDATIONS:

- There should be an acceleration of the process to establish CARPHA as an institution. The proposed time frame should be shortened in order for funding opportunities not to be missed.
- An appeal should be made to PAHO and CDC to continue to help with the development towards a strong, reliable, regional public health agency.

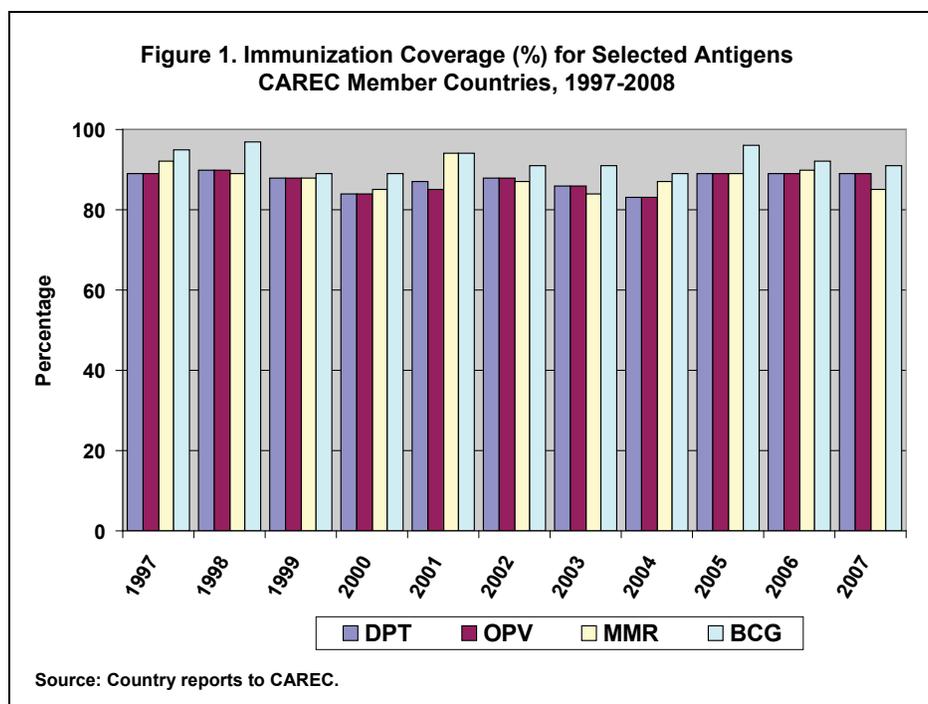
II. Vaccines and Vaccination Coverage

The family immunization policy continues to be priority and many countries have developed the appropriate policy and expanded their target population to include adolescents, adults, elderly, and groups with special needs. Countries are gradually introducing the new and underutilized vaccines in the public sector immunization schedule.

Currently, three countries (Barbados, Bermuda, and Cayman Islands) have already introduced pneumococcal vaccines into their public sector schedules. Two additional countries, Guyana and Trinidad and Tobago, have included pneumococcal vaccination for at-risk infant populations and should have full implementation by 2010/2011. HPV vaccines were introduced in Bermuda (2008) and the Cayman Islands on a pilot basis (2009). The vaccine is being administered through the school health system. Rotavirus vaccine was introduced in the Cayman Islands in 2009 and should be fully introduced in Guyana in 2009/2010. The delivery of vaccination services is part of the child health services in the public and private health care systems of countries.

Achieving national coverage of 95% or more for each administered vaccine at each region, district, or zone level has been and continues to be the goal of the immunization programme.

For 2008, the average coverage for primary immunizations (3 doses of DTP, OPV/IPV, Hib, hepatitis B vaccines and 1 dose of MMR, BCG) for the Caribbean subregion is DTP 90%, OPV/IPV 90%, Hib 92%, hepatitis B 90%, MMR-1 91%, and BCG 94% (Figure 1.)



Marked increase in vaccination coverage for 2008 was noted for Barbados and Jamaica, especially for the MMR vaccine.

Extra effort was exerted by Jamaica to increase vaccination coverage in response to an imported measles case. Eight countries had vaccination coverage for DTP-3 of 95% or more, while all countries had coverage greater than 80% for all antigens (Table 1).

Table 1. Distribution of Vaccination Coverage (%), Caribbean Subregion, 2008 and 2007

Coverage Children Aged 0-11 months (%)	DTP-3		OPV-3		MMR (12-23months)	
	2008	2007	2008	2007	2008	2007
<50	0	0	0	0	0	0
50-79	0	0	0	0	0	2
80-89	6	4	6	4	4	5
90-94	5	4	5	4	6	2
≥95	8	12	8	12	9	11
Sub-regional Coverage	90	89	90	89	91	85

Source: MOH Reports to EPI/CAREC.

In the six countries with population greater than 300,000, three countries have 60% of their geopolitical areas with vaccination coverage of administered antigens greater than 95% and most of the other areas between 85 to 94%. In 2007, Guyana had achieved the goal of 95% coverage

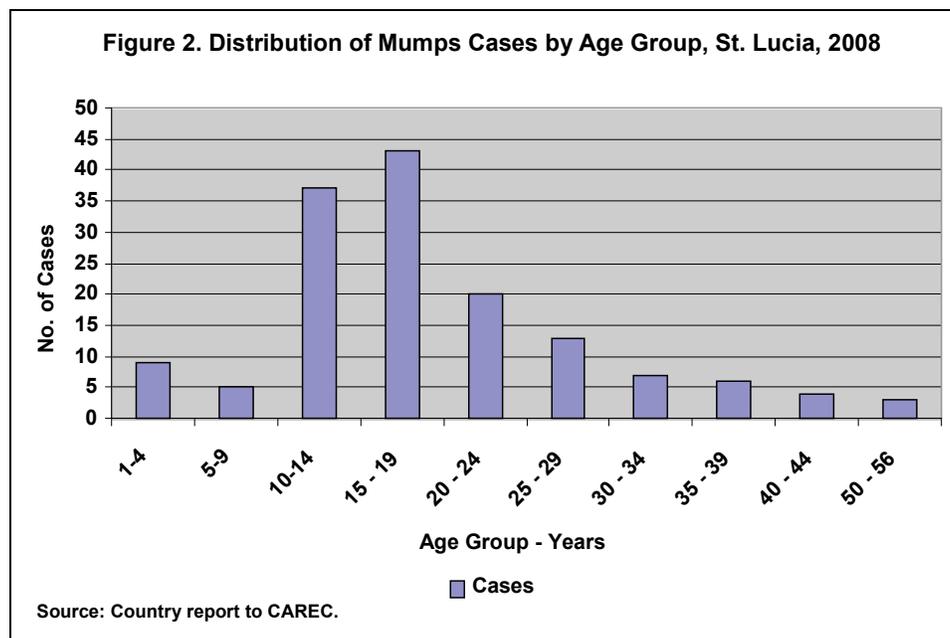
for MMR-1 in 5 of its 10 regions; Jamaica in none of its 14 parishes; and Trinidad and Tobago in 4 of its 8 counties as well as the island of Tobago. In 2008, Guyana achieved the goal ($\geq 95\%$) in 6 of its 10 regions; Jamaica in 2 parishes, 90-94% in 6 parishes, and 80 to 89% in the other parishes; Trinidad and Tobago achieved the goal in 6 counties as well as on the island of Tobago.

Vaccination coverage surveys were conducted in Barbados and Belize in 2009. The surveys included assessment of coverage for the 2nd dose of MMR vaccine. Vaccination coverage surveys have been proposed for Guyana and Trinidad and Tobago and data quality assessment is still proposed for Jamaica in 2009 and Belize in 2010. Jamaica and Suriname need to increase their national vaccination coverage to greater than 95%.

A. General Surveillance

Countries continued to report weekly surveillance for vaccine-preventable diseases. The last diphtheria case was reported in 1994 and the last neonatal tetanus case in 2006. Nine tetanus cases were reported in 2008 from 5 countries and 5 cases in 2009 (as of epidemiological week 42) from 2 countries, mainly in the elderly. There has been no reported case of laboratory-confirmed pertussis in 2009 compared to 2 cases confirmed in 2008 in one country. All countries continue to report cases of varicella: 9,328 varicella cases were reported up to 2009 (as of epidemiological week 42).

An outbreak of mumps that started in St. Lucia in 2008 continued up to June 2009. The first case of parotitis was seen at a medical clinic in March 2008, where the client was a 17-year old male. Over 200 suspect cases were reported from the public and private sectors. Reported ages ranged from 16 months to 56 years and the male to female ratio was 1:1 (Figure 2).



Among the cases were 15 children from one secondary school who had history of receiving one dose of mumps-containing vaccine, but 2 doses of measles. From the 92 samples sent to CAREC for testing, 22% were positive from viral isolation or serology and genotype G was isolated. Most of the tested cases were linked to a laboratory-positive case via family, work, or social groups. A 20-month old female diagnosed with viral pneumonia was admitted.

From the vaccination dates obtained, the cases have received none or 1 dose of mumps-containing vaccine and 2 doses of measles vaccine. All cases were managed by isolation at home and booster MMR given to their contacts if they had received one or no dose of mumps-containing vaccine. A 2nd dose of mumps-containing vaccine was given to the school-age children (“high school children”) who had received only one dose.

GENERAL RECOMMENDATIONS:

- All countries should attain coverage levels for all administered antigens at 95% or greater at national and sub-national levels.
- The EPI Managers expressed their support for the PAHO Revolving Fund and will continue to recommend that their Ministries of Health procure vaccines through the Fund.
- All efforts should be made by countries to assess the quality of the vaccination data and implement mechanisms to collect vaccination data from the private sector.
- Data quality audits were proposed for Jamaica and Belize in 2009/2010.
- Comprehensive EPI evaluation and data quality survey were proposed for St. Kitts and Nevis and Virgin Islands (UKOT).
- Vaccination Coverage Surveys are to be conducted in 2010 in Guyana and Trinidad and Tobago and should include MMR2 vaccination coverage in both countries. For Trinidad and Tobago, it should also include the 2nd yellow fever dose (YF2) vaccination coverage. YF2 would be a part of the survey in both countries.
- All health care providers are strongly encouraged to administer tetanus-diphtheria containing vaccine boosters to at-risk adults, such as farmers, carpenters, gardeners, every 10 years, using all contacts with health care system as potential opportunities for vaccination.
- Susceptible groups for mumps in the subregion should be identified and plans implemented to address their lack of immunity.

B. Progress with Measles, Rubella, and CRS Elimination

1. Challenges and Opportunities for Maintaining Elimination in the Americas

The last instance of endemic measles transmission in the Americas occurred in Venezuela in November 2002. Since 2003, imported and import-associated measles cases have been reported in historically low numbers in the Americas: 119 in 2003, 108 in 2004, 85 in 2005, 237 in 2006, 167 in 2007, 206 in 2008, and 81 in 2009.¹ In the period 2008-2009, 199 secondary cases resulted from a total of 69 importations, while for 24 cases the source was unknown.¹ Measles cases reported in the Americas have been isolated and/or sporadic and outbreaks have resulted in a limited number of cases secondary to importation, with outbreak size ranging from 1 to 52 secondary cases in Canada and the United States, respectively, and from 1 to 2 secondary cases in Latin America and the Caribbean respectively. Sixty percent of measles importations to the Americas for the same period have come from Europe; these outbreaks occurred in Argentina, Canada, Chile, Ecuador, Jamaica, Peru, and the United States.

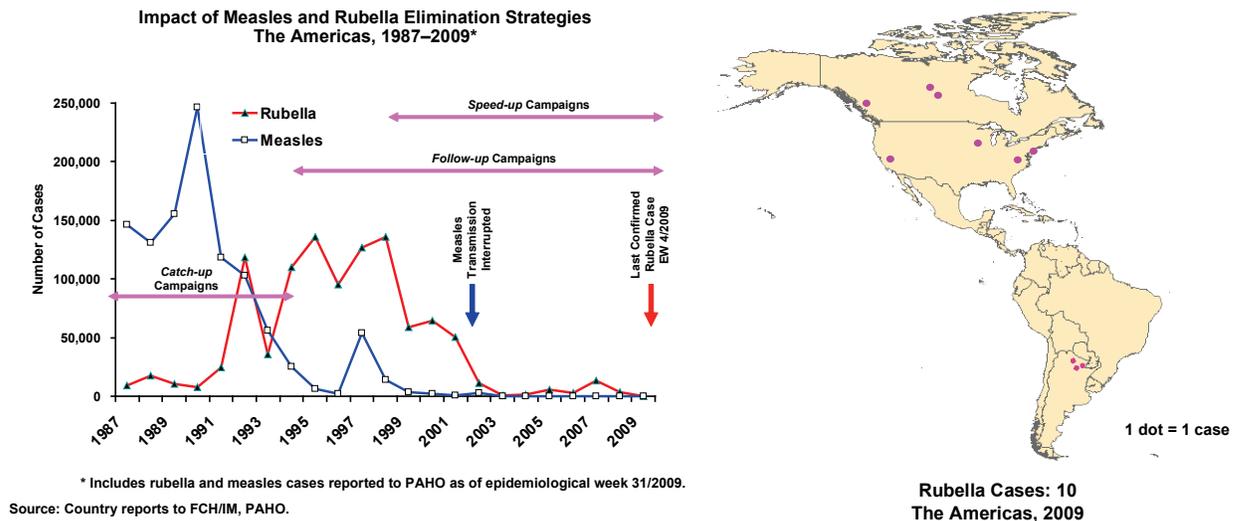
Regarding rubella and congenital rubella syndrome (CRS) elimination, the Region of the Americas has made extraordinary progress with an estimated 112,500 CRS cases prevented in Latin American and the Caribbean over a fifteen-year period. The last instance of endemic circulation occurred in Argentina in February 2009. Canada and the United States have reported

¹ Data until epidemiological week 32/2009.

3 and 4 import-associated rubella cases (genotype 2B in the United States), respectively. In 2008-2009, the Americas reported a total of 39 CRS cases in Argentina (n=3), Brazil (n=33), Chile (n=2), following large rubella outbreaks, and 1 the United States.¹

Among the main challenges to maintain elimination are the risk of virus importations from other Regions with the occurrence of secondary cases, the need to keep reaching susceptibles through a second vaccination opportunity/high-quality follow-up campaigns, the need to strengthen integrated measles/rubella and CRS surveillance (with increased involvement of the private sector), the issue of false positives/negatives, and the limited specimens available for virus detection/isolation, particularly for rubella.

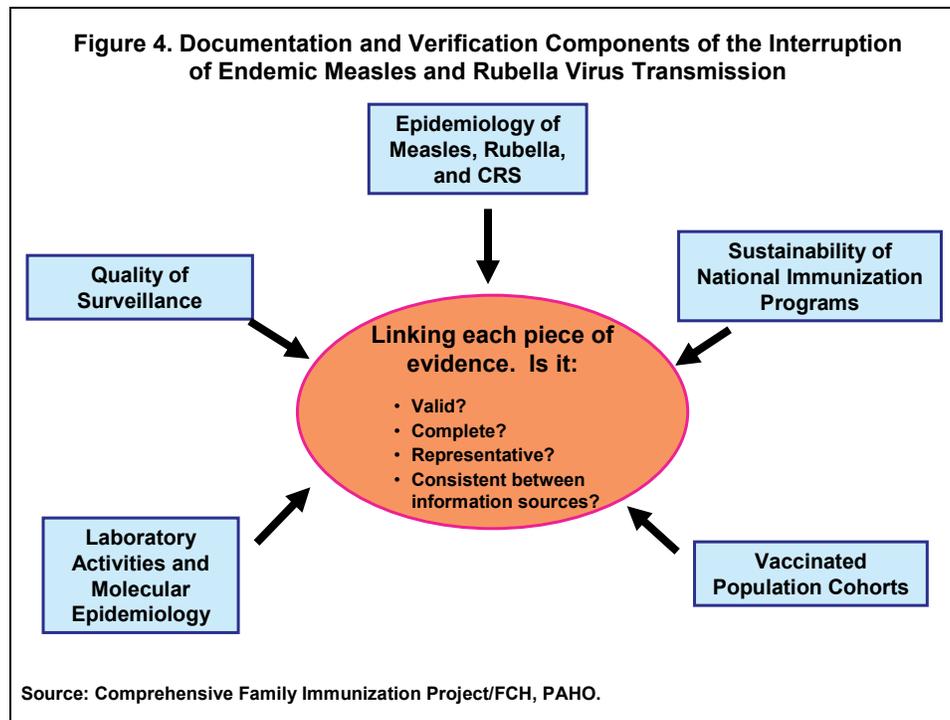
Figure 3. Impact of Measles and Rubella Elimination Strategies, The Americas, 1987-2009*



2. Process for Documenting and Verifying Measles and Rubella Elimination

In October 2007, Resolution CSP27.R2 was adopted during the 27th Pan American Sanitary Conference. The resolution called for the establishment of an international Expert Committee and urged PAHO Member States to establish national commissions to document and verify elimination in each country. In August 2009, PAHO's Technical Advisory Group (TAG) on Vaccine-preventable Diseases endorsed a Regional plan of action for the documentation and verification of measles, rubella, and CRS elimination in the Region of the Americas. TAG went further to state that the documentation process presents an opportunity to place immunization programs as a high-ranking priority on the political agenda of countries and to strengthen vaccination activities and surveillance systems. TAG recommended that countries prepare and implement a national plan of action (Figure 4) for the verification of measles, rubella, and CRS elimination, with technical cooperation from PAHO and the international Expert Committee. The key components to be evaluated during the documentation and verification process include the following:

1. Analysis of coverage with the measles-rubella vaccine in population cohorts aged <40 years.
2. Epidemiology of measles, rubella, and CRS and the impact of vaccination strategies.
3. Quality and efficiency of integrated measles, rubella, and CRS surveillance.
4. Analysis of virologic epidemiology and verification of the absence of endemic measles and rubella virus strains (through viral detection) in all countries of the Americas.
5. Sustainability of national immunization programs to maintain measles and rubella elimination.



RECOMMENDATIONS INCLUDED IN THE PRESENTATION:

- Urge other WHO regions to eliminate measles and rubella;
- Guarantee homogeneity and coverage $\geq 95\%$ in follow-up campaigns and with the first routine MMR dose;
- Prepare plans for rapid response to importations;
- Actively involve the private sector in measles, rubella, and CRS surveillance and vaccination activities;
- Guarantee the completion of integrated measles/rubella surveillance indicators and CRS surveillance indicators;
- Establish national commissions to compile and analyze data to document and verify measles, rubella and CRS elimination; and
- Each country should develop and implement a national plan of action to document and verify measles, rubella and CRS elimination.

3. Recent Measles and Rubella Importations

a. Canada:

Endemic transmission of measles and rubella in Canada has been interrupted for some time. However, importation and import-related measles and rubella continue to occur.

Measles: After a very low incidence of 13 cases in 2006, 102 and 62 cases were reported in 2007 and 2008, respectively. In 2009, as of November, 14 cases were reported. Source countries included Bangladesh, Belgium, China, France, India, Israel, Morocco, Pakistan, and the

USA. Although for many cases vaccination status is not known, unvaccinated individuals accounts for most of the cases.

Rubella and CRS: Since the outbreak of rubella in a community that opposes immunization, less than 5 cases are reported annually, all imported or import related. Source countries include the Bangladesh, Egypt, and the Philippines. No CRS cases were reported since 2005. Challenges include pockets of susceptibles due to reported religious or philosophic objections and importation by Canadians and foreign visitors. Epidemiological and virologic evidence support the elimination of measles and rubella in Canada.

b. USA:

Despite the elimination of measles in the USA in 2000 and rubella and CRS in 2004, cases continue to occur. Since 2001, 625 measles cases have been reported in the US. Most of these cases are the result of direct importations from other countries or are associated with spread from these importations. In recent years many of importations have been from European countries experiencing measles outbreaks including Belgium, Italy, Switzerland, and the UK. The largest measles clusters in the US have been in pockets of individuals who are unvaccinated because of personal beliefs. Fifty-four rubella cases and 3 CRS cases have been reported in the US since the diseases were declared eliminated in 2004. Most of the cases are also importations or import-associated.

The US has four basic strategies for maintaining measles, rubella, and CRS elimination. These include (1) maximizing population immunity through vaccination, (2) assuring adequate surveillance, (3) rapid outbreak response, and (4) working to improve global control of measles and rubella infections. Challenges to maintaining measles, rubella, and CRS elimination include the ongoing risks of importations, lack of familiarity with diagnosis of these conditions, the high level of public health effort needed to investigate suspect cases, and the maintenance of high vaccine coverage.

4. System Performance - Caribbean Measles and Rubella Elimination Activities

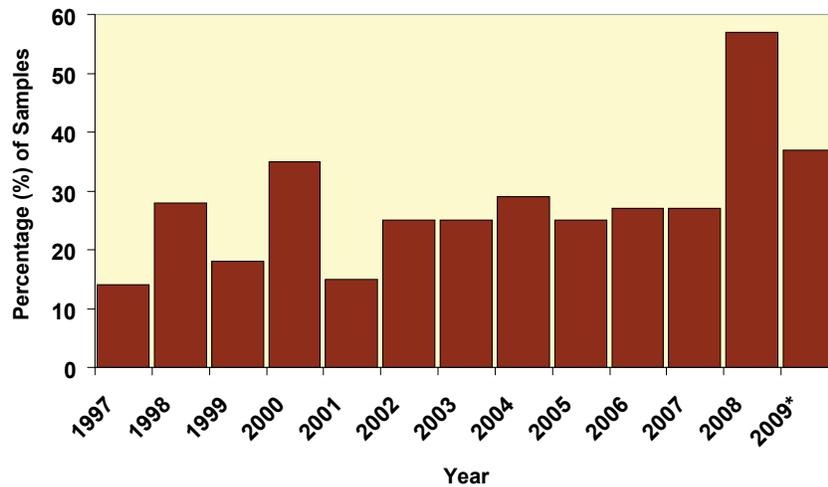
The interruption of indigenous measles virus circulation occurred in 2002 in the Americas and in 1991 in the Caribbean Community. Since then there have been imported cases with a recent imported and one import-related case in 2008.

a. Case Reporting:

Suspect measles, rubella, and CRS cases are being reported from over 700 sites in the Caribbean subregion for 2009 (up to epidemiological week 42). Ninety-nine percent of these sites report weekly. National reports include data from public and private health facilities, of which public sector sites account for 85-95% of total sites. Routine reporting of febrile rash illnesses continues from French Guiana (started in 2003), Aruba, and the Netherlands Antilles which started reporting again in 2007.

In 2008, the highest proportion, 57%, of febrile rash specimens reached CAREC's laboratory within five days after collection. The improvement was primarily due to the timely response of Jamaica to an imported measles case. However, in 2009 (epidemiological week 42) only 37% of specimens arrived within the prescribed period, a reduction of 20% (Figure 5).

Figure 5. Percentage Samples Received at CAREC <5 Days After Being Taken English-speaking Caribbean and Suriname, 1997-2009*



*Data as of Epidemiological Week 42/2009.

Source: Country reports, CAREC.

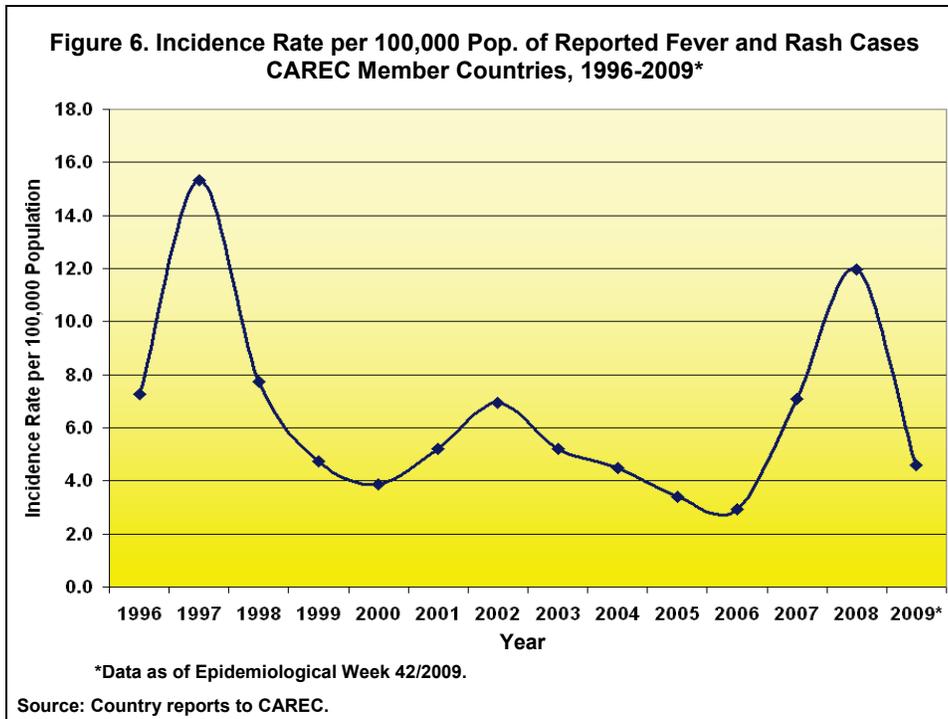
b. Challenges:

Some countries, for example Belize, have managed to improve the percentage of specimens that have arrived at CAREC within the prescribed 5 days, but for many the internal mechanisms are still unable to meet the surveillance system demands for rapid specimen transport. A similar challenging situation exists for the external airline courier systems. Specimen transport within countries is problematic at times, as there are often inadequate funded mechanisms to guarantee a reliable system. Airport clearance remains challenging but some improvements have occurred through mechanisms in place for influenza surveillance.

c. Case Classification:

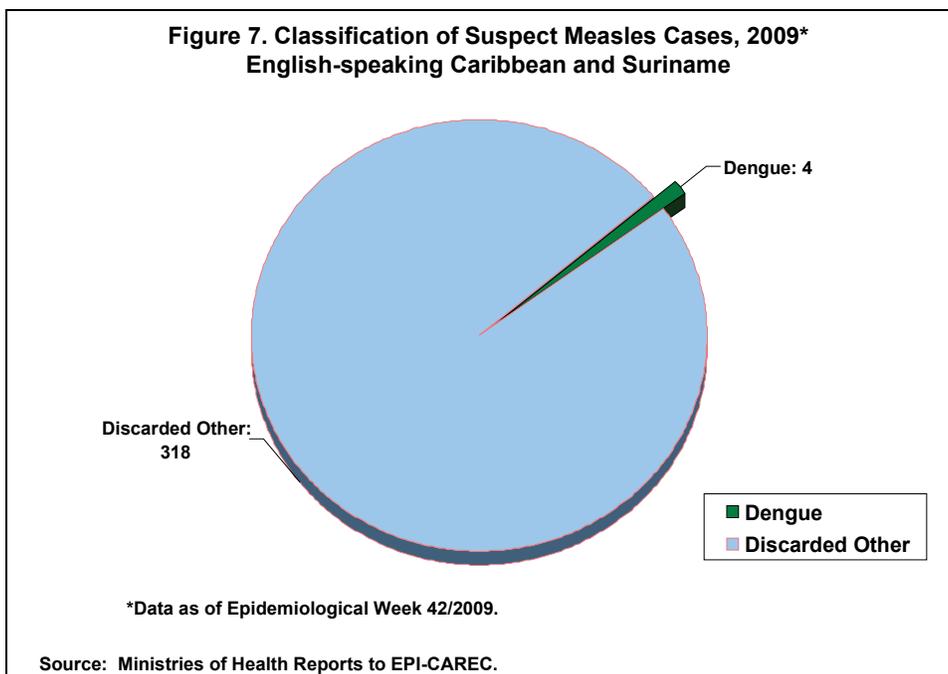
The surveillance system started in 1991 has received reports of 7,960 cases up to the end of 2008. Laboratory testing was conducted in 99% of these cases: 772 of the cases were rubella, 420 dengue, and 7 confirmed measles.

Between 2000 to 2008, there were 3,523 suspect measles/rubella cases reported through the surveillance system and of these, 28 were laboratory confirmed as rubella infection and 256 as dengue fever. Two confirmed measles case (imported and import-related) were reported, while 3,237 specimens tested negative for measles, rubella, and dengue fever. Of these negative cases, 115 were laboratory confirmed as due to human herpes virus type 6 (HHV-6). The other clinical diagnoses include scarlet fever, varicella, and allergic reactions. The incidence rate of reported cases peaked in 2008 to 12 per 100,000 population because of increased surveillance activities in response to an imported measles case (Figure 6). All countries have reported suspect cases over the past five years. Also the average rate of rash and fever cases per 100,000 population from 1998 to 2008 varied from 1.4 to 15.



For 2009 (up to epidemiological week 42), 326 cases of fever rash illness were reported, of which Jamaica was responsible for 64%, followed by Guyana, 16%, and Belize, 15%. The reported cases were from eight countries. Fifty-six percent of cases were less than 5 years of age and 11% fifteen years and older. Of the 326 cases, 15% of cases were tested for dengue and 5 were IgM positive.

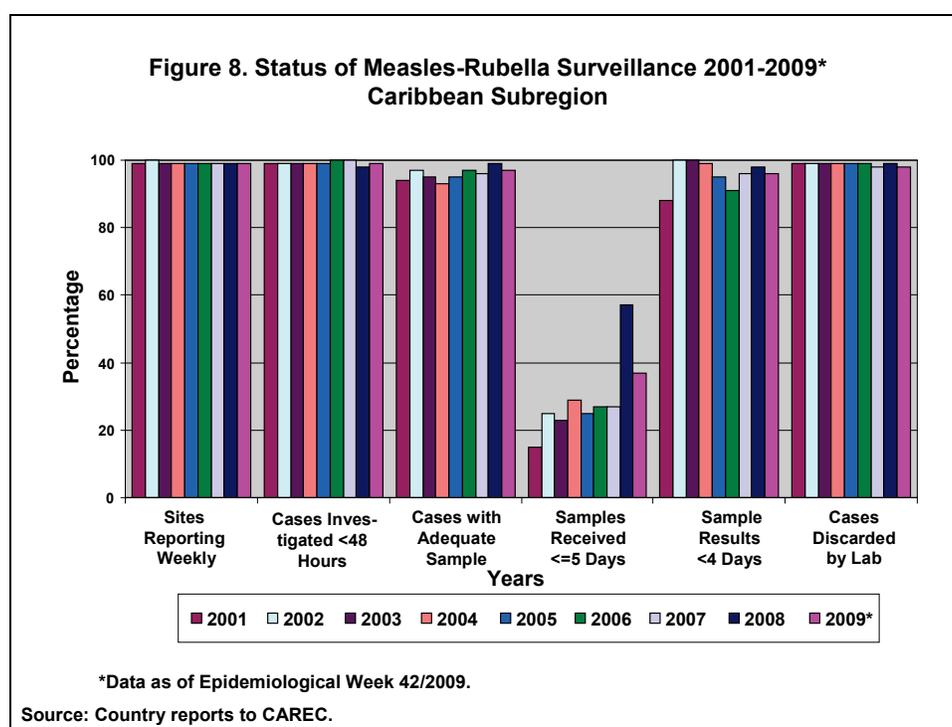
Three hundred and eighteen cases were discarded as neither measles nor rubella and of these 21 were tested for HHV-6 (roseola) and 3 were positive (Figure 7).



In addition to the cases stated above, French Guiana (16) and Netherlands Antilles (142) reported a total of 158 fever/rash cases. There were no reports of laboratory-confirmed measles or rubella.

d. Surveillance Indicators:

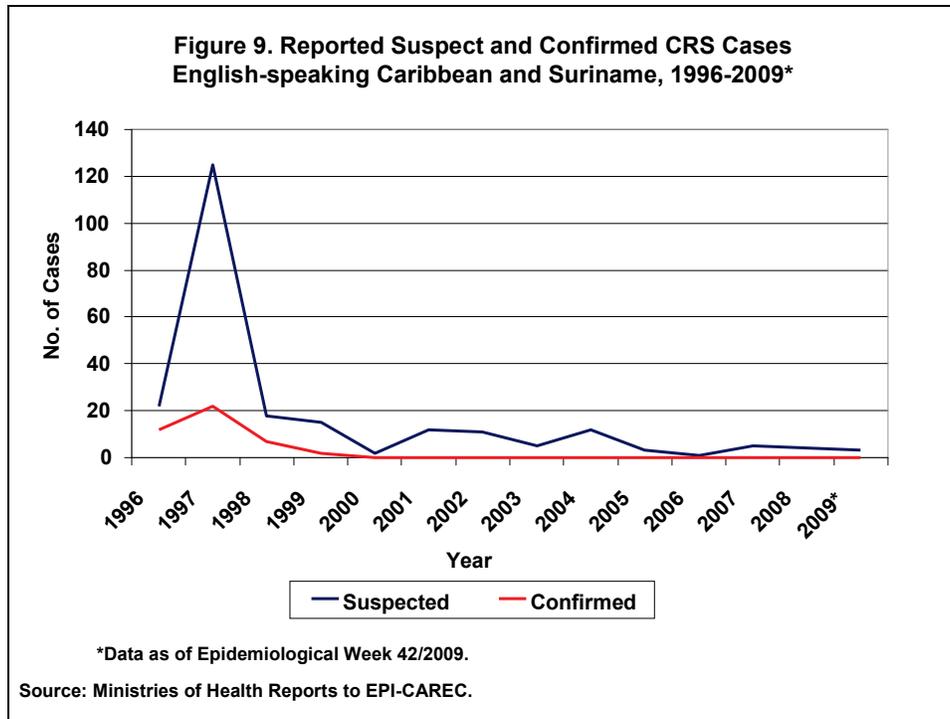
In 2008, 99% of surveillance sites reported on a weekly basis with 98% of cases being investigated within 48 hours; 99% of cases had adequate samples taken and 98% received laboratory results in less than 4 days. Almost all cases (99%) were discarded on the basis of laboratory testing. An improved 57% of specimens were received at CAREC less than 5 days after collection. For 2009 (epidemiological week 42), 99% of sites reported on a weekly basis and 99% of cases were investigated within 48 hours; adequate specimens were collected from 97% of cases; and 96% had received laboratory results in less than 4 days. Ninety-eight percent of specimens were discarded by laboratory testing. Only 37% of samples arrived at the CAREC laboratory in less than 5 days post-collection, a 20% decrease in comparison to 2008. (Figure 8).



e. Impact of the Rubella Vaccination Program:

Cases of indigenous rubella were last reported in 2001, whereas, in 2008, an imported rubella case was reported from Bermuda and another rubella case from French Guiana. No case was reported in 2009 (epidemiological week 42).

In 2008, a total of 39 cases were evaluated for CRS, of which four were referred as suspect CRS and 35 for TORCH evaluation (toxoplasmosis, rubella, cytomegalovirus, and herpes). For 2009 (epidemiological week 42), 3 suspect CRS cases were referred for testing and 16 cases for TORCH laboratory evaluation. All specimens were confirmed rubella negative. The last indigenous CRS case in a CAREC member country was recorded in 1999 (Figure 9).



5. Caribbean - Plan of Action to Verify Measles, Rubella, and CRS Elimination

The PAHO/WHO Directing Council adopted Resolution CD44.R1 calling for the elimination of rubella and CRS by 2010. The 27th Pan American Sanitary Conference at its 59th Session of the Regional Committee adopted Resolution CSP27.R2 in 2007, requesting Member States to begin the process of documentation and verification of the interruption of endemic measles and rubella virus transmission in the Americas. In response to these resolutions, PAHO convened an international group of experts that developed a document to guide and standardize the process of documentation and verification of the elimination of measles, rubella, and CRS.

The document establishes concepts and criteria, provides methodologies, and identifies required data elements to document the interruption of endemic measles and rubella virus transmission in the countries of the Americas.

The documentation and verification process should answer the three following questions:

1. Have measles and rubella viruses been present in the country or territory during the past three years?
2. Is surveillance adequate enough to detect these viruses if they were imported in the country or territory?
3. Are vaccination levels high enough to prevent the re-introduction of measles and rubella infection if they are introduced?

RECOMMENDATIONS:

In order to implement the elimination activities regarding the Resolution, the following recommendations are proposed:

- The Caribbean sub-region should establish a working group to review the documents and further refine and define checklists and procedure for documentation and verification.
- The proposed members of the working group should include selected EPI Managers and experts and the meeting of working group should occur during the 1st quarter of 2010 with the output document ready for use by May 2010.
- The Subregional Commission should be established and should meet in the first 6 months of the year 2010 (June 2010). The proposed composition of the Commission should include Mr. Henry Smith, Dr. Peter Figueroa, Dr. Merceline Dahl-Regis, CMO, Bahamas, public health practitioner, a retired EPI Manager, an epidemiologist, a virologist, and the president of the Caribbean Paediatric Association.
- An assessment team should visit each country to assist with readiness, verification, documentation, and report writing.

a. Belize - Fever and Rash Surveillance:

Measles, rubella, and CRS surveillance is the responsibility of the Maternal and Child Health Unit in the Ministry of Health. Detection of suspect cases is done at the primary and secondary levels within the public and private health sectors. Specimens are collected by health care providers and sent to CAREC for laboratory testing or confirmation. The number of suspect cases investigated has increased from 47 cases in 2005 to 71 cases in 2008. The last measles case occurred in 1991, rubella in 2001, and CRS in 1997.

Catch-up vaccination campaigns targeting children aged 1–4 years (1997), females aged 5–35 years (2000), and males aged 5–35 years (2004) were implemented. The combined MMR vaccine was introduced in 1996 and the second dose for children aged 2 years in 2005.

Four of the five surveillance measles/rubella indicators were very well met. The major challenge of the fifth is to continue to improve the timeliness of specimens arriving at CAREC. Challenges being experienced regarding surveillance are the strengthening of the active search of suspect cases in both public and private sectors and the continued strengthening of community participation in the surveillance system.

b. Jamaica - Fever and Rash Surveillance:

Fever and rash surveillance continues in Jamaica through 66 sentinel and 28 hospital sites. Over the past three years, the surveillance has improved with reporting from all but one parish in 2009. Increased reporting of suspect cases over the years has been associated with outbreaks of viral illnesses such as dengue fever, chickenpox, “hand, foot and mouth disease”, and, in 2008, an imported case of measles that helped with strengthening surveillance.

Jamaica has met all but one of the indicators for fever and rash surveillance: timely submission of specimens to CAREC. This indicator remains relatively low at 65% in 2008 and 56% in 2009. Of cases reported with adequate samples taken, over 96% were discarded as neither measles nor rubella and 1-2% was discarded as dengue fever or human herpes virus type 6. Measles IgG testing was performed on most specimens submitted to CAREC. Of those children aged 1 year and older with documented evidence of a measles-containing vaccine, only an average of 85% demonstrated sero-conversion.

Challenges to fever and rash surveillance include the timely submission of specimens to the national laboratory and the completeness of investigation following the first contact strategy.

c. Measles and Rubella Monitoring in French Guiana:

Up until 2003, no monitoring system for measles and rubella was in place in French Guiana. Since then, two systems have been set up: a biological monitoring system with laboratories and monitoring of fever and rash syndrome with health centers.

In March 2003, the national reference center for arbovirus and influenza virus, Pasteur Institute of French Guiana, started conducting a biological diagnosis of measles for each negative result for dengue (if a clinical rash is present). Between 7,000-20,000 biological tests are done for dengue per year. In July 2005, biological diagnosis of rubella (IgM) was also added. The results have been no measles reported. In September 2008, 1 rubella case was detected in a pregnant woman, but with no congenital transmission.

In May 2006, syndromic surveillance for fever and rash was implemented in the 17 health centers. About 7 to 40 fever and rash cases are notified each year but the diagnoses were generally varicella and dengue.

Since 2005, France has introduced the specific mandatory measles notification for the entire territory. All pregnant women have been mandatory tested for rubella for many years. In the future, it is expected that the seven laboratories of French Guiana will join the national Renarub network.

RECOMMENDATIONS – MEASLES, RUBELLA AND CRS:

The recommendations below consist of some adopted from the 2009 TAG meeting and issues discussed at the present meeting.

- Further analysis should be conducted by CAREC regarding the presentation of the 2009 IgG measles and rubella data from Jamaica.
- A funded mechanism should be established in countries to ensure that specimens arrive at CAREC within five days post-collection.
- EPI Managers should discuss with their ministries of health the strategies and activities to be implemented concerning the documentation and verification of the elimination of measles, rubella, and CRS. PAHO may need to resend letters to ministries of health concerning the elimination activities.
- Countries should develop national plans for preparation and rapid response to an importation and potential outbreaks of measles and rubella to achieve an adequate level of preparedness.
- Countries should actively involve the private sector in measles, rubella, and CRS surveillance to support the rapid detection of importations and response to outbreaks and to strengthen immunization activities.
- In order to attain high quality surveillance, countries should guarantee the full integration of measles and rubella surveillance systems and ensure the completion and continuous monitoring of the recommended standardized measles/rubella surveillance indicators. Emphasis must be placed on high-risk and “silent” areas.
- TAG reiterates the previous recommendation to increase sensitivity and quality of the CRS surveillance system by strengthening sentinel site reporting.
- Countries should complete the analysis and evaluation of the following key components of the documentation process as described in the regional plan of action:

- Analysis of coverage with the measles-rubella vaccine in population cohorts aged <40 years.
 - Epidemiology of measles, rubella, and CRS and the impact of vaccination strategies.
 - Quality and efficiency of integrated measles, rubella, and CRS surveillance.
 - Analysis of virologic epidemiology and verification of the absence of endemic measles and rubella virus strains (through viral detection) in all countries of the Americas.
 - Sustainability of national immunization programs to maintain measles and rubella elimination.
- Countries should prepare and implement a national plan of action for the verification of measles, rubella, and CRS elimination, with technical cooperation from PAHO and the International Expert Committee.

C. Poliomyelitis Eradication Efforts and AFP Surveillance

1. AFP Surveillance: A Regional Perspective

The Western Hemisphere was certified as free of the circulation of the indigenous wild poliovirus in 1994 and the last case of poliomyelitis caused by a wild poliovirus was detected in Peru in 1991. In 1998, resolution WHA41.28 of the World Health Assembly established the goal of global eradication of poliomyelitis. In 2009, poliomyelitis was still circulating in 20 countries of Asia and Africa. It is a matter of concern that the international spread of poliovirus is continuing.

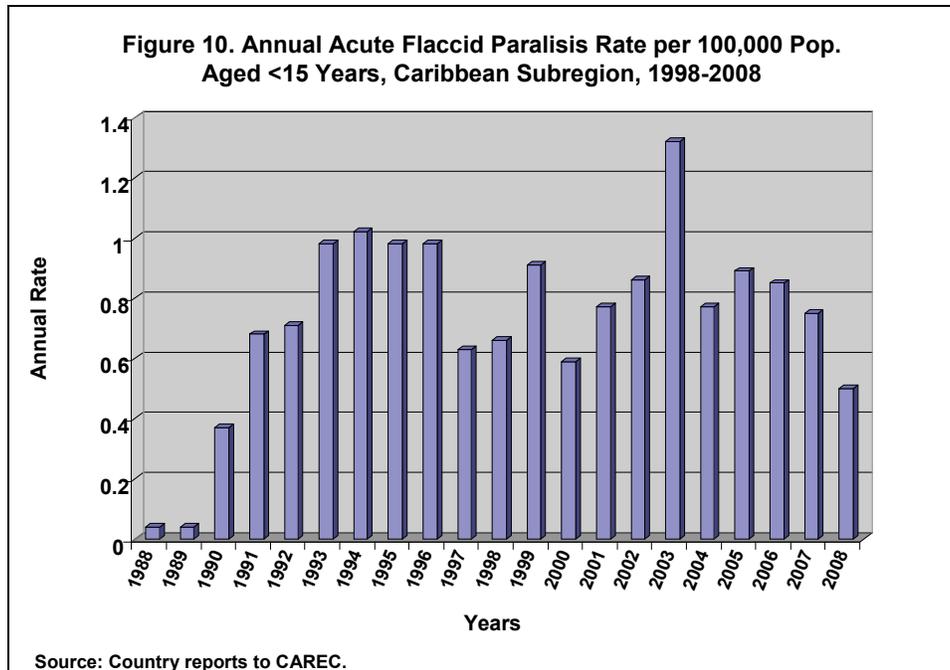
In the Region of the Americas, the vaccine-derived outbreak of polio in 2000-2001 in the Dominican Republic and Haiti highlights the risk of low OPV coverage in countries and municipalities, and the risk of failing to timely detect the circulation of poliovirus in a country or Region that has remained free of its circulation for a long time.

In the Caribbean countries, the Acute Flaccid Paralysis (AFP) rate and the adequate collection of stool specimens in AFP cases has been decreasing for the last five years. To minimize the potential for reintroduction of wild polio viruses in the communities, Caribbean countries must strengthen AFP surveillance and collect adequate stool specimens.

2. AFP Surveillance: A Caribbean Perspective

The Caribbean countries experienced the last cases of wild poliovirus in 1982 and the countries have strived to maintain high OPV/IPV coverage and effective AFP surveillance. AFP reporting continues from 493 sites and 99% of these sites have been reporting on a weekly basis in 2009 (up to epidemiological week 42).

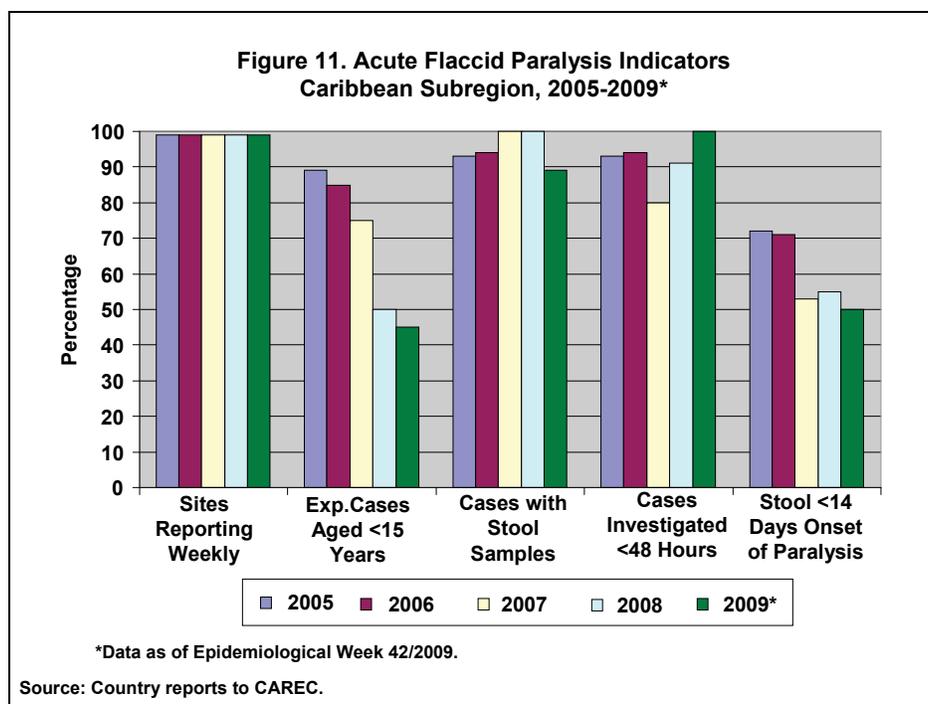
During the period 1994-2008, 267 AFP cases aged less than 15 years were reported from 10 countries. The annual AFP rates ranged from 0.59 to 1.32 per 100,000 population aged less than 15 years (Figure 10).



In 2008, 30 AFP cases with age range of 2 months to 76 years were reported from 4 countries: Belize, Guyana, Jamaica, and Suriname. Stool specimens were collected from the 11 cases aged less than 15 years; 55% of cases had specimens taken within 14 days of onset of paralysis.

In 2009 (up to epidemiological week 42), 16 AFP cases with age range of 13 months to 45 years were reported from 5 countries: Belize, Guyana, Jamaica, Suriname, and Trinidad and Tobago. Nine (56%) cases were aged less than 15 years, of which 8 cases had stool specimens collected within 14 days of onset of paralysis.

The annual rate of AFP cases per 100,000 population aged less than 15 years is 0.45, below the recommended rate of 1.0. The indicators of adequate stool specimens and annual AFP rate are directly related to the probability of early detection of importations of wild polioviruses from the endemic regions of the world. These two indicators are less than expected levels (Figure 11).



RECOMMENDATIONS:

- Caribbean countries must improve their AFP surveillance, paying special attention to the detection of AFP cases and the timely and adequate collection of clinical specimens. This indicator has been decreasing instead of improving.
- Caribbean epidemiologists are strongly encouraged to fully investigate all cases of AFP and ensure that they are appropriately classified.
- Surveillance for AFP in Trinidad and Tobago needs to be improved and evaluation of the system in early 2010 is of paramount importance.
- Each EPI Manager should develop mechanisms to implement annual internal validation of the surveillance system and re-sensitize health practitioners in the public and private sectors about achieving the indicators for AFP surveillance.
- TAG recommends the continued use of OPV as long as wild type polio virus continues to circulate globally.
- All countries should initiate discussions regarding the need for legislation required for phase 2 – laboratory containment for poliovirus materials.

D. Surveillance – Immunization Safety

In 2009, there was one case report of a serious adverse event associated with vaccination. However, no post-mortem was conducted for the cause of death to be elucidated. Training updates and audits in relation to events supposedly attributable to vaccination or immunization (ESAVI) surveillance were conducted in some countries.

1. ESAVI Surveillance: The Experience of Suriname

ESAVI reporting is obligatory for all vaccination sites and clinics. A pharmaco-vigilance structure is also set up and can complement reporting. However, ESAVI surveillance still needs improvement.

In July 2009, a case of ESAVI occurred in a district in Suriname, 300 km from the capital. A 4-month old child died within 24 hours after vaccination. This was broadcasted in the media through radio (talk show), television and, newspaper. A team was instantly set up to investigate the case and the ministry of health was informed. The team initiated investigation, developed a work plan with a working hypothesis according to ESAVI classification (vaccine-related, non-vaccine related, and inconclusive). The schedule included meeting with the relevant local authorities, doing case investigation and supervision of the health and other regional centers. Interviews with parents of deceased, clinic personnel, and other parents were conducted. The doctors and pediatrician who treated the patient were also interviewed.

Communication with the media was also done. Consultations were held with a pathologist, jurist and a psychologist. According to the parents the child behaved normally until 7 pm and worsened at 9 pm. The parents hurried to the emergency room and arrived at 11:30 p.m. with a critically ill child. According to the pediatricians, the child did not improve, even worsened, and the child eventually died at 4:00 a.m. the next day. Sepsis was diagnosed, though post-mortem was requested to exclude other etiology. The post-mortem was refused and the child was buried the same day for religious reasons (Muslim).

In conclusion, vaccination was adequately conducted, the cold chain showed no deficiencies, and there were no contraindications to vaccination. Other children vaccinated that same day and the prior week showed only minor ESAVIs. Challenges in this ESAVI case included the delay in reporting, the distrust of the parents, and the media attention given to the case.

E. Vaccination Week in the Americas

1. Overview of Vaccination Week in the Americas

Vaccination Week in the Americas (VWA) has been celebrated seven times in the Region. Originally endorsed in 2003 by PAHO's Directing Council, VWA is an initiative based on the principles of equity, access, and Pan Americanism. VWA activities strengthen national immunization programs by targeting populations with otherwise limited access to regular health services, such as those in border and rural areas, urban margins, indigenous communities, and poor performing districts. Over its tenure in the Region, VWA has resulted in the vaccination of more than 288 million individuals, the implementation of multiple social communication and awareness campaigns and the integration of other preventative interventions together with immunization. In recent years, VWA has been granted progressively more political priority. Presidents, Ministers of Health, Regional Directors of United Nations agencies, and other international, national, and local leaders have increasingly participated in VWA launching events and activities. This participation has resulted in important media attention being focused on immunization. Outside of the Americas, the WHO European Region celebrated the fourth annual European Immunization Week (EIW) in 2009, an initiative modeled after the success of the Americas. This year, a technical meeting was held between Suriname and French Guiana (French overseas Department) to strengthen ties between the two Regions as part of their vaccination week activities. In 2010, the Eastern Mediterranean Region is planning to pilot a vaccination week and is collaborating with both PAHO and EURO in the planning process, advancing work towards a Global Vaccination Week in the near future.

As has occurred in Central and South America in recent years, VWA 2010 presents an opportunity to highlight the achievements of the Caribbean EPI through the realization of a Regional VWA launching event in an interested Member State.

2. VWA: Examples from the Caribbean

a. Dominica:

VWA 2009 in Dominica focused primarily on providing technical updates on immunization and training health care providers responsible for executing the EPI. Target audiences included nurses, doctors, pharmacists, community health aides, drivers, cleaners, and selected environmental health officers. The need for this EPI update was identified when Dominica's annual EPI evaluations were conducted.

Social mobilization activities were also undertaken. This involved 'Live call in' radio programmes that were held on major radio stations on the island. The programmes gave the public an opportunity to call in with their questions. The discussions focused mainly on the seasonal influenza vaccine as this vaccine would have been introduced to the population in July 2009.

"Special corners" at various health centers to highlight immunization were set up during the week and health education sessions at health facilities focused primarily on immunization.

Hepatitis B vaccination for the target group aged 6-13 years continued during the week. Most students received the 3rd dose of the vaccine. This campaign is ongoing to ensure that the population up to aged <35 years is fully immunized against hepatitis B infection. Trophies were awarded to the districts that maintained the highest quality of immunization throughout the year.

A small survey to evaluate the effectiveness of social mobilization efforts was also conducted. Sourcing adequate funds for VWA 2009 was challenging.

Among the achievements and lessons learned are the following:

- Seven seminars were conducted for health care providers where a total of 120 persons received technical update about EPI. Post-test indicated that persons had learnt and therefore equipped to transfer information to clients.
- Social mobilization efforts were commendable, although it could have been better if more funds were available. The populace seems knowledgeable on vaccines and exhibited positive health behavior in relation to vaccinations.
- The need for MOH, Dominica to provide more funds for the EPI and not just for procurement of vaccines, but to enhance social mobilization efforts.
- Training of Health Staff should be done periodically especially with the transfer of new staff on the districts.

b. Suriname:

During VWA 2009, Suriname focused on four activities:

1. Catch-up and outreach activities by the Regional Health Services (RGD) to improve vaccination coverage status in low coverage areas in the coastal district areas.
2. Yellow fever vaccination in high-risk areas (mainly rural and in the hinterland) and at-risk professional groups in the city and elsewhere.
3. Vaccination against measles/rubella among populations in border areas of Brazil.
4. Joint activities with the EPI of French Guiana

Catch-up and outreach activities by the Regional Health Services: For 2009, the RGD, focused on the age group aged <5 years in low vaccination coverage areas and in five urban and sub-urban health regions in and within vicinity of the capital city, Paramaribo. The strategies applied were fixed vaccination centers with extended opening hours and outreach activities during the period 27 April – 29 May 2009.

Yellow Fever Vaccination Campaign: The yellow fever outbreak in some countries of the region of the Americas in 2008 was reason for Suriname to conduct a yellow fever vaccination campaign, which was successfully implemented until May 2009. In the hinterland, mop-up activities were conducted. A total of 12,657 persons (84.4% of target population) were vaccinated.

Measles Elimination Campaign in Border Area with Brazil: In the hinterland, 99% of the target population were reached and vaccinated with antigens as needed. The campaign was successfully implemented and at the end of the activities 99% of the villagers were up to date with the vaccination schedule. No adverse reactions were reported.

Joint activities with French Guiana: The main purpose of this meeting was to discuss the modalities for EPI collaboration during the 2010 VWA and European Vaccination Week. Topics discussed were joint collaboration in surveys along the Marowijne border river, surveillance/exchange of epidemiological surveillance data, and collaboration in the areas of childhood vaccination. The next meeting will be held in the last week of November 2009.

c. St. Kitts and Nevis:

The programme focused on social communication and mop-up vaccination activities for farmers, fishermen, and health care workers due to their occupational risks. Vaccines given included hepatitis B and diphtheria-tetanus (adult Td). Clients were vaccinated at the “open days “at all health centres.

It was also important to empower primary schools teachers on vaccine-preventable diseases. This was done through a sensitization seminar. Brochures were developed and disseminated to schools, parents, and guardians. Public information was shared on the radio programmes “A Voice for Health” and “The Health Chapter.”

An award was presented to St. Kitts first EPI Manager, Ms. Diana Francis-Delaney, and the St. Kitts national EPI Manual was launched as a reference tool for health care workers.

Positive feedback from the teachers showed increase in awareness on the importance of vaccines and vaccine-preventable diseases. The health care workers expressed appreciation for the manual as a good reference tool. Farmers, although they are aware of the importance of vaccines are rather fearful of needles.

RECOMMENDATIONS:

- It is proposed that the VWA be launched in the Caribbean for 2010 – highlights would be focused on achievement and integration of programmes.
- Countries should continue to plan and implement innovative activities for VWA.

F. Pandemic and Seasonal Influenza

The emergence of the new influenza strain and its subsequent management and control activities has impacted on activities that were slated for implementation in countries. Health practitioners of

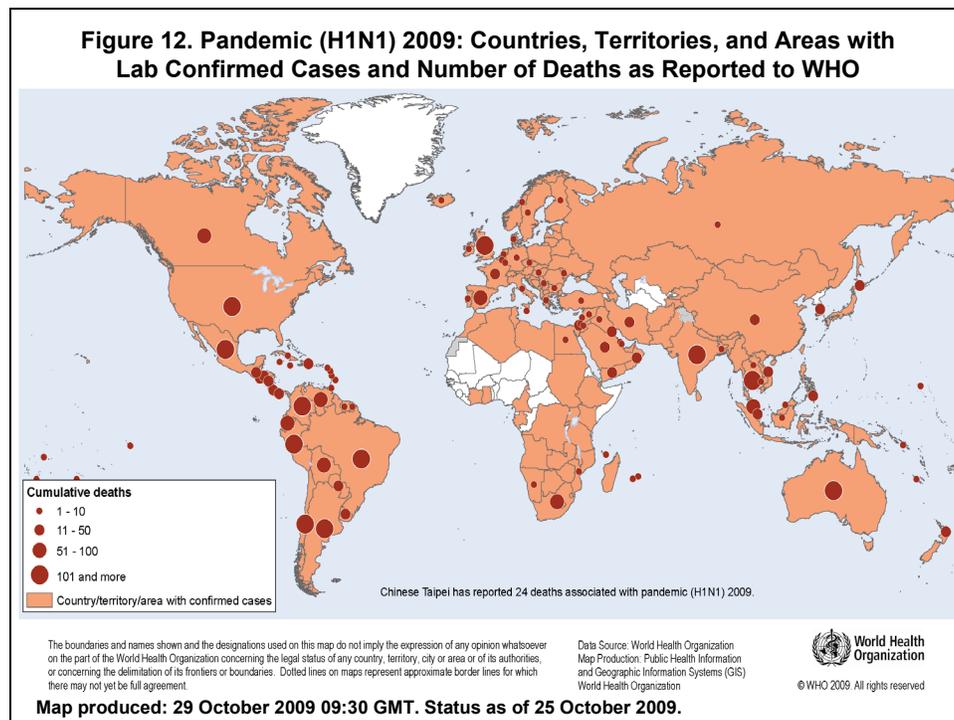
the immunization programme are being challenged to maintain normal activities while coping with an influenza pandemic of which Phase 6 was launched on 11 June 2009.

1. Epidemiological Situation

In March, 2009, the surveillance system in Mexico identified an increase in the number of influenza-like illness (ILI) during a period when a decline would be expected. The increase illnesses were subsequently confirmed to be due to a new strain of influenza, influenza A(H1N1).

The disease spread quickly worldwide and by 11 June 2009, the World Health Organization (WHO) declared phase 6 (pandemic). In 9 weeks, all WHO Regions had reported cases of pandemic (H1N1). In the Northern Hemisphere, pandemic influenza activity continues to intensify throughout North America and this was evidenced by high and increasing rates of ILI in the US and Western Canada, and increasing influenza virus isolations. Pandemic influenza transmission remains active in many parts of the tropical zone of the Americas, most notably in several Caribbean countries and overall transmission continues to decline in most, but not all, parts of tropical Asia.

There have been more than 440,000 laboratory confirmed cases of pandemic influenza (H1N1) and over 5,700 deaths worldwide reported to WHO as of 25 October 2009. Many countries have stopped counting individual cases and the case count is likely to be much less than the actual number of cases that have occurred. The Region of the Americas has accounted for approximately 40% of cases and 73% of deaths (Figure 12).



2. Caribbean Community

The first cases of the pandemic influenza A(H1N1) virus were identified in the Caribbean Community in May 2009. Further spread of the virus occurred quickly to the unaffected countries and laboratory confirmed cases have been reported from all our countries (exception Montserrat) and are widespread within countries.

Syndromic reporting of acute respiratory infection (ARI) occurs weekly from all CAREC member countries and severe respiratory infection (SARI) from 5 countries: Barbados, Dominica, Jamaica, St. Vincent and the Grenadines, and Trinidad and Tobago. On reviewing the data, there is a peak in ARI from epidemiological weeks 21 to 29 and another from week 36. The increase in these cases is due to an increase of ARI cases in children aged <5 years. A similar picture is seen for hospital admissions for ARI.

As of 28 October 2009, over 3,300 specimens have been tested with 35% laboratory confirmed as pandemic influenza A(H1N1) and 3% as seasonal influenza A or B. Most cases were in the age group of 5-14 years, followed by the 20-29 years group.

Twenty percent of the cases were hospitalized and 6% of the hospitalized patients died. Those who died had risk factors such as obesity, diabetes, haemoglobinopathies, and pregnancy. Monitoring continues regarding the geographical spread, respiratory disease trends, intensity, impact of the pandemic on health services, number of hospitalizations and deaths, viral antigenicity, and antiviral sensitivity. Transportation of specimens is still challenging and continuous review and adaptation of country influenza pandemic plans are necessary. Strengthening of surveillance and the response capacity is required together with appropriate risk communication to the public.

a. Cayman Islands - Pandemic H1N1 Status:

Cayman Islands comprise of three islands with an estimated population of 60,000. The ARI surveillance through all the health centres and all three hospitals indicated that about 4,195 cases (7% of population) were reported in 2008 and there were 5,559 (9%) by the end of October 2009 with increase in activity in June and July. Cayman Islands conducted immunofluorescence antibody (IFA) testing locally and sent samples to CAREC for H1N1 testing. There were 105 confirmed cases with 29 admissions at the end of week 43 with the first case confirmed on 4 June. The date of onset of the latest confirmed case was in week 39. Seventy percent of influenza A positives by IFA were confirmed to be pandemic H1N1, seasonal H1N1 and H3N2. However 19% of the influenza A negative specimens (by IFA) were confirmed to be either H1N1 or seasonal influenza. Seventy-two percent of influenza cases were pandemic H1N1 and 28% were of seasonal influenza. Twenty-nine cases (28%) were hospitalized. About fifty percent (49.5%) of cases were aged 5-24 years. The age-specific incidence rate was highest among 5-14 years, being 5 per 1,000 population, followed by 15-24 years, being 3 per 1000 population. Public education through mass media was undertaken to ensure the every day steps for social distancing and personal hygiene. Antivirals were obtained to be sufficient for 25% of the population.

WHO guidelines were used to guide treatment. Currently the ARI cases were double the number of cases for corresponding weeks in 2008. There were about 10 respiratory syncytial virus (RSV) cases detected during this testing. Effective 10 November, an influenza clinic will be established in the largest health centre (Georgetown). In order to curtail transmission, the influenza-like cases are separated from other patients in the general practice clinic. The hospital facilities are capable of managing any admissions that may occur. The ministry of health is currently offering the seasonal influenza vaccine and awaiting the H1N1 vaccine. Public education will continue and also the measures for prevention of spread through social distancing and personal hygiene.

b. Jamaica - Influenza Situation:

Jamaica had developed an influenza pandemic preparedness plan in 2006, which was modified specifically for influenza A(H1N1). The country had its first confirmed H1N1 case in May 2009 in a female student with travel history to the USA. Since then, there have been 40,000 cases of ARI reported through the surveillance system (attack rate in population was 1.5%) with 149 confirmed H1N1 cases of which 56% were females and 44% males. There were 5 deaths in confirmed cases, 1 child and 4 adults, of whom 3 were pregnant women. Eighty percent (80%) of laboratory

confirmed cases were in individuals less than 30 years. The main age groups affected were 20-29 years followed by 10-19 years, and 5-9 years. Only 13% of cases were hospitalized with age distribution being the same as confirmed cases. Of all laboratory confirmed influenza cases, 85% were due to H1N1. Some challenges to the management of pandemic influenza were related to adequacy of availability of intensive care units beds, ventilators, and isolation facilities as well as laboratory test kits. The response to the pandemic influenza served to strengthen inter-sectoral collaboration especially with the ministry of education.

c. Suriname - Influenza Situation:

The purpose of surveillance is generally to monitor and easily detect outbreaks and gaining knowledge of the risk groups. Another important asset in surveillance combined with regular testing is for a country to know which viruses circulate within the country so as to determine which specific vaccine to be used, northern or southern vaccine.

In Suriname, surveillance for ILI is covered at two levels: primary care (before year 2000) and at hospital level. At primary care level, this is done through 25-30 sentinel stations and at hospital level since the introduction of emerging infectious diseases (EID) surveillance in 2005-2006. The challenge has been to include the specimen collection and testing as part of surveillance. Since 2003, several viruses have been identified with testing in 'incidental outbreaks', but this was not conducted on a systematic basis.

With the enhancement and introduction of the International Health Regulations (IHR), and with the outbreak of a new (pandemic) virus in Mexico, the surveillance was strengthened and testing finally started in May 2009. Now testing is done according to CAREC's recommendations: 6 ARI specimens per week and all SARI cases from hospitals. Surveillance was enhanced as Suriname was faced with an outbreak —epidemic of fever and respiratory symptoms at both, primary and hospital levels— this year. The epidemic started 8-9 weeks after the confirmed introduction of influenza A(H1N1), by the volleyball team that returned from a tournament in Trinidad and Tobago. From May until November, over 600 specimens were sent for testing to CAREC, of which 200 were of hospitalized cases. Several viruses were identified but the majority was the pandemic influenza A(H1N1). Both men and women were affected from all age groups. The most affected age groups were persons aged <60 years and, specifically those aged <9 years.

Surveillance is essential in finding which viruses are circulating and specifically since the pandemic influenza activity is ongoing. Enhancement of surveillance including improved specimen testing proved that influenza A(H1N1) was responsible for the majority of cases of the epidemic of fever and respiratory symptoms in Suriname.

d. Pandemic H1N1, Canada:

In Canada, the 2nd wave of pandemic H1N1 (pH1N1) influenza activity started earlier than that usually expected for the seasonal influenza. The 2nd wave initially started in Western Canada, progressed to widespread activity across the country. In this wave, the proportion of specimens tested positive for influenza increased steadily and rose to more than 35% by the end of October 2009. Over 700 influenza outbreaks have been reported. The pandemic (H1N1) 2009 strain accounted for 99.7% of the positive influenza A subtyped specimens. Over 100 deaths have been reported between 12 April and 31 October 2009. The intensity of pandemic (H1N1) 2009 in the population was high recently with 661 hospitalizations and 8 deaths reported by week ending 30 October 2009.

A total of 2,440 persons were hospitalized, including 443 cases admitted to ICU; 230 cases required ventilation. Immunization against pandemic H1N1 (with unadjuvanted and adjuvanted vaccines produced by GlaxoSmithKline) started in early November, as per the recommendations. Immunization was initially given by public health officials exclusively, but now it is also given by selected general practitioners. An active immunization campaign is currently going on, with

millions of doses already distributed. Adverse events reported to date are comparable to that of the seasonal influenza vaccines and no serious ones linked to the new vaccine have been reported. Adjuvanted H1N1 vaccine was approved by Health Canada on 21 October 2009.

e. Martinique Vaccination Programme for H1N1 :

The French health policy against the influenza A(H1N1) pandemic is to plan and develop a vaccination campaign and to propose, among other actions, for the vaccine against the new virus to be administered to the entire population of Martinique. This vaccination campaign is an important part of the prevention measures against A(H1N1) virus. The main goal is to vaccinate the highest proportion of the population in the shortest time (50% in 2 months in Martinique). In order to do this, it is necessary to set up 6 special vaccination centers which will employ all together about 150 persons (nurses, physicians, administrative personnel). The basic vaccination team is composed of 6 nurses, 2 physicians, 7 administrative officers. This basic vaccination team will operate 4 hours per day and will have the capacity to perform 360 vaccinations during this time (one every 40 seconds). There are major difficulties to set up this special vaccination campaign and so the staff will have to be imaginative and innovative.

RECOMMENDATIONS:

Excerpts from TAG Recommendations:

- After considering the current context, SAGE² recommended the following population groups (edited to reflect age ranges more commonly managed in the Region):
 - Health care workers;
 - Pregnant women;
 - Population older than 6 months of age with chronic disease;
 - Healthy young adults aged 19-49 years;
 - School children aged 5-18 years;
 - Children aged 6 months to 4 years;
 - Healthy adults older than 50 years.
- As with all new vaccines, the detection of ESAVIs will be essential. The main objectives of ESAVI surveillance are the following:
 - Detection of triggers and known events from previous use of pandemic vaccines and events possibly associated with adjuvants.
 - Rapid, transparent, and efficient communication of investigation results to the public and parents.

Non-TAG Recommendations:

- CAREC should reiterate the guidelines for ARI/SARI sampling and ensure that updated guidelines are published on the website.
- Guidelines are required regarding the epidemiology of influenza-like illnesses (e.g. RSV and dengue, circulation and co-infection) and sampling criteria.
- Guyana could do a case-control study regarding H1N1 and seasonal influenza to see if there is any cross protection from seasonal influenza vaccine. In July, Guyana vaccinated over 20,000 persons with seasonal influenza vaccine.

² SAGE: Strategic Advisory Group of Experts (WHO).

G. Seasonal Influenza

1. Status of Seasonal Influenza Vaccine Use: Regional Perspective

Seasonal influenza is a viral disease whose annual epidemics are estimated to cause three to five million cases of severe illness and 250,000-500,000 deaths worldwide.³ Vaccination is the main strategy for primary prevention. Over the last five years, the Region of the Americas has seen an accelerated uptake of the seasonal influenza vaccine. As of December 2008, thirty-five countries and territories administered the vaccine in their public health sectors, compared to 14 countries and territories in 2004.

Targeted risk groups for seasonal influenza vaccination vary and coverage data is not readily available in most countries and territories. In the tropics, there is a mixed use of both the Northern and Southern Hemispheres vaccine formulations.

In May 2009, following the emergence of the pandemic influenza virus, PAHO helped to coordinate the donation of approximately 1.5 million total doses of seasonal influenza vaccine to 11 eleven countries and territories. This effort allowed for the introduction of the vaccine in 7 of the remaining countries and territories, as well as the expansion of vaccination to additional risk groups in 4 other countries and territories. While seasonal influenza vaccine has not been found to protect against pandemic influenza, this donation was realized to help countries prepare for the eventual introduction of the pandemic influenza vaccine, and to reduce the risk of recombination of circulating strains.

In order to optimize future seasonal influenza vaccine use in the Region, efforts need to be made to improve vaccination coverage monitoring and vaccine uptake, while enhancing the surveillance data available of circulating strains.

2. Guyana - Introduction of Seasonal Influenza Vaccine

The seasonal influenza vaccine was introduced through a vaccination campaign method. This was launched using mass vaccination campaign activities on 18 June 2009 and completed by 31 July 2009. This campaign was possible since 30,000 doses of the Northern Hemisphere influenza vaccines (VIAXGRI) were donated through PAHO to Guyana's EPI programme. The main achievement was that 29,253 persons were vaccinated with a coverage of 98%. The target groups were healthcare workers, the elderly, and security forces (army, police, and fire services). The Maternal and Child Health/EPI prepared a list of the number of at-risk individuals for influenza morbidity and vulnerable groups in all regions. As soon as the vaccines arrived, a one-day sensitization on the seasonal influenza vaccine was conducted for the senior health visitors who were responsible for the vaccination target population within their assigned catchment areas.

Challenges experienced were short shelf-life of donated vaccines; therefore, only 45 days were available to use 30,000 doses. This was a substantially difficult task considering the geographic spread of the population and constrained resources. Even though Guyana was able to use most of the doses, with significant efforts and energy diverted to the vaccination campaign. Some main lessons learnt are that EPI staff are capable of vaccinating large number of individuals in short time with good leadership and close monitoring. Targets established before the beginning of the campaign helped in the use of the vaccines and there was a need to recruit extra manpower in the larger region.

³ World Health Organization. Influenza Fact Sheet N° 211. Geneva, 2003. Available at: <http://www.who.int/mediacentre/factsheets/fs211/en/>

RECOMMENDATIONS:

- All countries should incorporate the seasonal influenza vaccine in the immunization schedule.
- The surveillance system for acute respiratory infection (ARI) and severe acute respiratory infection (SARI) should be continued and enhanced.
- Laboratory diagnostic capacity for influenza has to be enhanced in selected countries.

III. New Vaccine Introduction

The introduction of pneumococcal, rotavirus, and human papillomavirus (HPV) vaccines should be governed by the guiding principles of ProVac, which helps to ensure sustainable immunization approaches to address public health priorities. Surveillance is a key underpinning of this process.

The GAVI Alliance has already committed to providing resources to PAHO's GAVI-eligible countries for the introduction of pneumococcal and rotavirus vaccines. The issue of long-term sustainability of the expensive new vaccines is of paramount importance to policy-makers. PAHO remains committed to the activities of ProVac.⁴ At a Caribbean workshop held in Jamaica in July 2009, a ProVac tool geared toward assessing the cost-effectiveness of introducing HPV vaccine was presented. The tool was field-tested in Barbados. ProVac has also fostered the development of other tools (e.g., pneumococcal vaccine introduction) that are being used in countries. Websites are available for additional reading and interactive work.

A. Rotavirus and Pneumococcal Vaccines

Since 2004, PAHO's Regional Office has been working with member countries in the Region of the Americas to implement hospital sentinel surveillance of rotavirus diarrheal disease, using case definitions, laboratory diagnosis, and analyses of standardized data. Thirteen countries in the Region now have sentinel surveillance and systematically send reports to PAHO. In 2008, Bolivia, Chile, Ecuador, El Salvador, Guatemala, Honduras, and Nicaragua reported their data. A total of 149,853 hospitalizations of children aged <5 years were reviewed in these countries; of these cases, 14% (20,863) had been admitted for diarrhea and of these, 57% (11,904) were classified as suspect rotavirus infection. Of the investigated cases with stool samples, 28% tested positive for rotavirus. Guyana, St. Vincent and the Grenadines, and Suriname have discontinued reporting data to PAHO since 2008.

Since 2006, fourteen (14) countries and one territory have introduced rotavirus vaccine in their national vaccination schedule: in 2006, Brazil, El Salvador, Mexico, Panama, Nicaragua, the United States, and Venezuela; in 2007, Ecuador; in 2008, Bolivia; in 2009, Colombia, Guyana, Honduras, Peru, and the British territory of Cayman Islands. The countries of the Region of the Americas were the first to introduce this vaccine into their vaccination programs, and for the first time ever, a new vaccine is being introduced in developing and developed countries at the same time.

In the Region of the Americas, support is being provided for an epidemiological surveillance network for pneumonia and bacterial meningitis cases in children aged <5 years in sentinel hospitals to support the information obtained through laboratory testing of samples in the SIREVA II network. Seven countries (Bolivia, Ecuador, El Salvador, Guatemala, Honduras, Panama, and Paraguay) conduct epidemiological surveillance of pneumonia and bacterial meningitis. Brazil

⁴ ProVac: Initiative to Promote the Implementation of Economic Analysis for Vaccine Introduction in Countries of Latin America and the Caribbean.

only reports data on hospitalized cases of bacterial meningitis. In 2008, 8,829 suspect pneumonia cases were hospitalized, 79% of them with a chest x-ray, and classified as probable bacterial pneumonia, with a case-fatality of 5%.

Regarding the pneumococcal conjugate vaccine, the United States (2001), Canada (2002), Bermuda (2008), Mexico (2008), Uruguay (2008), Costa Rica (2009), and Peru (2009) have introduced this vaccine in their vaccination schedule for children aged <1 year.

Many lessons were learned from the introduction of the rotavirus vaccine and pneumococcal conjugate vaccine in the Region of the Americas: for example, the need for adequate evaluation of the cold chain and the logistics of the immunization program prior to introducing a new vaccine, the need for training at all levels, the importance of strengthening the network for ESAVI reporting and investigating, the importance of ensuring the sustainability of the vaccine in the national budget, and the establishment of surveillance prior to the introduction of the vaccine and the subsequent maintenance of that surveillance as fundamental to decision-making. Another lesson learned was the importance of having the countries conduct special studies on cost-effectiveness, effectiveness, and safety when introducing a new vaccine for which there is no precedent of use in developing countries.

1. Rotavirus Surveillance – Caribbean Subregion

The surveillance system continues, but less specimens are being submitted for testing and genotyping. In 2008, seven countries reported 138 cases while in 2009, six countries reported 105 cases. Countries need to continue to send samples. Guyana initiated activities for introduction of the rotavirus vaccine while the vaccine was introduced in the Cayman Islands.

2. Introduction of Pneumococcal Vaccine - Barbados

Barbados decided to introduce the conjugate 7-valent pneumococcal vaccine (PCV7) into the public sector routine immunization schedule for all new babies. Accomplishments to date and steps leading up to its introduction were outlined.

B. HPV Vaccine

1. Experience of HPV Vaccine Introduction - Cayman Islands

Cayman Islands comprise of three islands with an estimated population of 60,000 of which 23,500 are females aged 15 years and above. About 50% of the population is expatriate workers and their dependents. The cervical cancer cases ranged from 2 to 8 per annum for the past 15 years, the average being 4.4 per year, with an annual incidence of about 19 cases per 100,000 females aged 15 years and above. It is noteworthy that there were no cases in 2008. While HPV testing is done in some selected cases, there is no data on its prevalence and genotypes.

It has been established that HPV vaccine offers protection against cervical cancer (the USA has introduced it three years ago). In Cayman Islands, the vaccine is available through the private sector. The Cancer Society has been willing to partner with the Government and the vaccine was introduced on 26 August 2009 as a pilot project: the vaccine was offered at no cost to 160 young women aged 11-17 years. The vaccine is administered on 'a first-come, first-served basis'. Public education through the media was organized and special weekly clinics are scheduled. The vaccine is offered with parental consent and the parents must accompany the child. A monitoring system for collection of data on adverse events and side effects was established. As of 31 October 2009, 94 young women were given the first dose and there was one adverse event reported; an 11 year old fainted and hyperventilated after the administration of vaccine. The

project will be reviewed and a decision will be made on its incorporation into the routine schedule, noting the cost implications.

Some of the steps during vaccine introduction included sensitizing the public and health staff, enhancing the relationships with the private sector, arranging the vaccine order and paying for the vaccine, and preparing and implementing guidelines for improved surveillance and use of the vaccine. As a consequence of this decision, several other changes had to be put in place. These included amending the immunization schedule in order to align it with other countries. Revision and renewal of the take-home vaccination card for children were done.

2. Use of a Tool to Cost HPV Vaccine Introduction - Barbados

A costing tool is necessary to define the resources required for the introduction of the HPV vaccine and to evaluate the required incremental costs required. The tool consists of three steps. The first deals with general data, demographics and target populations, the second relates to vaccine delivery, expected uptake and shared costs, while the third one gives the results. Using the proposed strategy of commencing in 2011, the tool gave the following results. The total cost for delivering 3 doses per child was US \$207 with the vaccine cost at US \$37.76. If the vaccine cost was reduced to US \$7 then the cost per vaccinated child would be reduced to US \$98.

It is recommended that PAHO negotiate with the manufacturers to reduce the cost of the vaccine, that training needs be reviewed to identify less costly methods of training, and that the possibility of charging a co-payment by user be considered to enable all eligible persons to receive the vaccine. In addition, further tools should be developed to ascertain the actual cost-benefit of HPV vaccine introduction.

RECOMMENDATIONS:

- Countries that are constrained by resources should prioritize the use of the pneumococcal conjugate vaccine for children at high risk of the disease.
- Surveillance should be enhanced and continue to be used to assess circulating types and antibiotic resistance patterns for pneumococcal organism causing invasive disease.
- The rotavirus surveillance system needs to be strengthened and countries are to send stool specimens to CAREC for genotyping. If rotavirus testing is done in countries, then stool specimens that are positive for rotavirus should be sent to CAREC.
- Cervical cancer prevention programme —primary and secondary prevention activities including surveillance— should be major foci for 2010.
- PAHO should provide assistance to develop cervical cancer prevention model programme to be implemented and evaluated in selected countries with small population size.
- PAHO's Immunization Project should garner funding to assist regarding sero-prevalence studies and economic analyses, including cost-effectiveness studies concerning new vaccine introduction.
- The HPV costing tool should be able to cost the value of an averted death.
- More cost-effectiveness or cost-benefit analyses should be conducted and supported with tools to be able to strengthen the justification for HPV vaccine introduction in countries of the sub-region.
- Countries planning to introduce new vaccines must prepare an implementation plan to include logistics, training, and cold chain capacity, as well as ESAVI monitoring.

IV. Other Topics

A. Vaccination Coverage Survey

1. Belize

A Vaccination Coverage Survey (VCS) was conducted in Belize during the months of March to May 2009. Children aged 2-4 years were included in the survey. The WHO 30x7 sampling method was used in order to give each child an opportunity to participate in the survey.⁵ Sampling points were obtained by random selection of enumerated districts. Four separate surveys were conducted, one in each health region. Take-home records and clinic records were reviewed. The sample size per region was 210 children for a total of 840 children. The main findings were as follows: 20% of children had completed schedule for DPT/HepB/Hib (pentavalent) and OPV vaccines at 26 weeks and by 52 weeks the coverage achieved was more than 90%; vaccination of children with all antigens is delayed by 18 to 23 weeks and the Western Health Region has the lowest estimated and reported coverage for all antigens. Based on the findings, Belize has been requested to conduct an audit of the vaccination data quality for 2010 in order to identify strengths and opportunities and to address areas of weaknesses.

2. Barbados

Barbados sought to validate the officially reported vaccination coverage data, validate coverage for the 2nd MMR dose, and identify any weaknesses in the functioning of the vaccination program. To this end two independent surveys were conducted, a household survey and a school survey. The methodology used was cluster sampling, with two-stage random sampling, 30 sampling locations, and 7 children per location. The survey sample size was 210 per survey making it 420 children. There were three data collection teams comprising public health nurses, clerical staff, and 5 supervisors to verify and validate the data.

The results showed immunization coverage for polio and pentavalent vaccines that is greater than 90%. However, the MMR-1 was slightly delayed and MMR-2 needs to be improved. From the results, it can be verified that the target population is accurate and the data received by the EPI Manager is correct. The recommendations are that the country should continue to strive for on-time immunization and every opportunity should be taken to ensure that the MMR-1 vaccination has been given. A school-based mop-up campaign for MMR-2 should be conducted.

B. Management of Epizootic Yellow Fever – Trinidad and Tobago

Trinidad and Tobago, like some countries in South America, is home to the howler monkeys that are responsible for transmission of the yellow fever (YF) virus. The earliest record of the disease in Trinidad and Tobago was in 1793. Deaths have been recorded due to outbreaks, but for more than 30 years the country has not recorded any human YF case.

In December 2008, dead monkey carcasses were found in and around forested areas of Rio Claro and Ecclesville. In January 2009, sick and dead monkeys were sighted and caught in the Tamana and Manzanilla areas. Laboratory testing done at CAREC indicated positive YF results.

⁵ A commonly used two-stage cluster sampling scheme, the "30 x 7" sample was developed by the World Health Organization with the aim of calculating the prevalence of immunized children within +/- 10 percentage points. That is, if the true prevalence was 40%, one would expect an estimate between 30% and 50% when using the 30x7 method. (<http://nccphp.sph.unc.edu/PHRST5/TwoStageSampling.pdf>).

Confirmation was obtained in January 2009. The ministry of health then launched management strategies to prevent the spread of the disease to humans. Three approaches were identified:

1. **Public Health Measures:** Special teams comprising surveillance, insect vector, veterinary public health, and EPI were formed with the mandate to develop and implement a Plan of Action. The main objectives of the plan were to avert an epidemic; to control human transmission and prevent further spread; and to conduct the evaluation for better preparedness and response.
2. **Public Health Programmes:** These included mass media information, distribution of posters and handouts detailing the disease, and measures to prevent being affected with the disease.
3. **Vaccination:** Vaccination activities were conducted in two phases. Phase 1 concentrated on areas where the sick and dead monkeys were identified. Priority vaccination was given to those persons who reside or work in the affected areas and were not immunized against YF or had only 1 dose more than ten years ago. Phase II also included the priority groups identified, the populations aged 1 year, persons who never received YF or had only 1 dose but are not residing or working in close proximity to the affected areas, together with compulsory vaccination for persons travelling out of the country.

Vaccination activities were conducted at all health centres and at private doctors. For the period January to August 2009, a total of 66,232 YF vaccines doses were administered. There were no adverse events reported due to YF vaccination.

RECOMMENDATIONS:

- In view of the yellow fever epizootic cases in one country the following is suggested for countries with similar situation:
 - Assess yellow fever vaccination status of persons residing in the villages adjacent to the forested areas in countries
 - Develop and maintain a register (including YF vaccination status) for these communities.
- There is a need for recommendations from SAGE and TAG regarding the number of doses of YF vaccine required for full and lifelong immunity.
- To support decision-making, a serosurvey is being recommended. The survey could be conducted in Trinidad and Tobago, which would be an ideal country with epidemiological data and vaccination programme since 1979.

C. Tuberculosis

1. Management of Tuberculosis Cases in the Cayman Islands

About 50% of Cayman Islands' estimated population (60,000) are expatriate workers and their dependents. Chest X-ray is one of the medical requirements to obtain a work permit. Persons with tuberculosis (TB) are not given work permits as TB is not endemic in the Cayman Islands and there will be an impact on the capacity to monitor and follow-up such cases. The BCG vaccination at 6 weeks after birth is still in place although controversial, as it was part of the immunization schedule for a long time.

Usually 1-2 cases of TB are detected among immigrant workers. In 2009, there were two cases detected. The first case was an employee at a work place with about 1,000 employees. The

patient was acid fast bacilli (AFB) smear positive by local testing and specimens were sent overseas for culture and sensitivity which indicated drug-sensitive *Mycobacterium tuberculosis*. The patient was symptomatic for at least three weeks. It has been the policy to offer modified Directly Observed Therapy (DOT)—by admitting the patient to the hospital for two weeks, and offering four drug regimens for 2 months followed by two drugs for another four months. As a proactive measure, press release was issued to avoid any media sensationalisation. A management meeting was held; close contacts were identified; 40 persons were screened using *Mantoux* testing and repeating 8 weeks after the last contact. Three persons were positive by *Mantoux* testing. As these persons are from endemic countries, they were further tested by QuantiFERON TB Gold blood test at CAREC. Two of them were confirmed to be latent infection.

The second case was asymptomatic and it was an accidental finding of *Mycobacterium tuberculosis* in culture taken six weeks prior when patient had an upper respiratory tract infection. The same management procedure was adopted as in the first case. Although only about 10 persons could be considered to having regular contact with the patient, 50 co-workers volunteered to have *Mantoux* tests done and all were negative.

2. A Case of Tuberculosis in Anguilla

The first case of tuberculosis was reported in Anguilla in March 2009. The patient, a construction worker, presented with a history of dry cough for over 2-3 weeks accompanied by productive sputum at mornings, intermittent low grade fever, loss of appetite, weight loss, and shortness of breath when coughing. He was initially investigated as a case of atypical pneumonia but was also screened to rule out pulmonary tuberculosis.

The patient, who originated from Asia, had a history of having received a short course of Isoniazid and Rifampicin in October 2008. He was given a clean medical certificate and deemed fit for employment in Anguilla. Anti-tuberculosis medication was started on 23 March and DOT was used.

All close contacts, 24 persons from Dormitory 5B and 59 mosque worshippers, were investigated. Chest X-rays were done on all contacts in the dormitory and 56 of the 59 mosque attendees. All examined contacts had clear lung fields and were clinically healthy.

A decision was made to continue surveillance, repeat the Mantoux test and give prophylactic medication to contacts with positive Mantoux test. Educational sessions with occupants of the dormitories were held and weekly surveillance for fever and cough was maintained for all contacts.

The opportunity was taken for vaccination of staff of the project and this commenced during VWA 2009 (30 April to 4 May) and continued through September 2009. Vaccines offered included hepatitis B, Td, MMR and varicella. Some workers returned home before the programme was completed. All migrant workers on the site were appropriately vaccinated and immunization cards were issued.

Lessons Learnt:

- Medical certificates should not be accepted on entry to the island unless they are verified.
- Overseas workers must undergo a medical examination before they are given work permits.
- There should be authentic proof of immunization.
- There is a need to develop and improve public relations initiative and the dissemination of appropriate and timely information to the general public to prevent anxiety.

D. Country Evaluation – BVI Experience

A visit was made to the British Virgin Islands Health Authority during the period 6-12 July 2009. The goal of the visit was to evaluate the BVI EPI program. The personal learning goals were to observe the management of the EPI program in another country and to improve knowledge and skill in EPI management in areas such as auditing. Visits were made to key personnel at the BVI Health Authority and the Honourable Minister of Health, Ms. Dancia Penn. The issue of public-private sector partnership was discussed (including private sector receiving vaccine from the public sector).

Visits were also made to 6 public health centers and 2 private health centers where an audit of the EPI system was conducted. The findings were discussed with staff members and recommendations were made.

Two half-day workshops were conducted and 35 participants attended including 7 from the private health sector. The workshop agenda included cold chain management, new and newly introduced vaccines, such as varicella vaccine, and pandemic influenza status of CARICOM countries. The draft EPI Manual was also reviewed with the team.

There were many lessons learnt and experiences shared: the importance that human rights play in the acceptance and refusal of vaccination; the importance of having a vaccination registry for older children and adults; the experience of St. Vincent and the Grenadines with public-private partnership which included sharing of vaccines and surveillance data.

E. New tools: ISIS Information System

The participants were provided with a brief overview of the uses of the new software package for input of case-based information on measles, rubella, CRS, and polio. The Integrated Surveillance Information System (ISIS) is a Microsoft SQL 2008 server data base (Express) written in Visual Basic. Participants from countries were given a practical demonstration on the use of ISIS. Interest was shown by participants for using the software in their countries and also for using it to input information for other diseases.

F. Regional Initiative – Elimination of Vertical Transmission of HIV and Congenital Syphilis

HIV and syphilis are major public health problems affecting women and their newborns globally and also in the Caribbean. Prevention of vertical transmission of HIV and syphilis will result in substantial savings in cost associated with treatment and care for preventable cases. Available data show that some countries in the Caribbean subregion might have reached the target set for elimination.

A 1995 Directing Council Resolution urged countries to eliminate congenital syphilis. The initiative was endorsed by stakeholders from the Caribbean who also endorsed the strategic framework in 2008. The ministers of health of the Caribbean endorsed the proposal within CCH-III in COHSOD 2009 and it was formally adopted at the Caucus of Health Ministers in September 2009.

The goal of the initiative is to eliminate vertical transmission of HIV and syphilis in all countries and territories in the Caribbean by the year 2015, with the following impact indicators:

- Mother-to-child HIV transmission reduced to 2% or less.
- Incidence of mother-to-child HIV transmission is reduced to 0.3 cases per 1,000 live births or less (Caribbean specific).
- Incidence of congenital syphilis is reduced to 0.5 cases per 1,000 live births or less.

RECOMMENDATIONS:

- Consideration should be given to include congenital hepatitis B infection as part of the elimination efforts. Countries that were in a position to do so were encouraged to include it.
- The elimination goal for congenital syphilis should be zero cases instead of 0.5 cases per 100,000 population.

G. Surveillance and Immunization Awards

An annual **Caribbean Surveillance Award** has been established to recognize countries that have performed outstandingly on the surveillance component of their program during the previous year. The award is based on two main criteria: on-time reporting and the percentage of sites reporting to CAREC. The award consists of a certificate and the inscription of the name of the country on a plaque that is kept by the winning country during the following year and until a new country is selected to receive the award. The award is announced during the annual Managers' meeting. **Cayman Islands** is the recipient of the 2009 Surveillance Award. Awards for the second and third places went to **Montserrat** and **Dominica**, respectively.

The Henry C. Smith Immunization Award is presented this year to **Turks and Caicos Islands**. The award is in honour of Mr. Henry C. Smith, who was the first PAHO-EPI technical officer for the Caribbean subregion. His service in the subregion spanned 18 years. The immunization trophy is awarded to the country that has made the most improvement in EPI.

Participants at the 26th Caribbean EPI Managers' Meeting sincerely congratulate these countries for being the recipients of awards and extend their compliments to all their health workers for such outstanding performances.

The 27th Caribbean EPI Managers' meeting will be held in November 2010.