IMMUNIZE AND PROTECT YOUR FAMILY

Immunization Newsletter

Pan American Health Organization

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In this issue:

St. Maarten Completes Two Vaccine Coverage Surveys

Background

Accurate vaccination data has not been available for the Dutch territory of St. Maarten for a number of years, resulting in the territory not being able to identify under-served populations or activities that needed further improvement. This situation has now been corrected with the completion in 2008 of two vaccine coverage surveys that were conducted through an exemplary model of technical cooperation between the Netherlands and the Pan American Health Organization. One survey was based on a random sample of children in the general population and the other was focused specifically on all children living in three geographic areas with large populations of non-documented migrants, a group that is believed to not use general health services, including immunization services, as readily as do members of the registered population.

This territory, which is one of five island territories of the Netherlands Antilles, shares an island with French St. Martin. Citizens of both countries move freely across the border and can be vaccinated on either side. There is, however, no sharing of vaccine records so that it is impossible to know if a particular child has missed an immunization or has in fact obtained it on the other side of the island. Furthermore, the registered population of the territory is approximately 35,000, but St. Maarten's strong economy, based on tourism and trade, has resulted in significant migration from other Caribbean islands. A large but unknown number of these migrants are not registered with the government so that it has been challenging to estimate the target population for immunization.

The majority of immunizations in St. Maarten are provided free through government-supported clinics operated by a non-governmental organization, The White and Yellow Cross Foundation (W&YC). The government also supplies vaccines free to private care providers.

Methodology

For the general survey, we used the sampling methodology recommended by the World Health Organization: two-stage cluster sampling.[1] In the first stage of the sampling, we randomly selected 36 small geographic districts. For the second stage, we randomly chose a specific house within each selected district where the survey team began its field work. The teams then went from house to house, following a specified pattern of travel until they located 8 children in the cluster who were in the target age group of 12-59 months.

For the second survey, we selected three carefully defined neighborhoods with high concentrations of migrants. In these areas, all children in the same target age group were asked to participate in the survey.

For both surveys, we collected information on name, age, sex, date and place of birth, dates of immunizations, usual place of immunization, and, if the child had missed any vaccines, reasons expressed by the caregiver for not obtaining the vaccine.

Among the participants in the survey there were a number of children for whom vaccine records were unavailable but whose caretakers claimed that they had been immunized. To remove the potentially biasing effect of these children on the results, we calculated coverage using the actual data from the survey and a second, adjusted coverage that omitted these children from the calculation.

1 Immunization coverage cluster survey – Reference Manual. Document WHO/IVB/04.34, available at http://www.who.int/vaccines-documents/DocsPDF05/www767.pdf.

ProVac Workshop: The Case of Pneumococcal Conjugate Vaccine

Introduction

The third Regional ProVac Meeting was convened in Asunción, Paraguay, on 2-4 December 2008. The objective of the Pan American Organization's (PAHO) ProVac Initiative is to enhance national capacity to make evidence-based decisions regarding new vaccine introduction. The purpose of the Paraguay workshop was to train participants in the use of the ProVac cost-effectiveness model to evaluate the conjugate pneumococcal vaccine.

Ninety-six participants from 22 countries attended the workshop. Of the 96 participants, 29% were economists, 19% epidemiologists, 19% pediatricians or from other medical specialties, 16% immunization program managers, and 17% PAHO immunization staff in countries. In addition, ministries of health, the U.S. Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), and several academic centers were represented. Experts from the London School of Hygiene and Tropical Medicine, the University of Medicine and Dentistry of New Jersey, Harvard University, Central University of Colombia, National Nutrition Institute of Peru, and São Paulo University contributed to the development of workshop materials.

Methodology

The methodology used for this workshop was a combination of plenary sessions and small breakout ses-

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Results

1. Survey Subjects

Of the 288 children enrolled in the general survey, nine lacked a complete birth date or were either too young or too old. For the 100 children identified in the special survey, four lacked a birth date or were too old or too young. The final sample sizes were 279 for the general survey and 96 for the special survey.

Approximately two thirds of the subjects in each survey were born in St. Maarten, and another fifth were born in French St. Martin. Interestingly, slightly more children in the general survey, 14%, were born off the island compared with only 11% of children in the special survey.

2. Vaccination Status of Subjects

Approximately three quarters of the children participating in the two surveys could document that they were fully immunized at the time of their interview (Table 1). Additionally, approximately 15% of the children were partially immunized, so that overall, 93% of children in the general survey and 86% of the children in the special survey had received at least some vaccines. The remaining children, 20 (7%) in the general survey and 13 (14%) in the special survey, either lacked vaccine records or reported that they had never been immunized.

Among this group of children who lacked vaccine records, 95% of those from the general survey reported that they had been vaccinated compared with 69% from the special survey. Vaccine cards for most of these children were either on the French side of the island or at The White & Yellow Cross Foundation, but for both of these situations they could not be located. If their reports are assumed to be correct, then over 99% of the children in the general survey were at least partially immunized, as were 96% of those in the special survey.

3. Proportion of Children Vaccinated by One Year of Age

Pentavalent vaccine: By twelve months of age all children should have received three primary doses of pentavalent vaccine (containing diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, and inactivated polio vaccines) as well as a booster dose scheduled for the eleventh month of life. The percentage of children who received the three primary doses of pentavalent vaccine by their twelfth month of life was 85% for the general survey and 70% for the special survey (Table 2). Using adjusted coverage that excludes children without vaccine records increases these estimates to 91% and 79%, respectively.

Table 1. Vaccination Status of Survey Subjects, St. Maarten, 2008

Vaccination Status*	General Survey	Special Survey
Fully immunized† (with primary doses)	212 (76.0%)	69 (71.9%)
Partially immunized	47 (16.8%)	14 (14.6%)
Not immunized and unknown status	20 (7.2%)	13 (13.5%)
Total subjects in survey	279 (100.0%)	96 (100.0%)

* Vaccine status as determined at the time of the survey, regardless of age.

† Primary immunization includes three doses of pentavalent vaccine (containing diphtheria, tetanus, pertussis, *Haemophilus influenzae* type b, and inactivated polio vaccines); two doses of hepatitis B vaccine (usually three doses but this is a new vaccine in the national schedule so we examined only the second dose); and one dose of measles-containing vaccine (usually MMR containing measles, mumps, and rubella vaccines).

Table 2. Proportion of Children Vaccinated by One Year of Age, St. Maarten, 2008

Vaccine	General Survey		Special Survey	
	Actual	Adjusted†	Actual	Adjusted†
Pentavalent (3 doses)	85.2%	91.4%	69.6%	79.0%
Pentavalent (4 doses)	41.0%	43.9%	41.6%	47.1%
Hepatitis B (2 doses)	81.9%	87.9%	72.7%	82.5%

† Adjusted by eliminating children whose parents reported their being vaccinated but who lacked vaccine cards or for whom records could not be located by W&YC.

Table 3. Proportion of Children Vaccinated by Two Years of Age, St. Maarten, 2008

Vaccine	General Survey		Special Survey	
	Actual	Adjusted†	Actual	Adjusted†
Pentavalent (3 doses)	89.6%	96.8%	71.7%	81.4%
Pentavalent (4 doses)	73.0%	78.9%	67.7%	76.3%
Hepatitis B (2 doses)	84.3%	90.9%	72.7%	82.5%
Measles-Mumps-Rubella (1 dose)	78.3%	84.7%	66.8%	75.7%

† Adjusted by eliminating children whose parents reported their being vaccinated but who lacked vaccine cards or for whom records could not be located by W&YC.

The percentage of children receiving the fourth pentavalent dose in the general survey was only 41% and for those in the special survey, only 42% (Table 2). When we adjust these figures, the coverages increase slightly to 44% and 47% respectively.

Hepatitis B: By the end of their first year of life all children should have received three doses of hepatitis B vaccine: two early in life followed by a third dose at 11 months of age. Because this vaccine is relatively new in the St. Maarten immunization schedule, we will only look at the two early doses in these surveys. For the general survey, 82% of the children had received the initial two doses of hepatitis B vaccine; for the special survey, 73% had received them. Looking at the adjusted figures, we find that 88% of the children in the general survey had received the two doses, compared with 83% of the children in the special survey.

Figure 1. Cumulative Immunization with the 3rd Dose of Pentavalent Vaccine by Week of Age, St. Maarten, 2005 - 2008

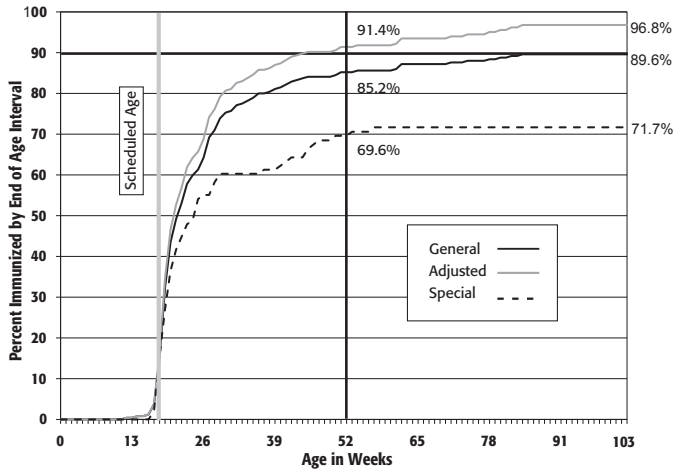


Figure 2. Cumulative Immunization with the 4th Dose of Pentavalent Vaccine by Week of Age, St. Maarten, 2005 - 2008

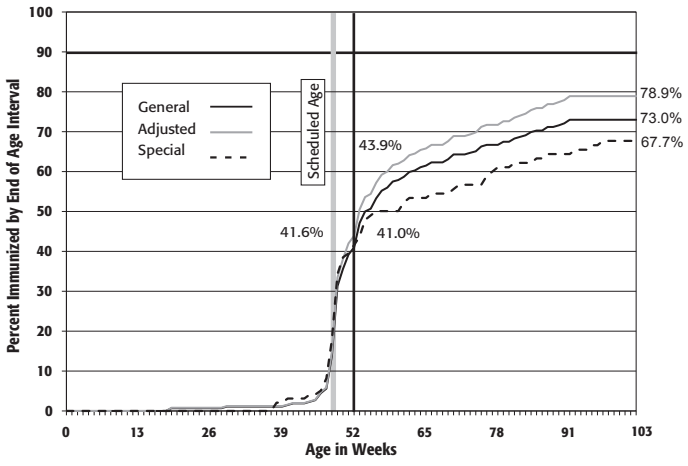


Figure 3. Cumulative Immunization with the 2nd Dose of Hepatitis B Vaccine by Week of Age, St. Maarten, 2005 - 2008

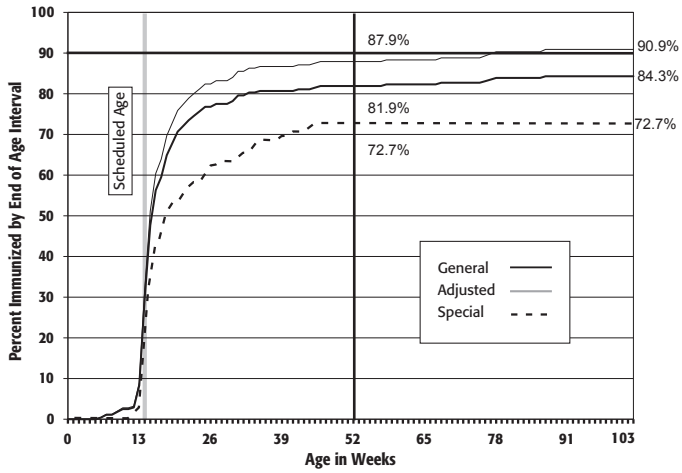
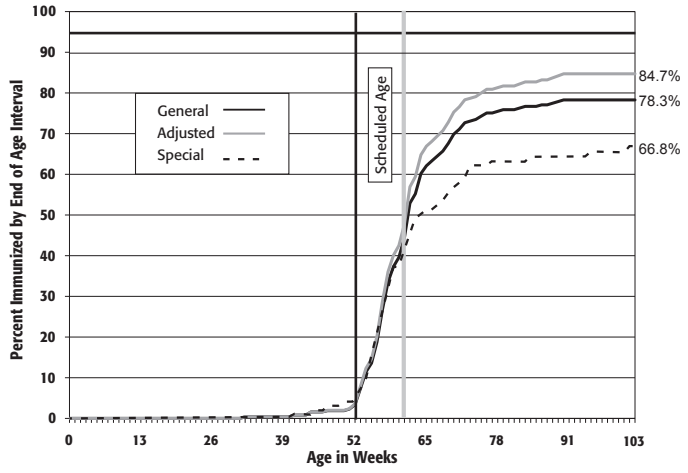


Figure 4. Cumulative Immunization with the 1st Dose of MMR Vaccine by Week of Age, St. Maarten, 2005 - 2008



4. Proportion of Children Vaccinated by Two Years of Age

MMR vaccine: Only one vaccine, that for measles-mumps-rubella (MMR), is scheduled during the second year of life, although children who are missing other vaccines can continue to receive these during their second year. For the general survey, 78% of the children had received the MMR vaccine by the end of their second year; for the special survey, 67% of the children had done so (Table 3). The adjusted figures, 85% and 76%, are slightly higher but remain far below the target level of 95%.

Pentavalent vaccine: Coverage for the third dose of pentavalent vaccine increased only slightly during the second year of life, changing from 85% to 90% for children in the general survey, and from 70% to 72% in the special survey (Table 3). For the fourth dose, which had been quite low at the end of the first year of life, the increase was much greater: from 41% to 73% for children in the general survey and from 42% to 68% in the special survey.

Hepatitis B vaccine: For children in the general survey, coverage for the second dose of hepatitis B vaccine increased from 82% to 84%, while for children in the special survey coverage remained static at 73% (Table 3).

5. Cumulative Immunization by Week of Age

Pentavalent vaccine: Very few children (<20%), in both the general survey and the special survey, received their third dose of this vaccine during the scheduled week of age. Following that period, the cumulative curves continued to rise slowly, with the curve for the special survey lagging further and further behind the general survey curve as the age of the children increased. By one year of age, there was a fifteen-percentage point difference between the two curves. During the second year of life, there was only a slight increase for these two curves, indicating that very few children were identified and immunized during this period. This phenomenon was especially true for children in the special survey, where no children were immunized between the thirteenth and twenty-fourth month of life. The adjusted curve is the only one that surpassed the 90% line by 12 months of age, and it ultimately rose to almost 97% (Figure 1).

The timing of immunization and overall coverage was much lower for the fourth dose of pentavalent vaccine than for the third dose (Figure 2). A similar 20% of the children received the vaccine on time, but the one-year coverage was much lower, approximately 41%, compared with 70% to 85% for the third dose. At the end of the second year of life, a more

useful time point for comparison because the scheduled age for the fourth dose, 11 months, is so close to one year, reported coverage for children in the general survey was 73%, only slightly above that for the special survey, 68%.

Hepatitis B vaccine: This vaccine is the most recent addition to the St. Maarten immunization schedule, yet coverage for the vaccine is comparable to that of other, older vaccines (Figure 3). Only approximately 20% of the children in the two surveys received their second dose of hepatitis B vaccine on time. The proportion of children covered continued to rise rapidly in both surveys, and, by the end of the first year of life, 82% and 73% of the children in the general and special surveys had received their second dose of this vaccine, slightly below comparable figures for the third dose of pentavalent vaccine. The adjusted one-year coverage was 88%. Twelve months later, however, by the end of the second year of life, there had been very little change in coverage for children in both of the surveys: 2.4 percentage points for children in the general survey and zero for those in the special survey.

MMR vaccine: This vaccine was scheduled to be administered at age 14 months; beginning in 2009, however, the scheduled age changed to 12 months of age. This impending change in the schedule is reflected in the cumulative immunization for MMR, shown in Figure 4. In the two-month period from age 12 months to age 14 months, approximately 40% of the children in both surveys were already immunized. After this age, however, the rate of immunization was lower so that, by the end of the second year of life, only 78% of children in the general survey and 69% of those in the special survey had been immunized. When the data are adjusted to remove children with no data, the two-year coverage is still only 85%, far below the recommended level of 95% coverage that is required to keep measles from returning to the island.

Conclusions

Vaccine coverage in St. Maarten has improved considerably during the past 10 years and the immunization program is now functioning reasonably well. However, with sufficient attention, some areas could see additional improvements. These areas include:

- More children could be immunized at the scheduled ages;
- Follow-up of children who have missed scheduled doses of vaccine does not appear to be functioning satisfactorily;
- Coverage at one year of age is too low for all antigens;
- Coverage at two years of age remains too low to prevent reintroduction of vaccine-preventable diseases into the territory;
- Children living in areas with large migrant populations have significantly lower vaccine coverage than children living in other areas of the island;
- Vaccine records for 9% of the children in the survey could not be obtained; and
- Coverage with the first dose of MMR is alarmingly low and is insufficient to prevent circulation of measles virus if it is reintroduced into the island territory.

Recommendations

These results demonstrate that seven steps need to be taken to ensure that at least 95% of all children are immunized on time:

- Carefully review the existing vaccine procedures with health care providers to determine where more support is needed;
- Improve the method for scheduling on-time immunizations for both health care providers and families;
- Improve follow-up and outreach for children who have missed scheduled vaccine doses;
- Develop methods to recognize and immunize unvaccinated children who come to health clinics for other reasons;
- Improve outreach in areas with large migrant populations;
- Coordinate record-keeping with the French side of the island;
- Urgently conduct a measles and rubella catch-up campaign to immunize the approximately 25% of children who are currently susceptible to both diseases. ■

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sions. Plenary sessions covered all components of the model, including disease burden, vaccine efficacy and coverage, vaccination program cost, and health service utilization and costs. Working teams during break-out sessions completed exercises addressing each of the model components in greater details. The teams, known as "ProVac country teams", consisted of 3 to 5 participants, usually from the same country. Each country team was provided with a computer loaded with the cost-effectiveness model and other ProVac tools. To the extent possible, country teams populated the model with data from their own country. Participants were asked to think of possible local sources of data for each component of the model. Country teams were aggregated in 4 sub-regions formed by 5 to 7 neighboring countries, which allowed for a productive exchange of information. Standardized forms were provided to the facilitators of each sub-region to collect feedback from participants that would allow for future model improvements. Participants were also encouraged to provide feedback on how ProVac in general can better serve countries.

Conclusions

Overall, countries acknowledged the importance and usefulness of the pneumococcal cost-effectiveness tool. They also agreed that cost-effectiveness analysis is one of several criteria needed for decision-making. To that end, the complete decision package covers all criteria related to technical, operational, and social factors.

While sustainable introduction of new vaccines requires urgent evaluation, countries also acknowledged the critical need to protect the gains in immunization and complete the unfinished agenda of ensuring every district have vaccination coverage >95%. Specifically, countries requested ProVac to continue its current approach of country technical support, which includes regional and subregional workshops, site visits, distance learning, and exchange of information.

Lastly, countries recognized that one key criterion in the decision-making process is to ensure vaccine supply. They unanimously acknowledged the key role that the PAHO Revolving Fund plays in guaranteeing an affordable and safe vaccine supply.

Recommendations

1. ProVac Country Teams:

To fully benefit from ProVac technical and financial central, countries will need to formalize national ProVac teams as soon as possible. The ProVac central team will develop and circulate general guidelines to define the operational bases for country teams. Terms of reference for country teams should include the following:

- Cross-sectional representation from economic, epidemiologic, and other public health sources of expertise;
- Situation analysis to identify gaps in information required for evidence-based policy deci-

sions on country-relevant new vaccines; and
- Development of strategic workplans for necessary research and data collection to fill evidence gaps.

2. ProVac Cost-effectiveness Model for Conjugate Pneumococcal Vaccine:

To the extent possible, countries worked with national data for the workshop exercises. They used default data derived from the Global Disease Burden (GDB) project to complete the disease burden component of the model, and recognized the need to validate GDB estimates for their particular country. The most strategic area where countries could improve quality of data is the costing component, specifically the numerator of the cost-effectiveness ratio (vaccination program cost and health services utilization costs).

Countries recommended some improvements for the existing pneumococcal tool to allow for the evaluation of the following:

- Herd immunity;
- Otitis media;
- Different vaccine schedules;
- Catch-up approaches to initiation of vaccination;
- Results of the model (DALYs[1] averted and other health outcomes) from the government versus societal perspectives; and
- High-risk approach to vaccine introduction.

3. ProVac Website:

Acknowledging that they still struggle with sufficient access to data, countries requested that ProVac continue to develop its website to facilitate greater access to tools and data.

ProVac plans to launch an improved Website in the first quarter of 2009, with the following three major components:

- ProVac tools such as cost-effectiveness models (for pneumococcal, rotavirus, influenza, and human papillomavirus), data collection instruments, and methodological guidelines.
- An e-AIMs learning platform developed by PATH for distance learning.
- OLIVES, a data repository developed by PAHO/WHO and the London School of Hygiene and Tropical Medicine. ■

1 DALY: disability-adjusted life-year.

ProVac Workshop: Feedback from Country Teams

Methodology

After the last exercise of the ProVac workshop, 20 participating country teams filled out and returned the final feedback sheet, consisting of open-ended, multiple choice, and dichotomic questions regarding (1) Knowledge acquired through the workshop; (2) Country interest in assessing the introduction of new vaccines and receiving technical assistance from ProVac; and (3) Opportunities for improving the ProVac initiative.

Results

1. Knowledge acquired through the workshop:

Participants ranked 8 out of 10 as the level of knowledge gained from this workshop. All participants answered that their knowledge on why and how to perform a cost-effectiveness analysis (CEA) had increased significantly during the workshop. Several countries indicated their intention to use these tools for the introduction of new vaccines in the future. In addition, some countries commented that involving economists in the workshop was useful and that organizing an exercise to familiarize the participants with the ProVac model was very useful.

2. Country interest in assessing the introduction of new vaccines and receiving technical assistance from ProVac:

A total of 85% of participating countries (17 out of 20 countries) stated that their country is currently interested in assessing the introduction of the 7-valent pneumococcal conjugate vaccine (PCV7). Out of these, 60% (12) indicated 2009 as possible year of introduction of the vaccine; 2 countries stated that they were planning on introducing it for high-risk population only; and 3 other countries indicated 2010 or later as possible year of introduction.

A total of 70% of participating countries (14) stated that their country would be interested in receiving technical assistance from the ProVac central team to perform a CEA on PCV7.

Participants whose country does not wish to receive technical assistance to assess PCV7 introduction still found the workshop useful. The main reasons offered were that the ProVac model is a good base to be applied to any other vaccine and that the concept of CEA is useful for analyzing health interventions in general.

The participants also indicated that they would be interested in performing CEAs of other vaccines:

- 70% of the country teams (14) were interested in performing a CEA of human papillomavirus vaccine.
- 65% (13) were interested in performing a CEA of rotavirus vaccine.
- 55% (11) were interested in performing a CEA of seasonal influenza vaccine.
- 20% (4) were interested in performing a CEA of hepatitis A vaccine.
- 10% (2) were interested in performing a CEA of either pneumococcal 10- or 13-valent vaccine, meningococcal vaccine, hepatitis B vaccine, varicella vaccine, or Tdap (diphtheria, tetanus, acellular pertussis for adolescents/adults) vaccine.
- One country (5%) expressed interest in performing a CEA of pentavalent vaccine (DTP-Hib-HepB).

3. Opportunities for improving the ProVac initiative:

Country teams were asked about the topics that they would like to see covered in more depth:

- 80% (16) expressed interest in the following areas:
  - Identifying local/sub-regional sources to replace the default values with data more representative of my country.
  - Better understanding the calculations behind the model to generate the CEA.
  - Having a broader understanding on how to interpret the results of the CEA.
- 65% (13) expressed interested in the following areas:
  - Gaining better understanding of the sources and assumptions of default estimates of the model.
  - Having a broader understanding of the whole framework of evidence to make informed decisions regarding new vaccine introduction (which includes technical, programmatic and operational, and social criteria).

- 55% (13) were interested learning the ingredients approach[1] for immunization program costs and other components of the CEA.

Participants were asked what sort of support material they would want to see published on the ProVac webpage:

- Several participants expressed the need to have an online access to the ProVac model and to the tools used during the workshop.
- Some participants indicated that they would be interested in reading different CEAs performed either in other countries or for other vaccines.
- Several country teams stated that they would like to obtain more information on the model's construction methodology and about the existence of other methodologies not presented during the workshop.

In addition, some countries requested from the ProVac central team that it provide a user's guide of the model that would contain the following elements:

- Definitions of terms used in the model,
- A guide on how to interpret the results, and
- A complete example of the model's implementation.

1 An ingredients approach takes into consideration the cost of each component of an immunization program to come up with an estimate of the total program cost.

Finally, many countries suggested that it would be useful to add bibliographical references on CEAs, cost-benefit analyses, health economics, epidemiological, and pharmaco-economical studies conducted in the Region. They also requested links to databases to be able to have access to data to populate the model.

General Suggestions

At the end of the feedback questionnaire, participants were asked to provide general suggestions or comments about their experience. In general, participants stated that the workshop was useful, well organized, and interesting. They made several comments and suggestions on future training activities, changes for the model, and follow-up activities and communications expected after this first step.

Participants suggested that similar workshops should be organized regularly. Several expressed their interest in participating in other courses to help them make decisions concerning PCV7 and other vaccines. They emphasized the importance of keeping the same team members for future training activities, to progressively improve their knowledge and strengthen their identity as a team.

For future workshops, country teams also suggested that the ProVac team provide them with information in advance on the type of exercises that will be performed so they can bring available national data and the most appropriate staff.

Participants made the following suggestions on how to improve the model:

- Allow flexibility in the amount of doses in the schedule;
- Allow to save data in the model;
- Develop a model that can be used on the Spanish version of Microsoft Office/Operating System;
- Improve and expand the information provided on the "Help" buttons;
- Revise translations into Spanish of the model and exercises; and
- Add a Portuguese translation.

In addition, participants requested the following activities/communications to be conducted after completion of the workshop:

- Remote technical support for performing CEAs;
- Site visits to provide assistance with data collection;
- Promotion of epidemiological studies in some countries of the Region; and
- Periodic communications to provide continuous training. ■

Update on the Certification of Polio Laboratory Containment in the Americas

During the second meeting (February 2008) of the **American Regional Commission for Certification** of Poliovirus Laboratory Containment and Verification of Polio-free Status (AMR RCC), the RCC classified countries of the Region into two general groups (A and B) based on assessment of available information and perceived compliance with the requirements of Phase I of the WHO Global Plan for laboratory containment of wild poliovirus.[1] During Phase I, countries survey their laboratories to determine the existence of poliovirus infectious or potentially infectious material. Group A countries, perceived as more advanced in their compliance with Phase I, were requested to submit a final report no later than 31 July 2008 and National Committees were requested to be prepared to present the final report to the RCC during the third quarter of 2008. In addition, the RCC requested that Group B countries submit a final report no later than 31 December 2008 [(1)]. In follow-up, a workshop for Group B countries was conducted in May 2008[(2)].

In October 2008, at its third meeting, the RCC examined the final Phase 1 written and oral reports from the Group A countries after a panel reviewed them in detail. The RCC was particularly pleased with the overall high quality of the reports and presentations, consistency of formats, and the special attention given to survey accuracy among the institutions and laboratories at highest risk of possessing wild polioviruses or potential infectious materials. The quality of the reports reflected the degree of national cooperation and the investment of human and financial resources to complete the survey and inventory. Panama received special commends for its effort to conclude phase I after being classified as a group B country. Chile, Mexico, Trinidad and Tobago, and the United States (4/31 countries) reported having facilities with wild poliovirus infectious or potential infectious materials.

The fourth meeting of the AMR RCC is scheduled for the first quarter of 2009. During that meeting, the RCC will make a final decision on the reports submitted before 31 December 2008 by Argentina, Brazil, Canada, Colombia, Cuba, Ecuador, Guatemala, Paraguay, Peru, Uruguay, and Venezuela. Before of the meeting, an *ad hoc* panel will review the reports and provide recommendations to the AMR RCC.

1 WHO Global Plan for laboratory containment of wild poliovirus (2nd Edition), WHO/V&B/03.11, available at www.who.int/vaccines-documents/DocsPDF03/www729.pdf.

References:

1. Certification of Polio Laboratory Containment in the Americas. *Immunization Newsletter* 2008;30(2).
2. Laboratory Containment of Wild Poliovirus: Group B Countries Workshop. *Immunization Newsletter* 2008;30(3).

See **POLIO CONTAINMENT** page 8

Measles/Rubella/CRS: Final Classification, 2007

Country	Total Measles/ Rubella Suspect Cases Notified	Confirmed Measles			Confirmed Rubella			Congenital Rubella Syndrome (CRS) Cases	
		Clinical	Laboratory	Total	Clinical	Laboratory	Total	Suspect	Confirmed
Anguilla	4	0	0	0	0	0	0	0	0
Antigua & Barbuda	0	0	0	0	0	0	0	0	0
Argentina	430	0	0	0	0	90	90	0	0
Aruba	…	…	…	…	…	…	…	…	…
Bahamas	3	0	0	0	0	0	0	0	0
Barbados	10	0	0	0	0	0	0	0	0
Belize	54	0	0	0	0	0	0	0	0
Bermuda	0	0	0	0	0	0	0	…	…
Bolivia	151	0	0	0	0	0	0	…	…
Brazil	37723	0	0	0	608	8131	8739	137	17
Canada	...	0	101	101	0	1	1	…	…
Cayman Islands	0	0	0	0	0	0	0	0	0
Chile	…[a]	0	0	0	…	…	4263	243	0
Colombia	2055	0	0	0	2	0	2	67	0
Costa Rica	103	0	0	0	0	0	0	1	0
Cuba	621	0	0	0	0	0	0	0	0
Dominica	0	0	0	0	0	0	0	0	0
Dominican Republic	202	0	0	0	0	0	0	…	…
Ecuador	544	0	0	0	0	0	0	0	0
El Salvador	121	0	0	0	0	0	0	…	…
French Guiana	13	0	0	0	0	0	0	…	…
Grenada	0	0	0	0	0	0	0	0	0
Guadeloupe	…	…	…	…	…	…	…	…	…
Guatemala	426	0	0	0	0	0	0	0	0
Guyana	82	0	0	0	0	0	0	0	0
Haiti	31	0	0	0	0	0	0	6	0
Honduras	224	0	0	0	0	0	0	18	0
Jamaica	324	0	0	0	0	0	0	0	0
Martinique	…	…	…	…	…	…	…	…	…
Mexico	6457	0	0	0	1	101	102	0	0
Montserrat	0	0	0	0	0	0	0	0	0
Netherlands Antilles	…	…	…	…	…	…	…	…	…
Nicaragua	169	0	0	0	0	0	0	0	0
Panama	142	0	0	0	0	0	0	1	0
Paraguay	399	0	0	0	0	0	0	3	0
Peru	2840	0	0	0	0	0	0	1005	2
Puerto Rico	…	…	…	…	…	…	…	…	…
St. Kitts & Nevis	5	0	0	0	0	0	0	0	0
St. Lucia	4	0	0	0	0	0	0	0	0
St. Vincent & Grenadines	1	0	0	0	0	0	0	0	0
Suriname	2	0	0	0	0	0	0	0	0
Trinidad & Tobago	18	0	0	0	0	0	0	0	0
Turks & Caicos	0	0	0	0	0	0	0	0	0
United States	...	0	43	43	0	12	12	0	0
Uruguay	21	0	0	0	0	0	0	0	0
Venezuela	2677	0	23[b]	23	0	62	62	…	…
Virgin Islands (UK)	0	0	0	0	0	0	0	0	0
Virgin Islands (US)	…	…	…	…	…	…	…	…	…
TOTAL	**55853**	**0**	**167**	**167**	**611**	**8397**	**13271**	1481	**19**

... No information provided

(a) Incomplete data due to large rubella outbreak; (b) 32 cases previously recorded.

Source: MESS and country reports through the PAHO-WHO/UNICEF Joint Reporting Form (JRF), 2007. Updated: 10 March 2009

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Second AMR RCC Meeting: Recommendations and Decisions

General recommendations:

- PAHO should share with Group B countries with unfinished reports the high quality of reports and presentations from Group A countries and, when appropriate, make specific examples available.
- Group A countries requested by the RCC to provide additional information or clarify specific items in their reports should do so through PAHO by 31 October 2008.
- Signed approval of respective National Certification Committees should be forwarded by national authorities of all countries to PAHO no later than 31 December 2008.

Specific decisions:

The RCC reviewed the submissions from countries and grouped them in 3 categories.

1. Accept report: Bolivia, Caribbean Sub-Region, Costa Rica, Dominican Republic, Mexico, Panama, United States.

2. Accept report, with request for clarification or additional information:

- Chile: Clarify the number of low risk laboratories that were surveyed as a sample; obtain responses from Universities that have not yet submitted the completed survey; add a paragraph explaining the process of reviewing the non-responding laboratories and the evaluation of their risks.
- El Salvador: Include a calendar of events.
- Honduras: Include important information on legislation presented during the meeting that was not included in the report
- Nicaragua: Update the report to include information presented at the meeting.

3. Reports to be submitted:

- Canada: A representative was unable to attend the meeting. A final written report needs to be submitted.
- Haiti: Data presented to the RCC by Haiti indicate that Phase 1 has been completed, but a formal written report needs to be submitted to PAHO. ■

The *Immunization Newsletter* is published every two months, in English, Spanish, and French by the Immunization Unit of the Pan American Health Organization (PAHO), Regional Office for the Americas of the World Health Organization (WHO). The purpose of the *Immunization Newsletter* is to facilitate the exchange of ideas and information concerning immunization programs in the Region, in order to promote greater knowledge of the problems faced and possible solutions to those problems.

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