IMMUNIZE AND PROTECT YOUR FAMILY

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In this issue:

Sharing Experiences in Measles, Rubella, and CRS Elimination

Member States of the World Health Organization Western Pacific Region (WHO/WPRO), including China, have been accelerating efforts to eliminate measles and strengthen their national immunization programs. In light of the success in achieving and maintaining measles, rubella, and congenital rubella syndrome (CRS) elimination in the Western Hemisphere, WPRO requested from the Pan American Health Organization (PAHO) to organize a tour for a Chinese delegation to visit both PAHO Headquarters and the national immunization team in Brazil. The goal was to share experiences in elimination efforts between the two Regions. The timing of the visit was particularly important given that China will initiate a nationwide measles vaccination campaign from 12-20 September targeting 96 million children.

A first meeting took place at PAHO Headquarters, in Washington, D.C., on 20-21 May (Table 1), with the following objectives:

1. To understand how PAHO works with countries and partners to develop and implement health policies;
2. To identify key lessons learned from the implementation of measles and rubella elimination strategies in the Americas;
3. To discuss preparations for and response to events supposedly attributable to vaccination or immunization in the Region;
4. To highlight the processes for making evidence-based decisions for the introduction of new vaccines;
5. To recognize the principal role of advocacy in uniting countries, communities, and partners behind the Expanded Program on Immunization (EPI) and in sustaining immunization programs; and
6. To identify how the EPI has been strengthened through the success of Regional initiatives.

Additional areas of interest for discussion identified by the Chinese participants included new vaccine introduction, social communication, and alliances with the media, as well as ensuring high vaccination coverage among vulnerable populations.

The delegation then traveled to Brazil for meetings on 24-26 May (Table 2). In São Paulo, the participants met with the State's immunization and surveillance teams to discuss lessons learned from the 1997 measles

The Chinese delegation in front of PAHO Headquarters building with PAHO staff who welcomed them during their visit.

Uruguay: Faculty of Medicine Plays Major Role in National Vaccination Campaign

Background

In September 2007, Uruguay's Ministry of Public Health (MoPH) and the Ministry of Social Development (MoSD) launched a vaccination campaign to increase immunization coverage and to introduce the hepatitis A vaccine for children aged 1-5 years at increased risk due to social factors and children aged 1-2 years who received services from the public health sector. In Uruguay, all vaccinations are free and mandatory; hepatitis A vaccine became part of the routine schedule in 2008, following the 2007 campaign.

To contribute to the MoPH/MoSD campaign, professors and 7th year-medical students rotating in the School for Woman, Pregnant Woman, Child, and Adolescent Health or SMEIA (from the Spanish acronym for *Salud de la mujer, la embarazada, el niño y el adolescente*) of the Faculty of Medicine of the University of the Republic (*Universidad de la República*) launched a project to actively participate in the vaccination campaign, thereby fulfilling the University social responsibility and its commitment to improve the health of the population. The chief characteristic of the experience was the synergy between the university educational function and the participation in a real-life public health initiative to increase vaccination coverage among children and to promote hepatitis A vaccination.

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outbreak and the city's innovative methods for reaching the large urban population during the mass rubella-measles vaccination campaign in 2008. The delegation also had an opportunity to visit a local health center and observe first-hand the operation of the vaccination post. In Brasilia, representatives of the Ministry of Health discussed measles and rubella elimination activities, thus providing the delegation with a perspective from an American country.

One of the desired outcomes of the meeting was that the delegation share the lessons learned from the Americas in China to support efforts aimed at strengthening immunization programs and improving disease control measures. As presented by the delegation, take-home messages included the importance of political commitment, preparedness and rapid response to crisis, and inventive measures for reaching at-risk populations.

Overall, the visit was a success and opened the door to future collaboration between the Americas and WPRO, including China. Inspired by his visit to the Americas, Dr. Chen, Director General of China's Communicable Diseases Department, expressed China's willingness to eliminate measles and rubella and stated that if Brazil can eliminate measles and rubella, then so can China. ■

Table 1. Chinese Delegation's Visit to PAHO Headquarter

Selected Activities	Key Content/Message	Relevance to the Chinese Delegation
High level opening	The visit of Chinese officials is of primary importance to PAHO.	• High level, formal curtain raiser sets a tone that is most favorable to exchanges.
Managerial aspects of PAHO policies	PAHO is a technical agency close to its Member States.	• China values quality technical input above all. • China as a country and PAHO as a Region have common points and issues.
Resource mobilization/ partnership	PAHO elevates public health policies at the highest leadership level.	• Immunization could benefit from higher level political support in China.
EPI Overview	Strength and breadth of EPI in PAHO.	• High profile, high output of PAHO immunization activities. • PAHO developed a true vaccine culture. • PAHO immunization workforce is strong and large.
Measles/rubella supplementary immunization activities (SIAs)	High quality SIAs require a systematic approach (evidence-based target groups, advocacy, organization, training, planning and supervision), which results in high coverage and strengthens the immunization system.	• China could use a comparable approach for measles SIAs.
Vaccination Week in the Americas	SIAs allow reaching vulnerable population.	• China could use similar approaches to reach floating populations.
Integrated laboratory support and outbreak response	Outbreaks are used to extract evidence that is used to shape programmatic strategies.	• China can make better use of epidemiology for action.
Measles/rubella surveillance and information for action	PAHO has a fluid information management and high-quality feedback.	• Measles and rubella: same vaccine, same population, same laboratory surveillance.
Surveillance to estimate congenital rubella syndrome (CRS) burden	CRS is not apparent unless looked for.	• China, with unclear vaccination coverage of children, could be at increased risk of susceptibility shifting towards older age groups that would result in more CRS.
Events Supposedly Attributable to Vaccination or Immunization (ESAVI)	PAHO has a strong plan to prevent, detect, and manage ESAVIs.	• China could use some of PAHO's approaches in crisis prevention, preparedness, and management.
New vaccines	PAHO foresees new vaccine introduction issues and has a systematic approach about it.	• China is considering standard operating procedures for new vaccine introduction that would include economic analyses.
Advocacy	PAHO advocacy generated a culture of public demand for immunization (e.g., vaccination is an act of love, public good of elimination).	• China could develop broader social mobilization strategies.
The PAHO Revolving Fund	Equity and solidarity principles.	• Compared procurement models.

Source: Dr Yvan J Hutin, Medical Officer, WHO/China.

Table 2. Chinese Delegation's Visit to Brazil

Selected Activities	Key Content/Message	Relevance to the Chinese Delegation
Presentation of the multiple levels of the Brazilian system (São Paulo)	Shared responsibilities and role in decision-making.	Similarities and difference with China.
Response to 1997 measles outbreak (São Paulo) and rubella cohort susceptibility analysis (Brasilia)	Cohort analysis to understand susceptibility and direct supplementary immunization activities.	China could use these approaches to generate evidence from surveillance, survey, and outbreak investigations and to guide the program.
Field visit (São Paulo)	In the Brazilian system, there is no strict link between a health care facility and a catchment population. There is a population demand and people come to whatever health facility to receive vaccine.	In the Chinese system, a health care facility has a precise catchment population that needs to be vaccinated. Hence, health workers seek out people to deliver vaccines.
High level opening (Brasilia)	The visit of Chinese official is of primary importance to Brazil.	High level, formal curtain raiser sets a tone that is most favorable to exchanges.
Maintaining rubella and measles elimination	The plan to maintain elimination still requires high input.	Post-elimination phase is still resource-intensive.
Social mobilization strategy	Impressive plans strategized and implemented with high expertise level and systematically evaluated.	China could use similar strategies for social mobilization.
Policy in research, innovation, and introduction	High level policy drive for systematic approach in research, innovation, and introduction.	China has strong vaccine production and vaccine delivery systems, but has no strong policy body to link the two systematically.
Field visit	Quality and quantity of the staff involved in EPI.	China's EPI could benefit from a larger and stronger team.

Source: Dr Yvan J Hutin, Medical Officer, WHO/China.

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Implementation

The project was designed and implemented by a team of professors from SMEIA, following a resolution of the board of the Faculty of Medicine.[1] A total of 454 students took part in the project and 20 clinical assistants taught classes while they were responsible for planning the vaccination outreach strategies. The project was implemented in 3 cities: Montevideo, Paysandú, and Salto.

The following four campaign activities were defined:

1. Training students regarding the Expanded Program on Immunization (EPI), hepatitis A, and how to prevent the disease;
2. Disseminating information among the health personnel and the public regarding the importance of immunization, hepatitis A, and how to prevent the disease;
3. Collaborating on efforts to promote and implement the campaign; and
4. Evaluating the campaign impact.

Active participation from different social stakeholders was considered key. Therefore, activities were coordinated with government and nongovernmental agencies, health institutions, the media, and the private sector (including pharmaceutical companies).

Four working groups composed of faculty and students performed the following tasks:

1. Training: to conduct comprehensive studies on hepatitis A and existing prevention measures; to develop information material for training of faculty and students regarding campaign objectives, the EPI, hepatitis A, and its prevention; to hold workshops for all program students (95% were trained); to design a pre- and post-test to evaluate how the participants completed the training activities; and to develop a form and instructions to register children vaccinated in the primary health care centers where the students were working.

2. Interinstitutional Coordination: to present the project to the MoPH and MoSD; to coordinate activities with the two institutions; and to promote participation from primary health care centers in Montevideo or other Departments where the students would be working.

3. Population Assessment: In parallel to information dissemination activities, students visited health centers and their catchment areas to assess the population that would receive the hepatitis A vaccine. This process included updating the vaccination cards and administering the first hepatitis A vaccine dose. Students accompanied vaccinators to mobile vaccination posts in disadvantaged neighborhoods and areas where many children congregate, such as gyms and sport fields.

Dr. María Julia Muñoz, Minister of Health of Uruguay, on stage in a stadium being interviewed by a medical student during an activity to promote vaccination.

4. Dissemination and Press: Several activities were organized.

- The slogan "Beat Hepatitis A" (Gánale a la hepatitis A) was chosen and used for all communications with the public and the press. Later, students and faculty created and recorded a jingle for use in mobile and fixed vaccination posts, and on the country's airwaves.
- Invitations to the planned activities were extended to the President of the Republic, Department authorities, the MoPH and MoSD, the Faculty of Medicine, the Medical Association, and the Pediatric Society of Uruguay.
- A cell phone company partnered on the project by sending a text message to all its customers to inform them about the campaign activities.
- The media (radio, TV, and written press) disseminated messages about the campaign
- On 11 October, students and faculty organized a press conference followed by a march through the streets to disseminate information on the goals, objectives, and progress of the campaign. MoPH and MoSD authorities, among others, along with the dean of the Faculty of Medicine and sports and music celebrities, took part in this activity.
- On 30 October, a Super Vaccination Day took place in health centers of Montevideo, Salto, and Paysandú to promote vaccination through fun and recreational activities.
- On 16 November, a free show in Montevideo marked the end of the campaign: several musical groups, dance troupes, clowns, and circus acts were featured while arts and crafts workshops were conducted. To see the show named "*El Vacunazo*" (the Big Vaccination), members of the audience had to present the children's vaccination card. Students checked the cards to update them and administered hepatitis A vaccine to children who belonged to the targeted age groups. Transportation, food, and pharmaceutical companies partnered with government authorities to organize and hold the event.

Results

Previous, non-mandatory vaccination campaigns held in Uruguay, such as those for seasonal influenza or the hepatitis B campaigns in at-risk persons, had not achieved the expected results. As a consequence, some vaccine doses had remain unused, resulting in health authorities broadening the target group and, in some occasions, discarding doses due to expiration. The 2007 campaign, however, was a success. The goal was to vaccinate 30,000 children between 10 September and 31 December and, by campaign end, 44,716 children had actually been vaccinated.

1 Resolution from the Faculty of Medicine Council, University of the Republic, Nº 51. 14/11/07, available at: www.fmed.edu.uy.

Another benefit from the SMEIA university project is that in addition to achieving high coverage levels, it succeeded in linking the university functions of education and promotion of outreach activities in the community with the national health policies that prioritize primary health care.

Conclusions

Faculty and students took the lead in a health initiative that will undoubtedly contribute to improving the health and life quality of all Uruguayans. The innovating experience was developed to support the teaching-learning process. It stimulated creativity and promoted interinstitutional cooperation and social responsibility. Finally, the breakthrough in the teaching process was an opportunity to encourage a more human form of medicine, one that is committed to the community. ■

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Brazil Implements Workshops to Improve Vaccination Coverage at Local Level

Introduction

The PAHO Technical Advisory Group (TAG) on Vaccine-preventable Diseases recommends that all countries in the Americas reach ≥95% vaccination coverage, **in every municipality**, with all the vaccines recommended in the national immunization programs (NIPs). At its XVIII meeting, TAG also recommended the systematic and periodic review of vaccination coverage data as a regular activity of immunization programs, emphasizing that the review should take place at all levels of the program.

The Brazilian NIP has found a long-term pattern of uneven vaccination coverage and inconsistencies in the data between doses in a significant proportion of municipalities. Consequently, the program developed a project to monitor vaccination coverage through a timely review of data at the most disaggregated level possible in order to identify the factors underlying the poor coverage results and implement activities that will produce adequate coverage.

Brazilian health authorities record vaccination coverage using administrative procedures, both routine and official. Coverage is calculated using the number of doses of a specific vaccine administered in a specific time period, divided by the target population, and multiplied by 100. Vaccination coverage surveys are rarely used.

Information System

Vaccination data are recorded according to NIP standards and collected from almost 32,000 vaccination centers through a standardized daily bulletin recording the type of vaccine, age group, sex, and type of dose administered. The data on the doses administered are consolidated in a monthly bulletin and entered into the Information System for Immunization Program Review (*Sistema de Informação de Avaliação do Programa de Imunizações*/SIAPI) by each of the 5,564 municipalities, and then submitted to the State and ultimately the federal level. SIAPI tabulates the number of doses administered to obtain the numerator for vaccination coverage calculation. The purpose of the data processing is to evaluate the performance of the NIP at all levels in terms of doses administered, vaccination coverage, drop-out rates, and other indicators.

Coverage is calculated using the available data from the Live Birth Information System (*Sistema de Informação de Nascidos Vivos*/Sinasc) for children aged ≤1 year and estimates from the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística*/IBGE) for children aged ≥2 years. Until 2002, all denominators for the coverage calculation came from IBGE population estimates. In 2003, the Health Surveillance Secretariat (*Secretaria de Vigilância em Saúd*/SVS) adopted Sinasc data as an alternative denominator source to calculate coverage in children <1 year, following a comparative study of population projections based on the census and Sinasc records for the period 1997-2001. Sinasc data was initially used in 15 Federated Units (UF) and their respective municipalities. In these UF, birth coverage as recorded by Sinasc was ≥90% of the IBGE estimate, the index adopted as the quality criterion for SIAPI by the Inter-Agency Health Information Network (*Rede Interagencial de Informação para Saúde*/Ripsa). In 2006, the SVS adopted the live birth from Sinasc as the denominator in vaccination coverage estimates in children aged ≤1 year in 100% of the municipalities.

However, because Sinasc coverage by municipality is not homogeneous and errors in dose recording occur, administrative vaccination coverage can be unreliable in some situations. Thus, monitoring and review mechanisms are needed to identify distortions on a timely basis and intervene where necessary. This is the reason for the proposal to monitor vaccination coverage and hold workshops at UF and municipality levels.

Definitions

The classification criteria used in the monitoring methodology were aimed at differentiating areas of epidemiological risk requiring further investigation or monitoring. In order to facilitate risk classification, the municipalities were stratified into three levels of vaccination coverage: (a) 0 to 94.9%; (b) 95% to 120%; and (c) >120%. In the first stratum (0% to 94.9%), municipalities with vaccination coverage <50% require immediate intervention.

The population size of the municipalities was also considered, starting with the basic assumption that the larger the population, the greater the chance of the spread of diseases under the right conditions. Based on Sinasc data, municipalities were stratified into three groups: (a) <1,000 live births; (b) 1,000 to <10,000 live births; and (c) ≥10,000 live births. In all cases, the goal is to achieve adequate vaccination coverage and maintain vaccine-preventable diseases eradicated, eliminated, or under control.

Workshop Structure

The training of immunization personnel at national and state management levels in the use of the vaccination coverage monitoring methodology began in July 2009. Three macroregional workshops to train professionals in 27 state immunization programs, and professionals at federal level in epidemiological monitoring and primary health care, were first held in July. The state secretariats then replicated the workshops in their own health regions. The first state workshop was held in September in the state of Rondônia with professionals from three Regional Health Offices and the 52 municipalities.

This was followed by four workshops, one in the state of Ceará for immunization professionals of the 21 Regional Health Directorates and the municipalities where regional headquarters are located; one in Rio Grande do Sul for staff from 19 regional directorates; one in Minas Gerais for 31 regional directorates; and one in the Federal District for 15 regional health administrations. Thus, in the period from July to December 2009, eight workshops were held with more than 150 immunization professionals trained, so that they could serve as multipliers for training in municipalities. Two workshops are planned in 2010: from 25-27 April for immunization professionals from 31 regional health directorates in the state of Bahia and from 13-14 July for professionals from the regional pole of Araguaína, comprised of eight municipalities, in the state of Tocantins.

Methodology

The purpose of the workshop is, above all, to improve the capacity to evaluate data quality and vaccination coverage results in the municipality, and to obtain the commitment of professionals in the municipality to quality information, especially the numerator (doses administered).

The workshops are programmed to last at least two days. They begin with two lectures presenting the vaccination coverage surveillance project and the information system used to record doses administered (numerator) and to calculate the denominator (Sinasc records and IBGE population estimates), the two elements needed for this indicator. A computer setup with Internet access is available with at least one computer for two trainees.

During the workshop, trainees use the SIAPI database for their coverage area, with the support of instructional material (an exercise notebook). They are instructed on how to set up a "Workshop" folder to store data extracted from SIAPI and other databases, such as Sinasc and the Primary Care Information System (*Sistema de Informações da Atenção Básica*/SIAB), in an Excel spreadsheet. The instructional material includes information on the following components: vaccine centers in each municipality; type of center (public, private, municipal); verification of vaccination coverage achieved for each vaccine and complete vaccination series, use of alternative denominators (IBGE, SIAB), drop-out rates, and missed vaccination opportunities; analysis of inconsistencies in the records of doses administered (single-dose and multidose vaccines); and trend analysis of population estimates.

Considering the results obtained, the trainee receives guidance on how to identify and list priority municipalities and/or areas for intervention based on the criteria defined in the vaccination coverage surveillance methodology. For each priority identified, the trainee must formulate proposals for intervention. The trainee is also encouraged to conduct a more in-depth study that will facilitate the adoption of specific measures to achieve the recommended coverage, i.e., updating the lists of vaccination centers, correcting errors in the records of doses administered, observing trends in the records used for the numerator and denominator, reaching out to the unvaccinated, and conducting rapid coverage monitoring.

The workshop ends with a multiple-choice questionnaire on different aspects of the methodology, such as content, instruction, logistics, and time needed to learn the methodology. In order to obtain a greater number of responses, respondents are not required to identify themselves. The questionnaire is used as a tool for improving the methodology and/or planning other workshops. Once the immunization professionals are trained, vaccination coverage monitoring is considered established. Over the next six months, the benefits of the training are evaluated and changes are made, if necessary

Conclusions

The purpose of the methodology for vaccination coverage monitoring is to provide states and municipalities with tools to conduct vaccine coverage monitoring in a decentralized manner, therefore allowing for the identification of epidemiological risk as close as possible to the area where the risk occurs.

Each workshop held since the introduction of the methodology has resulted in a proposal for intervention by trainees in their areas of action. It was noted during each workshop that the proposed methodology can be used with positive results in any municipality, as long as the municipality can provide high quality data from its vaccination centers. Improved data quality offers an opportunity for providing a more reliable vaccination coverage, which is particularly relevant when the main data problems are related to inaccuracies in the numerators.

The majority of workshop participants found the time allotted for the training to be insufficient because of the difficulties they had in using the database and the Excel application. Other limitations to the initiative include insufficient number of immunization professionals, excessive demands on their time (vaccination campaigns conducted one after another), and lack of governability over population estimates. In addition, many immunization managers are unfamiliar with database manipulation. The workshops must be part of continuous training and staff development, as solutions to these limitations are beyond the scope of the workshops themselves.

Nevertheless, the dissemination of the methodology will certainly bring gains for all, and particularly for the NIP's target population, since it allows for the following:

- The identification of priority municipalities, based on risk, in each federated entity and priority districts or subareas, with low coverage, a large population base, values below the goal for three or more vaccines, or even extreme values;
- The identification of high-risk populations in areas with greater demographic density, poverty, migration, exclusion, and neglected or marginal populations, where it has been shown that there are greater difficulties in reaching the target groups;
- The definition of immediate actions aimed at more in-depth research on the determinants of risk situations. Examples of interventions include modifications in supervision or technical cooperation, active outreach to find the unvaccinated, and household rapid coverage monitoring.

According to participants, the involvement of managers at each level is essential for the successful implementation of the methodology. It is expected that, within the limits of what is technically feasible, the methodology will help improve data quality and make the evaluation of vaccination coverage a routine activity in Brazil. It should also indirectly expand the coverage of birth registration (Sinasc), and promote greater collaboration among different technical areas (vaccine-preventable disease surveillance, health information, and primary health care).

It is also essential that the results indicating a need for action be shared with NIP managers and other immunization professionals in order to overcome any bottleneck. The goal is to fulfill the larger mission of the NIP at every level, i.e., to achieve and maintain high, homogeneous vaccination coverage in each municipality and all areas within each municipality, therefore effectively contributing to the control, elimination, or eradication of vaccine-preventable diseases under surveillance. ■

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Network of ProVac Centers of Excellence in Economic Evaluations and Decision Analysis

As significant expertise on health economics and decision analysis exists in Latin American and Caribbean countries, the ProVac Initiative has established a Network of Centers of Excellence in Economic Evaluations and Decision Analysis. The first meeting of the Network took place on 1 March 2010 in Nicaragua. The following institutions (in alphabetical order) are part of the Network:

- Center for Evaluation Research and Surveys (CIEE), National Institute of Public Health, Mexico, under the coordination of Dr. Atanacio Valencia Mendoza;
- Department of Internal Medicine and Health Technology Assessment Unit, State University of Rio de Janeiro (UERJ), Brazil, under the coordination of Dr. Denizar Vianna Araujo;
- Department of Preventive Medicine, Faculty of Medicine, São Paulo University, Brazil, under the coordination of Dr. Hillegonda Maria Dutilh Novaes;
- Epidemiology and Public Health Evaluation Group, Epidemiology Unit, Public Health Department, Universidad Nacional de Colombia, Colombia, under the coordination of Dr. Fernando de la Hoz Restrepo;
- Research Group on Health Economics, Cartagena University, Colombia, under the coordination of Dr. Nelson Rafael Alvis Guzman; and
- Health Economic Evaluations and Technology Assessment, Institute for Clinical Effectiveness and Health Policy (IECS), Argentina, under the coordination of Dr. Federico Augustovski.

The Network will provide technical support to ongoing activities of the ProVac initiative, particularly those aiming at strengthening capacity at country level, developing economic analysis at national level, and developing and disseminating tools to support economic analysis and evidence-based decision-making. As such, the general proposed terms of reference of the Network are the following:

- To conduct specific studies and develop specific products for the ProVac Initiative, considering each center specific expertise;
- To provide training through ProVac workshops and long-distance learning on economic analysis and evidence-based decision-making through the ProVac e-support center;
- To critically review, validate, and pilot selected ProVac models, tools, and materials, providing critical feedback and updates as needed;
- To act as technical subject matter experts in selected issues during the implementation of the ProVac Initiative, as needed and requested by Latin American and Caribbean countries through the Pan American Health Organization (PAHO); and
- To provide technical support to national multidisciplinary teams in all steps of economic evaluations on new vaccines in various countries in Latin America and the Caribbean, including study design, data collection, data cleaning, and critical revision, analysis, and interpretation of results.

In addition to the above activities, selected activities will be conducted by specific centers based on their expertise and experience in the subject area. These will be identified later as the need arises. The Network will be coordinated by PAHO´s ProVac management team. Support to the Network will be provided by PAHO and a formal contract with each of the participating institutions will be established. ■

On-line International Vaccine Economics and Statistics (OLIVES)

OLIVES is a web-based repository of vaccine-related statistics, developed as part of PAHO's ProVac Initiative. The website is being developed by two of the ProVac Centers of Excellence, the London School of Hygiene and Tropical Medicine (LSHTM) and the Institute for Clinical Effectiveness and Health Policy (IECS). It is expected to be officially launched and its web address disseminated during the first quarter of 2011. Its purpose is to provide immunization program managers and national teams with consistent, up-to-date and reliable sources of information to facilitate economic evaluation of new vaccines.

New vaccines are more expensive than those in the routine vaccine schedule. With limited financial resources to invest in health, several countries have asked ProVac for technical support for cost-effectiveness analyses (CEAs) of the options being considered. The challenge is to ensure that these analyses are timely and of good quality. Countries are faced with an absence of data for some parameters, yet multiple and often conflicting sources of information for others. Data formats and definitions may be inconsistent, and data may be of uncertain or variable quality. In response to this challenge the OLIVES website will provide consistent data formats, clarity about definitions, and, where feasible, independent quality assessment.

The plan is to make OLIVES consistent with ProVac's TRIVAC model, which currently allows countries to estimate the cost-effectiveness of Hib, rotavirus, and pneumococcal vaccines. The website will allow users to find data by country and type of indicator, to select preferred data if there is more than one source, to develop charts and maps, and to export information to the TRIVAC model. The site will also allow access to archived data files.

OLIVES will also include data related to human-papilloma virus (HPV) as the ProVac suite of CEA models continues to evolve.

OLIVES will draw data from authoritative sources including, but not limited to, the following:

- United Nations Population Division for population data and projections;
- World Health Organization (WHO) and other epidemiological estimates for burden of disease;
- WHO data on vaccine schedules, vaccine coverage, and treatment costs;
- Demographic and Health Survey (DHS) data on treatment utilization rates;
- World Bank data on expenditure and income;
- PAHO Revolving Fund for Vaccine and Syringe Procurement;
- UNICEF Supply Division for Vaccine and Syringe Procurement; and
- Data from clinical trials on vaccine efficacy.

Currently LSHTM and IECS are reviewing existing data sources, undertaking quality assessments and developing the functionality of the website. Immunization managers will be informed when the full content of the OLIVES webpage becomes available online at the ProVac e-Support Center (www.paho.org/provac). ■

Measles/Rubella/CRS: Final Classification, 2009

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	1	0	0	0	0	0	0	0	0
Antigua & Barbuda	0	0	0	0	0	0	0	0	0
Argentina	400	0	3	3 [a]	0	4	4	10	3
Aruba	…	…	…	…	…	…	…	…	…
Bahamas	1	0	0	0	0	0	0	0	0
Barbados	9	0	0	0	0	0	0	0	0
Belize	56	0	0	0	0	0	0		
Bermuda	0	0	0	0	0	0	0	...	...
Bolivia	166	0	0	0	0	0	0	2	...
Brazil	9623	0	0	0	0	0	0	140	14
Canada	…	…	14	14 [a]	…	7	7	...	1
Cayman Islands	0	0	0	0	0	0	0	0	0
Chile	156	0	1	1 [a]	0	0	0	87	0
Colombia	1418	0	0	0	3	1	4	189	0
Costa Rica	34	0	0	0	0	0	0	10	0
Cuba	594	0	0	0	0	0	0	0	0
Dominica	0	0	0	0	0	0	0	0	0
Dominican Republic	144	0	0	0	0	0	0	...	...
Ecuador	617	0	0	0	0	0	0	1	0
El Salvador	240	0	0	0	0	0	0	...	...
French Guiana	…	…	…	…	…	…	…	...	...
Grenada	0	0	0	0	0	0	0	0	0
Guadeloupe	…	…	…	…	…	…	…	...	...
Guatemala	272	0	0	0	0	0	0	5	0
Guyana	59	0	0	0	0	0	0	0	0
Haiti	2	0	0	0	0	0	0	1	0
Honduras	133	0	0	0	0	0	0	50	0
Jamaica	253	0	0	0	0	0	0	0	0
Martinique	…	…	…	…	…	…	…	...	...
Mexico	4391	0	0	0	0	0	0	0	0
Montserrat	1	0	0	0	0	0	0	0	0
Netherlands Antilles	…	…	…	…	…	…	…	…	…
Nicaragua	103	0	0	0	0	0	0	0	0
Panama	83	0	0	0	0	0	0	1	0
Paraguay	331	0	0	0	0	0	0	4	0
Peru	825	0	0	0	0	0	0	...	...
Puerto Rico	…	…	…	…	…	…	…	...	...
St. Kitts & Nevis	0	0	0	0	0	0	0	0	0
St. Lucia	0	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	8	0	0	0	0	0	0	0	0
Turks & Caicos	0	0	0	0	0	0	0	0	0
United States	…	…	71	71 [a]	…	3	3	0	2
Uruguay	2	0	0	0	0	0	0	...	...
Venezuela	838	0	0	0	0	0	0	...	...
Virgin Islands (UK)	2	0	0	0	0	0	0	0	0
Virgin Islands (US)	…	…	…	…	…	…	…	…	…
TOTAL	**20765**	**0**	**89**	**89**	**3**	**15**	**18**	**500**	**20**

... No information provided; (a) Imported cases or cases related to importation.

Source: MESS and country reports through the PAHO-WHO/UNICEF Joint Reporting Form (JRF), 2010.

Updated: 8 October 2010

Sixty-third World Health Assembly Endorses Resolutions on a Variety of Immunization Issues

The World Health Assembly, which brought together Health Ministers and senior health officials from the World Health Organization (WHO) Member States, closed on 21 May. The delegates adopted resolutions on a variety of global health issues including the following:

→ **Global eradication of measles:** Nineteen countries took the floor during the discussion and endorsed the following targets to be achieved by 2015: measles vaccination coverage of >90% at national level and >80% in every district; a reported annual incidence of measles of <5 cases per million population; and ≥95% reduction in global measles mortality compared with 2000 estimates. These targets should be viewed as milestones towards the eventual global eradication of measles. Member States were encouraged by the efforts and progress made in controlling measles, but also highlighted the formidable challenges that need to be addressed to achieve the 2015 targets. These include competing public health priorities, weak immunization systems, sustaining high routine vaccination coverage, addressing the US $298 million funding gap, vaccinating the hard-to-reach population, and addressing an increasing number of measles outbreaks, particularly in border areas. Success in achieving the measles 2015 targets is essential if the Millennium Development Goal 4 to reduce child mortality is to be achieved.

→ **Viral hepatitis:** Member States accepted the report to the World Health Assembly and adopted a resolution including a World Hepatitis Day on 28 July. Viral hepatitis (i.e., hepatitis A, B, C, D, and E) is estimated to kill over 1 million people each year. An estimated 1 in 12 persons is currently infected and has to face a life with liver disease if unrecognized. The endorsement by Member States calls for WHO to develop a comprehensive approach to viral hepatitis prevention and control.

→ **Treatment and prevention of pneumonia:** Member States adopted a resolution on the treatment and prevention of pneumonia, the number one killer of children aged <5 years globally. The resolution makes it clear that intensified efforts to address pneumonia are imperative if the Millennium Development Goal 4 to reduce child mortality is to be achieved. ■

Adapted from Global Immunization News (28 May 2010), Immunization, Vaccines and Biologicals, World Health Organization. Issues are available at http://www.who.int/immunization/gin/en/index.html.

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