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Regional Strategy for Sustaining National Immunization in the Americas

The 47th Directing Council of the Pan American Health Organization met in Washington, D.C. during the last week of September 2006. During this meeting, ministers of health discussed health policy for the Region. This year, they approved Resolution CD47.R10 calling for a new regional strategy for sustaining national immunization programs in the Americas.

Technical and Programmatic Challenges

The document presented to the Directing Council by the Immunization Unit outlined the remarkable progress made over the past decade towards an umbrella of protection against vaccine-preventable diseases, including the eradication of polio, elimination of measles and neonatal tetanus, control of yellow fever and diphtheria, introduction of pentavalent and influenza vaccines, and significant progress on rubella elimination.

Despite excellent progress, national immunization programs (NIPs) continue to face significant challenges, which include completing the unfinished agenda of achieving 95% coverage in low-performing districts; introducing new-generation vaccines against priority diseases; transitioning from child to family immunization; and sustaining the growth of the PAHO Revolving Fund for Vaccine Procurement.

1. The unfinished agenda:

The immunization umbrella of protection does not yet extend to all of the Region's children and vulnerable women. Approximately one child in three in Latin America and the Caribbean lives in an underserved district. Completing the unfinished agenda for immunization requires that these unreached children and



Dr. Leslie Ramsammy, Minister of Health of Guyana, meeting with Dr. Julian Lob-Levyt, Director, GAVI; Dr. Jon Andrus, Lead Technical Advisor, Immunization Unit, PAHO; Ms. Rebecca Affolder, GAVI; Dr. Beryl Irons, Immunization Unit, CAREC; and Dr. Janice Woolford, EPI Manager, Guyana. See **GAVI and Guyana** page 4

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Multiyear Project Proposal for the Promotion of Evidencebased Policy Decisions for New Vaccine Introduction in Latin America and the Caribbean (Pro-Vac)

A week-long "Workshop on Economic Analysis to Support Decision-Making on Vaccine Introduction" was held at PAHO Headquarters, in Washington, D.C., from 5-8 September. Representatives from ministries of health of the Region, as well as academic health institutions and agencies participated. The objective of the workshop was to build national capacity for making improved policy decisions and develop tools for conducting health economic analysis at country level.

The workshop began with a discussion of major successes in the Americas, including measles and neonatal tetanus elimination, polio eradication, and the cost-effectiveness of rubella and congenital rubella syndrome elimination. These accomplishments have set a precedent critical to future successes in the Region. Current goals include immunizing susceptible populations, conducting effective surveillance, providing a guaranteed supply of vaccines through the PAHO Revolving Fund for Vaccine Procurement, and rapid deployment of vaccines.

The principal role of economic analysis in decision-making is to provide a more realistic understanding of over-

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women have equitable access to the benefits of immunization. Key strategies for achieving and sustaining target coverage levels of all routine vaccines can include, as appropriate, reestablishment of regular outreach services where necessary, supportive supervision and on-site training, strengthening community links with service delivery, monitoring and using data for action, and better planning and management of human and financial resources.

Maintaining the scale of past successes with immunization is a major challenge for national decision-makers and program managers. Disturbing evidence from industrialized countries has indicated the vulnerability of immunization programs to defunding, as the memory of childhood killer diseases fades. Lapses in public vigilance in Australia, the United States, the United Kingdom, and other European countries resulted in dramatic drops in immunization coverage in the early 1990s.

While enormous progress has been made towards rubella elimination, resource mobilization and sustained political commitment must remain a top priority. Developing high-quality surveillance to monitor progress and to verify congenital rubella syndrome elimination also needs urgent attention. (1)

2. Introducing New-Generation Vaccines:

The introduction of new vaccines against rotavirus, pneumococcus, and human papillomavirus (HPV) into routine schedules poses significant technical challenges to countries. With newgeneration vaccines, there is a necessity to establish burden-of-disease estimates specific to subregions. There is also a need to set mortality reduction targets for these diseases addressing the Millennium Development Goals (MDGs), in accordance with the WHO Global Immunization Vision and Strategies (GIVS) guidelines. Decision-making processes for vaccine introduction should be based on local situation to allow better monitoring of the impact of immunization against these diseases on the achievement of the MDGs.

New generation vaccines are more costly than the basic EPI vaccines. These increasing costs present enormous challenges for immunization program managers seeking to introduce new products based on sound epidemiological evidence alone. The doubling of program budgets needed to introduce, for example, rotavirus vaccine has required that countries begin to assess the potential for creating fiscal space—the room in a national budget that allows provision of resources without jeopardizing overall financial sustainability or economic stability—for the new vaccine introduction under consideration. (2)

In this context, PAHO has commenced a process of systematic review of the quality and effectiveness of existing vaccine legislation and regulations in Member States. The purpose of this review is to define best practices to sustain NIPs financially and to use improved laws to reduce country transaction costs for immunization programs. (3)

PAHO is promoting renewed emphasis on strengthening national capacity to make evi-



dence-based decisions for vaccine introduction in the context of all health priorities. The Immunization Unit has developed a regional training plan to help equip national policy-makers with all the evidence needed to make sound policy decisions for vaccine introduction. (4)

3. <u>Transition from Child to Family Immuniza-</u> <u>tion</u>:

The family immunization approach should be grounded in comprehensive primary health care strategies. The benefits of such efforts should be the reduction of preventable morbidity and mortality in older individuals who have been immunized with appropriate vaccines, and the strengthening of systems that can be used in the event of emerging epidemics affecting children and adults. Specifically, the transition from child to family immunization means that NIPs will be better positioned to prevent influenza, pneumococcal, HPV, and HIV infections. This transition should begin with achieving high coverage with influenza, tetanus, and rubella vaccines in target adult populations. The lessons learned from influenza control and neonatal tetanus and rubella elimination will be applied to prevent influenza, cervical cancer, and eventually AIDS deaths in the Region.

NIPs in almost all countries of the Region have developed strong service delivery systems. Based on these systems, and supported by internal PAHO partnerships to explore innovative approaches to more effective service delivery integration, the transition to family immunization can contribute to a more integrated approach to maternal and child health programs. Effective integrated family immunization can also contribute to the achievement of the MDGs.

4. The Revolving Fund:

Over the past 10 years, the PAHO Revolving Fund for Vaccine Procurement has grown significantly through the increased volume of vaccine purchases and the compounding effect of the 3% service fee applied to each order. At the close of 2005, the Fund was capitalized at just over \$34 million and had total expenditures of over \$154 million that year (Figure 1). PAHO is currently conducting a study to determine the minimal annual increases in working capital required to ensure PAHO's continued service to countries for the introduction of new vaccines. These estimates of annual increases will require innovative mechanisms of support to the Fund, such as additional voluntary contributions from countries or donors. As it stands now, there is insufficient working capital to adequately keep up with the country demands for new vaccines like influenza and rotavirus.

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The Revolving Fund's mission is to provide highquality vaccines to countries of the Region at a single price affordable to all. Essential to addressing the challenge of more costly new-generation vaccines will be unprecedented levels of country participation in the Fund, as this will provide the volume of demand needed to both stabilize supply and negotiate best prices. New supply chain partnerships, drawing on the operational and programmatic experiences of PAHO Member States not routinely using the Fund, will be key to achieving maximum participation.

Sustaining Immunization in the Americas

The Regional Strategy for Sustaining National Immunization Programs in the Americas is based on the guiding principles presented at the 2004 PAHO Technical Advisory Group (TAG) on Vaccine-Preventable Diseases (5) and on the principles used for the renewal of primary

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all costs, and the great potential for health and economic gains. Specific issues discussed in the presentations included uses of cost-effectiveness and cost-minimization analysis, financial sustainability, cost-of-program and affordability studies, types and perspectives of costs, and measures of disease burden, such as Disability-Adjusted Life Year (DALY) and Quality-Adjusted Life Year (QALY).

The workshop offered an opportunity to present PAHO's current work in health economics, and highlight projects assessing the economic impact of ill health. Specific disease models were described in terms of economic analysis for influenza, human papillomavirus (HPV), and pneumococcal vaccines. A project to simultaneously determine cost-effectiveness of Hib, pneumococcus, and rotavirus was also presented. Countries' experience with decision-making on vaccine introduction were shared by representatives from Brazil (rotavirus), Chile (rotavirus/influenza), Costa Rica (HPV), Panama (rotavirus), and Venezuela (rotavirus).

The Pro-Vac Initiative

The workshop was the opportunity to launch a five-year comprehensive strategic plan to strengthen national capacity to make evidencebased decisions for new and underutilized vaccine introduction. The advances gained through this plan, also called the Pro-Vac Initiative,¹ con-

 Initiative to Promote the Implementation of Economic Analysis for Vaccine Introduction in Countries of Latin America and the Caribbean. health care (6). These principles focus on reducing inequities, strengthening public health infrastructure, cultivating a culture of prevention, galvanizing political commitment, and striving for excellence in technical cooperation. Another key element of sustainability is partnership: PAHO is actively promoting and developing partnerships at family, community, national, subregional, regional, and global levels.

PAHO will continue to strive to maintain wellfunctioning technical oversight and partner coordination groups, such as the TAG and the Regional and Country Interagency Coordination Committees. These groups help ensure that the technical strategies stay on track and sufficient resources are available. PAHO will also continue to mobilize resources to maintain its network of country-based international immunization consultants and various grants to conduct immunization activities, such as the elimination of measles and rubella and the introduction of new vaccines. Finally, PAHO will continue to play

tribute to PAHO's innovative approach to partnership for immunization programs with other Regions and organizations. The main goals of the Pro-Vac Initiative are as follows:

- Providing support in the introduction of new vaccines such as rotavirus, pneumococcal, influenza, and HPV.
- Coordinating a partnership between national immunization programs, ministries of health, academic institutions, and international and regional organizations for health and development.
- Providing a forum in which country teams can share and discuss their economic analysis. A web-based work group will make existing tools and guidelines for health economic analysis available in multiple languages.
- Developing tools to conduct costing and disease burden cost-effectiveness analysis of new vaccine introduction.
- Encouraging transparency of methods and data collections among countries so that they can learn from each other and standardizing tools according to international guidelines to allow comparison of results.
- Providing continuing technical support with a team of experts from several academic institutions and non-academic settings.
- Establishing a multidisciplinary network of key centers of excellence and organizing regional and national centers for epidemiology, economics, and public policy.
- Evaluating progress through site visits, meetings, and documentation produced.

a critical role in sharing national experiences and the lessons learned from all Member States.

References."

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- Immunization Newsletter, Vol. XXVIII, number 2: Analysis of Vaccination-related Legislation in the Americas (April 2006).
- Immunization Newsletter, Vol. XXVIII, number 5: Multiyear Project Proposal for the Promotion of Evidence-based Policy Decisions for New Vaccine Introduction in Latin America and the Caribbean (Pro-Vac) (October 2006).
- EPI Newsletter, Vol. XXVI, number 6: XVI Meeting of the PAHO Technical Advisory Group on Vaccine-preventable Diseases: Conclusions and Recommendations (December 2004).
- Immunization Newsletter, Vol. XXVII, number 5: Rubella and Congenital Rubella Syndrome Elimination Strategy: Contributing to Primary Health Care Renewal (August 2005)

Note: all above articles available at http://www.paho.org/ english/ad/fch/im/Epi_newsletter.htm.

Major outcomes of the five-year Pro-Vac Initiative will include the following:

- The formation of a Regional network of key centers for economics, epidemiology, and public policy.
- Strengthened national capacity through information technologies, long distance training/meeting platforms, and Region-wide follow-up conferences.
- The development of vaccine introduction evidence for decision-making through the use of models for cost-of-program and disease burden. This evidence should be effectively communicated.
- Evidence-based vaccine introduction decisions and planning support.

Future challenges for sustaining the Pro-Vac Initiative efforts will include maintaining effective disease control and elimination strategies, reducing inequities, and continuing to build and strengthen health infrastructure. In order to assist in this process, technical support for the Pro-Vac Initiative will include an e-mail address: provac@paho.org, which will be used to coordinate meetings, referrals, and site visits.

Since the workshop took place, cost-effectiveness studies have been proposed by several countries and are in the discussion phase. These include studies for HPV vaccine (Argentina, Brazil, Caribbean countries, El Salvador, Guatemala, Mexico, Panama, Peru, and Venezuela), pneumococcus vaccine (Bolivia, Brazil, Costa Rica, El Salvador, Guatemala, and Venezuela), rotavirus vaccine (Bolivia, Costa Rica, El Salvador, Guatemala, and Panama), and influenza vaccine (El Salvador and Guatemala).

Feedback from participants indicated they found the workshop highly useful, in large part due to the high level of participation by partners in the Pro-Vac Initiative and member countries. The response to the workshop and the tools provided to participant underscores the value of the Pro-Vac Initiative in helping national immunization programs sustainably pursue new vaccines and benefit from health gains. The expertise offered through the Pro-Vac Initiative is in demand

in other WHO Regions and PAHO is already receiving information requests from agencies and countries outside of the Americas.

GAVI and Guyana: A Success Story

Guyana is the first country to takeover sustainable funding of pentavalent vaccines from the Global Alliance for Vaccines and Immunization (GAVI). In May of this year, Immunization Newsletter Editor, Jon Andrus, interviewed Guyana's Minister of Health, Dr. Leslie Ramsammy, the principal architect behind this achievement. Below follows a summary of the discussion.

When the pentavalent¹ vaccine was introduced in Guyana in 2001, Dr. Ramsammy recalled, the country was ranked among the world's poorest, with a GDP of just around US \$600 and a crippling debt burden. The situation is hardly different today, yet Guyana has been able as of this year to completely take over the cost of providing pentavalent vaccine to its citizenry. "That was a remarkable achievement," said Ramsammy, "but we couldn't have done that unless we had that interim arrangement to help us. In 2000, if we had decided to add pentavalent, it would have been through an incremental approach that might have necessitated about five or six years before we could have raised funds locally. By bringing in GAVI at the time, we were able to accelerate the introduction. And that's why today Guyana is actually able to take over total ownership of this program without any assistance."

Dr. Ramsammy said that what initially impressed him about GAVI was that the program allowed countries like Guyana to introduce new vaccines into the health care system, instead of simply buttressing existing vaccination regimes. "In

1 Diphtheria-pertussis-tetanus + hepatitis B + Haemophilus influenzae type b 2001, at UNGASS,² I had argued that the proposals for the Global Fund should take lessons from GAVI. It's now five years later and Guyana is almost into its second phase into the Global Fund to fight AIDS, tuberculosis and malaria, and I am more convinced today that the model for the Global Fund should have been GAVI. It was a successful global alliance and we did not seek to learn enough from that initiative."

Guyana: A Country Committed to Immunization

Even before the provision of GAVI assistance, the Minister noted, Guyana has always had a strong immunization program. "Guyana has always included immunization, as a priority program," said Dr. Ramsammy, "even in the seventies and eighties when, because of economic reasons, Guyana's investment in the health sector decreased. If you follow Guyana's investment in the health sector, in the 1960s Guyana was spending about US \$60 on health per capita. Things started to deteriorate and by 1992 we were spending less than US \$7 on health per capita. Even within those periods when the investment in the health sector as a whole was decreasing, our investment in the immunization program remained stable. This country has always treated immunization as a priority program, and as a sacred program."

Ramsammy said that the local health sector's tradition of treating immunization as a "sacred priority" stretched back to the beginning of the national immunization program in the 1950s,

2 United Nations General Assembly Special Session.

The Global Alliance for Vaccines and Immunization or **GAVI Alliance** was formed to address one of the world's most glaring injustices: the inability of the poorest countries to provide vaccines for all of their children. An historic alliance between the private and public sector, GAVI harnesses the strengths of multiple partners in immunization, including governments, UNICEF, the World Health Organization, the Bill & Melinda Gates Foundation, the World Bank, vaccine manufacturers, nongovernmental organizations (NGOs), and research institutes. For more on the GAVI Alliance in the Americas, please see *The PAHO-GAVI Partnership* in PAHO's Immunization Newsletter, April 2006, Vol XXVIII, Number 2. The Global Fund to Fight AIDS, Tuberculosis & Malaria is a partnership between governments, civil society, the private sector, and affected communities. It was created to dramatically increase resources to fight three of the world's most devastating diseases, and to direct those resources to areas of greatest need.

when the country was still under colonial rule, and this tradition will continue. "Now [even] in any kind of austerity program, we will not touch the immunization program," Dr. Ramsammy said. "We recognize that it saves lives; we recognize that it saves children from being ill; that it protects children; it saves lives and is as important as anything else when it comes to strategies for reducing infant mortality."

Dr. Ramsammy acknowledged immunization as the backbone of primary health care in Guyana. "We would never deny a single child the full regimen, the full dose of vaccines that are available and relevant," he said.

Looking to the Future

Anytime that new vaccines or technologies that save lives become available, Dr. Ramsammy said that his Ministry would work assiduously within its budget to procure it. Whenever he turns to external agencies like GAVI, Dr. Ramsammy repeated that it is for help to accelerate programs either already in progress or on the drawing board for implementation.

"Once pentavalent vaccine became available commercially, there was no question about Guyana including it in our program. The question then was how we could afford it. We were fortunate that GAVI came along."

"I am encouraged by the fact that the policymakers in these organizations were sufficiently aware that you have to involve the beneficiaries, the recipients, in developing countries."

Ramsammy was convinced that there should be no substantial shift in the way GAVI supports countries in need, arguing that some countries are still lagging far behind in their own vaccination programs. "Let's take Hib, or hepatitis B,"

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Ramsammy offered, "which were available since the early 1980s, yet there are countries in the world today which have not yet introduced these vaccines. And we are talking about a time when newer vaccines which can save millions of lives are coming on board, and yet countries still have difficulty introducing these old vaccines."

Ramsammy said that the introduction of new vaccines like rotavirus can not only save lives, but eventually have a positive impact on the economic growth of developing countries by making children less sick, negating the need for unnecessary spending in the health sector. He was adamant that GAVI Phase 2 must include a strong component for new vaccine introduction in countries.

Regional Outlook

"It appears to me," the Minister said, "that as we go on, many of these global alliances are making it more difficult for countries of the Americas to benefit."

Dr. Ramsammy saw the main factors potentially influencing this trend as the Region's relative high GDP in comparison to other Regions, and the relatively lower disease burden. "Generally," he said, "we are considered to be a little more developed, yet there are very vulnerable countries in this Region, not just the GAVIeligible countries (Bolivia, Cuba, Guyana, Haiti, Honduras, and Nicaragua), but also countries that do not receive GAVI support, countries such as Ecuador, El Salvador, Guatemala, Jamaica, Panama, Paraguay, Peru, to name a few."

The Minister believes that countries in the Region that are improving developmentally, particularly in the area of health, should not be denied aid because of their success. Dr. Ramsammy noted that recently the Global Fund has omitted 22 countries from the Region from its eligibility list. "We shouldn't be penalized for doing well. The fact many of us have 80, 90, or 95% vaccine coverage for example should not be an excuse for assistance programs to leave us out. As important as it is to develop systems to have high coverage, it is also important to support systems to sustain that high coverage." ■

Update on Rotavirus Surveillance in the Americas

Data up to August 2006 regarding surveillance of rotavirus diarrhea in Bolivia, El Salvador, Guatemala, Honduras, Paraguay, and Venezuela are presented in Table 1. Among those countries, 15.2% of hospitalizations in children aged <5 years are due to diarrhea. The positivity average for confirmed rotavirus diarrhea is 44.96%. Between January and August 2006, the lowest percentage of confirmed rotavirus diarrhea cases is found in Venezuela (28.76%) and the highest in Honduras (49.13%). Data for 2005 were presented in the *Immunization Newsletter* issue of February 2006. ■

Table 1. Rotavirus Sentinel Hospital-based Surveillance in Reporting Countries, Region of the Americas, 2006 COUNTRIES INDICATORS Bolivia* El Salvador Guatemala Honduras Venezuela** TOTAL Paraguay Jan.-Aug. Jan.-Sep. Jan.-Aug. Jan.-Aug. Jan.-Aug. Jan.-Aug. Number of hospitalizations in children aged <5 years 32,236 78,816 7,797 9,789 24,709 3,437 848 Number of hospitalizations due to diarrhea in children aged <5 years 270 11,978 1,547 4,665 1,297 4,053 146 Percentage of hospitalizations due to diarrhea 19.8 14.5 13.3 16.4 7.9 17.2 15.2 Number of children aged <5 years that meet the case definition 1,275 3,010 620 3,755 226 473 9,359 Percentage of suspect rotavirus cases 82.4 64.5 47.8 92.7 83.7 100 78.1 Number of children with complete form and stool sample 862 2,122 420 2,310 193 459 6,366

Percentage of suspect cases with complete form and stool samples collected 67.6 70.5 67.7 61.5 85.4 97 68 Number of cases with result positive for rotavirus 358 1,013 164 1,135 60 132 2,862 Percentage of confirmed rotavirus cases 41.5 47.7 39.1 49.1 31.1 28.8 45

* Partial data.

al data. ** Partial data; the number of cases that meet the case definition includes non-hospitalized patients.

Source: Country Reports to Rotavirus Database, Immunization Unit, PAHO.

Neonatal Tetanus: Global and Regional Outlook

In 1989 the World Health Assembly (WHA) called for the global elimination of maternal and neonatal tetanus, which was later defined as less than one case of neonatal tetanus (NNT) per 1,000 live births in every district of every country. Ten years later, global efforts were successful in eliminating NNT in 104 out of 161 developing countries. However, NNT was still a significant public health problem in 57 countries in 2000, a fact that resulted in a renewed push by an international coalition to eliminate the disease by 2005. The number of NNT deaths has decreased from 800.000 worldwide in the 1980s to less than 180,000 in 2002, with most of these in just 52 countries. In addition, maternal deaths due to tetanus are estimated to be 30,000 annually.

After the high-risk approach was deployed in Latin America and the Caribbean in 1986, the number of reported NNT cases in the Region fell more than 50% in just the first four years. From 1986 to 2005, that number fell by more than 94%. The disease is now considered to be

eliminated in the entire American Region, with the exception of some countries (Table 1). The total number of districts reporting an annual rate >1 NNT case per 1,000 live births was 210 in 1995 and 16 in 2005.

A single case of NNT in the Americas should now be considered a failure of the health services, and should be subject to a thorough evaluation to determine how the case could have been averted in order to prevent new cases.

At its meeting held in July 2006, the Technical Advisory Group (TAG) on Vaccine-preventable Diseases recognized the tremendous achievements of countries of the Region toward NNT elimination and emphasized that those few countries still experiencing the occurrence of NNT cases should make special efforts to conclude the elimination task. Furthermore, TAG recommended the following measures:

 Countries that still have districts with cases must conduct vaccination in high-risk areas. Every country must maintain a high quality NNT surveillance and PAHO should encourage and support these efforts.

- All NNT cases should be fully investigated by an independent peer review board. Conclusions about the failure to prevent a case must be used as a guide to target populations to be vaccinated.
- PAHO should work with its partners to encourage and support Haiti in conducting a nation-wide campaign to eliminate NNT and should take advantage of this activity to maintain measles-free status and eliminate rubella and congenital rubella syndrome.

Table 1. Selected Latin American Countries With NNT Cases: Districts With Cases and Districts With >1 NNT Case per 1,000 Live Births, 1995 and 2005									
	1995				2005				
Countries	Total Districts	Total Cases	Districts				Districts		
			Reporting Cases	Rate >1/1000 LB*	Total Districts	Total Cases	Reporting Cases	Rate >1/1000 LB*	
Bolivia	93	20	11	4	324	5	4	2	
Brazil	4,954	127	113	82	5,564	10	10	7	
Colombia	1,020	35	27	15	1,113	9	8	3	
Dominican Republic	153	0	0	0	153				
Ecuador	141	51	36	9	167	6	6	2	
El Salvador	262	3	3	1	262	1	1	0	
Guatemala	331	9	8	5	331	0	0	0	
Honduras	293	3	3	3	298	0	0	0	
Mexico	2,406	67	63	18	2,444	1	1	0	
Nicaragua	152	4	3	1	162	1	1	0	
Panama	68	1	1	1	76	1	1	0	
Paraguay	211	16	16	8	232	2	2	2	
Peru	1,811	99	75	59	1,811	2	2	0	
Venezuela	287	18	12	4	287	1	1	0	
TOTAL	12,182	453	371	210	13,224	39	37	16	

* live birth ... not available

Source: Immunization Unit, PAHO.

Administration of Vitamin A Supplements

- Vitamin A reduces the severity of infections such as diarrhea and measles, therefore reducing mortality due to an infection.
- Vitamin A promotes the growth of children.
- Severe vitamine A deficiency is associated with difficulty to see in darkness, eye lesions, and blindness.
- Children and pregnant women whose diet is poor in vitamin A-rich foods need to received vitamin A supplements.
- Vitamine A is found in food in two ways: as pre-formed vitamin A (milk, butter, and liver) and in the form of carotenoids or vitamin A precursors (in yellow and orange fruits and in vegetables, particularly dark, green and leafy ones).

Steps to follow for appropriate administration of vitamin A supplements 1. Keep vitamin A capsules in an airtight 2. Separate and store vitamin A vials according 3. Check the expiry date of the product. container, away from light, heat, and to their doses. humidity. 4. Mark the date in which you opened the vial 5. Check the vitamin A dose that corresponds to 6. Wash your hands and ask the mother to sit of vitamin A capsules. the age of the child. comfortably with the child on her lap. 7. Cut the end of the capsule with a clean pair 8. Squeeze the capsule between your fingers 9. Mark on the health or vaccination card and make sure the entire content falls into the of scissors. the date when the vitamin A dosis was child's mouth. administered. 10. Tell the mother when she should bring the child back for the second dosis.

ONLY healthcare workers can administer vitamin A capsules!

- If the vial has not been opened, vitamin A capsules conserve their potency up to 2 years after their manufacturing date.
 - Capsules conserve their potency up to a year after the vial was opened.
 - Check that the child has swallowed the whole content of the capsule and that he or she did not spit any drop.

Vitamin A Dosage Schedule as Supplements: CHILDREN AGED 6-24 MONTHS						
Age	Dosis	Frequency				
6-11 months	100,000 IU (30 mg) (blue pearls)	One every 4-6 months				
12-24 months	200,000 IU (60 mg) (red pearls)	One every 4-6 months				



- Vitamine A capsules should not be refrigerated of frozen.
- Do not, under any circumstance, give vitamin A capsules to the mother or caregivers.
- Do not twist or bite the capsule to open it.

Source: PAHO/HPN/SVI/98.2, Child and Adolescent Health Unit, and Immunization Unit, PAHO.

Meeting on Epidemiologic Surveillance of Bacterial Pneumonia and Meningitis

The Pan American Health Organization (PAHO), with support from the Sabin Vaccine Institute and PneumoADIP, is organizing a meeting on epidemiologic surveillance of bacterial pneumonia and meningitis in children aged <5 years. The meeting will be held in São Paulo, Brazil, on 15 and 16 December 2006.

Participating in the meeting will be managers of the Expanded Program on Immunization (EPI) and individuals in charge of pneumonia and meningitis surveillance in countries of the Americas. PAHO immunization staff in countries and at headquarters will also participate.

The meeting will be an opportunity for participants to share information and experiences and to validate the regional surveillance guidelines being developed by PAHO. These guidelines focus on standardized case definition criteria, data to be collected, and reporting frequency. Feedback provided during the meeting will be incorporated in the final version of the guidelines, which will be later printed and distributed to all countries.

Pneumonia is a major cause of morbidity, hospitalization, and mortality among children aged <5 years in the Americas. Before the *Haemophilus influenzae* type b (Hib) vaccine was introduced in the routine immunization schedules of most countries, severe pneumonia and meningitis in children was caused most frequently by Hib. Today, pneumococcus is the most frequent bacteria causing severe pneumonia and meningitis in children.

Two vaccines against invasive pneumococcal disease are available. The polysaccharide vaccine, for adult use, and the seven-valent pneumococcal conjugate vaccine, for use in children aged <2 years. The seven-valent vaccine covers up to 60% of the prevalent serotypes in the Region. New vaccines are being developed

to protect against more serotypes. PAHO is cooperating with countries of the Region to generate standardized epidemiological information on bacterial invasive pneumococcal diseases and improve surveillance in order to support the introduction of new vaccines and evaluate their impact.

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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