Editorial

Anticipating new vaccines in the Americas

Jon Kim Andrus[1]

Gina Tambini,[2]

Jose Luis di Fabio,[3] *and*

Mirta Roses Periago[4]

An article on anticipating rotavirus vaccines (1) that is in this issue of the *Revista Panamericana de Salud Pública/Pan American Journal of Public Health* is extremely timely in terms of vaccine development. The authors correctly conclude that the heavy burden of disease attributable to rotavirus in Latin America suggests that vaccines currently being developed could have considerable impact in preventing hospitalizations, clinic visits, and deaths.

The Pan American Health Organization (PAHO) is strongly committed to addressing what the authors conclude to be the important public health priority of reducing the deaths and hospitalizations attributable to rotavirus diarrhea (2). One of the guiding principles for immunization programs in the Americas is reducing the inequities in health that exist between resource-wealthy countries and resource-poor ones. Providing new and underutilized vaccines to the children and families who need them most best exemplifies this guiding principle (3). The gap between vaccines available in resource-wealthy countries and resource-poor ones continues to expand each year. As stated in the World Bank's *World Development Report 1993: Investing in Health*, vaccines in general are the most cost-effective interventions available to medical science (4).

While reducing existing inequities is a major challenge, equally important is ensuring that any expansion of services is sustainable. Program sustainability is best ensured when governments finance their programs, especially the purchase of new vaccines. While expanding the terms of reference for immunization, efforts must continue to promote better utilization of the vaccines against "old" killer diseases, such as pertussis and tetanus. Regardless of the threat, the vaccine to tackle that threat must be safe, effective, and affordable. Price remains a critical issue for countries and must be a key element to be addressed in PAHO's support to countries, in partnership with existing alliances among the United Nations Children's Fund and other United Nations organizations, the Global Alliance for Vaccines and Immunization, bilateral agencies, and technical institutions such as the Centers for Disease Control and Prevention.

For more than 25 years PAHO has managed its Revolving Fund to provide Member States with an effective procurement and financing mechanism that complements a broad spectrum of technical assistance. In order to guarantee the quality of the vaccines purchased, the Revolving Fund relies on vaccines and manufacturers that are prequalified by the World Health Organization (WHO). To that end, the Revolving Fund will remain the centerpiece in PAHO's efforts to support the introduction of new and underutilized vaccines.

In this context, to strengthen the capacity of Member States to make appropriate decisions about new and underutilized vaccines, the Immunization Unit of PAHO provides technical cooperation in the following areas:

- country-based disease burden studies to determine whether the vaccine in question is addressing an important public health problem for the country
- identification and control of outbreaks of rotavirus diarrhea, using the experience to strengthen surveillance
- surveillance systems to assess disease burden over time in order to monitor changes in the epidemiologic situation or the impact of interventions
- economic evaluations to determine whether the vaccine in question is cost-beneficial or cost-effective, particularly in light of opportunity costs for other interventions
- assessment of cold chain capacity to absorb a new vaccine
- continuous advocacy with key partners and donors to make important vaccines affordable in order to address critical public health problems for those who need the vaccines the most, namely the poor and marginalized populations at risk

[1] Pan American Health Organization, Family and Community Health, Immunization Unit, Washington, D.C., United States of America.
[2] Pan American Health Organization, Family and Community Health, Washington, D.C., United States of America.
[3] Pan American Health Organization, Technology and Health Services, Washington, D.C., United States of America.
[4] Director, Pan American Health Organization, Washington, D.C., United States of America.

To that end, PAHO and its partners sponsored a workshop on "prevention effectiveness" for all the national immunization managers of the Americas in Washington, D.C., in June 2004. The aim of the workshop was to increase the skills of national program managers in determining which economic studies are scientifically sound. In this way, immunization managers can better advise their respective ministers of health on issues related to new and underutilized vaccines.

PAHO works closely with public-private partnerships, including the Global Alliance for Vaccines and Immunization. With WHO participation, the Global Alliance for Vaccines and Immunization earmarked three vaccines for rapid development and introduction into national immunization programs when feasible: the rotavirus (RV) vaccine, the pneumococcus vaccine, and the meningococcus vaccine. The first two of these are more relevant for the Americas, while meningococcal disease remains a serious public health threat in Africa. PAHO also works closely with the private sector to learn more about ongoing research, the status of clinical trials, and other aspects of development of vaccines that are "in the pipeline." The children of the PAHO Member States, and the ministries of health that serve them, are the clients of the PAHO Immunization Unit. These children must be provided with safe and effective vaccines that are affordable for everyone.

Some experts believe that the next new vaccine to be introduced by the countries of the Americas will be the one for rotavirus. RV disease kills an estimated 17 000 children yearly in the Americas, and it likely leads to more than 75 000 hospitalizations per year. However, a major impediment to introducing the vaccine will be its affordability.

Until the RV vaccine prices become affordable, countries may decide to introduce other, more-available, underutilized vaccines. The most likely choices are vaccines for pneumococcal disease, rubella, influenza, hepatitis A, and varicella. At current prices, the vaccine for pneumococcal disease is clearly not affordable for most countries. All studies conducted in the Region of the Americas so far have indicated that rubella elimination is a highly cost-beneficial intervention. Public health authorities are concerned about the impending influenza pandemic. In a recent economic evaluation, Costa Rica determined that the introduction of influenza vaccine would be cost-effective for the country (5). Finally, vaccines for hepatitis A and varicella are less likely to be addressed for introduction because they are less cost-effective at current prices and estimates of serious disease burden.

In 1977 the Expanded Program on Immunization was established in the Americas. The Regional and national immunization programs developed over the last 27 years need to continue efforts to address issues of inequity and to ensure the sustainability of interventions. Safe, effective, affordable vaccines, whether new or old, must be available for those who need them the most. New vaccines against rotavirus, human papilloma virus, and ultimately HIV infection have great promise for making an enormous public health difference. The same can be said for the introduction of underutilized vaccines such as those for rubella and influenza. Regardless, fast-tracking the introduction of new vaccines would assure the affordability and sustainability of vaccines for all people, and would maintain the gains of previous disease control initiatives. This will be one of the greatest public health challenges ahead.

REFERENCES

1. Kane EM, Turcios RM, Arvay ML, Garcia S, Bresee JS, Glass RI. The epidemiology of rotavirus diarrhea in Latin America. Anticipating rotavirus vaccines. Rev Panam Salud Publica. 2004;16(6):371–7.
2. Andrus JK. Rotavirus vaccines [letter]. Lancet 2004;364:246.
3. Castillo-Solórzano C, Andrus J, Roses Periago M. El desarrollo de nuevas vacunas: generación de información para la toma de decisiones. Rev Panam Salud Publica. 2004;15(1):1–3.
4. World Bank. World development report 1993: investing in health. Washington, D.C.: World Bank; 1993.
5. Pan American Health Organization. Influenza vaccination among risk groups in Costa Rica: an evidence-based decision. EPI Newsl. 2004:26(3):2–4.