EPI Newsletter

Expanded Program on Immunization in the Americas

Volume XIX, Number 5 **IMMUNIZE AND PROTECT YOUR CHILDREN** October 1997

SVI Technical Advisory Group Meets

*The **Twelfth Technical Advisory Group Meeting on Vaccine-Preventable Diseases** (TAG) was held in Guatemala, September 8-12, 1997. Formed in 1985 during the polio eradication campaign, the TAG meets every two years and functions as the leading forum to promote regional initiatives aimed at controlling and eliminating vaccine-preventable diseases. One of its main objectives has been to strengthen the policy dialogue on immunization among governments in the Region and participating agencies. The following are some of the major conclusions and recommendations.*

Immunization in a Changing Policy Environment

All countries are moving toward delegating greater responsibility for delivery and management of health care services to local levels. This provides an opportunity to promote community participation and commitment of local health authorities.

However, with decentralization there remains a requirement at the central level to assure that immunization program goals are met in all areas of a country. Because almost all vaccine-preventable diseases can spread widely, successful control or elimination requires coordinated national and international efforts so that no area becomes a reservoir to seed infection into other communities and countries.

Children wave their certificates proving that they have completed their vaccination schedule.
Source: WHO/Ministry of Health, Mexico

Recommendations

- National governments must maintain authority to monitor the implementation of immunization programs at the state and local level and to take corrective actions should problems be detected.
- Vaccination and surveillance programs should be considered essential public goods and funded with public resources.
- Within the context of a changing environment to improve access to health services, vaccination coverage should be an indicator of the success of local and state delivery of services and a measure of the success of the health care reform and decentralization process.

Measles Eradication

Substantial progress has been made towards achieving the goal of measles eradication in the Americas. Transmission has been interrupted in many countries of the Region. The PAHO vaccination strategy (*catch-up, keep-up* and *follow-up*), where fully implemented, has proven to be highly effective. However, TAG pointed out that low levels of incidence can lead to a false sense of security. In the absence of measles transmission, susceptibles accumulate in a community, as a result of failure to vaccinate all children and because primary vaccination does not protect 5 to 10% of those vaccinated. These susceptibles can sustain future measles outbreaks. To maintain a measles-free state will require ongoing efforts to minimize susceptibility using the complete strategy.

The measles eradication effort is not a local or even a national campaign but a hemisphere-wide program which

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can only be as strong as its weakest component. This is true on a global scale as well because many cases in this Region have been linked either epidemiologically or virologically to importations from outside this hemisphere. Thus, better worldwide measles control is important to the continued success of measles eradication in the Americas.

Recommendations

General

- The occurrence of epidemic measles in a major urban area poses, by far, the most serious threat to the overall program because of the possibility of widespread disease dissemination. Accordingly, it is important that program success in all urban areas (population of >=1,000,000) be monitored on an ongoing basis by national authorities and reported to PAHO.

Vaccination Strategies

- Routine vaccination of infants (*keep-up* vaccination) is a critical component of the PAHO measles eradication strategy.
- To maintain high population immunity among preschool-aged children, *follow-up* measles vaccination campaigns should be conducted whenever the estimated number of susceptible children 1-4 years of age approaches the number of children in one birth cohort.

Surveillance and Laboratory

- Each country should periodically evaluate the quality of its surveillance system. PAHO has developed a protocol for rapid evaluation of surveillance systems which should be disseminated to all countries of the Region. A plan should be made for these evaluations in all countries as soon as possible.
- Laboratory confirmation is an essential part of the regional measles surveillance system. A single serum specimen collected at first contact with the health care system is sufficient for confirming measles.
- Virologic surveillance is important. Clinical specimens for viral isolation should be obtained from every chain of transmission. Urine, the most practical specimen to collect, should be obtained within 7 days of rash onset and forwarded to a laboratory to be properly processed.

Outbreak Response

- Countries should not implement indiscriminate campaigns to vaccinate all adults against measles. Most adults are likely to be immune and achieving significantly higher levels of coverage among adults is extremely difficult. However, where surveillance has identified specific risk groups for measles among adults, such as university students, health care workers, or others, targeted vaccination efforts may be useful.

Management Indicators

The following indicators are essential for monitoring the performance of the program:

Notification:

- ≥ 80% of reporting sites report on a weekly basis the presence or absence of suspected measles cases.
- ≥ 80% of reporting sites report at least one suspected measles case per year.

Investigation:

- ≥ 80% of suspected measles cases are investigated within 48 hours of report.
- ≥ 80% of suspected measles cases have a blood specimen collected if there is not an epidemiological link to a laboratory confirmed measles case.
- ≥ 80% of measles chains of transmission have an identified source of infection.

Laboratory:

- ≥ 80% of specimens with results within 7 days of receipt in laboratory.

Poliomyelitis

The hemisphere continues to be free of wild polio virus and surveillance indicators for the Region, as a whole, show that most countries are continuing to conduct adequate surveillance for acute flaccid paralysis (AFP) cases. However, the TAG noted a substantial deterioration in surveillance in some of the countries of the Region, raising concerns that future importations of wild virus could be missed.

- All countries must assure that adequate resources are devoted to polio surveillance. AFP surveillance must continue with ascertainment of at least one case annually of AFP per 100,000 < 15 years of age.
- For laboratory diagnosis, only one stool, collected within 15 days of onset of paralysis, is needed. Such specimens should be collected from at least 80% of AFP cases.
- An inventory of all laboratories in the hemisphere which have wild polio virus stocks should be completed as a first step toward the eventual destruction of all wild polio viruses as part of the global certification process.
- OPV remains the vaccine of choice in the Americas because it induces gut immunity, thus preventing spread of wild viruses if introduced; it is easy to administer; and it is relatively inexpensive.

Neonatal Tetanus

Acceleration of NNT elimination activities in the Region of the Americas began in 1988 and great progress has been made. The annual number of cases in the Region decreased from 1,470 in 1988 to 312 in 1996, and the number of districts with multiple cases of NNT has also decreased.

Recommendations

- Td should replace TT any time TT is indicated for vaccination of women of childbearing age, other adults, and older children to also improve protection against diphtheria.
- Surveillance and NNT case investigations should be improved in risk areas of endemic countries, particularly in areas from which information on coverage and cases is lacking.

Rubella and Congenital Rubella

Available data indicate that rubella is prevalent throughout the Americas. Cases of congenital rubella syndrome

(CRS) and fetal infection have been documented in Barbados, Belize, Brazil, Cuba, Jamaica, Mexico, Panama, and Trinidad. It has been estimated that there are more than 20,000 infants born with CRS each year in the Americas in the absence of major epidemics.

Recommendations

- All countries should incorporate rubella vaccine (as MR or MMR) into childhood vaccination programs, both as part of routine childhood immunization at 12-15 months and as part of the *follow-up* campaigns reaching children 1-4 years of age every 4 years.
- Countries implementing childhood rubella programs should make efforts to reduce the accumulation of susceptible adult female groups, such as post-partum vaccination, immunization in family planning clinics, and other settings where females can be vaccinated. Women should be vaccinated with MR or MMR vaccine to take advantage of the opportunity to increase immunity to measles.
- Surveillance of CRS (and rubella) should be initiated throughout the Americas and should begin before, or at the same time as, implementation of a rubella vaccination program.
- Countries wishing to prevent and control CRS promptly should carry out a one time mass campaign to vaccinate all females 5-39 years of age with rubella or MR vaccine.
- Countries wishing to prevent and control both rubella and CRS promptly should carry out a one time mass campaign to vaccinate both males and females 5-39 years of age with rubella or MR vaccine.

Hepatitis B

It has been estimated that between 140,000 to 400,000 new cases of acute hepatitis B occur annually in the Americas. Two thirds of them are believed to occur in South America, primarily in areas within the Amazon Basin.

Recommendations

- Routine vaccination of all children living in the Amazon Basin is recommended as well as in other areas, if any, with high endemicity (HbsAg prevalence equal or greater than 7%).
- Routine vaccination is also recommended for those at high risk of infection, such as health care workers and hospital staff.

Yellow Fever

Between 1990 and 1996, 1,287 cases of yellow fever were reported in the Americas. As during the decade of the 1980s, 80% of these cases came from the Amazon Basin areas of Bolivia and Peru. However, important risk areas for yellow fever are also present in Brazil, Colombia, and Venezuela.

Recommendations

- Incorporate vaccination against yellow fever into national immunization programs in high-risk areas and ensure that adequate quantities of vaccines and other supplies necessary to immunize against this disease are available at local health services.

***Haemophilus Influenzae* type b (Hib)**

Safe and effective vaccines against *Haemophilus influenzae* type b (Hib) have had an enormous impact in industrialized countries on Hib disease incidence, particularly meningitis and epiglottitis. Similar effects have also been observed in some countries in the Region (e.g. Uruguay and Chile) that have introduced Hib vaccine in their national immunization programs. It is possible that a larger impact on pneumonia will be observed in developing countries, as *Haemophilus influenzae* type b is an important pathogen in childhood pneumonias.

Recommendations

- The TAG recommends the introduction of Hib vaccine in national immunization programs provided that adequate additional funds can be identified. However, implementation of Hib should not divert resources needed to sustain and enhance existing immunization efforts.

Vaccines of Quality

Quality of vaccine is assured through both quality control of the final product, as well as Good Manufacturing Practices (GMP) during the entire manufacturing process. Both manufacturers and governments using vaccines are responsible for quality. Manufacturers must adhere to GMP that assure high quality of every lot (consistency of production). Governments must have adequate capacity to monitor manufacturers and their products.

Recommendations

- Local vaccine manufacturers should participate in the PAHO Certification Program for Vaccine Producers.
- Local manufacturers should perform feasibility and viability studies of vaccine production to demonstrate their capability to supply vaccines of quality to immunization programs in a timely and continuous manner.
- Governments in the Region must institute National Control Authorities (NCA) appropriate to their vaccine production and purchasing policies.
- Immunization program managers should use only vaccines of known quality in their immunization programs.

Research and Development: the Regional Vaccine Initiative.

Although governments recognize that vaccine and immunization are key to the control, elimination and eradication of vaccine-preventable diseases, this recognition has not been translated into concrete actions to promote and support research and development for vaccine production. Research and development teams in the Region are few and not coordinated among themselves or with vaccine producers. The introduction of new vaccines into national immunization programs in the Region may be facilitated if some existing public laboratories participate in the process.

Results obtained by the Pneumococcal Surveillance Network demonstrate the importance of inter-country collaboration and coordination to standardize laboratory and epidemiological methodologies for monitoring a specific

pathogen, to determine regional burden of disease, and to define particular characteristics of the burden such as serotype distribution or antimicrobial resistance. This system can be established and developed as the basis for a more comprehensive surveillance network for vaccine-preventable diseases.

Recommendations

- Formal programs for vaccine research and development must be established with appropriate financial resources, together with strong coordination at the country and regional level in order to potentiate existing research, development and production capabilities.
- This initiative should give priority to the development of polysaccharide and polysaccharide conjugated vaccines as this methodology will provide vaccines against several important childhood pathogens such as *Haemophilus influenzae, Neisseria meningitidis, Streptococcus pneumoniae, Salmonella typhi, and Shigella* sp., responsible for significant mortality and morbidity in the Region.
- The Network should collect information on cases and correlate those data with laboratory information to answer questions such as whether the increasing trend of antibiotic resistance has been associated with increased disease severity, complications, and cost. These data will be important in guiding clinical management and future policies for pneumococcal vaccination.

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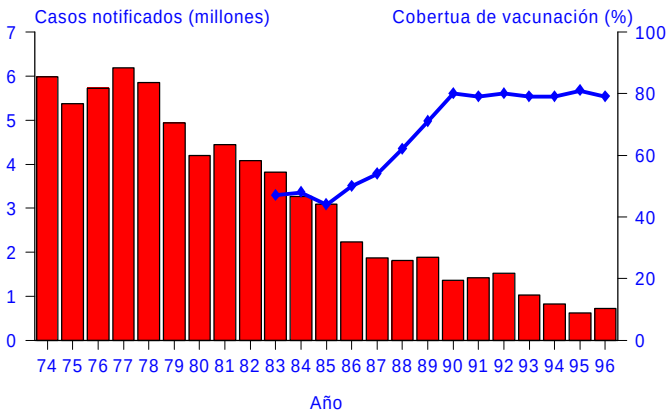
For a complete version of the TAG conclusions and recommendations, please contact SVI in Washington, D.C.

Third Global Roundtable on Measles Control and Elimination

The Third Meeting on Advances in Measles Control and Elimination was held in August 27-29, in Atlanta, Georgia. This consultative meeting is co-sponsored by PAHO, the Centers for Disease Control and the World Health Organization.

The progress made in the global fight against measles and interruption of transmission has been demonstrated in several countries, reinforcing the view that measles eradication is technically feasible using existing vaccines and intervention strategies. This has generated a positive trend in measles control and elimination (Figure 1).

Figure 1
Global annual reported vaccine coverage and measles cases
1974-1996



Source: WHO/EPI Information System

The countries of the Americas are well underway in their efforts to eliminate the disease by the year 2000 and the Pacific Island nations are expected to make a similar commitment in the near future. The European Advisory Group has recommended an elimination target date of 2007 and it is anticipated that the Regional Committee will consider this goal at its 1998 meeting. The Regional Committee of the Eastern Mediterranean will consider an elimination target of 2010. China and several southern African countries have embarked on accelerated measles control/elimination approaches.

A decision to eradicate measles worldwide will have a tremendous impact on infant morbidity and mortality. Despite the availability of an effective vaccine, measles continues to cause 42 million cases, and nearly 1 million deaths per year worldwide. Global coverage with measles vaccine is estimated at 79%. Most measles deaths occur among children under five years of age living in developing countries, particularly in Africa. This is because many children remain unprotected, particularly in poor urban areas where the case fatality is highest. The disease thrives in cities, in poor urban areas where crowding, poor sanitation and low measles vaccination coverage ensure ongoing circulation of the virus. Participants at the Atlanta meeting agreed it would be important to support urban immunization strategies to control measles in low income countries with high population density, with special emphasis on populations that hav not yet been reached.