Health Canada Santé Canada

Update: Vaccine-Preventable Diseases

Volume 7 Number 2 August 1999

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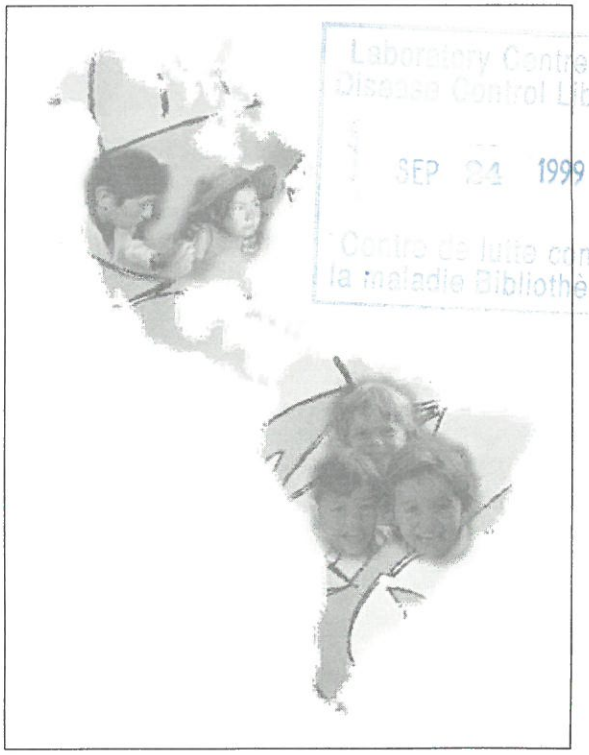
Current News

Thirteenth Meeting of the Pan American Health Organization's Technical Advisory Group on Vaccine-Preventable Diseases: Conclusions and Recommendations

Adapted from the final report of the 13th meeting of the PAHO Technical Advisory Group

The 13th meeting of the Pan American Health Organization (PAHO) Technical Advisory Group (TAG) on Vaccine-Preventable Diseases was hosted by Health Canada and held in Hull, Quebec, from April 12 to 16, 1999. TAG meets every 2 years and functions as the leading forum to promote regional initiatives aimed at controlling and eliminating vaccine-preventable diseases. Representatives from PAHO member countries meet to review the current status of vaccine-preventable diseases and immunization programs in the countries of the Region.

During the Hull meeting, emphasis was placed on the need to highlight the role that immunization has played in reducing the incidence of vaccine-preventable diseases. This impact can be further increased if countries find the means to introduce other vaccines in a sustainable way. The following are excerpts of the final report on the conclusions and recommendations of the meeting.



Introduction

The Region of the Americas enters the new millennium with great promise and strength. Additional vaccines are being added to the basic schedule every year, and the Region is making progress towards ensuring that these vaccines are of known quality. Much remains to be done, however, especially in reaching those people who are not currently benefiting from immunization services and those who could already be enjoying the advantages of vaccination against diseases that carry a significant health burden.

On the other hand, there is a tendency for complacency that goes hand in hand with the success achieved by immunization

Canada

worldwide. Efforts are needed to disseminate more widely the value of vaccines to individuals and the community at large.

Immunization coverage levels remain at above 80% throughout the Americas, and thus the vast majority of children are being reached with the basic vaccination schedule. The strength of these programs lies in a panamerican approach to tackling important public health problems. The historic poliomyelitis eradication in the Americas was the product of the collective action of collaborating agencies, countries and beneficiaries alike in the pursuit of a common objective. This collaboration has enabled many countries in the Region to acquire the necessary tools to improve their health situation by themselves.

1. Impact of Decentralization and Health Sector Reform on National Immunization Programs

The processes of health reform and decentralization of health services are well under way in the countries of the Americas. Although laws have been enacted that transfer decision-making and resources to the local levels, in practice there is a need to clarify the responsibilities of the various institutions assigned to the delivery of immunization services, as well as the mechanisms to transfer and manage resources. These changes are causing delays, especially in the allocation of resources for routine vaccination activities and for emergency outbreak situations in some countries.

Several countries going through the process of decentralization and health reform are showing a decline in process indicators for immunization programs, such as coverage and surveillance. This could have serious implications, both nationally and internationally, for immunization programs, especially for measles eradication. National governments should make special efforts to maintain the quality and effectiveness of national immunization programs, so that no areas become a reservoir to seed infection into other communities and countries.

Recommendations

- Decentralization as part of health system reform is recognized to be a positive step in strengthening health systems. However, assurance is needed of consistent implementation throughout the country of health programs such as national immunization programs, which require adequate performance in all areas.

Financing

- Vaccination and surveillance programs should be considered essential public goods and funded with public resources. National governments must keep control of the use of resources to fund national vaccination programs coming from outside sources.
- Legislation must be established that supports the creation of a direct budget line to finance recurrent costs associated with vaccination programs.
- National governments must maintain the authority to monitor the implementation of immunization programs at the state and local level.
- Performance agreements are increasingly being utilized as part of decentralization for the purpose of resource allocation. National governments should ensure that immunization indicators are included in these performance agreements with the local levels.

Delivery of Immunization Services

- Health authorities need to ensure that national technical and managerial capabilities are in place at the local level, especially to conduct surveillance and immunization activities. These steps will be essential to ensure that immunization services remain a priority and that they are delivered in an equitable way.

Programmatic

- Immunization and surveillance indicators should be used for monitoring the impact of decentralization and health sector reform.
- Governments need to ensure that local staff responsible for reporting epidemiologic information on vaccine-preventable diseases follow standardized reporting procedures.

2. Measles Eradication

Great progress has been made towards interrupting measles transmission in most countries of the Americas. However, measles virus continues to circulate in several areas of the Region, and only 21 months remain until the target date of achieving the goal of hemispheric measles eradication.

Recommendations

Vaccination Strategies

- The full implementation of PAHO's recommended vaccination strategy in all countries of the Region is needed to ensure the eradication of measles from the Americas.
- Routine vaccination of infants (*keep-up* vaccination) is a critical component of the PAHO measles eradication strategy. Efforts are needed to vaccinate $\geq$ 95% of infants as soon as possible after their first birthday in every district of every country every year.
- Vaccine coverage must be monitored at the district level or geographic equivalent using appropriate denominators for the target population. Supplemental vaccination (*mop-up*) activities are needed in those districts that do not achieve 95% coverage. These activities may include door-to-door vaccination.

- Follow-up measles vaccination campaigns should be conducted when the estimated number of susceptible children 1-4 years of age approaches the number of children in one birth cohort. In most countries, these campaigns are conducted every 4 years but should be conducted sooner if needed (based on coverage obtained in routine programs and other epidemiologic information).
- In countries with rubella/CRS (congenital rubella syndrome) control programs, measles and rubella-containing vaccines should be used for routine infant vaccination, *follow-up* campaigns and outbreak response activities.
- Health care workers are at increased risk of being exposed to measles virus and of being a potential source of virus transmission in health facilities. Persons working in health care settings who have contact with children and persons with infectious diseases should be vaccinated against measles, regardless of disease history or vaccination status. Rubella-containing vaccine should be used.

Outbreak Response

- Recent experience from outbreaks in Latin America has demonstrated that certain groups of adults may be at increased risk for measles during an outbreak. These groups have also been responsible for sustaining measles outbreaks and for transmitting measles to susceptible persons of other age groups. Since the epidemiologic situation differs among countries, it is not possible to give blanket recommendations about which groups of adults to vaccinate in all countries. When measles virus circulation is suspected, consideration should be given to quickly vaccinating persons within the following groups: teachers, university students, military personnel, and persons living/working within institutions such as prisons, large factories, work camps, and chronic care medical facilities.
- To obtain information that can be used to prevent and control future outbreaks, appropriate investigations and analysis must be conducted for all measles outbreaks. Efforts are needed to determine sources of measles virus introduction, transmission patterns and specific risk factors for acquiring measles.
- Once measles virus circulation has been confirmed by positive measles IgM serology in several patients, it is not necessary to routinely collect blood specimens from every suspected case. Many suspected cases can be confirmed via epidemiologic linkage to a laboratory-confirmed case.

Surveillance and Laboratory

- Measles surveillance is critical for measuring progress towards the goal of measles eradication in the Americas and for detecting problem areas. Efforts are urgently needed to improve the quality of measles surveillance throughout the Region.
- To monitor progress towards the achievement of measles eradication, all countries should provide data on a weekly basis to the Region-wide measles eradication surveillance system (MESS).
- Each country should periodically have its measles surveillance system objectively evaluated using the standardized evaluation protocol developed by PAHO. Countries should constantly work to improve the quality of the reporting system.
- Virologic surveillance and molecular epidemiology can provide important information to an eradication program. Appropriate clinical specimens for viral isolation should be obtained from every chain of measles transmission. Urine, the most practical specimen to collect for measles virus isolation, should be obtained within 7 days of rash onset and forwarded to a reference laboratory capable of performing measles virus isolation.

3. Rubella and Congenital Rubella Syndrome

Rubella virus continues to circulate freely in most countries of the Region. After a complete investigation, many suspected measles cases are ultimately found to be rubella. Moreover, cases of CRS have been found in all countries of the Region that have established CRS surveillance systems. This suggests that CRS is a major public health problem in all countries of the Americas.

Recommendations

Vaccination Strategies

- All countries should incorporate rubella-containing vaccine into childhood vaccination programs, both as part of routine childhood immunization at 12 months, and as part of the *follow-up* campaigns. Moreover, targeted efforts are needed to reduce the number of rubella-susceptible women of childbearing age. Such strategies as post-partum immunization, immunization in family planning clinics, immunization in schools and the workplace can be used to protect these women.
- There are substantial data available documenting the absence of significant risk from rubella vaccination during pregnancy. However, pregnant women are generally not vaccinated. This is to avoid the risk of the vaccine being implicated should there be an unrelated adverse outcome of the pregnancy. For women who are vaccinated and then subsequently found to be pregnant, abortions are not recommended. Finally, it is not necessary to counsel women to avoid pregnancy for 3 months following rubella vaccination, because no known risk of adverse fetal outcomes has been established.

Surveillance and Laboratory

- Rubella surveillance should be integrated with measles surveillance. The purpose of rubella surveillance is to detect circulation of rubella virus, not to detect every case of rubella. A separate rubella surveillance system is not needed. All sera from suspected measles cases that test negative for measles IgM antibodies should be tested for rubella IgM antibodies and vice versa.

- CRS surveillance should be initiated throughout the Americas. The purpose of CRS surveillance is to detect new or incident CRS cases in infants; efforts should not be routinely made to confirm CRS in older children.
- As with measles/rubella surveillance, laboratory confirmation is crucial for the diagnosis of CRS. A blood sample should be collected from every infant with suspected CRS. For surveillance purposes, a single serum specimen is generally considered adequate to either confirm or discard CRS. If, however, the first sample tests negative for rubella IgM and there exists compelling clinical and/or epidemiologic suspicion of CRS, then a second serum specimen may be requested to confirm CRS.
- Little information is available concerning the molecular epidemiology of rubella in the Americas. As with measles surveillance, rubella virus surveillance may provide important information concerning the viral sub-types that are currently circulating in the Region. Efforts should be made to collect several appropriate clinical specimens for viral isolation from every documented rubella outbreak. Nasopharyngeal aspirates are the preferred specimens for rubella virus isolation. Specimens should be collected within 4 days of rash onset and forwarded to an appropriate reference laboratory.

4. Poliomyelitis

The Region of the Americas remains at constant risk of polio importations from countries where the virus still circulates widely. Poliovirus is now largely confined to South Asia, West Africa, Central Africa, and the Horn of Africa. However, there have already been two importations detected in Canada since the confirmation of the last case of acute flaccid paralysis (AFP) due to wild poliovirus in the Americas in 1991.

National data continue to show deterioration in the surveillance of AFP in some countries. It is critical that the AFP surveillance system remain fully functional to rapidly detect poliovirus throughout the Region, should the virus be re-introduced.

The eradication of polio from the Western hemisphere is a well-known public health milestone. After 7 years of maintaining the Region polio-free, it would be a tragedy if polio were re-established in the hemisphere. A high level of commitment should be maintained at the political level in *every* country, to protect the population and prevent the re-establishment of the disease in the Region.

Recommendations

General

- Countries need to maintain 95% vaccination coverage with oral poliovirus (OPV) in 80% of the districts or equivalent geopolitical area. Countries unable to reach this coverage level should carry out at least two National Immunization Days (NIDs). Measles *follow-up* vaccination campaigns should be used as an opportunity to administer OPV.
- All countries should strengthen the key surveillance indicators of AFP reporting:
  - Surveillance systems must detect at least one AFP case per 100,000 population < 15 years of age per year.
  - At least 80% of the AFP cases should have an adequate stool sample collected **within 15 days** of paralysis onset.

Laboratory

- All governments should ensure the implementation of WHO's Guidelines for Implementing Phase I of the Global Action Plan for Laboratory Containment of Wild Polioviruses.

5. Neonatal Tetanus

Tremendous progress has been made in eliminating neonatal tetanus (NNT) as a public health problem throughout the Americas. In 1998, there were 223 reported cases of NNT from 16 countries in the Region. This represents an 85% reduction in cases since intensive efforts were instituted in 1988.

Recommendations

- Tetanus and diphtheria toxoids (Td) is the vaccine of choice among women of childbearing age (WCBA) for NNT prevention.
- In high-risk districts intense efforts (Attack Phase) are needed to achieve 90% coverage with at least two doses of Td among WCBA. Furthermore, ongoing vaccination efforts are needed to ensure that at least 90% of all new cohorts of WCBA receive a dose of Td.
- Missed opportunities to vaccinate can be markedly reduced by administering Td to all mothers who visit a health centre for any reason. Women attending prenatal clinics should have their vaccination histories reviewed and should receive vaccination if they have not previously received at least two doses of Td.
- Many NNT cases have occurred in infants born to mothers who have had one or more previous live births. Post-partum Td vaccination in health facilities can be used as an additional opportunity to prevent NNT.

6. Yellow Fever

Although no case of urban yellow fever has been reported in the Region since 1942, more than 1,900 cases of sylvatic (jungle) yellow fever have been reported from Bolivia, Brazil, Colombia, Ecuador, Peru, French Guyana, and Venezuela over the past 10 years. Although all of these infections were acquired in endemic areas, many of the cases were diagnosed and reported in urban environments. The widespread dissemination of the *Aedes aegypti* mosquito throughout the Americas makes the re-urbanization of yellow fever an increasing concern.

The seriousness of the yellow fever problem in the Region requires a commitment by countries at risk to implement appropriate vaccination and surveillance strategies for controlling and preventing the disease.

Recommendations

- Yellow fever endemic countries must achieve 100% vaccination coverage in enzootic yellow fever zones, as well as in contiguous areas infested with *A. aegypti*. These steps will provide protection to those persons exposed to the sylvatic cycle and will help prevent the introduction of the disease to urban settings.
- Given that it is difficult to predict demographic movements, countries with high migrant movements from non-enzootic to enzootic areas should consider national mass vaccination campaigns to immunize the entire population. Brazil is planning to conduct such a campaign.
- Yellow fever vaccination is also recommended for all travellers entering enzootic areas.
- In order to maintain high levels of population immunity to yellow fever, countries at risk should incorporate yellow fever vaccine into routine childhood vaccination schedules.

7. *Haemophilus influenzae* Type b Vaccine

Safe and effective *Haemophilus influenzae* type b (Hib) vaccines are available. These vaccines have had a significant impact in reducing the incidence of Hib disease in countries where the vaccine has been introduced in routine infant immunization programs and high coverage has been obtained. Remarkable progress has been achieved in the introduction of Hib vaccine in the Americas. By December 1999, PAHO estimates that 81% of all newborns in the Region (75% in Latin America and the Caribbean) will be living in countries where Hib vaccine is included in routine infant immunization schedules.

Recommendations

- Hib vaccine should be included in the routine immunization programs of every country in the Region once sustainability has been ensured.
- Countries introducing Hib vaccine should monitor and report vaccine coverage.
- Purchase of Hib vaccine or combined vaccines containing Hib antigen through the PAHO Revolving Fund can result in significant cost savings.
- Countries should have surveillance systems to monitor Hib-related illnesses and to measure the impact of vaccine introduction. All countries in the Region should implement hospital-based sentinel surveillance for meningitis and pneumonia due to Hib and *Streptococcus pneumoniae*. Surveillance should be integrated with and strengthen already existing systems.

Combination Vaccines

- The availability and use of combination vaccines such as DTP vaccine (diphtheria toxoid, tetanus toxoid, pertussis vaccine) will simplify the administration of vaccine antigens against major childhood diseases. Furthermore, it will result in infants and children receiving fewer injections, fewer visits to health centres, and an increase in compliance and coverage.
- Countries that include DTP, Hib and/or hepatitis B vaccines in their routine immunization programs should consider introducing vaccines that contain either the four or five antigens in combination.

8. Rotavirus Vaccine

Worldwide, rotavirus infection contributes significantly to infant and child morbidity and mortality as a result of diarrheal diseases. In developing countries, rotavirus accounts for a sizeable proportion of all deaths due to diarrhea, especially in children < 5 years of age.

A live, orally administered rotavirus vaccine became available in 1998. Although rotavirus vaccine is a potential candidate for inclusion in national immunization programs, a better understanding of rotavirus epidemiology and burden of disease in different countries is needed. Each country will eventually need to weigh the economic implications of introducing the vaccine into its immunization schedule.

Recommendations

- Studies are needed to better define disease burden, define the epidemiology of rotavirus and critically analyze the economic aspects associated with the introduction of rotavirus vaccine.
- Countries should establish strong technical and scientific advisory committees that can advise governments concerning the introduction of rotavirus and other new vaccines. These advisory committees will help ensure that only safe, cost-effective and appropriate vaccines are incorporated into national immunization programs.

9. Vaccines of Quality

Using vaccines of proven quality is essential for immunization programs. Although the manufacturer is primarily responsible for ensuring vaccine quality, there should be a national authority in each country that performs the six basic regulatory functions: licensing, clinical evaluation, Good Manufacturing Practices (GMP) inspections, lot release, laboratory testing, and post-marketing surveillance. PAHO has been strengthening the vaccine quality control system in the Region by organizing a network of certified national control laboratories responsible for the quality testing of vaccines and by harmonizing regulatory procedures of the national regulatory authorities of all countries.

Recommendations

- It is essential that immunization programs use vaccines of known quality according to international standards of safety,

potency, efficacy, and stability. It is expected that all countries will meet this goal by the year 2000.

- Vaccine producers must implement quality systems that guarantee consistent production of vaccines in compliance with GMP, national regulations, and the World Health Organization's requirements on vaccine quality and production.
- The fulfilment of international quality standards must be an essential factor to be considered in the economic and technical feasibility studies of vaccine production.
- Governments in the Region must, through their national regulatory authorities, ensure that they have effective control of the quality of vaccines used in the country.

10. Hepatitis B

It has been estimated that as many as 400,000 new hepatitis B infections occur annually in the Americas. In highly endemic areas, transmission occurs primarily perinatally or in early childhood. In areas with intermediate endemicity, infection occurs in all age groups. In areas of low hepatitis B seroprevalence, most infections occur in adults, especially in persons belonging to defined risk groups. Since the development of chronic infection is age-dependent, children can account for a high proportion of chronic hepatitis B infections. The risk of chronic infection is highest when infection is acquired early in life.

Recommendations

- Routine universal infant immunization should be the primary strategy to prevent hepatitis B virus (HBV) transmission.
- In highly endemic areas (hepatitis B surface antigen [HbsAg] prevalence > 7%), an area-wide vaccination campaign should be conducted.
- Health care workers who are at risk of being exposed to blood or other body fluids should be routinely vaccinated.
- Vaccination coverage should be monitored on a regular basis.

11. Safe Syringe Practices

Non-sterile injection practices remain a problem in some areas. Insufficient supplies of syringes and needles seem to be a major factor. Unsafe injections can result in the transmission of bloodborne pathogens from person to person.

Recommendations

- The only way to ensure that used injection equipment is not reused is through the utilization of single use, auto-destruct syringes.
- PAHO should provide support for developmental studies of needle-less injection devices.

12. Immunization Safety

Immunizations have reduced the incidence of vaccine-preventable diseases throughout the world. Public trust in national immunization programs is important to maintain. Although modern vaccines are safe and effective, no vaccine is entirely without risk and significant adverse events. The regular monitoring of immunization safety will provide technical and scientific assurance of the safety of vaccines utilized.

Recommendations

- All health care workers and program managers should be well informed on the issues concerning immunization safety.
- Adverse events possibly attributable to vaccination should be promptly reported.
- Health systems should respond promptly and appropriately by conducting careful investigations of such events.
- Information regarding significant adverse events causally related to immunization should be shared between immunization managers and health workers within the Region.
- PAHO should convene a Working Group to propose methodologies for monitoring immunization safety throughout the Americas.

Technical Advisory Group Members

John Peter Figueroa (Jamaica), Donald A. Henderson, Chairman (United States), Akira Homma (Brazil), John La Montagne (United States), Joseph Z. Losos (Canada), Fernando Muñoz Porras (Chile), Walter Orenstein (United States), Roberto Tapia Conyer (Mexico) and Ciro A. De Quadros, Secretary Ad-Hoc (United States).

For a complete version of the Report, please refer to the following web address: www.paho.org/english/hvp/hvp_home.htm

Editorial Note: The Canadian National Advisory Committee on Immunization (NACI) recommendation regarding rubella vaccination and pregnancy is that women of childbearing age should be advised to avoid pregnancy for 1 month after vaccination. NACI also recommends that inquiry regarding pregnancy should be made before vaccination, and administration of vaccine to pregnant women should be avoided.

Measles in the Americas Approaching the Year 2000

Adapted from Fact Sheet No. 15, Division of Vaccines and Immunization, Pan American Health Organization, Washington, D.C.

Following a resurgence of measles cases in the Region of the Americas in 1997, the number of cases reported declined in 1998. As the year 2000 approaches, collaboration among all who are working to eradicate measles is more important than ever, so we can make this goal a reality!

Four years have passed since the goal of measles eradication from the Americas was established at the 1994 Pan American Sanitary Conference. The majority of countries in the Region continue to successfully control measles and prevent large outbreaks with the Pan American Health Organization's (PAHO) recommended vaccination strategy for measles eradication. While great progress has been made towards achieving this goal with a marked reduction in the annual number of reported cases, measles virus continues to circulate in a few countries of the Region.

The ramifications of the measles outbreak in southern Brazil in late 1997, with over 52,284 confirmed cases, continue to affect countries of the southern cone, particularly Argentina, Bolivia and Paraguay. For 1998, the provisional confirmed cases in the Region of the Americas stands at 12,940, which represents a 75% reduction in measles cases when compared to confirmed cases in 1997. The measles outbreaks in Brazil and Argentina in 1997 and 1998 have again demonstrated the lethality of measles virus. Over 100 measles-related deaths have been reported in the past 2 years in both countries; most occurred among unvaccinated infants and preschool-aged children.

These outbreaks underscore the extreme infectivity of measles virus and the importance of achieving and maintaining high measles immunity in infants and preschool-aged children, especially those living in urban environments. Experience in the Americas is showing that the high population density of cities greatly facilitates measles virus circulation between infected and susceptible individuals, especially when the number of susceptible infants and children is high because of low vaccination coverage in routine measles programs.

There are four major remaining challenges to complete the Region's measles eradication goal by the year 2000.

First The countries of the Americas need to keep up their guard by maintaining the highest population immunity possible in infants and children through routine immunization services.

Second All countries need to carry out *follow-up* measles vaccination campaigns among children 1 to 4 years old, at least every 4 years to avoid the accumulation of susceptible children. This is an important component of the vaccination strategy recommended by PAHO for measles eradication.

Third All the countries in the Americas should place high priority on measles surveillance to conduct rigorous case and outbreak investigations.

Fourth The countries should assign sufficient resources to maintain adequate stocks of measles vaccines and other supplies, to carry out routine immunization services, to conduct scheduled *follow-up* vaccination campaigns and to quickly implement control measures in the event of an outbreak.

PAHO is urging countries to take a pro-active approach to prevent measles outbreaks. Outbreaks have been opportunities, however, to reinforce surveillance and to obtain the necessary political commitment to meet the goal of measles eradication by the year 2000. Considerably greater efforts are needed, however, in analyzing these outbreaks, disseminating lessons learned among health workers, and translating this information to decision-makers at the policy level.

It will be critical to implement PAHO's recommended vaccination strategy for measles eradication in *full*, and include other groups potentially at high-risk for measles, such as health care workers, college and university students and faculty, military personnel and people working in the tourist industry. For measles eradication, annual routine vaccination coverage must be at least 95% in every district or municipality of every country of the Region, and *follow-up* campaigns must be conducted among children 1-4 years of age at least every 4 years.

Together we will eradicate measles from the Americas!

Qs and As

Starting with this issue, the *Update* will feature, on an ad-hoc basis, a *Qs and As* section which will highlight significant or frequently asked immunization-related questions, and responses provided by national or provincial/territorial public health authorities knowledgeable in the specific issues, or by expert advisory committees. The purpose of this feature is to disseminate as widely as possible information that may be relevant to immunization programs and program staff who may be faced with similar questions. This service is being coordinated by the Division of Immunization to share and promote sharing of information by readers with common interests or concerns. While the questions may be edited, they will be kept as close as possible to the original to reflect real-life situations in the field. All attempts will be made to make the information provided in the *Qs and As* factually accurate and consistent with national policies and guidelines, however, the information does not necessarily represent official Health Canada policy. Readers who have information that can be shared in this section should contact the editorial staff.

Q: We have a child who was immunized with a vaccine called Tetralife or Tetra.... - the vaccination record is not legible. I am assuming it is a form of DPT-Hib. I am also wondering if this would have been a whole-cell pertussis vaccine. Are you able to enlighten us about the infant immunization schedules for South Africa. *(Saskatchewan)*

A: Information on the World Health Organization (WHO) Expanded Program on Immunization (EPI) schedule may be obtained from the website for WHO's Department of Vaccines and Biologicals (formerly Global Programme for Vaccines and Immunization) at www.who.int/gpv/. For country-specific immunization information, select "Diseases + Vaccines", "Country Immunization Profiles", then "Alphabetic Index". There is also an option to download Excel files of country-specific vaccination schedules and vaccination coverage levels. This website is an invaluable resource for any local/regional/provincial/territorial vaccine provider or public health staff (provided they have Internet access) to obtain basic immunization information for questions arising when serving clients from other countries. *(Division of Immunization, LCDC)*

Note: Additional information on a South African vaccine manufacturer was obtained through an Internet search for "Tetralife" and provided with the response, as a potential source of information on the specific vaccine product.

Announcement

REMINDER
Notice to Readers

We wish to remind our readers that the future of this publication depends upon the readers' interest and contributions. We believe, and have received feedback from the field, indicating that this newsletter is an invaluable forum for provinces/territories to highlight achievements or developments of interest and to share information about their VPD programs/activities with > 1,200 public health recipients. We continue to encourage active submission of reports on programmatic, policy or epidemiologic issues for publication.

The *Update* now includes an "Upcoming Conferences/Events" section to highlight national conferences/meetings related to VPDs; we would like readers to keep us informed of such events.

Submissions may include original material or previously published material and should be sent to the attention of VPDU Editors via fax (612-952-7948), e-mail (adwoa_bentsienchill@hc-sc.gc.ca) or by mail (Attn: VPDU Editors, Division of Immunization, Bureau of Infectious Diseases, LCDC, Tunney's Pasture PL 0603E1, Ottawa, Ontario K1A 0L2).

Erratum

Varicella-Zoster Virus Disease and Epidemiology: Seeking Better Control Strategies – Part 1

Volume 6, No. 4 – Paragraph 5, Page 36

Please note in paragraph 5, 4th line, "(up to 25 per **10,000** cases[6])" should read (up to 25 per **100,000** cases).

Enhanced Measles Surveillance Report

Confirmed Measles Cases in Canada by Week of Onset* (January 1 to June 30, 1999)		
Week Ending	**Onset of Rash (Weeks in Year)**	**Confirmed Cases**
2 Jan	53	0
9 Jan	1	0
16 Jan	2	0
23 Jan	3	0
30 Jan	4	1
6 Feb	5	1
13 Feb	6	0
20 Feb	7	1
27 Feb	8	0
6 Mar	9	0
13 Mar	10	0
20 Mar	11	0
27 Mar	12	0
3 Apr	13	0
10 Apr	14	0
17 Apr	15	0
24 Apr	16	0
1 May	17	0
8 May	18	0
15 May	19	0
22 May	20	1
29 May	21	0
5 Jun	22	0
12 Jun	23	0
19 Jun	24	0
26 Jun	25	0
TOTAL	—	**4**

* Based on confirmed cases reported to the Enhanced Measles Surveillance System, Division of Immunization, LCDC.

Vaccine-Preventable Diseases Summary

Cumulative number of cases reported* for selected vaccine-preventable diseases, Canada

January 1997 - June 1999

Disease	January-June 1997	January-June 1998	January-June 1999
Diphtheria	1	0	1
Haemophilus influenzae type b	12	15	11
Measles§	382	8	4
Mumps	154	35	24
Rubella¶	2,305	41	13
Congenital rubella syndrome	1	1	0
Pertussis	1,114	772	1,659
Paralytic poliomyelitis	0	0	0
Tetanus	1	0	0

* Based on cases reported to the Notifiable Disease Reporting System, Division of Disease Surveillance, LCDC; 1998 and 1999 data are provisional. Also cumulative totals for the current year to date may not represent national totals due to incomplete reports from provinces/territories.

§ Measles data are based on confirmed cases reported to the Enhanced Measles Surveillance System, Division of Immunization, LCDC.

¶ Approximately 98% of rubella cases reported in 1997 have been reported from Manitoba where an outbreak of rubella occurred, starting October 1996 through December 1997.

Upcoming Conferences/Events

National Immunization Awareness Week
October 25-30, 1999

National Immunization Registry "Trade Show"
Regina
December 6-8, 1999

Our mission is to help the people of Canada maintain and improve their health.
Health Canada

Submissions of pertinent reports/epi notes are welcome and the success of this endeavor depends upon the readers' interest and cooperation. Priority for inclusion in the newsletter is determined by the article's relevancy. This is not a formal publication, and the views and interpretation may not necessarily reflect Health Canada's position. Distribution is free of charge. Anyone wishing to receive a copy on a regular basis should contact the Division of Immunization, Bureau of Infectious Diseases, LCDC, Ottawa, Ontario, K1A 0L2; telephone (613) 957-1340; FAX (613) 952-7948. This publication can also be accessed electronically via Internet using a Web browser at http://www.hc-sc.gc.ca/hpb/lcdc

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Laboratory Centre for Disease Control, Health Canada
Tunney's Pasture, Ottawa, Ontario K1A 0L2
ISSN 1485-0230 (On-line) ISSN 1481-1014