



General Information on Measles

- Description and Symptoms
- Occurrence
- Prevention

Description and Symptoms

In recent months, cases of measles have been reported in Quebec. Provincial and local health authorities are leading the investigation into the outbreak and managing the response with support from the Public Health Agency of Canada.

Measles is a highly contagious and acutely infectious disease caused by a virus. Symptoms include fever, cough, coryza (runny nose), conjunctivitis, Koplik spots (white spots on the inner lining of the mouth) and rash. Complications can include diarrhea, otitis media, bronchopneumonia, encephalitis and in rare cases, subacute sclerosing panencephalitis (SSPE). The virus is transmitted by airborne droplets (sneezing or coughing) or direct (close personal) contact with nasal or throat secretions of infected persons. Less commonly, the virus spreads through contact with articles freshly soiled with nasal and throat secretions.

Occurrence

During the XXIV Pan American Sanitary Conference in September 1994, representatives from Canada and other Pan American Health Organization nations resolved to eliminate measles in the World Health Organization region of the Americas. Shortly thereafter, in 1995, Canada's Conference of F/P/T Deputy Ministers of Health endorsed a national goal of measles elimination.

Nationally, sustained transmission has been eliminated by the current 2-dose measles vaccination programs and high vaccine coverage in the general population. The 2004 National Immunization Coverage Survey (NICS) estimates that 94% of two year-olds have received one dose of measles vaccine and that 79% of seven year-olds have received at least two doses. Epidemiological and virological evidence suggests that endemic transmission of measles has been mostly interrupted since 1998; however, as expected, imported cases continue to occur. Secondary spread from these cases is usually self-limited and involves the few Canadians who are still vulnerable due to under-vaccination or opposition to vaccination.

Canada has had national, active measles surveillance in place since 1998. All provinces and territories report confirmed cases of measles weekly to the Public Health Agency of Canada who in turn report weekly to the Pan American Health Organization. As of the week starting October 7, 2007, there were 100 measles cases reported this year in Canada: Quebec (94), Alberta (3), and British Columbia (3).

Over the past five years, there has been an average of 10 measles cases each year in Canada with clusters of approximately 4 cases. The last large outbreak happened in the year 2000. It was centred in Alberta and involved nearly 200 individuals; nearly all of them un-immunized for religious or philosophical reasons. The initial cases were imported from Mexico and Bolivia.



Prevention

The virus can be spread for about four days before and until about four days after rash onset. Health officials have implemented a public information campaign to advise patients, the general public and health care providers on the appropriate control measures. People experiencing measles symptoms are advised to call before going to a doctor's office or clinic as a precaution to assist health care providers in preventing further spread of the disease.

Measles is a vaccine-preventable disease. Canadians are reminded to keep all vaccinations up-to-date. Two doses of measles/mumps/rubella (MMR) vaccine are recommended for children. One dose administered on or after the first birthday; the second dose should be given after 15 months of age but before school entry. A second dose of MMR vaccine is also recommended for Canadians at greatest risk of exposure; for example, travellers to measles-endemic areas, healthcare workers, military recruits and students at post-secondary institutions. Speak to your health care provider regarding the status of your immunization.



Information for Health Professionals – Update on Measles Outbreak in Quebec

- Outbreak Summary (week starting October 7, 2007)
- Public Health Actions
- Links to Resources

Outbreak Summary (week starting October 7, 2007)

Increased measles activity is currently being investigated in 7 out of 18 health regions in Quebec. As of the week starting October 7, 2 new reports result in a total of 94 confirmed cases of measles (Table 1). A confirmed case meets one of two criteria: (i) laboratory-confirmation of measles infection OR (ii) clinical compatibility with measles infection and an epidemiologic link to a laboratory-confirmed case. Only confirmed cases which meet this national case definition are being counted and reported. Probable and suspect cases still need to be identified for prompt and appropriate medical and public health management (e.g. diagnosis, specimen collection, laboratory testing, clinical care, as well as public health reporting, follow-up and intervention).

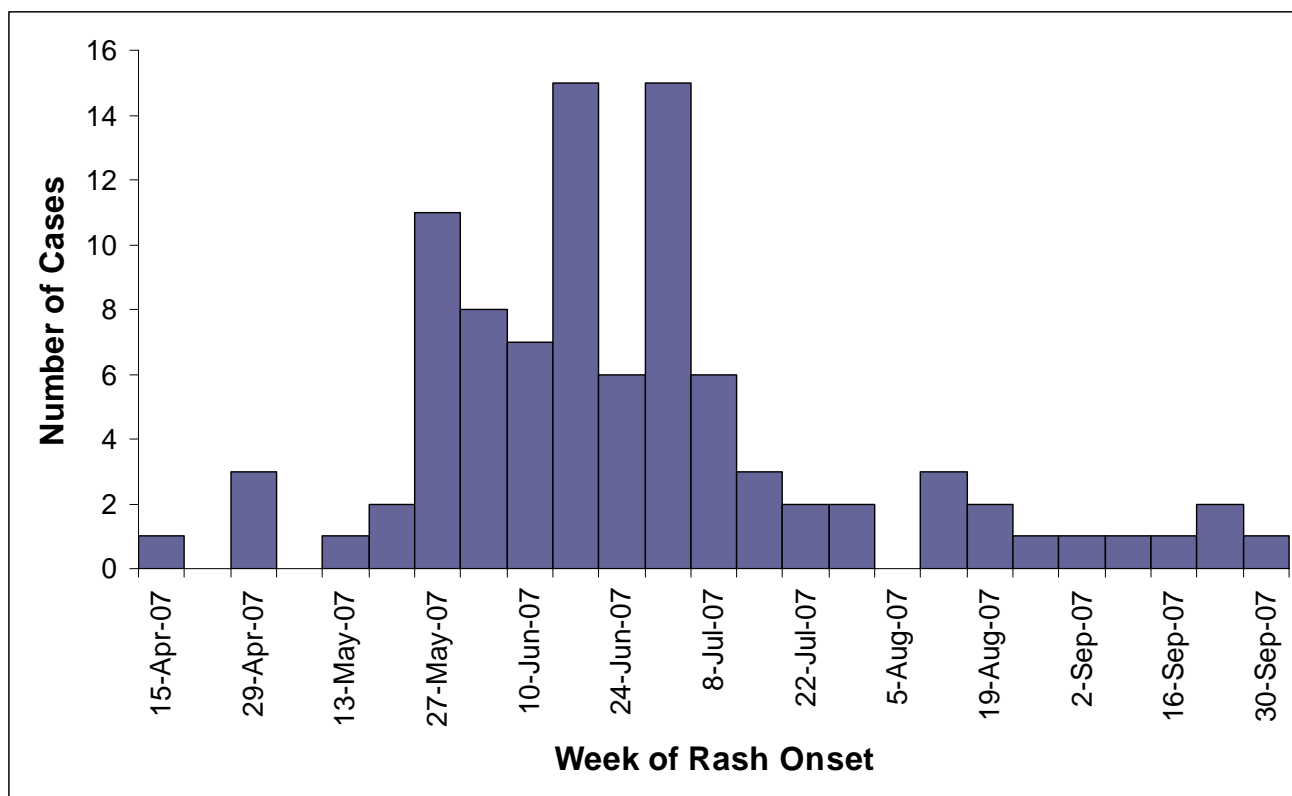
Table 1: Age and Sex Distribution of Confirmed* Measles Cases Reported in Quebec (N=94, week starting October 7, 2007)

Province/Territory	Confirmed* Cases (#)	Median Age in years (range)	% Male
Quebec	94	10.0 (1.0-46.0)	50

* A confirmed case is either laboratory-confirmed OR clinically-compatible and linked to a laboratory-confirmed case.

The first reported case had rash onset the week of April 15, 2007. The date of onset is known for all cases (Figure 1). Where immunization status is known, nearly all of the cases reported in Quebec (77/83) are susceptible individuals who are under-immunized (i.e. 1 dose of measles vaccine) or not immunized at all. In the latter case, these are mainly individuals who oppose vaccination for philosophical reasons. Nine cases have been hospitalized and to date, no serious complications have been reported.

Figure 1: Confirmed* Measles Cases Reported in Quebec, Weeks starting April 15, 2007 – October 7, 2007 (N= 94)



* A confirmed case is either a laboratory-confirmed case OR clinically compatible and linked to a laboratory-confirmed case.

Several community exposure settings have been identified through contact tracing. They include a fashion event, a national conference with participants from around the world, a theatrical event, two elementary schools with sub-optimal vaccination coverage rates, a public swimming pool as well as public transit and two workplace settings. Full public health follow-up and intervention is underway in all identified exposure settings. To-date, no known cases of measles related to the outbreak in Quebec have been reported in any other provinces or territories.

Laboratory Testing

Virus genotyping identifies and aids the global tracking of circulating measles virus strains. Genotyping can also be used to help link cases to clusters and to provide evidence that indigenous transmission has been eliminated. The National Microbiology Laboratory has identified the measles virus associated with outbreak in Quebec as a D4 strain.

Public Health Actions

Public health authorities in Quebec are actively searching for and managing cases as well as tracing contacts and offering vaccination or immune globulin as required. Authorities continue to advise the public of the on-going measles activity and are encouraging individuals to update their immunization, if necessary.



Public health and primary care providers should remain vigilant in the detection, appropriate testing and public health follow-up of febrile rash illness. Any suspect measles cases, particularly those with travel history to areas with endemic or epidemic measles, should be reported as soon as possible through the regular channels.

Public health and primary care providers are encouraged to refer to their local or provincial/territorial ministry of health for specific recommendations on action that may be required within their jurisdiction.

All provinces and territories have been informed of the epidemiologic situation and the public health management strategies in the affected jurisdiction. As such, all jurisdictions are encouraged to remain vigilant in monitoring for measles activity within their regions and report any cases to the Public Health Agency of Canada, through Canada's weekly enhanced measles surveillance system.

The Public Health Agency of Canada is notifying appropriate authorities in the event of exposure settings involving inter-jurisdictional or international travel and/or in the event of cases known to have traveled while infectious.

The Public Health Agency of Canada will continue to provide updates and work with the affected province by providing technical advice and assisting with laboratory testing of clinical specimens at the National Microbiology Laboratory.

The Public Health Agency of Canada encourages parents, guardians and adults to maintain up-to-date immunizations for themselves and their children, and encourages susceptible individuals to be immunized in accordance with the National Advisory Committee on Immunization (NACI) guidelines. All guidelines can be accessed at: www.naci.gc.ca. As a small proportion of adults born since 1970 are still vulnerable to measles, to minimize the risk of measles exposure, NACI currently recommends a second dose of the measles, mumps and rubella (MMR) vaccine for certain adults born after 1970. This includes students at post secondary institutions and health care workers.

Links to Ressources

Santé et services sociaux Québec – public information
http://www.msss.gouv.qc.ca/sujets/prob_sante/rougeole/rougeole.php

Canadian Immunization Guide, 7th edition
<http://www.phac-aspc.gc.ca/publicat/cig-gci/index.html>

National Microbiology Laboratory – Guide to Services
<http://www.nml-lnm.gc.ca/english/guide/default.asp>

Immunizations recommended for travel outside of Canada
http://www.phac-aspc.gc.ca/tmp-pmv/236_e.html

Canadian National Report on Immunization, 2006
<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/06vol32/32s3/index.html#toc>

Guidelines for Control of Measles Outbreaks in Canada
<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/96vol22/dr2202ea.html>



Measles Surveillance: Guidelines for Laboratory Support

<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/98vol24/dr2405ea.html>

Consensus conference on measles. Canada Communicable Disease Report, 30 May 1993; 19-10: 72-9.

National Advisory Committee on Immunization Statement on Elimination of Indigenous Measles in Canada. Canada Diseases Weekly Report, 23 Feb 1980; 6-8:33-9.

Measles Elimination in the Western Hemisphere and Global Perspective. Journal of Infectious Diseases 2004; 189(Suppl 1): S227-57.

Measles Update/Update-Vaccine Preventable Diseases

<http://www.phac-aspc.gc.ca/publicat/meas-roug/index.html>

Photo archive

http://www.phac-aspc.gc.ca/publicat/uvpd-mjimepv/photos_e.html

Global Measles Initiative

<http://www.measlesinitiative.org/index3.asp>

Measles Mortality Reduction and Regional Elimination: Strategic Plan 2001-2005

www.who.int/vaccines-documents/DocsPDF01/www573.pdf

Measles Elimination Field Guide, 2nd edition 2005 (PAHO)

www.paho.org/english/ad/fch/im/fieldguide_measles.pdf

Pan American Health Organization, Measles/Rubella Weekly Bulletin

<http://www.paho.org/english/ad/fch/im/MeaslesWeeklyBulletin.htm>

Global measles and rubella laboratory network – update

<http://www.who.int/wer/2005/wer8044/en/index.html>