

Epidemiological Alert

Measles outbreaks and implications for the Americas

9 February 2015

The Pan American Health Organization / World Health Organization (PAHO/WHO) recommends for Member States, to strengthen surveillance activities and take appropriate measures to protect residents in the Americas against measles and rubella.

Situation summary

The Region of the Americas' impressive achievement in interrupting endemic measles transmission in 2002 is facing major challenges, with several ongoing importations in some countries. The total count across the Americas of imported cases from 2003 to 2014 reached 5,077 cases, most of which have occurred in 2011 (n=1,369) and 2014 (n=1,848). In 2015, a total of 147 cases have been reported as of epidemiological week (EW) 5 of 2015 (ending on 7 February), most of which are related to a large multi-state outbreak in the United States. See figure.

In **Brazil** between 2013 and 2015, a total of 971 confirmed measles cases were reported in the Federal District and nine states: Ceará, Espírito Santo, Rio de Janeiro, Minas Gerais, Paraíba, Pernambuco, Sao Paulo, Santa Catarina and most recently Roraima. The highest proportion of measles cases were reported in the states of Ceará and Pernambuco.

Circulation of the measles virus was detected in Pernambuco on 19 March 2013. From that time up to 14 March 2014, a total of 224 confirmed cases, including one fatal case, were reported in 24 municipalities. The most affected group was children under one year old (49%, 110 of 224). The genotype identified was D8. This outbreak spread to the neighboring state of Ceara, which reported the first case on 25 December 2013. As of 5 February 2015, a total of 718 cases were confirmed in 31 municipalities. Rash onset of the last case was 19 January 2015. No deaths have been reported yet. The most affected groups are children under five years old (37.1 %), followed by adolescents and adults aged 15-29 years old (33.2 %). A total of 51 cases remain under investigation in 12 municipalities; rash onset of the last suspected case was 2 February 2015.¹ The genotype identified was D8. Additionally, one case with travel history to Fortaleza, Ceará was reported in a 40 year old male, resident of the state of Roraima.

Canada is currently investigating two separate measles outbreaks. On 3 February 2015, the Lanaudiere Public Health Department of the Agency for Health and Social Services² in Quebec province, reported of eight suspected measles cases since the beginning of 2015 with a link to the current outbreak in California. These suspected cases are members of the same family, who are unimmunized for religious reasons. On 2 February 2015, in Ontario province, the Toronto

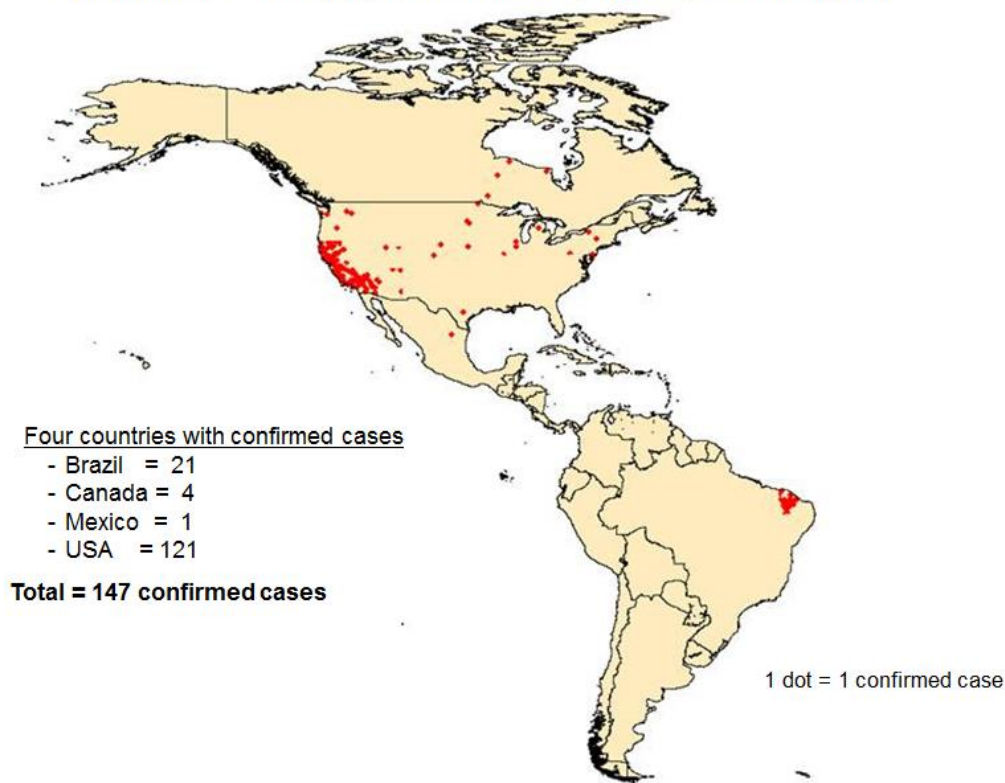
¹ Measles Epidemiological Bulletin – Ceara Health Secretary. Available at: <http://www.saude.ce.gov.br/index.php/boletins>

² Lanaudiere Public Health Department of the Agency for Health and Social Services. Available at: <http://www.agencelanaudiere.qc.ca/asss/Pages/default.aspx>

Public Health³ informed about four laboratory confirmed cases of measles, involving two children under two years old and two adults from different families. As of yet, no source has been identified and there are no known links or contact between the cases. Contact tracing of exposed contacts is underway.

A total of 121 measles cases have been reported in the **United States of America** from 1 January to 6 February 2015 in 17 states and Washington, DC: Arizona (7), California (88), Colorado (1), the District of Columbia (1), Delaware (1), Illinois (3), Michigan (1), Minnesota (1), Nebraska (2), New Jersey (1), New York (2), Nevada (2), Oregon (1), Pennsylvania (1), South Dakota (2) Texas (1), Utah (2), Washington (4)⁴. Most of these cases, 103 cases (85 %), are part of a large, ongoing multi-state outbreak linked to an amusement park in California.⁵ The outbreak likely started from a traveler who became infected overseas with measles, then visited the amusement park while infectious. However, no source has been identified. For cases with ages reported, the age of case-patients range from less than 12 months to 59 years old (median = 19 years old). Measles genotype information for the outbreak linked to an amusement park in California is B3, which also caused a large outbreak in the Philippines in 2014.

Figure. Map of confirmed measles cases, Region of the Americas, 1 January to 8 February 2015
Confirmed measles cases, Region of the Americas, 1 January to 8 February 2015



Source: Provisional country data reported to PAHO/WHO, AD/FGL/IM.

³ Toronto Public Health. Available at: <http://wx.toronto.ca/inter/it/newsrel.nsf/9a3dd5e2596d27af85256de400452b9b/8801512dfd189fa685257de0005b0b86?OpenDocument>

⁴ The Mexico IHR national Focal Point reported two imported cases of measles with history of travel to the United States. One case is a 1 year 10 months old girl resident of the state of Baja California Sur, Mexico, with history of travel to California from 16 to 18 December 2014. The second case is a female 37 years old, unvaccinated, resident of Nueva León state, Mexico, who traveled to San Francisco, California from 26 to 31 December 2014. Local and national authorities have implemented appropriate prevention and control actions and no secondary cases were registered in Mexico related to these imported cases.

⁵ U.S. CDC Health Advisory, U.S. Multi-state Measles Outbreak, December 2014- January 2015. Available at: <http://emergency.cdc.gov/han/han00376.asp>

Advice to national authorities

1. Travelers

Prior to departure

1. The Pan American Health Organization / World Health Organization (PAHO/WHO) recommends that Member States advise **all travelers over the age of six months (with the exceptions noted below) going to areas with documented measles virus circulation**, to be fully vaccinated against measles and rubella, preferably with the MMR (measles, mumps, and rubella) vaccine. Ideally, the vaccine should be administered at least **two weeks before** departure.
2. Infants who receive the MMR vaccine before their first birthday must be revaccinated according to their country's vaccination schedule.
3. Travelers who are not up to date on their vaccinations are at higher risk of contracting either disease when in close contact with travelers from countries where the viruses still circulate.
4. Exceptions to this recommendation include persons with medical contraindications to the measles and rubella vaccine. Additionally, infants under the age of six months should not be vaccinated.
5. Persons considered immune to measles and rubella, that is, those who can present:
 - Written documentation of having received a measles and rubella vaccination; **or**
 - Laboratory confirmation of rubella and measles immunity (a positive serological test for the measles and rubella-specific IgG antibodies).

During the trip

1. Ensure that travelers are aware of the following symptoms:
 - Fever
 - Rash
 - Cough, coryza (runny nose), or conjunctivitis (red eyes)
 - Joint pain
 - Lymphadenopathy (swollen glands)
2. If travelers suspect they have measles or rubella, they should:
 - Seek professional health care;
 - Remain at the site of their current residence (e.g. hotel or home, etc.), or as advised by a health professional, except to seek professional health care;
 - Avoid close contact with other people for seven days following the rash onset;
 - Avoid travel and visit to public places.

Upon returning

1. If travelers suspect they have measles or rubella they should seek professional health care and remain at the site of their current residence.
2. If travelers develop any of the above mentioned symptoms, they should inform their physician of their travel history.

2. Clinicians and health care providers

1. PAHO/WHO recommends the practice of requiring proof of immunity to measles and rubella in the health care sector (medical, administrative and security personnel).
2. Sensitize private sector personnel on the need to immediately report to the appropriate public health authorities any suspected measles or rubella cases, since international travelers may seek medical attention at private health care facilities. Prompt reporting of these diseases will permit a timely response from the national surveillance and response system.
3. Continue to remind health care workers to always ask patients for their travel history.

3. Persons and institutions in contact with travelers, before and/or after their trip

1. Advise personnel in the tourism and transportation sectors (i.e., hotels, airport, taxis, and other) to be fully immunized against measles and rubella, and make the necessary normative and operational arrangements to enable vaccination.
2. Conduct public awareness campaigns on the symptoms of measles and rubella, so travelers with symptoms know to seek immediate medical care. Information should be distributed at airports, ports, bus stations, travel agencies, airlines, etc.

4. Contact tracing of confirmed measles cases

1. Conduct contact tracing activities according to national guidelines for contacts identified and present in the **national territory**;
2. Consider the **international** implications that **contact tracing** may present and consider the following scenarios and operational aspects while conducting these activities:
 - *A case is identified by national authorities in a third party and national authorities are asked to locate contacts whose residence is most likely within their country. Although national authorities are encouraged to use all coordination mechanisms in place to locate these individuals, information available for action might be limited and efforts should be warranted according to the situation. Health services should be alerted of the possible or actual presence of contacts in order to detect suspected cases.*

- *A case is identified locally*, and, depending on the timing of the natural history of the diseases at detection:
 - Current case: national authorities should obtain information about the possible location of contacts abroad and inform third party national authorities accordingly.
 - Retrospectively identified case: according to the travel history of the case, national authorities should inform relevant third party national authorities as this occurrence might constitute the first signal of measles virus circulation, or of an outbreak, in the other country or countries concerned.

Operational remarks

- If no international conveyances are involved (e.g. aircrafts, cruise ships, trains) as a possible setting for exposure to a case(s), national authorities should contact their counterpart(s) through the IHR National Focal Point (NFP) network or other bilateral or multilateral programmatic mechanisms, with copy to the WHO IHR Contact Point for the Americas (ihr@paho.org). The assistance of the WHO IHR Contact Point for the Americas can be requested to facilitate international contact tracing related communications.
- If international conveyances are involved (e.g. aircrafts, cruise ships, trains) as a possible setting for exposure to a case(s), national authorities should activate existing mechanisms to obtain relevant information from carriers (e.g. airlines) to locate travelers, or establish such mechanisms if absent. For subsequent communication between national authorities see the preceding paragraph.

Channels to disseminate these recommendations

PAHO/WHO recommends that national authorities consider disseminating these recommendations outlined in this document through:

- Public awareness campaigns to promote and enhance travelers' health seeking behavior on the benefits of vaccination for measles, signs and symptoms of measles, and to promote and enhance travelers' health seeking behavior prior to travel and upon return. In addition to travel medicine services or clinics, airports, ports, bus and train stations, airlines operating in the country, should be utilized.
- Travel agencies and other tourism related agencies, diplomatic channels, should be considered so travelers know to take necessary actions prior to travel.
- Reiteration of the content of existing national guidelines to clinicians and health care providers and timely dissemination of any newly developed procedure in relation to travelers as/if applicable.

References

- Portal da Saúde. Brazil Ministry of Health: <http://portalsaude.saude.gov.br/index.php/situacao-epidemiologica-dados-sarampo> (in Portuguese accessed on 8 February 2015)
- Secretaria Estadual de Saude de Pernambuco: <http://portal.saude.pe.gov.br/noticias/secretaria-executiva-de-atencao-saude/vacinacao-de-polio-e-sarampo-prorrogada-ate-3112> (in Portuguese, accessed on 8 February 2015)
- Secretaria Estadual de Saude de Ceará: <http://www.saude.ce.gov.br/index.php/boletins> (in Portuguese, accessed on 8 February 2015)
- Portal de Saude. Secretaria de Estado de Saude de Roraima: <http://www.saude.rr.gov.br/index.php/servicos-e-informacoes/noticias/noticias-outubro-2013/1102-caso-de-sarampo-e-confirmado-em-roraima-e-sesau-adota-medidas-controle> (in Portuguese, accessed on 5 February 2015)
- U.S. Centers for Disease Control and Prevention (CDC) Health Advisory. Health Alert Network: <http://emergency.cdc.gov/han/han00376.asp> (accessed on 5 February 2015).
- The Public Health Department of the Agency for Health and Social Services of Lanaudiere, Quebec: <http://www.agencelanaudiere.qc.ca/asss/Pages/default.aspx> (accessed on 3 February 2015)
- Toronto Public Health investigates measles outbreak: <http://wx.toronto.ca/inter/it/newsrel.nsf/9a3dd5e2596d27af85256de400452b9b/8801512dfd189fa685257de0005b0b86?OpenDocument> (accessed on 2 February 2015)

Related links:

- PAHO/WHO Immunizations website: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=956&Itemid=358&lang=en