

Measles Verification Q&A

March 2015

Q1: What is measles?

A1: Measles is a highly contagious, serious disease caused by a virus. In 1980, before widespread vaccination, measles caused an estimated 2.6 million deaths each year. It remains one of the leading causes of death among young children globally, despite the availability of a safe and effective vaccine. Approximately 122 000 people died from measles in 2012 – mostly children under the age of five.

Q2: What are the signs and symptoms of measles?

A2: The first sign of measles is usually a high fever. The fever begins about 10 to 12 days after exposure to the virus and lasts four to seven days. A runny nose, a cough, red and watery eyes, and small white spots inside the cheeks can develop in the initial stage. After several days, a rash erupts, usually on the face and upper neck. Over about three days, the rash spreads, eventually reaching the hands and feet. The rash lasts for five to six days, and then fades.

Q3: How is measles diagnosed?

A3: Measles has a typical clinical appearance. Still, cases should be confirmed by laboratory testing of blood serum to look for measles-specific antibodies, which are usually present during the 30 days following the onset of the rash.

Q4: What are the complications of measles?

A4: Most measles-related deaths are caused by complications associated with the disease. Complications are more common in children under the age of five, or adults over the age of 20. The most serious complications include blindness, encephalitis (an infection that causes brain swelling), severe diarrhoea and related dehydration, ear infections, or severe respiratory infections such as pneumonia. Up to 10% of measles cases result in death among populations with high levels of malnutrition and a lack of adequate health care. Women infected while pregnant are also at risk of severe complications, including miscarriage and preterm delivery.

Q5: Who is at risk?

A5: Unvaccinated young children are at the highest risk for measles and its complications, including death. Unvaccinated pregnant women are also at risk. Any person who is not immune to measles can become infected. Most often, this includes people who did not receive two doses of measles vaccine.

Q6: How is the measles virus transmitted?

A6: The highly contagious virus is spread by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions. The virus remains active and contagious in the air or on infected surfaces for up to two hours. It can be transmitted by an infected person from four days prior to the onset of the rash to four days after the rash erupts.

Q7: What treatment is available for measles?

A7: No specific antiviral treatment exists for measles virus. Severe complications from measles can be avoided through good nutrition, adequate fluid intake and treatment of dehydration with oral rehydration solution. This solution replaces fluids and other essential elements lost through diarrhoea or vomiting. Antibiotics should be prescribed to treat eye and ear infections, and pneumonia.

Q8: How is measles prevented?

A8: Two doses of measles vaccination are recommended to prevent measles disease. These measles vaccination doses are usually provided to children through routine immunization programmes. Sometimes mass immunization campaigns are conducted in countries with high numbers of cases and/or high death rates from measles. The measles vaccine has been in use for 50 years. It is safe, effective and inexpensive. In developing countries, it costs less than one US dollar to immunize a child against measles. The measles vaccine is often incorporated with rubella and/or mumps vaccines in countries where these illnesses are problems. It is equally effective in the single or combined form.

Q9: How is measles elimination possible?

A9: When enough people in a population are protected (usually more than 95%) from measles virus (either because of vaccination or previous disease) the virus will not be able to continue being passed from person to person.

Q10: What does verification of elimination mean?

A10: When a country is verified as having eliminated measles, it means that the country interrupted transmission of the endemic (native strain) of circulating measles virus for a period of 36 months. Importations of measles virus may have occurred during this period, but the imported strains of measles virus were interrupted within 12 months of the importation.

Q11: What criteria are used to determine verification of elimination?

A11: The three criteria for verification are as follows:

- Documentation of the interruption of the endemic measles virus transmission for a period of at least 36 months from the last known endemic case;
- The presence of "verification standard*" surveillance; and

- Genotyping evidence that supports the interruption of endemic measles virus transmission.
*Verification standard surveillance is defined as surveillance that meets the four primary indicators of surveillance that measure sensitivity at the national level and at the provincial level as well as adequacy of the investigation of measles cases and laboratory testing of clinical specimens.

Q12: Who makes the decision about whether a country has eliminated measles?

A12: In the Western Pacific Region, the World Health Organization has appointed a 14-member panel to review the national reports and to decide about whether measles elimination has been achieved.

Q13: Once a country achieves elimination, is re-introduction possible?

A13: Reintroduction is possible because the measles virus is highly contagious and can easily spread from person to person across international borders. People infected with measles are infectious even before the rash appears, so people with early symptoms may not know that they have measles. Sensitive surveillance systems are necessary to detect imported measles virus early so that appropriate control measures can be implemented.

Q14: After elimination of measles, what actions are necessary to maintain elimination?

A14: Even after elimination, countries should maintain a sensitive surveillance system to detect measles cases. In addition, to prevent widespread outbreaks, it is important to maintain high rates of vaccination with two doses of measles vaccine in the routine immunization programme and conduct supplemental mass vaccination efforts as needed.

Q15: How many countries or areas have eliminated measles?

A15: In the Western Pacific Region, four countries or areas were verified as having interrupted endemic measles virus transmission in March 2014: Australia, Macao SAR (China), Mongolia and the Republic of Korea.

Q16: Is there a goal for regional or global elimination of measles?

A16: All six WHO regions have committed to regional elimination goals. There is a global goal that five of the six regions reach elimination by 2020.