

# Measles, a Disease Easily Preventable by an Effective Vaccine

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Measles is serious infectious disease caused by RNA virus. Before the introduction of measles vaccine in 1963 and widespread vaccination, major epidemics occurred approximately every 2-3 years and measles caused an estimated 2.6 million deaths each year. Measles is caused by a virus in the paramyxovirus family and it is normally passed through direct contact and through the air. The virus infects the respiratory tract, then spreads throughout the body.

More than 140 000 people died from measles in 2018 – mostly children under the age of 5 years, despite the availability of a safe and effective vaccine. Accelerated immunization activities have had a major impact on reducing measles deaths. During 2000-2018, measles vaccination prevented an estimated 23.2 million deaths. Global measles deaths have decreased by 73% from an estimated 536 000 in 2000 to 142,000 in 2018<sup>1</sup>.

Measles is one of the world's most contagious diseases. It is spread by coughing & 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 2 hours. It can be transmitted by an infected person from 4 days prior to the onset of the rash to 4 days after the rash erupts.

A runny nose, a cough, red and watery eyes and small white spots (Koplik's spots) inside the cheeks can develop in the initial stage followed by a high-grade fever, which begins about 10 to 12 days after exposure and lasts 4 to 7 days. After few days, a rash erupts, usually on the face and upper neck. Over about 3 days, the rash spreads, eventually reaching the hands and feet. This rash is maculopapular and usually associated with conjunctivitis/red eyes.

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The rash lasts for 5 to 6 days, and then fades. On average, the rash occurs 14 days after exposure to the virus<sup>2</sup>.

Treatment of measles is essentially supportive care with maintenance of good hydration and replacement of fluids lost through diarrhea or emesis. Intravenous (IV) rehydration may be necessary if dehydration is severe<sup>3</sup>. It is essential to maintain contact and droplet precautions while treating measles cases in ward, so best is to isolate measles cases and limit visitors. WHO recommends 2 doses of Vitamin A supplementation in children. However, patients with clinical signs of vitamin A deficiency should receive 3<sup>rd</sup> dose 2-4 weeks apart in addition to 2 standard doses<sup>4</sup>. It is important to perform contact tracing and mop up vaccination in that area from where measles cases are reported

Complications are more common in children under the age of 5, or adults over the age of 20 years or in pregnant ladies. The most serious complications include blindness, encephalitis, severe diarrhea, ear infections or pneumonia. Severe measles is more likely among poorly nourished young children, especially those with insufficient vitamin A, or whose immune systems have been weakened by HIV or immune deficiency disorders<sup>5</sup>.

Routine measles vaccination for children as per EPI program is being used across Pakistan. The measles vaccine has been in use for nearly 60 years. It is safe, effective and inexpensive. It costs approximately one US dollar to immunize a child against measles<sup>6</sup>. Despite being available in all government sectors hospitals free of cost, people still fail to vaccinate children as per EPI schedule. The biggest hurdle in achieving 100% vaccination coverage in Pakistan is ignorance as found in a study conducted during last breakout of measles. 31% parents didn't have appropriate knowledge about measles and its vaccination followed by fear of adverse reaction following measles vaccination as found in 15% cases. Moreover, only 29.9% children received two doses of

measles vaccine as compared to first dose which was received by 83% children in this study. It is pertinent to note that two doses of measles are important to develop good immunity against this disease<sup>7</sup>.

In 2018, about 86% of the world's children received 1 dose of measles vaccine by their first birthday through routine health services – up from 72% in 2000. Two doses of the vaccine are recommended to ensure immunity and prevent outbreaks, as about 15% of vaccinated children fail to develop immunity from the first dose<sup>1</sup>.

## References:

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