



Epidemiological Unit

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# Measles Fact Sheet

## Measles: the Disease

Measles is a highly contagious acute febrile illness caused by the measles virus. It is a human disease not known to occur in animals. More than 20 million people are affected each year by measles.

Measles remains a leading cause of death among young children in the world, despite the availability of a safe and effective vaccine for the past 40 years. In 2006, it was estimated that there were 242 000 measles deaths globally: this translates to about 663 deaths every day or 27 deaths every hour.

## Surveillance Case Definition

Fever and maculopapular rash

And

at least one of the following:

Cough

Coryza

Conjunctivitis

## Causative Organism

Measles virus belongs to the paramyxovirus family. It normally grows in the cells that line the back of the throat and in the cells that line the lungs.

## Clinical Features

Measles is often an unpleasant mild or moderately severe illness. Severe measles is particularly likely in poorly nourished young children, especially those who do not receive sufficient vitamin A, or whose immune systems have been weakened by HIV/AIDS or other diseases.

The first sign of infection is usually high fever, which begins approximately 10 to 12 days after exposure and lasts one to seven days. During the initial stage, the patient may develop a runny nose, cough, red and watery eyes and small white spots inside the cheeks. After several days, a rash develops, usually on the face and upper neck. Over a period of about three days, the rash spreads, eventually reaching the hands and feet. The rash lasts for five to six days, then fades. The rash occurs, on average, at day 14 after exposure to the virus, with a range of seven to 18 days.

## Complications

Children usually do not die directly of measles, but from its complications. 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 (a dangerous infection of the brain causing inflammation), severe diarrhoea (possibly leading to dehydration), ear infections and severe respiratory infections such as pneumonia, which is the most common cause of death associated with measles. Encephalitis is estimated to occur in one out of 1000 cases, while otitis media (middle ear infection) is reported in 5-15% of cases and pneumonia in 5-10% of cases. The case fatality rate in developing countries is generally in the range of 1 to 5%, but may be as high as 25% in populations with high levels of malnutrition and poor access to health care. People who recover from measles are immune for the rest of their lives.

### **Mode of Transmission**

The highly contagious measles virus is spread by coughing and sneezing, close personal contact or direct contact with infected nasal or throat secretions. Measles tends to result in epidemics which may cause many deaths, especially among young malnourished children.

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 individual from four days prior to the onset of the rash to four days after the onset. If one person has the disease, a high proportion of their susceptible close contacts will also become infected.

### **Treatment**

Severe complications can be avoided with adequate supportive therapy. General nutritional support and the treatment of dehydration with oral rehydration solution are necessary. Antibiotics should be prescribed for treating eye and ear infections and pneumonia. To improve survival, it is important that children with measles receive adequate nutrition and fluids.

All children in developing countries diagnosed with measles should receive two doses of vitamin A supplements given 24 hours apart. This can help prevent eye damage and blindness. Moreover, vitamin A supplementation has been shown to reduce the number of deaths from measles by 50%.

### **Prevention**

Immunization prevents suffering, complications and death caused by measles. The measles vaccine is safe, effective and inexpensive and is one of the most cost-effective public health interventions available for preventing deaths.

In Sri Lanka measles vaccine is offered to the children through the Expanded Programme of Immunization (EPI) at 9 months of age as the live attenuated measles vaccine and at the age of 3 years as the live attenuated (weakened) measles-rubella (MR) vaccine.

Surveillance of Measles is carried out with special investigation forms following the routine notification procedure as for other vaccine preventable diseases. All suspected and confirmed cases notified are entered in the National Measles Register.