Pennsylvania
Department of Health

Measles Fact Sheet

Overview

Measles is a highly contagious disease that can lead to serious health complications, especially for babies and young children. Anyone who is not fully vaccinated against measles is at risk. Severe measles can lead to hospitalization and even death.

Key Points about Measles

- Two doses of measles, mumps and rubella (MMR) vaccine provides the best protection against measles.
- Measles can spread when an infected person coughs or sneezes.
- Measles can stay in the air for up to two hours after a sick person has left the room.

SIGNS AND SYMPTOMS

Symptoms of measles typically begin within 7 to 14 days of exposure.

Individuals infected with measles will usually have a high fever, **cough, runny nose, and red, watery eyes** (also called "pink eye").

Picture 1. The child's face and forehead show the maculopapular rash.

Picture 2. Skin of a patient after three days with measles rash.

- **Tiny white spots** (Koplik's spots) may appear inside the mouth 2 to 3 days after symptoms begin.
- Rash breaks outs 3 to 5 days after symptoms begin. **Flat red spots tend to appear on the face at the hairline and spread downward to the neck, torso, arms, legs, and feet.** Small, raised bumps may also appear on top of the flat red spots. The spots may become joined together as they spread.
- **Fever** may rise to more than 104°F when the rash appears.
- **Rash persists for 5 or 6 days** and then fades, typically in the same order that it appears, from head to extremities.
- Other symptoms of measles include lack of appetite, swollen lymph nodes and diarrhea (especially in infants).
- **Some people may suffer severe complications**, such as pneumonia (infection of the lungs) and encephalitis (swelling of the brain). They may be hospitalized and could die.

CAUSES AND TRANSMISSION

Measles is a highly contagious disease that can lead to serious health complications. Measles spreads through coughing and sneezing from an infected person. **A person might catch measles just by being in the same room as someone who is infected, even if they already left. The virus can linger in the air for up to two hours.**

If someone breathes in this contaminated air or touches contaminated surfaces and then touches their face (like their eyes, nose, or mouth), they could become infected. **A person with measles can spread the virus to others starting 4 days before through 4 days after the rash or symptoms appear.**

RISK FACTORS

Anyone who is not protected against measles, or has not been infected with measles in the past, is at risk of getting infected. Certain groups are more likely to have serious complications from measles. These include children younger than 5 years old, adults older than 20 years old, pregnant women, and people with a compromised immune system.

COMPLICATIONS

Common complications from measles include: ear infections (especially in children), diarrhea, pneumonia, brain inflammation, seizures or convulsions, and death. Pregnant women who have not had the measles, mumps, and rubella (MMR) vaccine, and contract measles, may have babies born early (premature) or with a low birth weight.

TEST AND DIAGNOSIS

Measles should be suspected in any person with a fever, rash and other symptoms, such as cough, runny nose or red, watery eyes, especially if the person recently traveled to an area where a measles outbreak is occurring or if they had possible contact with a person with fever and rash or measles. If you start to have symptoms, contact your health care provider for guidance and recommendations.

Health care providers can diagnose measles through laboratory testing. Blood samples can be tested for the presence of measles antibodies (IgM and IgG). Additionally, a urine sample or a swab of your nose or throat can be tested for the presence of the virus.

Providers should contact the Pennsylvania Department of Health (PA DOH) at 877-724-3258 or their local health department to immediately report a suspect measles case, or if they have questions about testing.

TREATMENT

Measles has no specific treatment. A health care provider should help manage any complications appropriately and recommend supportive care, watching for dehydration or difficulty breathing. Report complications immediately to a health care provider.

PREVENTION– PROTECT YOURSELF WITH THE VACCINE.

The best way to prevent measles is to remain up to date on all measles vaccinations especially when considering travel. The measles, mumps, and rubella (MMR) vaccine protects you from measles, mumps, and rubella, potentially serious diseases caused by viruses. In the United States, two types of vaccines for measles are available:

- **MMR** – combination of vaccines for measles, mumps, and rubella (German measles)
- **MMRV** – combination of vaccines for measles, mumps, rubella, and varicella (chicken pox)

Two doses of MMR or MMRV vaccine are about 97% effective at preventing measles; one dose is approximately 93% effective. Both MMR and MMRV vaccines may be given at the same time as other vaccines. The first dose is typically given between 12 and 15 months of age and the second dose is given at 4 to 6 years old.

Your health care provider can give more information about each vaccine, including which one you should receive and when.

HIGH RISK INDIVIDUALS

For children under 12 months old who are unvaccinated, unvaccinated pregnant women, and individuals with compromised immune systems who have been exposed to measles, PA DOH or the local health department can provide specific recommendations to prevent the disease. These recommendations may include getting an MMR dose within 3 days of exposure or receiving immune globulin (Ig) treatment within 6 days of exposure to help prevent the disease. **There may be additional recommendations from PA DOH or local health department about who may need MMR or Ig depending on a specific measles exposure.**

IMMUNITY

You are protected from measles if you meet **at least one of the following:**
 You received two doses of the measles- vaccine and meet at least one of the following criteria: ❑ A school-age child (Grades K-12) ❑ An adult who will be in a setting that poses a high risk for measles transmission (including students at post-high school education institutions, health care personnel, and international travelers) ❑ International travelers of 12 months of age or older ❑ An adult who will not be in a high-risk setting for measles transmission
 You received **one dose** of the measles vaccine and meet at least one of the following criteria: ❑ A preschool-aged child ❑ An adult who will NOT be in a high-risk setting for measles transmission* ❑ **International traveler infant** aged 6-11 months*
 You have a laboratory confirmation of measles antibodies (IgG) or laboratory confirmation that you had measles at some point in your life.
 You were born before 1957

***If you are unsure whether you are fully vaccinated or if you are at high-risk of measles infection, talk with your health care provider.**

Pennsylvania residents unsure about their vaccination record, may be able to obtain their vaccination record online or by contacting PA DOH at 877-774-4748 if you have questions about getting a copy of your records. Note that Pennsylvania is a voluntary reporting state (with some exceptions); and immunization records began being collected around 2000, therefore, administered doses prior to then will most likely not be included.

Unvaccinated health care personnel born before 1957 should contact their health care provider for additional guidance.

DISEASE PATTERN

Before widespread immunization, measles was a common childhood disease, with about 500,000 diagnosed cases and 500 deaths occurring each year in the United States. After widespread vaccination started in 1963, reported measles cases in the U.S. dropped by approximately 98%. In the late 1980s and early 1990s, there was a resurgence in measles cases in the U.S. caused by low vaccination rates.

Despite having a safe and effective vaccine for more than 50 years, measles is still the leading vaccine-preventable disease killer of children throughout the world. Even in areas with high vaccination coverage, outbreaks still happen among groups of individuals who are under-vaccinated or unvaccinated. Large outbreaks continue to occur in Asia, Africa, and some parts of Europe.

Because signs of autism may appear around the same time children receive the MMR vaccine, some parents may worry that the vaccine causes autism. Vaccine safety experts, including experts at CDC and the American Academy of Pediatrics (AAP), agree that MMR vaccine is not responsible for increases in the number of children with autism. In 2004, a report by the Institute of Medicine (IOM) concluded that there is no link between autism and MMR vaccine, and that there is no link between autism and vaccines that contain thimerosal as a preservative.

Resources: Measles (Rubeola) | Measles (Rubeola) | CDC | Preventing Measles Before and After Travel