



CDC Measles and Outbreak Recommendations

KEY POINTS:

- The risk of measles remains low for most of the United States due to high immunization coverage and rapid case identification and response efforts.
- MMR vaccination remains the best protection against measles.
- Residents of and travelers to domestic measles outbreak areas with ongoing, community-wide transmission and international travelers may need additional doses of MMR vaccine.
- Information on measles can be found:
 - o <https://www.cdc.gov/measles/about/> (CDC)
 - o <http://ph.lacounty.gov/ip/diseases/measles/index.htm> (LACDPH)

Dear Provider,

Measles is a highly contagious febrile rash illness that can infect 9 of 10 susceptible persons who are close contacts of a person with measles. **Measles can cause serious illness:** 1 in 5 people with measles are hospitalized, 1 in 20 develop pneumonia, 1 in 1,000 develop encephalitis, and 1 to 3 out of every 1,000 people infected will die from measles.

The current increase in measles cases in the United States is due to people

returning to the United States from international trips with measles and an expanding outbreak among communities with low vaccination coverage in Texas and other states.

Still, the risk of widespread measles is very low in the United States due to high childhood vaccination rates with the measles, mumps, rubella (MMR) vaccine. The risk of measles among most U.S. adults is also low because of life-long immunity from previous infection (i.e., typically adults born before 1957) or vaccination.

MMR vaccination remains the best protection against measles. The following summarizes the Centers for Disease Control and Prevention's (CDC) existing guidance for routine vaccination, vaccination of international travelers, and persons living in or traveling to areas in the United States with ongoing, community-wide measles transmission.

ROUTINE MMR VACCINATION RECOMMENDATIONS

For children, [CDC routinely recommends](#) two doses of measles-containing vaccine:

- first dose at age 12 through 15 months and
- the second dose at age 4 through 6 years before school entry.

Adults should also have received 1 or 2 doses ([depending on risk factors](#)), unless they have other presumptive evidence of immunity¹ to measles.

Given the risk of measles is low for the general U.S. population, immunity testing or repeating vaccination is typically not needed for most adults. Healthcare providers should reassess need if their adult patient belongs to a special population (e.g., new healthcare personnel, college/vocational students, international travelers, or people going to or living in areas in the United States with ongoing community-wide measles transmission). Note, there are a small number of adults who received the inactivated or “killed” measles vaccine during childhood from 1963 through 1967 who are considered unvaccinated and should receive at least one dose of MMR vaccine; however, <5% of all doses given during 1963–1967 were of the inactivated vaccine.

DOMESTIC MEASLES OUTBREAK

Health care providers should follow vaccination recommendations issued by the state, local, tribal, or territorial health departments for areas experiencing sustained, community-wide measles transmission and an ongoing risk of exposure. In some cases, additional vaccinations may be recommended beyond the routine MMR vaccination schedule. For example, health departments may recommend:

- A second dose of MMR vaccine for adults who received one prior dose and are living in or traveling to these affected areas. Adults with no documentation of vaccination history should receive two doses, at least 28 days apart.
- A second dose of MMR vaccine for preschool-aged children aged 1 to 4 years who received one prior dose and live in or plan to travel to the outbreak area. Children with no documentation of vaccination history should receive two doses, at least 28 days apart.
- An early dose of MMR vaccine for infants aged 6–11 months who live in or are traveling to the outbreak area.
 - Providers should weigh the benefit of protection from measles during an outbreak against the risk of decreased immune responses in infants vaccinated with MMR before 12 months of age.
 - Infants younger than 12 months of age are at greatest risk of severe illness. Vaccination of infants aged 6–11 months minimizes the risk of disease and death that could occur in these infants during measles outbreaks.
 - The level of protective antibodies is lower and may remain lower in children vaccinated at younger than 12 months of age than in children vaccinated later. Infants who receive one dose of MMR vaccine before their first birthday should receive two more doses according to the routinely recommended schedule (one dose at 12 through 15 months of age and another dose at 4 through 6 years of age or at least 28 days later). (For additional information, see <https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm>, section “Immune Response to Measles Vaccination”).

Vaccination of visitors to outbreak-affected areas should be consistent with the guidance of the state, local, tribal, or territorial health department for residents of the outbreak-affected community. For example, if no vaccination recommendation was made by the local health department for infants aged 6–11 months living in the outbreak community, then vaccination of infant travelers visiting the outbreak area would also not be recommended. Healthcare providers can find updated outbreak

recommendations issued by state or local health departments at
<https://www.cdc.gov/measles/data-research/index.html>

INTERNATIONAL TRAVEL

There are additional MMR vaccine recommendations for international travelers than the routine recommendations. Before leaving the United States, travelers aged 6 months and older who do not otherwise have acceptable evidence of measles immunity should be vaccinated with MMR vaccine, as described below.

- **Children older than 12 months, teens, and adults born during or after 1957 who do not have other evidence of measles immunity** should receive two doses of MMR vaccine (ideally with the second dose given at least two weeks before travel and at least 28 days apart).
- **Infants aged 6 through 11 months** should receive one dose of MMR vaccine (ideally, at least two weeks before travel). Infants who received MMR vaccine at <12 months of age should still receive 2 doses according to the routine childhood schedule.

**Acceptable evidence of measles immunity for adults and children:*

- Birth before 1957 or
- Laboratory confirmation of disease or
- Laboratory evidence of immunity (i.e., positive measles IgG) or
- Written documentation of receipt of a live MMR vaccine
 - o 1 dose for pre-school aged children and adults not at high risk (i.e., adults who are NOT students in college/vocational school, healthcare workers, and international travelers)
 - o 2 doses for school-aged children

RESOURCES

- Information on measles can be found:
 - o <https://www.cdc.gov/measles/about/> (CDC)
 - o <http://ph.lacounty.gov/ip/diseases/measles/index.htm> (LACDPH)
- Information on routine measles vaccination for children and adults can be found here: <https://www.cdc.gov/vaccines/vpd/mmr/hcp/recommendations.html>

- For additional recent recommendations for healthcare providers, see: [Health Alert Network \(HAN\) - 00522 | Expanding Measles Outbreak in the United States and Guidance for the Upcoming Travel Season.](#)
- For information on measles outbreak control, see: <https://www.cdc.gov/surv-manual/php/table-of-contents/chapter-7-measles.html>
- Additional information about measles, including a continuing education module, is available at [cdc.gov/measles/hcp](https://www.cdc.gov/measles/hcp). Please direct any clinical MMR vaccine questions to nipinfo@cdc.gov.