

Measles, United States, January 1–April 25, 2008

From January 1 through April 25, 2008, CDC received a total of 64 reports of confirmed measles cases in the U.S. This is the highest number reported for the same time period since 2001.

Cases have been reported from the 9 states; outbreaks are ongoing in 4: Wisconsin, Arizona, Michigan, and New York.

Of the 64 cases, 59 occurred among U.S. residents and 54 were associated with importation of measles from other countries. Most (63) case-patients were unvaccinated or had unknown vaccination status; 1 had received two doses of vaccine. Of the 59 U.S. patients,

- 13 were < 12 months old
Too young to be vaccinated routinely
- 7 were 12–15 months old
Not yet vaccinated
- 21 were 16 months to 19 years old
14 (67%) claimed vaccination exemptions due to religious or personal beliefs
7 (all < 5 years of age) were unvaccinated due to delay or missed opportunities
- 18 were > 20 years old
14 had unknown or undocumented vaccination status
2 (who acquired measles in Europe) claimed personal belief or religious exemptions
1 had evidence of immunity through birth before 1957
1 had documentation of receiving two doses of MMR vaccine

Unvaccinated children tend to be clustered geographically and/or socially, augmenting the risk for outbreaks. Transmission has occurred in community and healthcare settings, including homes, childcare centers, schools, hospitals, emergency rooms, and physicians' offices.

The 64 patients ranged in age from 5 months to 71 years:

- 14 were < 12 months old
- 18 were 1–4 years old
- 11 were 5–19 years old
- 18 were 20–49 years old
- 3 were ≥ 50 years old

14 patients were hospitalized; no deaths have been reported.

Spread of measles has been controlled or limited due to

1. high vaccination coverage in the U.S.
2. excellent two-dose vaccine performance
3. rapid and effective public health responses

These cases and outbreaks serve as a reminder that measles can and still does occur in the U.S. Ongoing measles virus transmission was declared eliminated in the U.S. in 2000, but the risk of cases and outbreaks from imported disease remains.

These cases and outbreaks resulted primarily from failure to vaccinate, many because of personal or religious belief exemption. This fact highlights

- the ongoing risk of measles in unvaccinated persons
- the risk that unvaccinated persons transmitting measles to others, including infants too young to be vaccinated
- the importance of maintaining high levels of vaccination

- **Measles is an ongoing risk to those who choose not to be vaccinated and a risk to infants and children who have not yet received vaccine.**
 - The measles cases and outbreaks in 2008 result primarily from failure to vaccinate, many because of personal or religious exemption
 - Unvaccinated persons are at risk for acquiring measles themselves and also of transmitting to others, including children too young to be vaccinated.
 - Increases in the proportion of the population declining vaccination for themselves or their children might lead to large-scale outbreaks in the U.S.
 - Israel and a number of countries in Europe (e.g., Switzerland, Austria, Ireland, United Kingdom) are currently experiencing sizeable measles outbreaks affecting their general populations or among populations refusing vaccination.
 - Maintaining high vaccine coverage with MMR vaccine in the U.S. population is critical for preventing measles cases and outbreaks in this country.
 - Persons who cannot be vaccinated (infants < 12 months and those with medical contraindications) are best protected through high vaccination levels in their communities.

- **Measles can be a severe, life-threatening illness; however, the vaccine against measles is highly effective in preventing infections, and high immunization levels in the community are effective at preventing or drastically decreasing the size of outbreaks.**
 - Measles can be severe—14 (21.9%) of the current patients were hospitalized.
 - Before the measles vaccination program, about 3–4 million persons in the U.S. were infected each year, of whom 400–500 died, 48,000 were hospitalized, and another 1,000 developed chronic disability from measles encephalitis.
 - Due to the success of the vaccination program, measles is no longer endemic in the U.S.
 - MMR vaccine is highly effective in preventing measles: all but one of the current patients was unvaccinated or had an unknown vaccine history.
 - One dose of MMR vaccine is routinely recommended for all children at 12–15 months of age, with a second dose recommended at age 4–6 years.
 - Unless there is other evidence of measles immunity, two doses of MMR vaccine are recommended for all school students, students in post–high school educational facilities, healthcare personnel, and international travelers who are ≥ 12 months of age (NOTE: infants 6–11 months should receive one dose prior to travel abroad).
 - Other adults without evidence of measles immunity should routinely receive one dose of MMR vaccine.

- **Healthcare providers and public health officials should be aware that measles can be acquired through international travel to many countries, including developed countries, and even in the U.S., due to measles importations.**
 - Public health officials and clinicians should remain vigilant regarding the possibility of measles, especially in persons who travel abroad, including to Europe.
 - During 2008, measles importations have occurred from Switzerland, Israel, Belgium, India, Italy, and likely China, but they can occur from almost any country.
 - The possibility of measles should be considered in persons with a history of travel, exposure to travelers or possible exposure to measles in their community (e.g., in healthcare, daycare, or household settings).

- **Healthcare providers and public health officials need to promptly respond to cases and implement control measures when measles is suspected.**
 - Due to the severity of measles infected persons are very likely to seek medical care.
 - To prevent transmission of measles in healthcare settings, airborne infection control precautions should be followed stringently or, if negative air-pressure rooms are not available, the patient should be placed in a room with the door closed and asked to wear a mask.
 - All healthcare personnel should have documented evidence of measles immunity on file at their work location.
 - Cases should be investigated, and infected persons should be isolated promptly.
 - Case contacts without evidence of measles immunity should be vaccinated, offered immune globulin, or quarantined at home.
 - Contacts with measles-compatible symptoms should be managed in a manner that will prevent further spread.