Fact Sheet: Update: Measles — United States, January–July 2008

From January 1 through July 31, 2008, CDC received 131 reports of confirmed measles cases in the U.S. This is the highest number reported for the same time period since 1996.

Cases have been reported from 15 states and the District of Columbia. Seven outbreaks (≥ 3 cases linked in time or place) accounted for 106 (81%) of the cases,

Of the 131 total cases,

- 17 (13%) were importations (8 among foreign visitors; 9 among U.S. residents who had traveled abroad)
- 99 (76%) were associated with importation
- 15 (11%) had an undetermined source of infection

Most (91%) of the 131 case-patients were unvaccinated or of unknown vaccination status.

Of the 123 U.S. case-patients, 5 (4%) had received 1 and 6 (5%) had received 2 doses of MMR vaccine; 112 (91%) were unvaccinated or had unknown vaccination status

- 16 (13%) of the 112 were < 12 months of age—too young to be vaccinated
- 1 (1%) of the 112 had presumed evidence of measles immunity because he/she was born before 1957
- 95 (85%) of the 112 were eligible for vaccination, of which
  - 63 (66%) were unvaccinated due to their own or their parents' philosophical or religious beliefs
  - 17 (18%) missed / had an unknown reason for missing a vaccination opportunity
  - 15 (16%) were unsure whether they had ever been vaccinated

The 123 U.S. case-patients, 99 (80%) were < 20 years of age:

- 16 (13%) were < 12 months old
- 10 (8%) were 12–15 months old
- 18 (15%) were 16 months–4 years old
- 55 (45%) were 5–19 years old
- 22 (18%) were 20–49 years old
- 2 (2%) were ≥ 50 years old

Fifteen patients were hospitalized, including 4 children < 15 months of age; no deaths were reported.

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 spread of measles has been controlled or limited during recent outbreaks due to

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

However, findings suggest that unvaccinated persons remain at risk for measles and that sizeable measles outbreaks may occur in communities with a high number of unvaccinated persons. This year's increased number of U.S. cases resulted from a greater than usual spread of disease following measles importation, with most cases occurring among school-aged children who were eligible for vaccination but whose parents chose not to vaccinate them. The reasons for the increase are unclear, but the resulting cases and outbreaks are of concern and could herald an increase in measles morbidity and mortality.

Recent cases and outbreaks highlight

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

The start of every school year is a good time for parents to ensure that their children's vaccinations are up to date, whether they are returning to school, attending day care, or being schooled at home. To protect themselves and others, adults, including international travelers, should also ensure that their vaccination status is current.

Important Points

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, mainly because of philosophical or religious beliefs.
- Unvaccinated persons are at risk for acquiring measles themselves and also of transmitting to others, including children too young to be vaccinated and children with certain chronic diseases who cannot receive the vaccine.
- Currently, Israel and a number of countries in Europe (e.g., Switzerland, Austria, Italy, United Kingdom) are reporting 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—this year, 15 (12%) of the 123 U.S. patients with measles 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: most U.S. measles patients this year were 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, Italy, Israel, Belgium, India, Germany, China, Pakistan, Russia, and the Philippines, 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.