

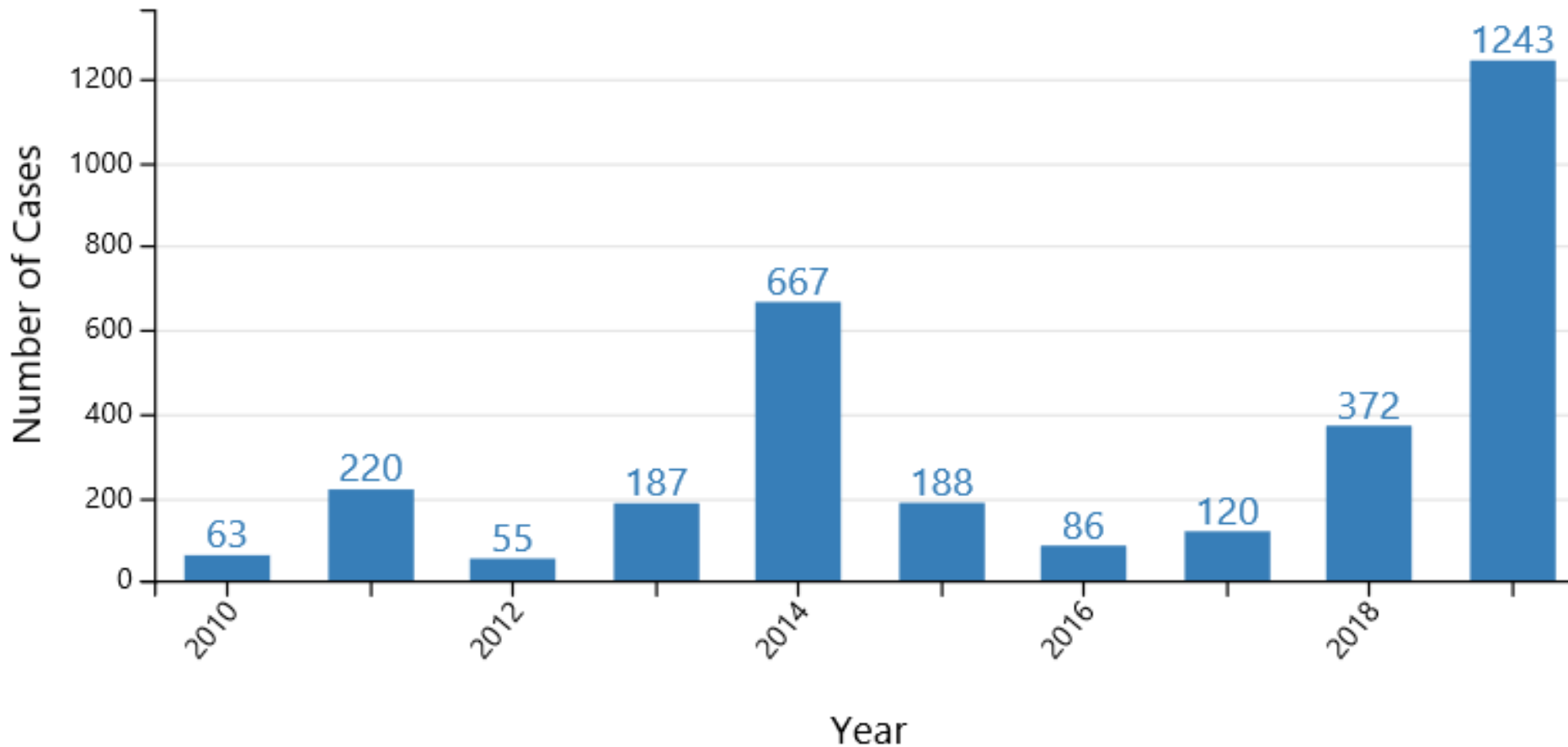


# Measles

## Washington State Immunization Summit, 2019

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# Numbers of Reported Measles Cases



States include Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Missouri, New Mexico, Nevada, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Tennessee, Virginia, and Washington.

**1,243 cases**  
as of  
**September 26<sup>th</sup>**

# Measles

- Acute, febrile rash viral illness
- Transmitted by direct contact with infectious droplets or airborne spread
- Most contagious of the vaccine preventable diseases
  - $R_0 = 12-16$
  - Secondary attack rate in susceptible household contacts ~90%



# Clinical presentation

- Incubation period 10-14 days (range 7-21 days)
- 2-4 day prodrome
  - The 3 C's": cough, coryza, and conjunctivitis
  - Koplick spots (white lesions on inner cheek), 2 days before rash onset
  - Fever up to 40.6°C (105°F)
- Rash begins approximately 14 days after exposure
  - Rash onset date is "day 0"
- Infectious period 4 days prior through 4 days after rash onset



# Measles Complications

Diarrhea	8%
Otitis media	7 – 9%
Pneumonia	1 – 6%
Hospitalized	1 in 4 cases
Encephalitis	1 per 1,000 cases
Death	1 – 3 per 1,000 cases
Subacute Sclerosing Panencephalitis (SSPE)	1 per 100,000 cases

Complications are more common in children <5 years and adults.

## **Prioritize measles on your differential diagnosis of a febrile rash illness if your patient:**

- Has not been vaccinated against measles
- Has traveled internationally, or has been exposed to someone who traveled internationally, within 21 days prior to the onset of their rash
- Is living in or visiting a community where there is a measles outbreak



# If you suspect a case of measles you should:

- Mask and promptly isolate the patient in a room with the door closed
- Collect a throat or nasopharyngeal swab for molecular testing using realtime polymerase chain reaction (RT-PCR) and blood for serology (IgM)
- Call your local health department or infection control team
  - Provide instructions on where to send specimens
  - Identify who was exposed and who might need post-exposure prophylaxis with either MMR vaccine or immunoglobulin
  - Prioritize exposed persons who are at high risk for serious disease including:
    - Infants aged <1 year
    - Pregnant women
    - Persons with immunocompromising conditions



# Measles Vaccine Recommendations

# Measles Vaccine

- Licensed in 1963 in the U.S.
- Combination measles-mumps-rubella (MMR) vaccine licensed in 1971
- Vaccine effectiveness:
  - 1-dose: ~93%
  - 2-doses: ~97%
- Excellent safety profile over last 50 years
  - Low risk of febrile seizures in children aged 12 – 23 months (1 in 3,000 doses)
  - Temporary pain/stiffness in joints (teenage or adult women)
  - Temporary low platelet count (1 in 30,000 doses)

# MMR Vaccine Routine Recommendations

- Children and Adolescents
  - One dose at 12 – 15 months of age and a second dose at 4 – 6 years of age
- Adults without evidence of measles immunity\*
  - Most adults need one dose
  - Two doses for high risk adults, at least 28 days apart
    - healthcare personnel
    - post-high school students
    - international travelers

## \*Presumptive Evidence of Immunity

- Birth before 1957
- Laboratory evidence of immunity
- Laboratory confirmation of disease

2013 ACIP recommendations: <http://www.cdc.gov/mmwr/pdf/rr/rr6204.pdf>

2019 Adult Immunization schedule: <http://www.cdc.gov/vaccines/schedules/hcp/adult.html>

# MMR Vaccine Travel Recommendations

- Persons aged  $\geq 12$  months without other evidence of immunity should receive 2 doses\*
  - Includes providing a 2nd dose to children aged 1 – 4 years before they reach age 4 – 6 years
  - Includes adults\*\* who have only received one routine dose in the past
- Children aged 6 – 11 months should receive 1 dose
  - If vaccinated at age 6-11 months, still need 2 subsequent doses at age  $\geq 12$  months

2013 ACIP recommendations.

\*2nd dose of MMR vaccine should be administered at least 28 days after the 1st dose

\*\*Born in 1957 or later

# What adult providers need to know for their patients

- Providers do not need to actively screen adult patients for measles immunity
  - high population immunity and low risk of disease among adults in non-outbreak areas in the U.S.
- Providers should make sure patients have measles protection before international travel
  - U.S. residents traveling internationally are at high risk for acquiring measles abroad
  - Importations into the U.S. can lead to transmission to susceptible persons, such as infants, and outbreaks
  - Providers should vaccinate if the patient's measles immunity status is unknown - serologic testing is not recommended.
- There is no adult catch-up program for adults born before 1989, or otherwise




# What providers need to know about vaccination during outbreaks

- Providers should consult with local health departments for the most up-to-date recommendations
  - This may include additional doses of MMR for your patients (similar to travel recommendations)
- In limited circumstances, health departments may recommend vaccination of infants 6 through 11 months of age with one dose of MMR vaccine
  - Outbreak is affecting infants aged <12 months
  - Outbreak demonstrates sustained, community-wide transmission
  - Benefit of early protection against measles during a period of increased transmission and exposure should be weighed against risk of decreased immune response following subsequent MMR doses in infants vaccinated at <12 months of age compared with infants vaccinated at  $\geq 12$  months of age
  - MMR dose given prior to 12 months of age does not count towards routine schedule





# Measles Outbreak Toolkit for Healthcare Providers

For information about measles for healthcare professionals, visit <https://www.cdc.gov/measles/hcp/index.html>




If you are looking for **resources for you or your staff** to learn more about having effective vaccine conversations with parents, these may help:

- Guidance for [Talking with Parents about Vaccines](#) 
- Tips for [Preparing for Questions Parents may Ask about Vaccines](#) 
- Vaccine safety fact sheets, such as [Understanding Thimerosal, Mercury, and Vaccine Safety](#) 
- [You Call the Shots module on MMR](#)

Examples of resources for providers to **share with parents** include:

- [Parent-friendly immunization schedule](#)  for children ages 0-6
- Fact Sheet: [Infant Immunization FAQs](#) 
- Fact Sheet: [If You Choose Not to Vaccinate Your Child, Understand the Risks and Responsibilities](#) 
- Infographic: [Measles: It Isn't Just a Little Rash](#) 
- Fact Sheet: [Tips for a Less Stressful Shot Visit](#) 
- Infographic: Illustrated list of [Six Reasons to Follow CDC's Immunization Schedule](#)
- Fact sheet: [Measles and the Vaccine \(Shot\) to Prevent It](#) 
- Fact Sheet: [Vaccines When Your Child Is Sick](#) 

If you would like posters to display in your office, here are some that may be helpful:

- [Superbaby: Power to Protect](#) 
- [How Vaccines Strengthen Your Baby's Immune System](#) 
- [Stop Serious Childhood Diseases in Their Tracks](#) 



**CDC Expert Commentary**  
Jane Seward, MBBS, MPH

Learn the signs and symptoms of measles for quicker diagnosing:

[CDC Commentary: Suspect Measles and Act Fast](#) 

## MEASLES OUTBREAK Protect Families & Communities with MMR Vaccine



The United States has had more than 1,000 cases of measles in 2019.



Measles is highly contagious respiratory disease caused by a virus. It can be serious for young children. Protect your families and communities by making sure everyone is up to date on measles vaccine, including before traveling abroad.

### MEASLES

Measles spreads through the air when an infected person coughs or sneezes. It is so contagious that if one person has it, up to 9 out of 10 people around them will also become infected if they are not protected.

Measles starts with a fever. Soon after, it causes a cough, runny nose, and red eyes. Then a rash of tiny, red spots breaks out. It starts at the head and spreads to the rest of the body. The rash can last for a week, and coughing can last for 10 days. Measles can cause serious health complications, such as pneumonia or encephalitis, and even death.



### CHILDREN NEED 2 DOSES OF MEASLES VACCINE

The best way to protect against measles is with a combination vaccine that provides protection against three diseases: measles, mumps, and rubella (MMR). The MMR vaccine is proven to be very safe and effective.

**CDC recommends that children get one dose at each of the following ages:**

- 12 through 15 months
- 4 through 6 years

Ask your doctor if you and your family have received all recommended doses of MMR for best protection against measles.

### MMR VACCINE IS SAFE & EFFECTIVE

The MMR shot is very safe and effective at preventing measles (as well as mumps and rubella). Vaccines, like any medicine, can have side effects. But most people who get the MMR shot have no side effects. The side effects that do occur are usually very mild, such as a fever, rash, soreness or swelling where the shot was given, or temporary pain and stiffness in the joints (mostly in teens and adults). More serious side effects are rare.

Scientific studies and reviews continue to show that there is no link between vaccines and autism. Vaccine ingredients do not cause autism. Numerous scientists have studied MMR vaccine and thimerosal, and they reach the same conclusion: there is no link between MMR vaccine or thimerosal and autism.

### BEFORE TRAVELING ABROAD

Each year, unvaccinated people get infected while in other countries and bring the disease into the United States and spread it to others. Before any international travel—

- Infants 6–11 months old need 1 dose of measles vaccine\*
- Children 12 months and older need 2 doses separated by at least 28 days
- Teenagers and adults who do not have evidence of immunity\*\* against measles should get 2 doses separated by at least 28 days

\*Infants who get one dose of MMR vaccine before their first birthday should get 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).

\*\*Acceptable evidence of immunity against measles includes at least one of the following: written documentation of adequate vaccination, laboratory evidence of immunity, laboratory confirmation of measles, or birth in the United States before 1957.

Talk to your healthcare professional if you have questions about measles, and visit CDC's website for more information: [www.cdc.gov/measles](http://www.cdc.gov/measles)

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