



# Lessons Learned from Measles Outbreaks in the Post-elimination Era

Sydney Stein, DVM, MPH | August 28, 2026

NEBRASKA

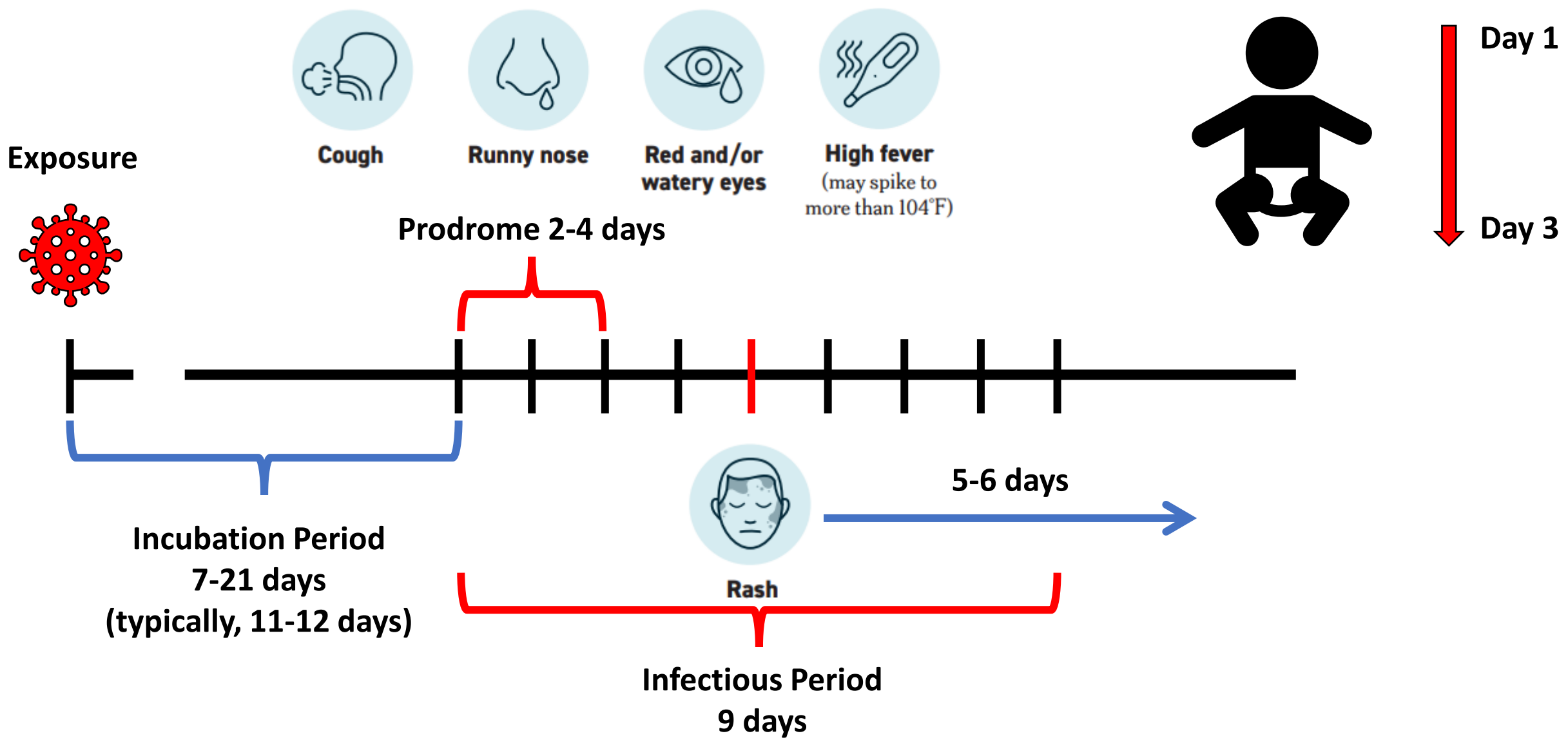
Good Life. Great Mission.

DEPT. OF HEALTH AND HUMAN SERVICES

DIVISION OF  
PUBLIC HEALTH

# Clinical Overview

# Timeline of Measles Infection



# Measles Complications

- **Acute**

- Immune amnesia = ↑ risk of infections
- Ear infections +/-hearing loss
- Diarrhea
- Hospitalization (~1 in 14)
- Pneumonia (1 in 20)
- Encephalitis (1 in 1,000)
- Death (1-3 in 1,000)

- **Rare, late onset (7-10 years)**

- Subacute sclerosing panencephalitis
  - Persistent CNS infection
  - Fatal within 1-3 years following onset
  - ↑ risk to children infected before age 2

## SEVERE MEASLES SYMPTOMS

### SEEK EMERGENCY CARE IF YOU HAVE:

- Trouble breathing or rapid breathing
- Signs of severe dehydration (dry nose and mouth, urinating less)
- Confusion, low energy, or weakness

#### For young children:

- Blue color around the mouth
- Crying without tears
- Low energy or appetite

*Unless it is a medical emergency, always call **BEFORE** arriving at a healthcare clinic so they can protect other patients from potential exposure*



# The MMR vaccine is highly safe and effective

## One dose of MMR vaccine is:

- 93% effective against measles
- 72% effective against mumps
- 97% effective against rubella

## Two doses of MMR vaccine are:

- 97% effective against measles
- 86% effective against mumps



## The MMR vaccine is safe and has been protecting Nebraskans for generations!

**DO NOT WAIT.** Contact your doctor to schedule a measles vaccine today!

If you do not have a doctor, contact your local health department to find a vaccine clinic near you.

MEASLES (Rubeola)

Measles is a highly contagious respiratory virus that causes febrile rash illness. Measles has been eliminated (no sustained circulation) in the United States for decades. However, there can still be measles cases, as it is easily imported by unvaccinated travelers and can spread in under-immunized communities.

DISEASE COURSE

The incubation period is typically 11–12 days from exposure to measles virus until the first symptoms appear (prodromal symptoms). A rash follows the prodromal symptoms 2–4 days later and usually lasts 5–6 days. Measles is infectious 4 days before and 4 days after rash onset.

SYMPTOMS

**Prodromal:** Fever, cough, coryza, or conjunctivitis. Koplik spots (tiny white spots inside the mouth) may also appear 2–3 days after symptoms first appear.

**Rash:** A maculopapular rash (rash of both flat and raised skin lesions) begins on the head and face and then spreads downward to the neck, trunk, arms, legs, and feet. The spots may become joined together as they spread from the head to the body. Fever may spike to more than 104° F when rash appears.



Measles on the face



Measles on the trunk of the body

\* Presumptive evidence of measles immunity for healthcare workers (one of the following): documentation of two doses of measles-containing vaccine; laboratory evidence of immunity (positive IgG); laboratory evidence of disease, or birth before 1950. Consider vaccinating healthcare workers born before 1957 who do not have other evidence of immunity to measles. Self-reported doses and a history of vaccination provided by a parent or other caregiver, or a clinical diagnosis of measles, should not be accepted.

COMPLICATIONS

**Most common complications:** Diarrhea and otitis media. **Most severe complications:** Pneumonia, encephalitis, and death. Patients may require hospitalization. Children younger than 5, adults older than 20, pregnant women, and immunocompromised persons are at most risk of serious complications.

WHAT TO DO IF YOU HAVE A SUSPECTED CASE

- 1. Immediately mask and isolate the patient in a room with a closed door (negative pressure room if available). Follow standard and airborne precautions.
- 2. Only allow health care workers with presumptive evidence of measles immunity\* to attend the patient; they must use N-95 masks.
- 3. Evaluate the patient and order measles confirmatory testing (collect a throat or nasopharyngeal swab for RT-PCR and serum for IgM measles testing).
- 4. Contact infection control if available at your facility.
- 5. Immediately report this suspected case to your local and/or state health department.

For questions regarding specimen collection, storage, and shipment, please visit [www.cdc.gov/measles/php/laboratories/](http://www.cdc.gov/measles/php/laboratories/)

RESOURCES

- Measles information for healthcare providers: [www.cdc.gov/measles/hcp/clinical-overview/](http://www.cdc.gov/measles/hcp/clinical-overview/)
- Measles vaccine recommendations: [www.cdc.gov/measles/hcp/vaccine-considerations/](http://www.cdc.gov/measles/hcp/vaccine-considerations/)
- Infection control guidelines for measles: [www.cdc.gov/infection-control/hcp/measles/](http://www.cdc.gov/infection-control/hcp/measles/)
- Surveillance manual chapter on measles: [www.cdc.gov/surv-manual/chpt4b/cdc-of-contents/chapter-7-measles.html](http://www.cdc.gov/surv-manual/chpt4b/cdc-of-contents/chapter-7-measles.html)

Measles Prevention and Treatment Overview

Information for Healthcare Providers

Overview

- MMR vaccination is the best way to prevent measles and its complications.
- There is no specific antiviral therapy that is approved by the Food and Drug Administration (FDA-approved) for management of measles.
- Medical care is generally supportive to help relieve symptoms.
- Measles can cause serious illness requiring hospitalization, and complications such as pneumonia and secondary bacterial infections should be promptly managed under the supervision of a healthcare provider.

Prevention

- Vaccines are the best defense we have against measles. The benefits of measles, mumps, and rubella (MMR) vaccination far outweigh the risks. Two doses of MMR vaccine are 97% effective at protecting against measles.
- MMR vaccine is given as a routine childhood vaccine, with a first dose recommended at age 12–15 months and a second dose at age 4–6 years prior to school entry.
- Early administration of MMR vaccine for infants 6–11 months of age is recommended prior to international travel and may be recommended by state or local health departments to prevent measles during an outbreak (defined as 3 or more related cases).
- For those who cannot or prefer not to get vaccinated, risks of measles infection and severe illness during an outbreak are higher.
- Post-exposure prophylaxis (PEP) for measles, when provided promptly after initial measles exposure, may provide protection against measles infection or reduce the risk of serious illness among susceptible people. MMR vaccine can be administered as PEP within 72 hours of initial measles exposure for individuals without evidence of immunity.
- Immune globulin (IG), also referred to as immunoglobulin, is typically reserved for certain vulnerable populations, and can be administered within 6 days of initial measles exposure. IG is prioritized for close contacts of measles cases who cannot get the MMR vaccine and have been exposed to measles including infants younger than 6 months of age, pregnant women, and severely immunocompromised people or people who have other medical contraindications to vaccination.

Isolation

- People who are infected with measles and are seeking emergency care should call the healthcare facility prior to arrival. This helps ensure appropriate infection control procedures can be implemented at the facility.
- People who are infected with measles should be isolated for 4 days after they develop a rash.
- If the patient is isolated in a healthcare setting, airborne precautions should be put in place.
- The preferred placement for patients who require airborne precautions is in a single-patient airborne infection isolation room (AIIR). Regardless of presumptive immunity status, all healthcare staff entering the room should use respiratory protection consistent with airborne infection control precautions. This includes use of an N95 respirator or a respirator with similar effectiveness in preventing airborne transmission.

PREPARING AND RESPONDING TO MEASLES: Checklist for Healthcare Workers



WHY SHOULD HEALTHCARE WORKERS PREPARE FOR MEASLES?

Measles is caused by a highly contagious virus that spreads through the air when an infected person coughs or sneezes. If one person has measles, up to 9 in 10 people nearby will become infected if they are not protected.

The risk for widespread measles in the U.S. remains low. However, measles cases occur in the U.S. every year when unvaccinated travelers get measles while they are in other countries. Outbreaks then occur when measles spreads in under-vaccinated communities. Anyone without immunity to measles is at risk.

A person with measles can present for care to any type of healthcare facility. Having a plan in place to respond when measles is suspected can protect healthcare workers, patients, and visitors. This checklist highlights several key action items for healthcare workers seeking to prepare for measles.

PREPARE FOR MEASLES BEFORE SEEING PATIENTS

- Be familiar with CDC's recommendations on measles vaccination and interim infection prevention and control recommendations for measles.
- Know how to contact your facility's infection preventionist (IP) and health department for assistance when measles is suspected in healthcare workers, patients, and/or visitors. Refer to CSTE's Epi-on-Call list for healthcare providers.
  - » Develop a response plan and discuss any questions you may have with your facility's IP or with your health department.
- Identify which of your patients do not have presumptive evidence of measles immunity and be prepared to talk with them about MMR vaccination if they are eligible.
- Check that you are immune to measles with two doses of MMR or other presumptive evidence of measles immunity.
  - » If you do not have presumptive evidence of measles immunity, talk with your occupational health program or similar entity about vaccination, if eligible.
  - » There is no harm in getting another dose of MMR vaccine if an individual may already be immune to measles (or mumps or rubella).
  - » CDC recommends that healthcare workers without presumptive evidence of measles immunity be excluded from work if they are exposed to measles.
- If you have not been fit-tested for a NIOSH-approved N95 or higher-level respirator within the last 12 months, confirm whether fit-testing is needed with your occupational health program.
  - » The respirator you need should be available in the areas where you work.
- Know how to identify measles.
  - » Stay alert for patients with fever and other early signs and symptoms of measles:
    - First symptoms: Fever with cough, runny nose, and/or red, watery eyes
    - 3–5 days after symptoms start: Rash (flat, red spots that appear on the face at the hairline and spread downward to the neck, torso, arms, legs, and feet)
  - » Assume a patient has measles if they have measles symptoms and at least one of the following:
    - Spent time in an area in the U.S. with a known measles outbreak
    - Had recent contact with someone with measles
    - Traveled internationally in the last 21 days
  - Has not been vaccinated for measles or doesn't know their vaccination status

BE READY FOR MEASLES [cdc.gov/measles](http://cdc.gov/measles)

Immune globulin for Measles Post-Exposure Prophylaxis

Immune globulin post-exposure prophylaxis (IG PEP) should not be used to control measles outbreaks, but rather to reduce the risk for infection and complications in certain vulnerable populations. Healthcare providers should provide appropriate measles PEP in coordination with local or state health departments.

What is post-exposure prophylaxis for measles?

Post-exposure prophylaxis (PEP) for measles, when provided promptly after initial measles exposure, may provide protection against measles infection or reduce the risk of serious illness among susceptible people.

There are two types of PEP for measles:

1. MMR vaccine, if administered **within 72 hours** of initial measles exposure (preferred)<sup>1</sup>
2. Immune globulin (IG), also referred to as immunoglobulin, if administered **within 6 days** of initial measles exposure, which is typically reserved for certain vulnerable populations.

What is immune globulin?

Immune globulin (IG) is a sterile solution containing antibodies from human blood. IG is prioritized for close contacts of measles cases who cannot get the measles, mumps, and rubella (MMR) vaccine and have been exposed to measles. People who can't get the MMR vaccine are:

- infants younger than 6 months of age
- pregnant women (although breastfeeding women can get MMR)
- severely immunocompromised people or people who have other medical contraindications to vaccination

IG PEP should not be used to control measles outbreaks, but rather to reduce the risk for infection and complications in certain vulnerable populations. IG is generally prioritized for infants less than 12 months of age without measles immunity, pregnant women without any evidence of measles immunity, and severely immunocompromised people who are close contacts of a confirmed measles case. IG can be given to other people who do not have evidence of measles immunity, but priority should be given to those exposed in settings where intense, prolonged, close contact (e.g., household, daycare, and classroom) has occurred.

Most people have no reactions to IG, or the side effects are very mild. IG is not a vaccine and provides short-term protection against measles lasting approximately 3–4 weeks. People who receive IG PEP and are eligible for MMR vaccination should wait at least 6 months before getting the MMR vaccine.

<sup>1</sup> For vaccine eligible persons aged 12 months or older exposed to measles, administration of MMR vaccine is preferable to using IG, if administered within 72 hours of initial exposure. If exposure does not cause infection, postexposure vaccination should induce protection against subsequent measles exposures while also providing protection against mumps and rubella infection.

[cdc.gov/measles](http://cdc.gov/measles)



Search

National Center for Immunization and Respiratory Diseases



Clinical Overview of Measles: Diagnosis, Laboratory Testing, and Outbreak Response

Dr. Dan Filardo, MD  
Medical Officer  
Measles, Rubella, and Cytomegalovirus Team  
Division of Viral Diseases

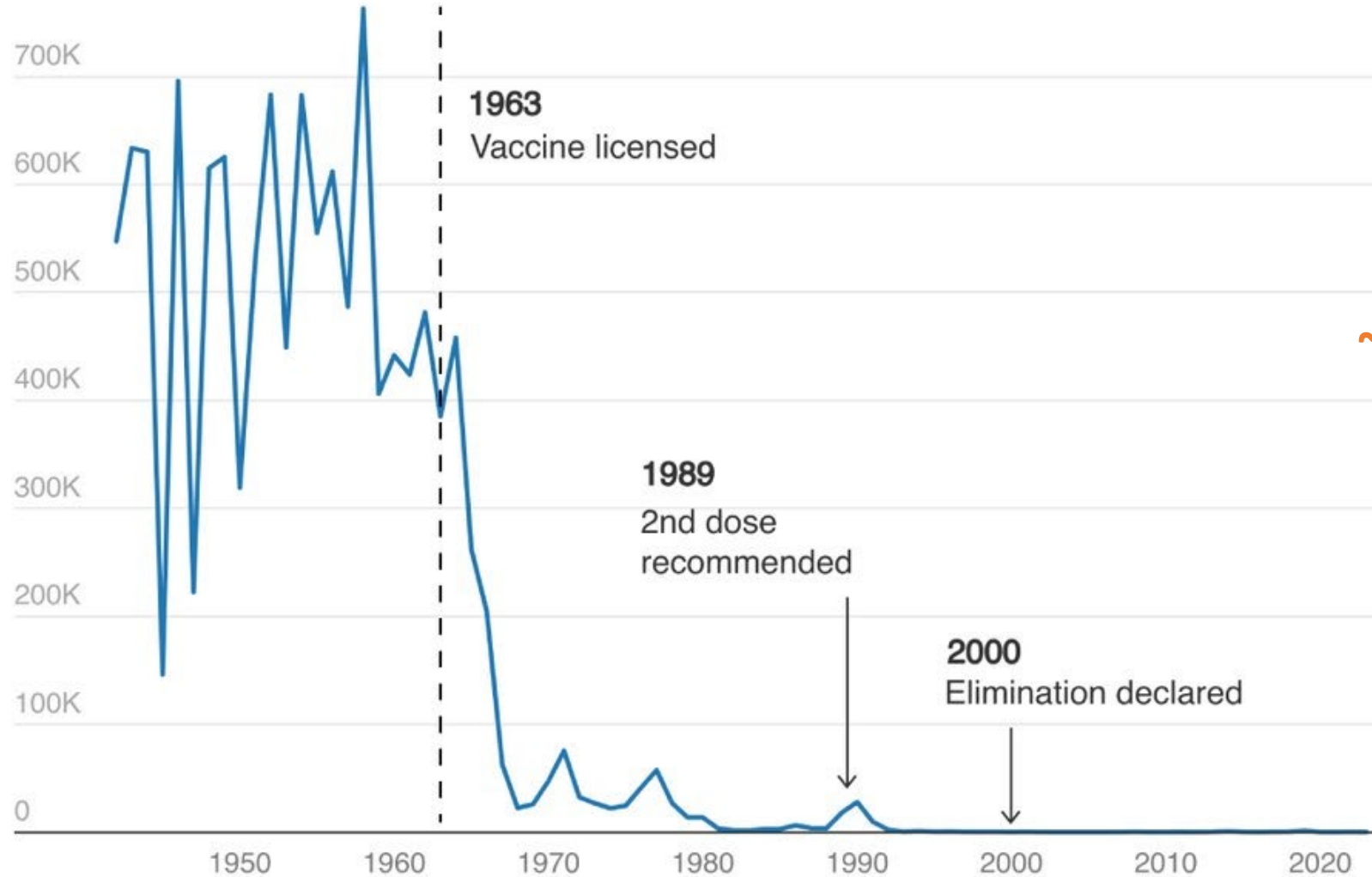
CE Available

Need a Refresher?



Where We've Been

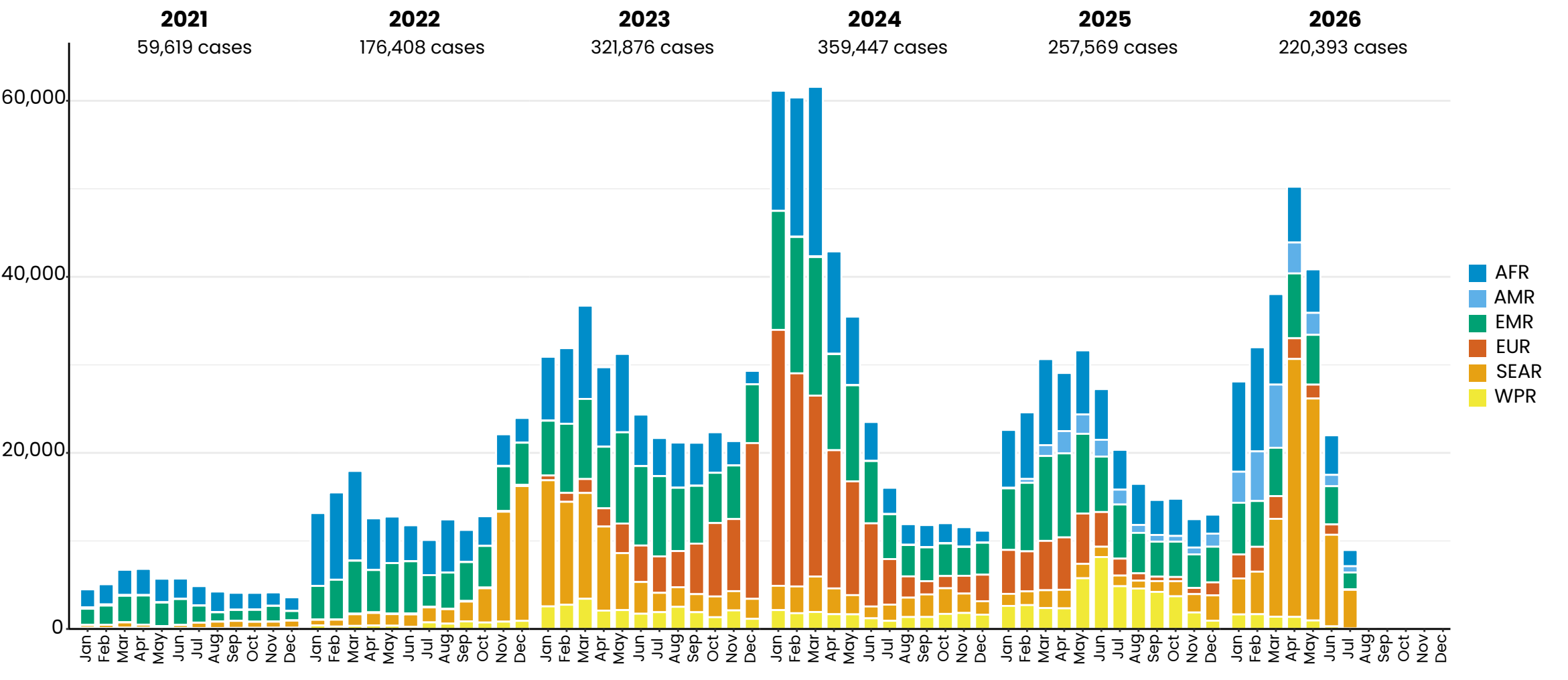
# Reported number of measles cases, 1942 to 2023



**Before 1963,**  
**~3–4 million people were infected**  
**annually in the United States**  
**resulting in**  
**48,000 hospitalization and**  
**400–500 deaths**

Source: Centers for Disease Control and Prevention • Created with Datawrapper

# Measles case distribution by month and WHO Region (2021-2026)

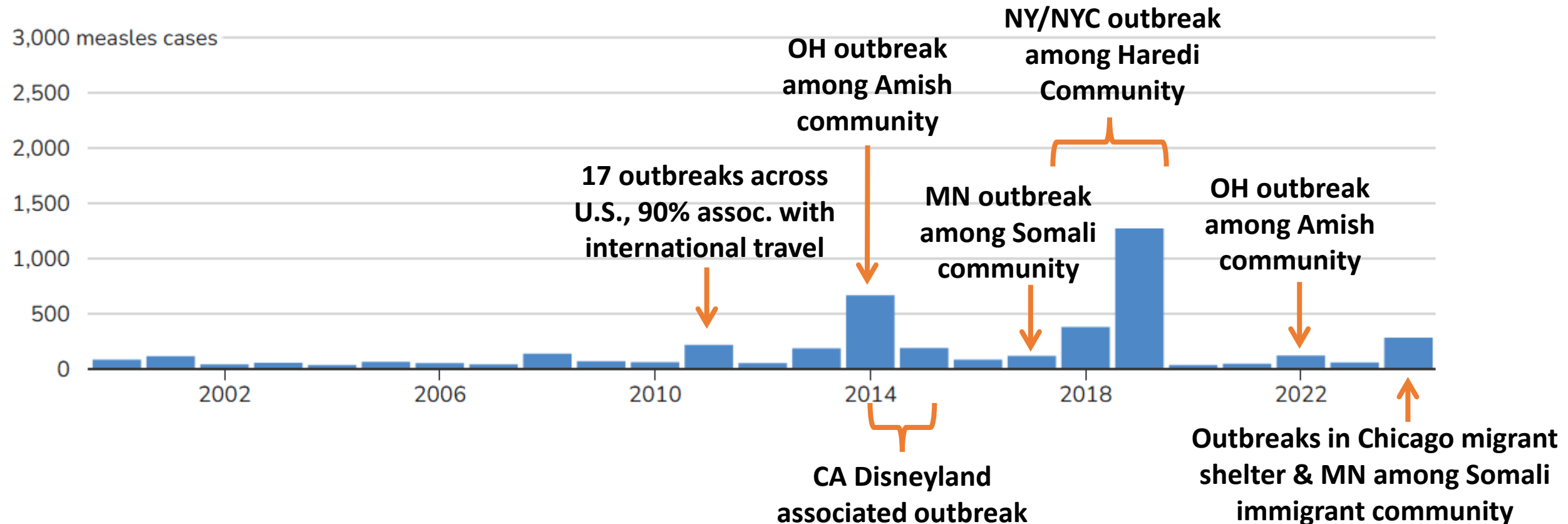


Based on data received 2026-08 - Data Source: IVB Database - This is surveillance data, hence for the last month(s), the data may be incomplete.

# Yearly measles cases

as of August 20, 2026

2000-Present\*

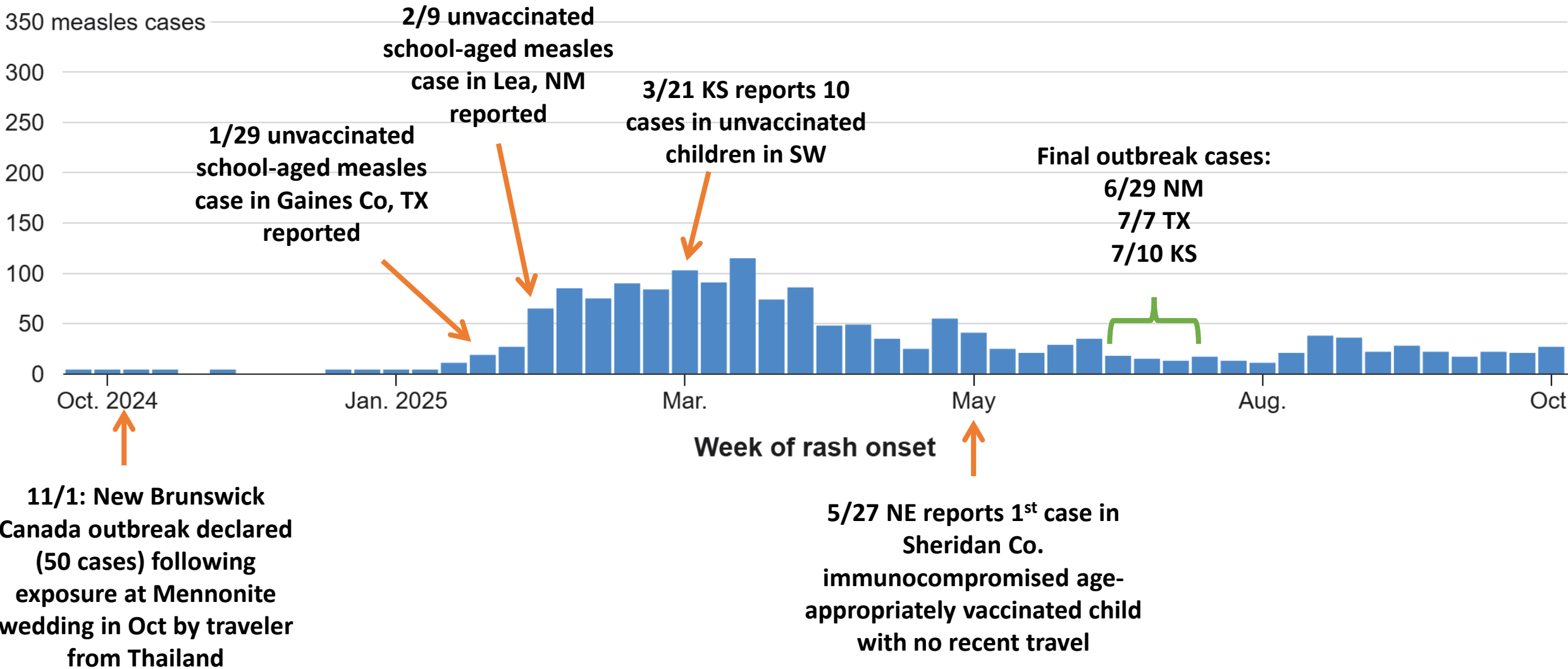




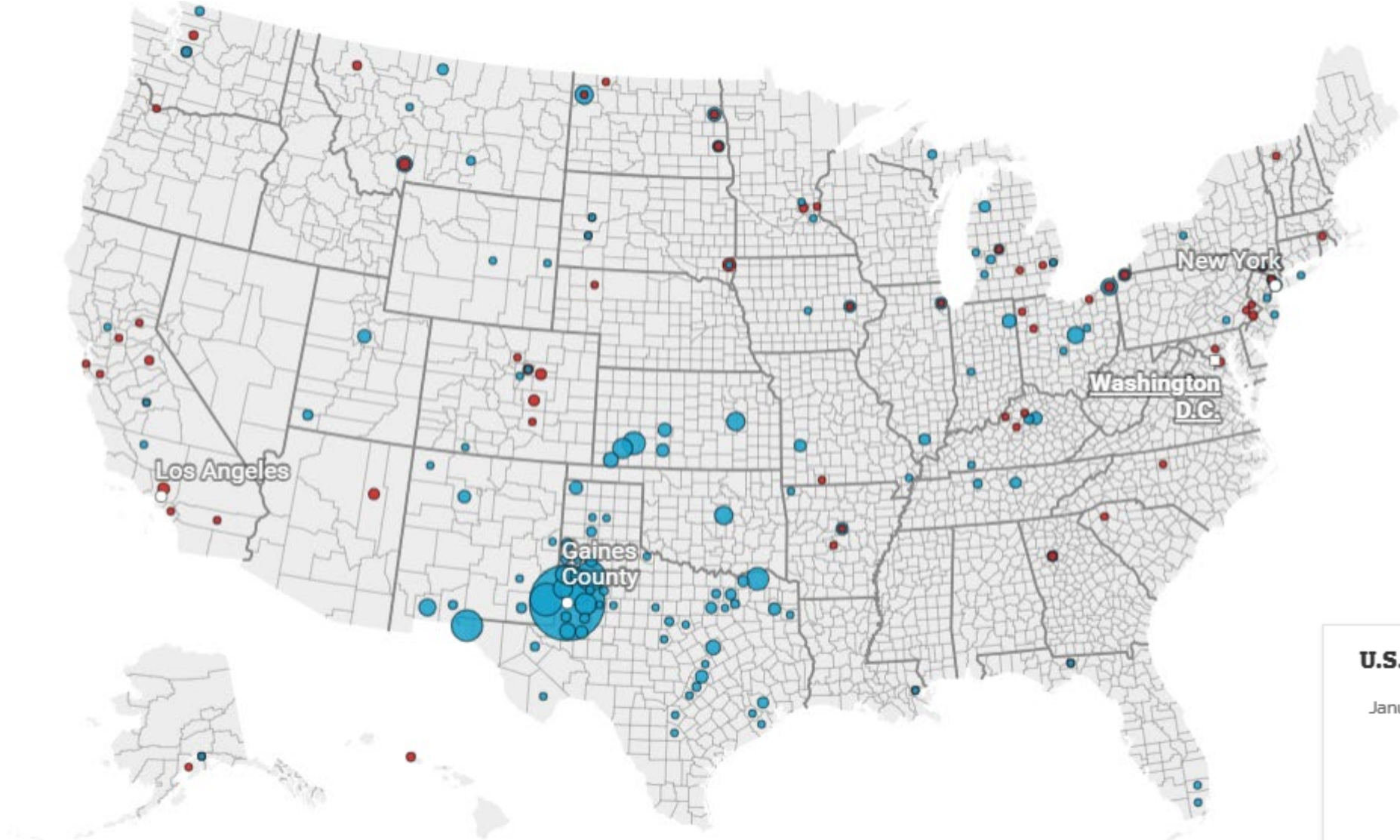
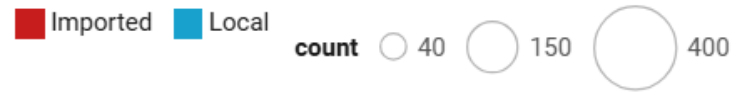
**Where We Are Now**

# Weekly measles cases by rash onset date

2022–2026\* (as of August 20, 2026)



# Cumulative measles cases reported in the United States in 2025



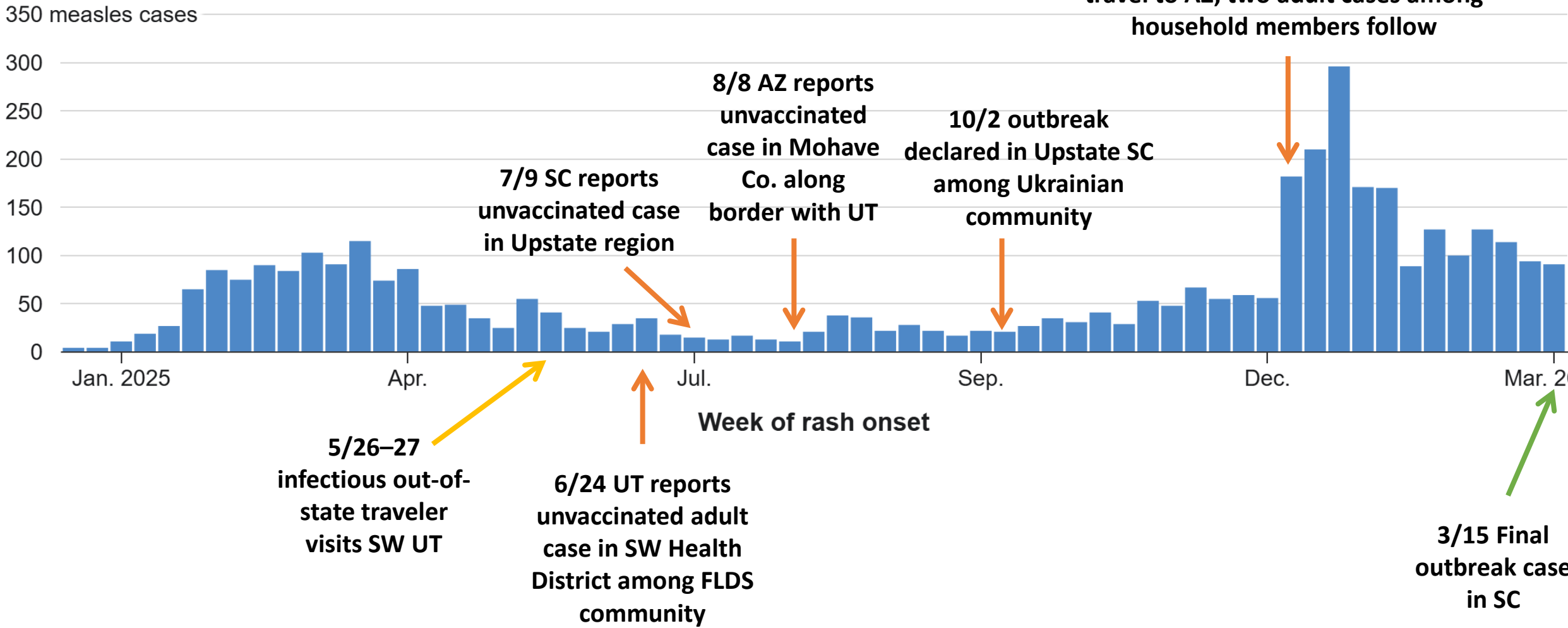
## U.S. MEASLES CASES

January 1, 2025 - Jul 17, 2025

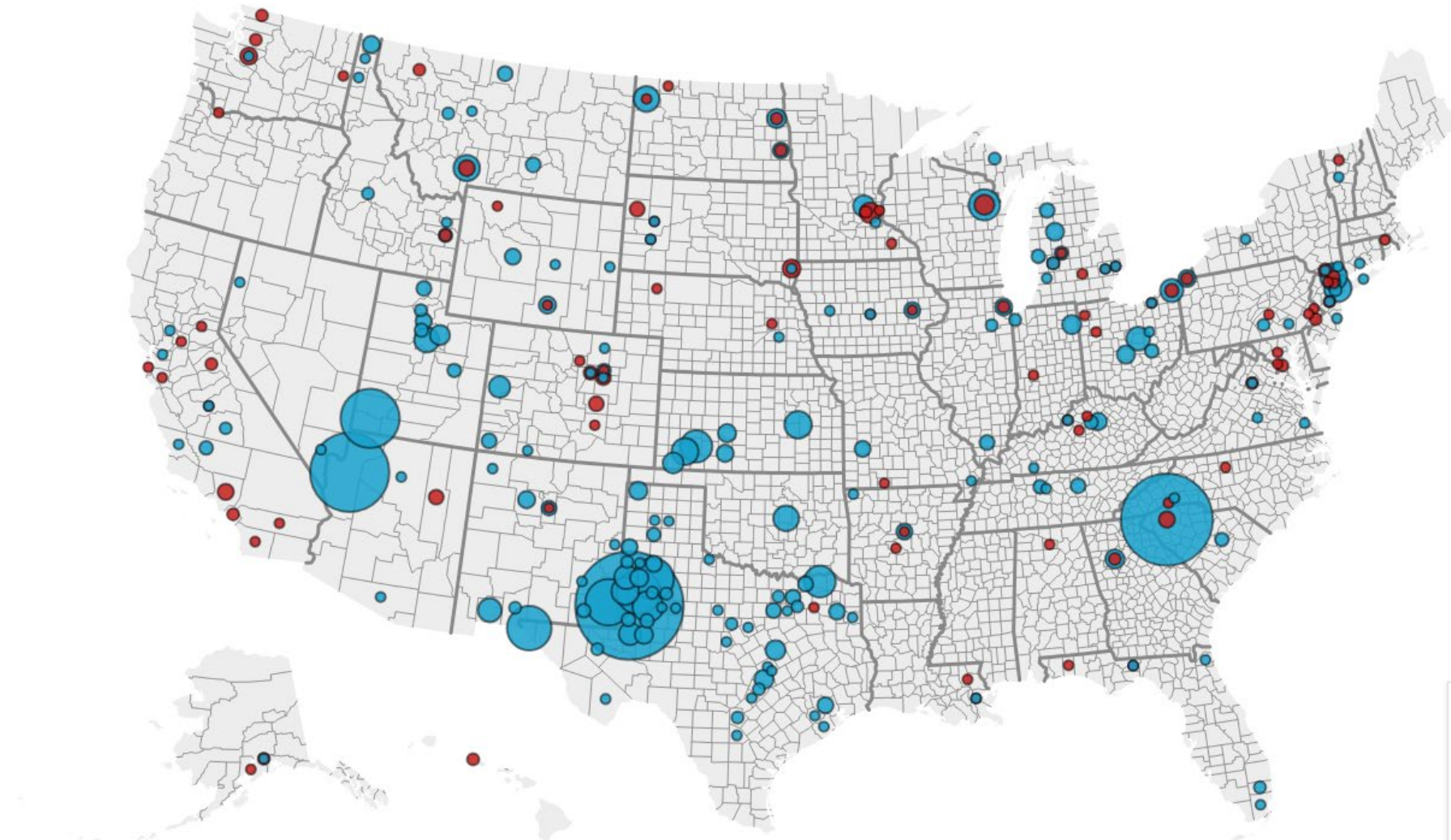
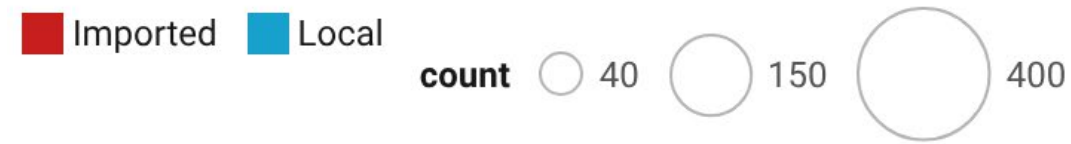
1311

# Weekly measles cases by rash onset date

2022–2026\* (as of August 20, 2026)



# Measles cases reported in the United States (2025)



U.S. MEASLES CASES

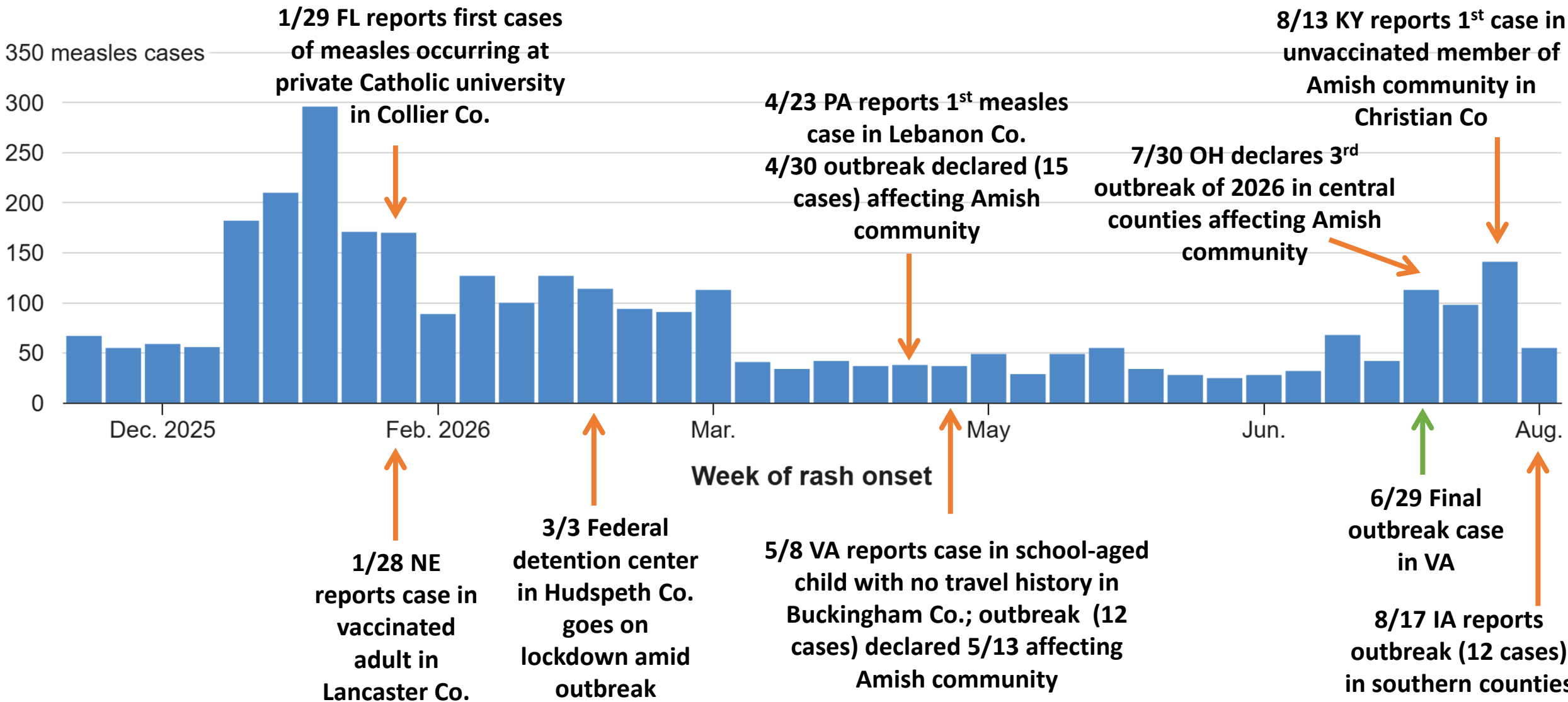
2025

2,286

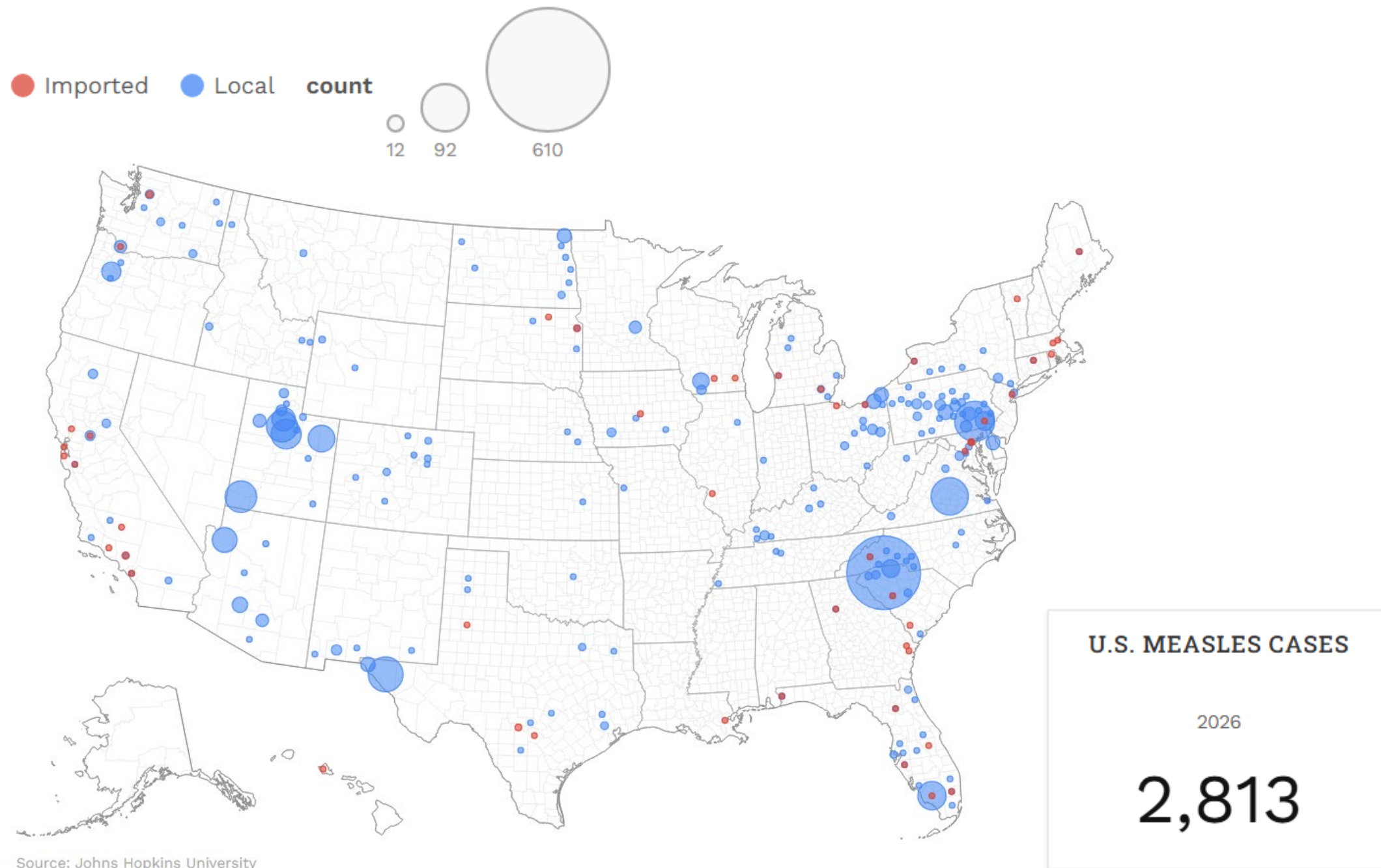
Source: Johns Hopkins University

# Weekly measles cases by rash onset date

2022–2026\* (as of August 20, 2026)



# Measles cases reported in the United States (2026)



# U.S. Measles Update (*as of 8/20/26*)

## U.S. Cases

|                           | 2026<br>To date           | 2025<br>Full year |
|---------------------------|---------------------------|-------------------|
| <b>Total Cases</b>        | <b>1136</b>               | <b>2281</b>       |
| <b>Age</b>                | <b>+211 past 1 week Δ</b> |                   |
| Under 5 years             | 278 (24%)                 | 584 (26%)         |
| 5-19 years                | 653 (57%)                 | 1012 (44%)        |
| 20+ years                 | 198 (17%)                 | 672 (29%)         |
| Age unknown               | 7 (1%)                    | 13 (1%)           |
| <b>Vaccination Status</b> |                           |                   |
| Unvaccinated or Unknown   | 92%                       | 93%               |
| One MMR dose              | 4%                        | 3%                |
| Two MMR doses             | 4%                        | 4%                |

- 2025
  - 48 outbreaks (3+ linked cases)
    - 90% (2,066) of cases outbreak-associated
  - 45 jurisdictions affected
  - 26 cases in international travelers to U.S.
  - Record # of annual measles cases since 1992 (2,126)
- 2026
  - 36 new outbreaks
    - 94% of cases (2,614) outbreak-associated
  - 47 jurisdictions affected
  - 16 cases in international travelers to U.S.
  - **Broke the new 2025 record in July**

# U.S. Measles Update (*as of 8/20/26*)

## U.S. Hospitalizations

|                                          | 2026                              | 2025                               |
|------------------------------------------|-----------------------------------|------------------------------------|
| <b>Total Hospitalized</b>                | <b>7%</b><br>(193 of 2,777 cases) | <b>11%</b><br>(243 of 2,289 cases) |
| <b>Percent of Age Group Hospitalized</b> |                                   |                                    |
| Under 5 years                            | 10% (53 of 522)                   | 18% (106 of 584)                   |
| 5-19 years                               | 4% (50 of 1,314)                  | 6% (58 of 1,018)                   |
| 20+ years                                | 10% (90 of 931)                   | 12% (79 of 674)                    |
| Age unknown                              | 0% (0 of 10)                      | 0% (0 of 13)                       |

• People at high risk for measles complications include:

- Infants/children <5 yr
- Adults >20 yr
- Pregnant women
- People with weakened immune systems
  - Leukemia
  - Uncontrolled HIV infection
  - Cancer treatment

## U.S. Deaths

|                     | 2026     | 2025     |
|---------------------|----------|----------|
| <b>Total Deaths</b> | <b>0</b> | <b>3</b> |

2 previously healthy, unvaccinated children (TX)  
1 unvaccinated adult (NM)

Time Period: August 09, 2026 - August 15, 2026

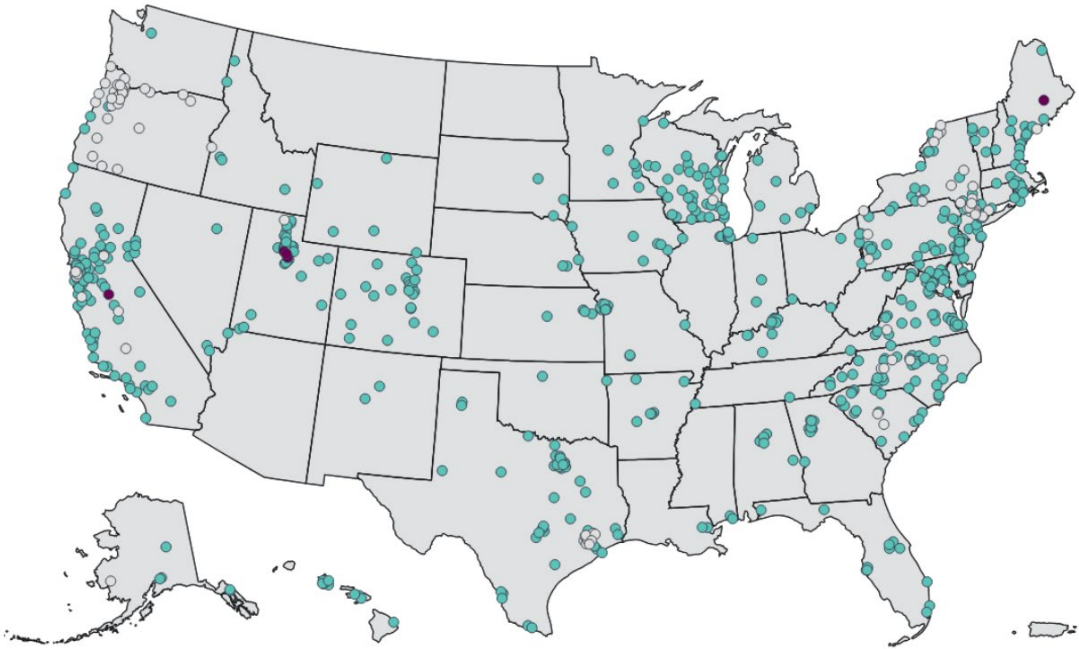
For the week ending August 15, 2026, 566 site(s) reported results for measles in wastewater, and 5 (0.9%) site(s) from 3 state(s) reported measles detections.

Measles Detection  
5 site(s) (0.9%)

No Detection  
561 site(s) (99.1%)

No Data  
90 site(s)

| State/Territory ▾ | Counties Served ▾ | Population Served ▾ | Source ▾                        | 08/15/2026 ▾ | 08/08/2026 ▾ |
|-------------------|-------------------|---------------------|---------------------------------|--------------|--------------|
| California        | Merced            | 91,000              | WastewaterSCAN                  | +            | -            |
| Maine             | Penobscot         | 40,000              | WastewaterSCAN                  | +            | -            |
| Utah              | Utah, Salt Lake   | 94,484              | State_Territory                 | +            | +            |
| Utah              | Utah              | 102,624             | State_Territory, WastewaterSCAN | +            | -            |
| Utah              | Utah              | 253,112             | State_Territory                 | +            | +            |



# Top 10 countries with measles outbreaks

| Country    | Number of Cases |
|------------|-----------------|
| Bangladesh | 57,561          |
| India      | 26,332          |
| Yemen      | 14,961          |
| Mexico     | 12,252          |
| Pakistan   | 11,212          |
| Cameroon   | 9,394           |
| Guatemala  | 7,067           |
| Kazakhstan | 6,968           |
| Angola     | 6,737           |
| Madagascar | 5,664           |

Source: World Health Organization

This table is based on provisional monthly surveillance data reported to the World Health Organization (Geneva) as of August 2026. The data reflected covers January 2026 - June 2026.

# Costs of these Outbreaks

# Quantifying the cost of measles outbreak in the U.S. and how costs scale with outbreak size

Salin Sriudomporn<sup>a,b,\*</sup>, Bryan Patenaude<sup>a,b</sup>

- Identified studies detailing measles responses across the U.S. published during Jan 1, 2000–Oct 7, 2025
  - 2017 Minneapolis, MN \$1.7 million to contain outbreak with 21 confirmed cases
  - 2018–2019 NYC/NY \$10.6 million to contain outbreak with 649 confirmed cases
  - 2019 Clarke Co, WA \$4.3 million to contain outbreak with 71 confirmed cases
  - 2024 West TX, \$10 million to contain outbreak with 802 confirmed cases
- Outbreaks ranged from 1 to 802 cases → avg. cost/case \$43,203.65 (range: \$33,415.75 to \$58,591.50)
- **However, fixed cost of initiating a public health response estimated at \$297,746.94 w/ incremental increase of \$16,299.64 per additional case**

# Lessons Learned

# Providers must know which samples to test for patients with acute illness

## Measles Tests

## When to Collect?

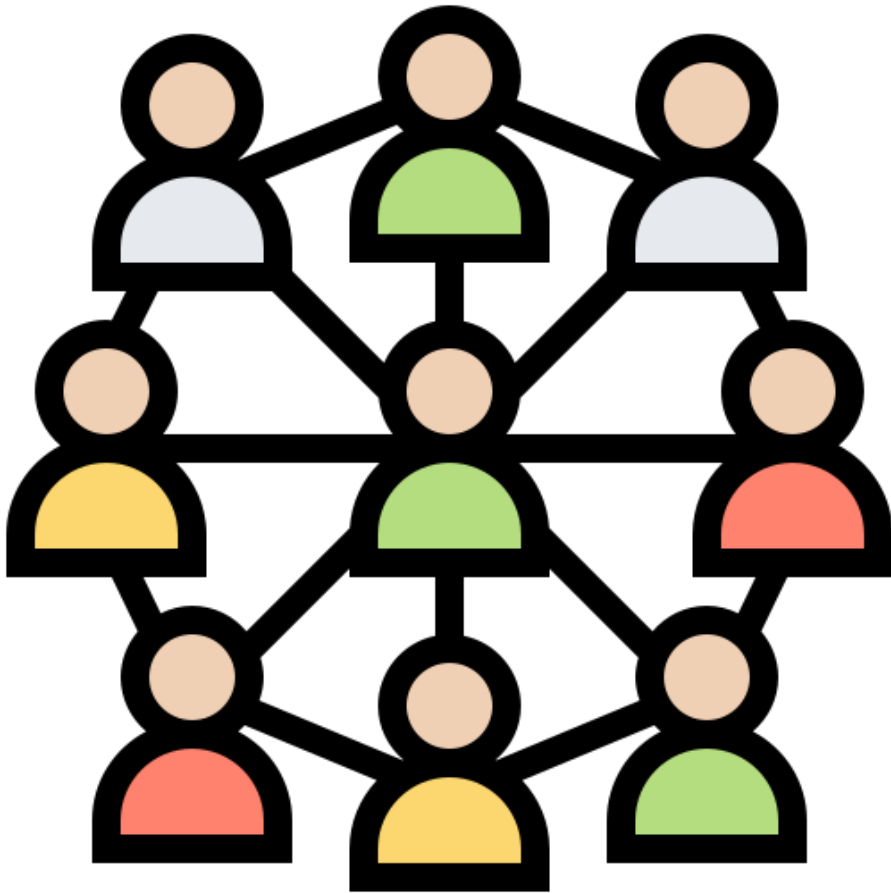
|               |     |                                         |                                                                                       |                                                                                                                                                                                   |
|---------------|-----|-----------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute Disease | PCR | Nasopharyngeal (NP) or Throat (OP) Swab |    | As soon as possible upon suspicion of measles: ideally <b>3</b> days after rash onset and within <b>4-10 days</b> .                                                               |
|               | PCR | Urine                                   |    | <b>Within 10 days of rash onset.</b><br>*Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window. |
|               | IgM | Serum                                   |  | <b>OPTIONAL:</b> Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM <b>can be detected for 6-8 weeks after acute measles.</b>                      |
| Immunity      | IgG | Serum                                   |  | IgG testing is used when assessing evidence of immunity, can be detected <b>~2 weeks</b> after MMR vaccination.                                                                   |

## Measles Outbreak Associated with an Infectious Traveler — Colorado, May–June 2025

Amanda R. Metz, MPH<sup>1</sup>; Meghan Barnes, MSPH<sup>1</sup>; Kevin Andresen, MPH<sup>1</sup>; Ginger Stringer, PhD<sup>1</sup>; Nicole Comstock, MSPH<sup>1</sup>; Alexis Burakoff, MD<sup>1</sup>; Shannon R. Matzinger, PhD<sup>1</sup>; Leslee Warren, MS<sup>2</sup>; Marigny Klaber, MSc<sup>3</sup>; Melissa Orozco, MPH<sup>4</sup>; Si Ning Chan, MPH<sup>5</sup>; Jennifer J. Fowler, DVM<sup>6</sup>; Shannon L. Gearhart, MD<sup>6</sup>; Molly B. Nicholson<sup>6</sup>; Rachel Herlihy, MD<sup>1</sup>

- May 13–14, 2025 an unvaccinated adult who acquired measles in the U.S. return from an international trip while symptomatic
  - 15 secondary and 2 tertiary cases in 6 states
  - 4/9 secondary CO cases were fully vaccinated → **fewer/milder symptoms**
  - 2 vaccinated cases had negative NP swab but positive urine via RT-PCR
    - **Urine should routinely be collected** on suspect measles cases, particularly in vaccinated persons

Working with undervaccinated close-knit communities requires special care, and community health workers can make a difference



# New technologies can help us better understand measles transmission

## *Notes from the Field:* Wastewater Surveillance for Measles Virus During a Measles Outbreak — Colorado, August 2025

Weekly / January 15, 2026 / 75(2);20–22

[Print](#)

Grace M. Jensen, MPH<sup>1</sup>; Cyrus Gidfar, MPH<sup>1</sup>; Kirsten Weisbeck, MPH<sup>1</sup>; Meghan Barnes, MSPH<sup>1</sup>; Erin Minnerath, MSPH<sup>2</sup>; Shannon Matzinger, PhD<sup>1</sup>; Allison Wheeler, MSPH<sup>1</sup> ([VIEW AUTHOR AFFILIATIONS](#))

## *Notes from the Field:* Retrospective Analysis of Wild-Type Measles Virus in Wastewater During a Measles Outbreak — Oregon, March 24–September 22, 2024

Weekly / January 15, 2026 / 75(2);16–19

## Genotype-Specific Detection of Measles Virus Using Wastewater Surveillance — Wisconsin, February 2026

Weekly / July 16, 2026 / 75(27);344–348

[Print](#)

Ian Pray, PhD<sup>1,2</sup>; Adélaïde Roguet, PhD<sup>3</sup>; H. Auguste Dutcher, PhD<sup>3</sup>; Stephanie Schauer, PhD<sup>2</sup>; Matthew Deraedt, PharmD<sup>2,4</sup>; Megan Rasmussen, MPH<sup>2</sup>; Ryan Westergaard, MD, PhD<sup>1</sup>; Dagmara Antkiewicz, PhD<sup>3</sup>; Erica Henning<sup>3</sup>; Devin Everett<sup>3</sup>; Martin Shafer, PhD<sup>3</sup> ([VIEW AUTHOR AFFILIATIONS](#))

 [Follow this preprint](#)

## Real-Time Genomic Epidemiology Approaches to a Measles Outbreak Response in Utah

Mary Jewell, Abbey Marye, Clarissa Neilsen, Leisha D Nolen, Amelia Salmanson, Kelly Oakeson

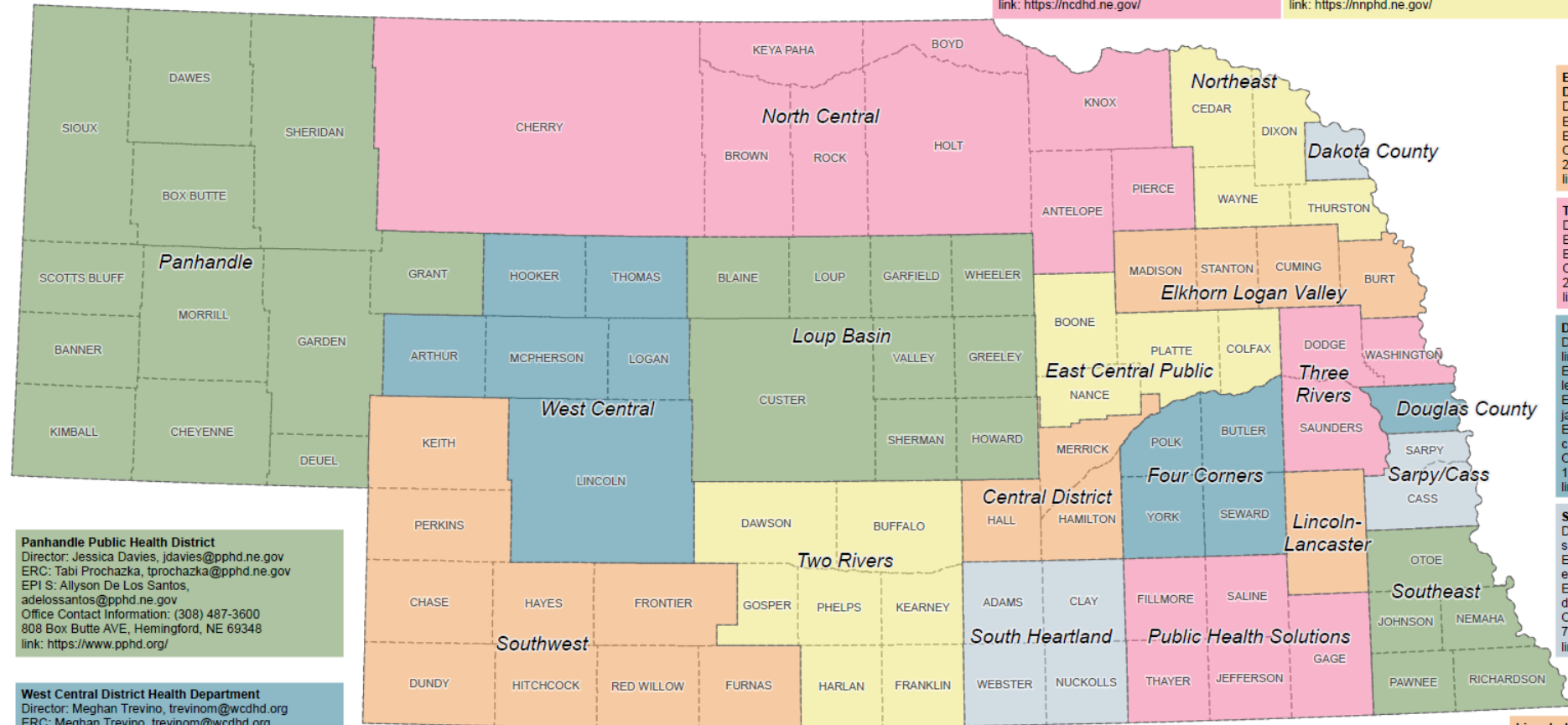
doi: <https://doi.org/10.64898/2026.08.25.26361356>

# Some remaining questions

- Will decreasing exposure window in shared airspace from 2 hours to 1 hour pose a considerable risk vs reduced contact tracing benefit?
  - CA has been using 1 hour window in healthcare exposure settings since 2013 with no documented cases occurring from longer exposure
  - More data needed
- What is the trajectory of measles shedding across the infectious period and how does this impact transmission risk?
  - How is this altered in people who have received 1 or 2 MMR doses?
- What is the risk of breakthrough infection for vaccinated people in close contact with measles cases?
  - Should we have different recommendations for vaccinated close contacts?

# Measles Resources

# Local Health Department Contacts



**Panhandle Public Health District**  
 Director: Jessica Davies, [jdavies@pphd.ne.gov](mailto:jdavies@pphd.ne.gov)  
 ERC: Tabi Prochazka, [tprochazka@pphd.ne.gov](mailto:tprochazka@pphd.ne.gov)  
 EPI S: Allyson De Los Santos, [adelossantos@pphd.ne.gov](mailto:adelossantos@pphd.ne.gov)  
 Office Contact Information: (308) 487-3600  
 808 Box Butte AVE, Hemingford, NE 69348  
 link: <https://www.pphd.org/>

**West Central District Health Department**  
 Director: Meghan Trevino, [trevino@wcdhd.org](mailto:trevino@wcdhd.org)  
 ERC: Meghan Trevino, [trevino@wcdhd.org](mailto:trevino@wcdhd.org)  
 EPI S: Samantha Eckman, [eckmans@wcdhd.org](mailto:eckmans@wcdhd.org)  
 Office Contact Information: (308) 696-1201  
 820 South Maple ST, North Platte, NE 69101  
 link: <https://wcdhd.org/>

**Southwest Nebraska Public Health Department**  
 Director: Myra Stoney, [director@swhealth.ne.gov](mailto:director@swhealth.ne.gov)  
 ERC: Kay Schmidt, [kay@swhealth.ne.gov](mailto:kay@swhealth.ne.gov)  
 EPI S: Melissa Propp, [nurse@swhealth.ne.gov](mailto:nurse@swhealth.ne.gov)  
 Office Contact Information: (308) 345-4223  
 404 W 10th ST, McCook, NE 69001  
 link: <https://www.swhealth.ne.gov/>

**Loup Basin Public Health Department**  
 Director: Amanda Jeffries, [ajeffries@lbphd.ne.gov](mailto:ajeffries@lbphd.ne.gov)  
 ERC: Darren Balderson, [dbalderson@lbphd.ne.gov](mailto:dbalderson@lbphd.ne.gov)  
 EPI S: Sarah Railford, [srailford@lbphd.ne.gov](mailto:srailford@lbphd.ne.gov)  
 Office Contact Information: (308) 346-5795  
 327 N 8th, Burwell, NE 68823  
 link: <https://www.lbphd.ne.gov/>

**Two Rivers Public Health Department**  
 Director: Jeremy Eschliman, [jeschliman@trphd.ne.gov](mailto:jeschliman@trphd.ne.gov)  
 ERC: Ashley Green, [agreen@trphd.ne.gov](mailto:agreen@trphd.ne.gov)  
 EPI S: Jackie Haley, [jhaley@trphd.ne.gov](mailto:jhaley@trphd.ne.gov)  
 Office Contact Information: (888) 669-7154  
 516 West 11th ST, Suite 108B, Kearney, NE 68845  
 link: <https://www.trphd.ne.gov/>

**Central District Health Department**  
 Director: Teresa Anderson, [tanderson@cdhd.ne.gov](mailto:tanderson@cdhd.ne.gov)  
 ERC: Esthefany Lopez Cruz, [elopez@cdhd.ne.gov](mailto:elopez@cdhd.ne.gov)  
 EPI S: Jonna Mangeot, [jmangeot@cdhd.ne.gov](mailto:jmangeot@cdhd.ne.gov)  
 Office Contact Information: (308) 385-5175  
 1137 S Locust ST, Grand Island, NE 68801  
 link: <https://cdhd.ne.gov/>

**South Heartland District Health Department**  
 Director: Michele Bever, [michele.bever@shdhd.ne.gov](mailto:michele.bever@shdhd.ne.gov)  
 ERC: Erik Meyer, [erik.meyer@shdhd.ne.gov](mailto:erik.meyer@shdhd.ne.gov)  
 EPI S: Devi Dwarabandam, [devi.dwarabandam@shdhd.ne.gov](mailto:devi.dwarabandam@shdhd.ne.gov)  
 Office Contact Information: (402) 462-6211  
 606 North Minnesota, Suite 2, Hastings, NE 68901  
 link: <https://southheartlandhealth.ne.gov/>

**East Central District Health Department**  
 Director: Molly Pofahl, [mpofahl@ecdhd.ne.gov](mailto:mpofahl@ecdhd.ne.gov)  
 ERC: Samantha Higgins, [shiggins@ecdhd.ne.gov](mailto:shiggins@ecdhd.ne.gov)  
 EPI S: Dana Spindola, [dspindola@ecdhd.ne.gov](mailto:dspindola@ecdhd.ne.gov)  
 Office Contact Information: (402) 562-7500  
 4321 41st AVE, Columbus, NE 68601  
 link: <https://ecdhd.ne.gov/>

**Four Corners Health Department**  
 Director: Laura McDougall, [lauram@fourcorners.ne.gov](mailto:lauram@fourcorners.ne.gov)  
 ERC: Hannah Miller, [hannahm@fourcorners.ne.gov](mailto:hannahm@fourcorners.ne.gov)  
 EPI S: Suzanne Phinney, [suzannep@fourcorners.ne.gov](mailto:suzannep@fourcorners.ne.gov)  
 Office Contact Information: (402) 362-2621  
 2101 N Lincoln AVE, York, NE 68467  
 link: <https://www.fourcorners.ne.gov/>

**Public Health Solutions**  
 Director: Kim Showalter, [kshowalter@phsneb.org](mailto:kshowalter@phsneb.org)  
 ERC: Kate Lange, [klange@phsneb.org](mailto:klange@phsneb.org)  
 EPI S: Kate Lange, [klange@phsneb.org](mailto:klange@phsneb.org)  
 Office Contact Information: (402) 826-3880  
 830 E 1st ST, Suite 300, Crete, NE 68333  
 link: <https://www.phsneb.org/>

**Southeast District Health Department**  
 Director: Grant Brueggemann, [grant@sedhd.org](mailto:grant@sedhd.org)  
 ERC: Hannah Kirkendall, [hannah@sedhd.org](mailto:hannah@sedhd.org)  
 EPI S: Christine Eltiste, [celtiste@sedhd.org](mailto:celtiste@sedhd.org)  
 Office Contact Information: (402) 274-3993  
 2511 Schneider AVE, Auburn, NE 68305  
 link: <https://www.sedhd.org/>

**North Central District Health Department**  
 Director: Heidi Kuklis, [heidik@ncdhd.ne.gov](mailto:heidik@ncdhd.ne.gov)  
 ERC: Danielle Roessler, [danielle@ncdhd.ne.gov](mailto:danielle@ncdhd.ne.gov)  
 EPI S: Elizabeth Parks, [elizabeth@ncdhd.ne.gov](mailto:elizabeth@ncdhd.ne.gov)  
 Office Contact Information: (402) 336-2406  
 422 East Douglas ST, O'Neill, NE 68763  
 link: <https://ncdhd.ne.gov/>

**Northeast Nebraska Public Health Department**  
 Director: Colleen Hupke, [colleen@nnphd.ne.gov](mailto:colleen@nnphd.ne.gov)  
 ERC: JJ Jackson, [jj@nnphd.ne.gov](mailto:jj@nnphd.ne.gov)  
 EPI S: Brittney Uhig, [brittney@nnphd.ne.gov](mailto:brittney@nnphd.ne.gov)  
 Office Contact Information: (402) 375-2200  
 801 Milo Dr, Wayne, NE 68787  
 link: <https://nnphd.ne.gov/>

**Dakota County Health Department**  
 Director: Theresa Grove, [tgrove@dakotacounty.ne.gov](mailto:tgrove@dakotacounty.ne.gov)  
 ERC: Chloe Coover, [cchoover@dakotacounty.ne.gov](mailto:cchoover@dakotacounty.ne.gov)  
 EPI S: Courtney Swick, [cswick@dakotacounty.ne.gov](mailto:cswick@dakotacounty.ne.gov)  
 Office Contact Info: (402) 987-2164  
 1601 Broadway ST, Dakota City, NE 68731  
 link: <https://www.dakotacountyhealth.org/>

**Elkhorn Logan Valley Public Health Department**  
 Director: Gina Uhing, [gina@elvphd.ne.gov](mailto:gina@elvphd.ne.gov)  
 ERC: Paige Kirby, [paige@elvphd.ne.gov](mailto:paige@elvphd.ne.gov)  
 EPI S: Nikki Mullinax, [nikki@elvphd.ne.gov](mailto:nikki@elvphd.ne.gov)  
 Office Contact Information: (402) 529-2233  
 2104 21st CIR, Wisner, NE 68791  
 link: <https://elvphd.ne.gov/>

**Three Rivers Public Health Department**  
 Director: Terra Uhing, [terra@3rphd.ne.gov](mailto:terra@3rphd.ne.gov)  
 ERC: Val Goodman, [val@3rphd.ne.gov](mailto:val@3rphd.ne.gov)  
 EPI S: Katie Schultis, [katie@3rphd.ne.gov](mailto:katie@3rphd.ne.gov)  
 Office Contact Information: (402) 727-5396  
 2400 N Lincoln ST, Fremont, NE 68025  
 link: <https://www.threeriverspublichealth.org/>

**Douglas County Health Department**  
 Director: Lindsay Huse, [lindsayhuse@douglascounty-ne.gov](mailto:lindsayhuse@douglascounty-ne.gov)  
 ERC: Lexie Jenkins, [lexie.jenkins@douglascounty-ne.gov](mailto:lexie.jenkins@douglascounty-ne.gov)  
 ERC/ERI: Jack Gordon, [jack.gordon@douglascounty-ne.gov](mailto:jack.gordon@douglascounty-ne.gov)  
 EPI S: Chad Wetzel, [chad.wetzel@douglascounty-ne.gov](mailto:chad.wetzel@douglascounty-ne.gov)  
 Office Contact Information: (402) 444-7471  
 1111 South 41st ST, Omaha, NE 68105  
 link: <https://www.douglascountyhealth.com/>

**Sarpy/Cass Public Health Department**  
 Director: Sarah Schram, [sschram@schd.ne.gov](mailto:sschram@schd.ne.gov)  
 ERC/ERI: Emily MacNabb, [emacnabb@schd.ne.gov](mailto:emacnabb@schd.ne.gov)  
 EPI S: Derek Bumgardner, [dbumgardner@schd.ne.gov](mailto:dbumgardner@schd.ne.gov)  
 Office Contact Information: (402) 339-4334  
 701 Olson DR, Suite 101, Papillion, NE 68046  
 link: <https://www.schd.ne.gov/>

**Lincoln-Lancaster County Health Department**  
 Director: Kerry Kernen, [kkernen@lincoln.ne.gov](mailto:kkernen@lincoln.ne.gov)  
 ERC: Gina Egenberger, [egenberger@lincoln.ne.gov](mailto:egenberger@lincoln.ne.gov)  
 EPI S: Angie Elliott, [aelliott@lincoln.ne.gov](mailto:aelliott@lincoln.ne.gov)  
 Office Contact Information: (402) 441-8000  
 3131 O ST, Lincoln, NE 68510  
 link: <https://www.lincoln.ne.gov/City/Departments/Health-Department>

**NEBRASKA**

Good Life. Great Mission.

DEPT. OF HEALTH AND HUMAN SERVICES



Last update: February 6, 2026.  
 For the most current information and links  
 visit: <https://arcg.is/0a4jXi> or scan the QR code.  
 Email [DHHS.GIS@nebraska.gov](mailto:DHHS.GIS@nebraska.gov) with updates.

# PREPAREDNESS CHECKLIST FOR PUBLIC HEALTH

## Measles Clusters and Outbreaks

---

### Purpose

---

**The purpose of this document is to provide a checklist of key activities that state, tribal, local, and territorial jurisdictions should consider to be prepared for a potential measles cluster or outbreak<sup>1</sup>.** If all these activities are not feasible to complete prior to the identification of a measles case or outbreak detection for preparedness purposes, they will still be valuable to consider after a measles case or outbreak is identified.

Information covered:

- Prepare your health department for measles, *in the short-term*
- Prepare your health department for measles, *in the long-term*
- Considerations for Special Settings
  - Healthcare systems preparedness
  - School, daycare, and summer camp/program preparedness

# MEASLES

## IDENTIFICATION, TESTING, AND MANAGEMENT OF SUSPECTED CASES

*Triage febrile rash illnesses by phone, or immediately upon arrival, assess the need for control measures*

### PATIENT MUST MEET BOTH CRITERIA

- Prodrome: fever (100.4°F or higher) / cough / runny nose (coryza) / red, watery eyes (conjunctivitis)
  - Followed in 2-4 days by: generalized descending maculopapular rash beginning at hairline / face lasting for usually 5-6 days  
Koplik spots inside cheeks (may / may not be present prior to rash)
- AND**
- Risk factors for measles (history of international travel, contact with travelers, links to known outbreak or case, or local transmission), or no/unknown immunity status

### No to any of the criteria

Consider other viral/bacterial differential diagnoses and manage as clinically indicated.

### YES to BOTH Criteria

#### MINIMIZE RISK OF TRANSMISSION AS SOON AS POSSIBLE

- Measles is highly airborne infectious: Identify febrile rash illnesses prior to, or immediately upon arrival to expedite evaluation in a negative pressure room, when possible, or a private room to minimize congregate exposures
  - Conduct exam in room that can be left vacant with the door closed for at least 2 hours after patient departure
- Avoid waiting room (use side / back entrance)
- Staff evaluating patient should have presumptive evidence of measles immunity and should wear N-95 masks
- Contact infection control preventionist, if available
- Request patient wear surgical mask

**IMMEDIATELY CALL (24/7) upon suspicion for public health reporting and follow-up guidance**  
Your Local Health Department

## Testing

**PREFERRED SPECIMENS** to be collected as soon as possible

- *Within 3 days of Rash Onset*- Nasopharyngeal (NP) or throat swab in universal viral transport media and Urine in a sterile cup, (if able to self void), for RT-PCR
- *Within 4-10 days of Rash Onset*- Urine in sterile cup (*catheterize, if necessary*) for RT-PCR; ideally with a Nasopharyngeal (NP) or throat swab in universal viral transport media for RT-PCR

**[OPTIONAL] SERUM SPECIMENS** consider collecting if > 72 hours AFTER rash onset

- Measles specific IgM (*Caution: clinical interpretation of IgM*)

**\*Measles IgG testing should only be considered when testing for PRIOR measles immunity (natural or vaccination) and should NOT be used for active infection**

Measles RT-PCR available at certain commercial labs or through NE Public Health Laboratory after prior authorization by NE-DHHS Public Health

### Suspect Case Management:

- Isolate patient immediately
- Exclude from childcare/school/workforce for at least 4 days after rash onset
- Reassess isolation based on diagnosis and provide supportive treatment



## If POSITIVE: Measles PCR test OR High Suspicion for ACTIVE INFECTION (after Public Health consultation)

- Notify receiving facilities of diagnosis
- Identify patients/visitors/staff that shared congregate space exposure and review measles immunity status
- Exclude all health care staff without immunity evidence from day 5 through day 21 following exposure
- Recommend vaccine within 3 days, or immunoglobulin within 6 days of exposure as indicated
- Clean surfaces that may be contaminated with an EPA-registered disinfectant for health care settings

# Measles Tests

# When to Collect?

|               |     |                                         |                                                                                       |                                                                                                                                                                                   |
|---------------|-----|-----------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acute Disease | PCR | Nasopharyngeal (NP) or Throat (OP) Swab |    | As soon as possible upon suspicion of measles: ideally <b>3</b> days after rash onset and within <b>4-10 days</b> .                                                               |
|               | PCR | Urine                                   |    | <b>Within 10 days of rash onset.</b><br>*Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window. |
|               | IgM | Serum                                   |    | <b>OPTIONAL:</b> Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM <b>can be detected for 6-8 weeks after acute measles.</b>                      |
| Immunity      | IgG | Serum                                   |  | IgG testing is used when assessing evidence of immunity, can be detected <b>~2 weeks</b> after MMR vaccination.                                                                   |

# Airborne Contaminant Removal

Table B.1. Air changes/hour (ACH) and time required for airborne-contaminant removal by efficiency \*

| ACH § ¶ | Time (mins.) required for removal<br>99% efficiency | Time (mins.) required for removal<br>99.9% efficiency |
|---------|-----------------------------------------------------|-------------------------------------------------------|
| 2       | 138                                                 | 207                                                   |
| 4       | 69                                                  | 104                                                   |
| 6+      | 46                                                  | 69                                                    |
| 8       | 35                                                  | 52                                                    |
| 10+     | 28                                                  | 41                                                    |
| 12+     | 23                                                  | 35                                                    |
| 15+     | 18                                                  | 28                                                    |
| 20      | 14                                                  | 21                                                    |
| 50      | 6                                                   | 8                                                     |

If you know the ACH for the space in which a suspected measles case was present within the facility you can refer to this table for the required closure time of that space.

**If you do not know the ACH defer to 2 hours after the patient leaves a space for closure time.**

The number of air changes per hour and time and efficiency.

# Additional CDC Resources for Providers

- [Caring for Patients with Measles Fact Sheet](#)
- [Measles Clinical Diagnosis Fact Sheet](#)
- [Clinical Provider Flowsheet: A tool to guide providers in evaluating a patient presenting with rash and fever](#)
- [Clinical Overview of Measles: Diagnosis, Lab Testing & Outbreak Response \(recorded webinar, see video description for CE\)](#)
- [Recommendations for Testing Measles, Mumps, Rubella, and Varicella](#)

## Measles Resources for Clinics

Healthcare clinic leadership and staff should prepare for patients presenting with suspected or confirmed measles (rubeola). Clinics include but are not limited to adult and pediatric primary care or specialty clinics, college health clinics, immediate care clinics, or mobile clinics. Nebraska ICAP has developed this comprehensive resource to aid with rapid **Identification, Isolation, and Informing** processes.

| Guidance Documents                                                                      | Page                      |
|-----------------------------------------------------------------------------------------|---------------------------|
| How Clinics can Prepare for Measles                                                     | <a href="#"><u>2</u></a>  |
| Clinic Scenario #1: Scheduled Suspected Measles Patient                                 | <a href="#"><u>3</u></a>  |
| Clinic Scenario #2: Unannounced Suspected Measles Patient                               | <a href="#"><u>4</u></a>  |
| Patient Screening Form: Suspected Measles                                               | <a href="#"><u>7</u></a>  |
| CDC Resource - Transmission-Based Precautions Signage                                   | <a href="#"><u>9</u></a>  |
| Signage for Exam Room Closure                                                           | <a href="#"><u>11</u></a> |
| General Recommendations for Testing                                                     | <a href="#"><u>12</u></a> |
| CDC Resource: Air Exchanges Per Hour                                                    | <a href="#"><u>12</u></a> |
| Cleaning and Disinfection and Handling Laundry/Waste                                    | <a href="#"><u>12</u></a> |
| Measure Exposure Log Sheet (Contact Tracing)                                            | <a href="#"><u>14</u></a> |
| Definition of Exposure to Measles for Healthcare Personnel (HCP) in Healthcare Settings | <a href="#"><u>15</u></a> |

# Measles Preparedness and Response in Healthcare Settings



Public Health

AUG. 18, 2025

## KEY POINTS

- Healthcare facilities and health departments can use these resources to support measles infection prevention and control actions in healthcare settings.
- Primary assessment tool seen here, more resources (including versions that can be customized) available below.
- Additional resources will be added as available.

**Format:** PDF

### Measles Assessment Tool (MAT) for Infection Control in Healthcare Settings: Measles Preparedness and Response During Community Outbreaks

This Measles Assessment Tool (MAT) is intended to be a resource for use by health departments and/or healthcare facilities to aid in a focused review of measles prevention and response policies and procedures at a healthcare facility and guide infection prevention and control (IPC) observations during an outbreak of measles in the community. Findings from this assessment can help the healthcare facility determine if it is currently able to safely identify, isolate, and care for a patient with measles. It also facilitates addressing any identified gaps. Ideally, this assessment would be used by a health department or healthcare facility to proactively identify and address any gaps in IPC policies and practices before a measles exposure occurs, either through importation or community transmission.

A healthcare facility may implement different policies to minimize measles exposures based on the burden of measles transmission in the community or healthcare setting. If used as a preparedness tool, before measles is identified in the community, some questions may need to be rephrased to ask about the addition of measures (e.g., use of measles-specific signage) that would be taken in response to cases in the community. Further, as practices related to screening and rapid isolation broadly apply to anyone presenting with signs or symptoms of acute respiratory illness, concepts could be broadened to address pathogens beyond measles.

This MAT includes information for different types of facilities and units (and their related specific challenges). To

- [Measles Assessment Tool \(MAT\) for Infection Control in Healthcare Settings](#)
- [Steps for Responding to Measles Exposures in Healthcare Settings](#)
- [Sample Script to Assess Patients and Visitors in Healthcare Settings](#)
- [Sample Measles Exposure Notification Letter for Patients and Visitors](#)

## PREPARING AND RESPONDING TO MEASLES: Checklist for Healthcare Workers



### WHY SHOULD HEALTHCARE WORKERS PREPARE FOR MEASLES?

**Measles is caused by a highly contagious virus that spreads through the air when an infected person coughs or sneezes. If one person has measles, up to 9 in 10 people nearby will become infected if they are not protected.**

The risk for widespread measles in the U.S. remains low. However, measles cases occur in the U.S. every year when unvaccinated travelers get measles while they are in other countries. Outbreaks then occur when measles spreads in under-vaccinated communities. Anyone without immunity to measles is at risk.

A person with measles can present for care to any type of healthcare facility. Having a plan in place to respond when measles is suspected can protect healthcare workers, patients, and visitors. This checklist highlights several key action items for healthcare workers seeking to prepare for measles.

### PREPARE FOR MEASLES BEFORE SEEING PATIENTS

- Be familiar with CDC's recommendations on [measles vaccination and interim infection prevention and control recommendations for measles](#).
- Know how to contact your facility's infection preventionist (IP) and health department for assistance when measles is suspected in healthcare workers, patients, and/or visitors. Refer to CSTE's [Epi-on-Call list](#) for healthcare providers.
  - » Develop a response plan and discuss any questions you may have with your facility's IP or with your health department.
- Identify which of your patients do not have presumptive evidence of measles immunity and be prepared to talk with them about MMR vaccination if they are eligible.
- Check that you are immune to measles with two doses of MMR or other presumptive evidence of measles immunity.
  - » If you do not have presumptive evidence of measles immunity, talk with your occupational health program or similar entity about vaccination, if eligible.
  - » There is no harm in getting another dose of MMR vaccine if an individual may already be immune to measles (or mumps or rubella).
  - » CDC recommends that healthcare workers without presumptive evidence of measles immunity be excluded from work if they are exposed to measles.
- If you have not been **fit-tested** for a NIOSH-approved N95 or higher-level respirator within the last 12 months, confirm whether fit-testing is needed with your occupational health program.
  - » The respirator you need should be available in the areas where you work.
- Know how to identify measles.
  - » Stay alert for patients with fever and other early signs and symptoms of measles:
    - **First symptoms:** Fever with cough, runny nose, and/or red, watery eyes
    - **3–5 days after symptoms start:** **Rash** (flat, red spots that appear on the face at the hairline and spread downward to the neck, torso, arms, legs, and feet)
  - » Assume a patient has measles if they have measles symptoms and at least one of the following:
    - Spent time in an area in the U.S. with a known measles **outbreak**
    - Had recent contact with someone with measles
    - Traveled internationally in the last 21 days
    - Has not been vaccinated for measles or doesn't know their vaccination status

BE READY FOR MEASLES  
[cdc.gov/measles](https://cdc.gov/measles)



- Be familiar with your facility's triage process for identifying someone with a potentially contagious infectious disease such as measles.
  - » Screening patients for risk factors and symptoms of measles by phone, electronic screening, or outside of the facility (e.g. tent, patient's car) can identify patients who need additional isolation before entering the building and minimize exposures.
- Know where in your facility a patient with measles symptoms should be isolated and how they should be transported there.
  - » An airborne infection isolation room (AIIR) with functional negative pressure, stocked with all needed PPE, is the best option. If an AIIR is not available, a private room with a door that shuts and doesn't vent air into the facility can be used. Identify potential patient transportation routes to the room that minimize contact with people not essential to care.
- Know where masks are available for patients.
- Know how to test a patient for measles and how long it will take to get results.
- Know who to refer for post-exposure prophylaxis (PEP), in the event of a measles exposure.
  - » PEP needs to be given within 6 days to be effective.
  - » Your health department or facility IP can help guide you through PEP and follow-up.

### RESOURCES

Health Department Directories:  
[www.cdc.gov/public-health-gateway/php/communications-resources/health-department-directories.html](https://www.cdc.gov/public-health-gateway/php/communications-resources/health-department-directories.html)

CSTE Epi-on-Call Numbers for Healthcare Providers:  
[libraries.cste.org/after-hours-contact/](https://libraries.cste.org/after-hours-contact/)

CDC's MMR Vaccination Guidance for Healthcare Providers:  
[www.cdc.gov/vaccines/vpd/mmr/hcp/index.html](https://www.cdc.gov/vaccines/vpd/mmr/hcp/index.html)

Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings:  
[www.cdc.gov/infection-control/hcp/measles/index.html](https://www.cdc.gov/infection-control/hcp/measles/index.html)

Infection Control in Healthcare Personnel: Epidemiology and Control of Selected Infections Transmitted Among Healthcare Personnel and Patients (2024):  
[www.cdc.gov/infection-control/hcp/healthcare-personnel-epidemiology-control/measles.html](https://www.cdc.gov/infection-control/hcp/healthcare-personnel-epidemiology-control/measles.html)

## RESPONDING TO MEASLES IN CLINICAL SETTINGS



### IMMEDIATE ACTIONS — WHAT TO DO IN THE FIRST 10 MINUTES AFTER MEASLES IS SUSPECTED

**When a healthcare worker, patient, or visitor has measles symptoms, take these actions IMMEDIATELY:**

- ❑ Identify persons with known or suspected measles and isolate them in an AIIR (if available) or private room with the door shut to protect others from exposure.
- ❑ Limit spread by giving the person a **mask** (if 2 years or older and able to wear a mask) to wear until isolated in AIIR or until they have left the facility. To limit the spread of respiratory secretions, masks should be well-fitting and cover the person's mouth and nose.
- ❑ Protect yourself by wearing a fit-tested, N95 or higher-level respirator, even if you are vaccinated, when entering the isolation room. Rarely, a person with measles immunity can still get measles, so all healthcare workers should follow [Standard](#) and [Airborne Precautions](#) when caring for the patient.
- ❑ Inform your facility's IP or health department as soon as possible. They should have further guidance for isolation, testing, care, and transport, if needed, for the person with measles symptoms and for preventing measles among exposed individuals.
- ❑ Seek emergency care for any patient experiencing signs of severe disease. If transferring to another health facility, be sure to alert the facility in advance of your concern for measles so they can put in place appropriate precautions.

Standard and Airborne Precautions:  
[www.cdc.gov/infection-control/hcp/basics/standard-precautions.html](https://www.cdc.gov/infection-control/hcp/basics/standard-precautions.html)  
[www.cdc.gov/infection-control/hcp/basics/transmission-based-precautions.html](https://www.cdc.gov/infection-control/hcp/basics/transmission-based-precautions.html)

Clinical Overview of Measles:  
[www.cdc.gov/measles/hcp/clinical-overview/index.html](https://www.cdc.gov/measles/hcp/clinical-overview/index.html)

Laboratory Testing for Measles:  
[www.cdc.gov/measles/php/laboratories/index.html](https://www.cdc.gov/measles/php/laboratories/index.html)

ACIP Recommendations on Measles Prevention:  
[www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm#Tab3](https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm#Tab3)

Be Ready for Measles Toolkit:  
[www.cdc.gov/measles/php/toolkit/index.html](https://www.cdc.gov/measles/php/toolkit/index.html)

Adult MMR Vaccination Decision Tree:  
[www.cdc.gov/measles/downloads/adult-mmr-algorithm-508.pdf](https://www.cdc.gov/measles/downloads/adult-mmr-algorithm-508.pdf)

**Table 3.32. Postexposure Prophylaxis (PEP) for People Exposed to Measles Who Are NOT Pregnant or Immunocompromised**

| Age Range        | Measles Immune Status <sup>a</sup>       | PEP Type Depending on Time After Initial Exposure                                                                                                                                            |                                                                                                                                                                                                   |                                                                                                                       |
|------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
|                  |                                          | ≤3 days (≤72 hours)                                                                                                                                                                          | 4–6 days                                                                                                                                                                                          | >6 days                                                                                                               |
| All ages (≥6 mo) | Immune                                   | <ul style="list-style-type: none"><li>• PEP not indicated. Exposed person has documented immunity.</li></ul>                                                                                 |                                                                                                                                                                                                   |                                                                                                                       |
| <6 mo            | Nonimmune (because of age <sup>b</sup> ) | <ul style="list-style-type: none"><li>• Administer immune globulin intramuscular (IGIM)<sup>c</sup></li><li>• Home quarantine<sup>d</sup></li></ul>                                          |                                                                                                                                                                                                   | <ul style="list-style-type: none"><li>• PEP not indicated (too late).</li><li>• Home quarantine<sup>d</sup></li></ul> |
| 6–11 mo          | Nonimmune                                | <ul style="list-style-type: none"><li>• Administer MMR vaccine (MMR vaccine preferred over immune globulin [IG])</li><li>• No quarantine needed.<sup>e</sup></li></ul>                       | <ul style="list-style-type: none"><li>• Administer IGIM<sup>c</sup></li><li>• Home quarantine<sup>d</sup></li></ul>                                                                               | <ul style="list-style-type: none"><li>• PEP not indicated (too late).</li><li>• Home quarantine<sup>d</sup></li></ul> |
| ≥12 mo           | Nonimmune                                | <ul style="list-style-type: none"><li>• Administer MMR vaccine</li><li>• No quarantine needed<sup>e</sup></li></ul>                                                                          | <ul style="list-style-type: none"><li>• IG PEP usually not administered<sup>f</sup></li><li>• Home quarantine,<sup>d</sup> then administer MMR vaccine to protect from future exposures</li></ul> |                                                                                                                       |
| ≥12 mo           | 1 dose of MMR vaccine                    | <ul style="list-style-type: none"><li>• Administer 2<sup>nd</sup> MMR vaccine dose if ≥28 days from the first dose</li><li>• No quarantine needed (person had 1 dose when exposed)</li></ul> |                                                                                                                                                                                                   |                                                                                                                       |

**Table 3.33. Postexposure Prophylaxis (PEP) for People Exposed to Measles Who ARE Pregnant or Immunocompromised**

| Category                                | Measles Immune Status <sup>a</sup>                 | PEP Type Depending on Time After Initial Exposure                                                                                                |          |                                                                                                                     |
|-----------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------|
|                                         |                                                    | ≤3 days (≤72 hours)                                                                                                                              | 4–6 days | >6 days                                                                                                             |
| Severely immunocompromised <sup>b</sup> | IG recommended regardless of measles immune status | <ul style="list-style-type: none"> <li>Administer immune globulin intravenous (IGIV)<sup>c</sup></li> <li>Home quarantine<sup>d</sup></li> </ul> |          | <ul style="list-style-type: none"> <li>PEP not indicated (too late)</li> <li>Home quarantine<sup>d</sup></li> </ul> |
| Pregnant                                | Immune                                             | <ul style="list-style-type: none"> <li>PEP not indicated</li> </ul>                                                                              |          |                                                                                                                     |
|                                         | Nonimmune                                          | <ul style="list-style-type: none"> <li>Administer IGIV<sup>c</sup></li> <li>Home quarantine<sup>d</sup></li> </ul>                               |          | <ul style="list-style-type: none"> <li>PEP not indicated (too late)</li> <li>Home quarantine<sup>d</sup></li> </ul> |

[AAP Red Book: Measles Chapter](#)

# Immune Globulin IM Administration Guidance

## Preparation for use of Immune Globulin Intramuscular as Measles Post-Exposure Prophylaxis

Post-exposure prophylaxis (PEP) for measles, when provided within the target window, may provide measles protection, or modify the clinical course of disease among susceptible people. MMR vaccine or immunoglobulin can be given for PEP; additional information is available in the ACIP MMWR: <https://www.cdc.gov/mmwr/pdf/rr/rr6204.pdf>.

Immunoglobulin needs to be given within **6 days** of initial exposure and can be given intramuscularly (IGIM) or intravenously (IGIV).

GamaSTAN is the only available IGIM available in the U.S. GamaSTAN is supplied in 2mL and 10mL single dose vials. It is stored at 2-8°C (36-46°F) and has a shelf life of 3 years.

The CDC/ACIP IGIM recommended dose is **0.5mL/kg\***; maximum dose by volume: 15mL.

\*Note: CDC/ACIP recommended dosing different than the GamaSTAN package insert.

Package Insert available here: <https://www.fda.gov/media/86789/download?attachment>

**Planning** is critical to ensure rapid availability of IGIM after initial exposure.

# Measles Symptoms

**Measles symptoms start similar to a common cold**

First you may experience...



Cough



Fever



Red, watery eyes



Runny Nose

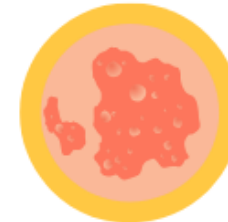
Two or three days later you may start to see...

Spots inside the mouth



Three to five days later you may start to see...

The measles rash, which typically begins at the hairline and spreads down the chest and back.



**Measles symptoms can take 7 to 21 days to appear after exposure.**

# Measles complications

- Acute
  - Ear infections +/-hearing loss
  - Diarrhea
  - Hospitalization (1 in 5)
  - Pneumonia (1 in 20)
  - Encephalitis (1 in 1,000)
  - Death (1-3 in 1,000)
- Rare, late onset (6-10 years)
  - Subacute sclerosing panencephalitis
    - Persistent CNS infection
    - Fatal within 1-3 years following onset
    - **↑ risk to children infected before age 2**

## SEVERE MEASLES SYMPTOMS

### SEEK EMERGENCY CARE IF YOU HAVE:

- Trouble breathing or rapid breathing
- Signs of severe dehydration (dry nose and mouth, urinating less)
- Confusion, low energy, or weakness

### For young children:

- Blue color around the mouth
- Crying without tears
- Low energy or appetite

*Unless it is a medical emergency, always call **BEFORE** arriving at a healthcare clinic so they can protect other patients from potential exposure*



# MEASLES OUTBREAK (2025)

FOR QUESTIONS, PLEASE REACH OUT TO US AT [R7DHRE@UNMC.EDU](mailto:R7DHRE@UNMC.EDU)

[CLICK HERE TO SHARE A RESOURCE](#)

[FEEDBACK/REPORT AN ISSUE](#)

---

**+ NATIONAL COMMUNICATION, DATA & GUIDANCE**

---

**+ STATE PUBLIC HEATH PAGES**

---

**+ COMMUNICATION RESOURCES**

---

---

**+ HEALTHCARE RESOURCES**

---

**+ SCHOOL RESOURCES**

---

**+ UPCOMING WEBINARS**

---



## *Be Ready for Measles* Toolkit



Public Health

AUG. 5, 2025

### AT A GLANCE

Public health professionals can use this *Be Ready for Measles* toolkit to communicate with different audiences when preparing for and responding to measles cases and outbreaks.

### Intended users

State and local health departments

### What's included

Fact sheets, social media graphics, and videos for the public, and outbreak-related response tools for clinicians and other public health professionals.

**PREPARING AND RESPONDING TO MEASLES:  
Checklist for Early Care and Education Centers**



**WHY SHOULD EARLY CARE AND EDUCATION CENTERS PREPARE FOR MEASLES?**

**PREPARING AND RESPONDING TO MEASLES:  
Checklist for K-12 Schools**



**WHY SHOULD K-12 SCHOOLS PREPARE FOR MEASLES?**

**PREPARING AND RESPONDING TO MEASLES:  
Checklist for Congregate Shelters**



**WHY SHOULD CONGREGATE SHELTERS PREPARE FOR MEASLES?**

**PREPARING AND RESPONDING TO MEASLES:  
Checklist for Correctional Facilities**



**WHY SHOULD CORRECTIONAL FACILITIES PREPARE FOR MEASLES?**

# Routine Measles Vaccine Recommendations

0 to 6 months and  
pregnant women



- Vaccine is NOT recommended

4 to 6 years



- Receive second dose at least 28 days after the first dose

6 to 11 months



- If you are traveling to an outbreak area or internationally, consult your doctor on an early dose

6 years to adult



12 to 15 months



- Receive first dose of MMR vaccine



Previous Vaccine Dose

- Receive first dose immediately
- Receive second dose at least 28 days later
- If born before 1957, you are considered immune

# Measles vaccine recommendations for non-pregnant adults\* aged $\geq 19$ years by birth year—United States

*This infographic for healthcare providers summarizes ACIP and CDC recommendations*

## ADULTS BORN BEFORE 1957

Is your patient considered healthcare personnel<sup>†</sup>?

NO

YES

Have documentation of **either** receiving 2 doses of live measles-containing vaccine (e.g. MMR) **or** laboratory evidence of immunity<sup>‡</sup> **or** laboratory confirmation of disease?

YES

NO

No doses of MMR vaccine are needed

If vaccination history\*\* not known, or has received no doses, **should consider receiving 2 doses** MMR vaccine  $\geq 28$  days apart. During outbreaks, should receive 2 doses MMR vaccine  $\geq 28$  days apart.

## ADULTS BORN IN 1957 OR LATER

Does your patient belong to one of these populations?

1. Healthcare personnel<sup>†</sup>;
2. International traveler;
3. Post-secondary education student;
4. Close contacts of immunocompromised people;
5. People with HIV without evidence of severe immunosuppression<sup>§</sup>

YES

NO

Have documentation of **either** receiving 2 doses of live measles-containing vaccine (e.g. MMR) **or** laboratory evidence of immunity<sup>‡</sup> **or** laboratory confirmation of disease?

YES

NO

If vaccination history\*\* not known, or has received no doses, **should receive 2 doses** of MMR vaccine  $\geq 28$  days apart.  
If person has received one dose, administer 1 dose MMR vaccine  $\geq 28$  days after that first dose.

Have documentation of **either** receiving 1 dose of live measles-containing vaccine (e.g. MMR) **or** laboratory evidence of immunity<sup>‡</sup> **or** laboratory confirmation of disease?

No doses of MMR vaccine are needed

**Should receive 1 dose** of MMR vaccine

## HAVE YOU HEARD OF NESIIS?

*Securely download your immunization records on your:*



Phone



Computer



Tablet

## BENEFITS OF USING NESIIS

- **Quick & Easy** access to immunization records on any computer, phone, or tablet.
- **QR Code Enhanced** Smart Health Card imports immunization records into any app that accepts Smart Health cards.
- **On the Go** immunization records to make checking your vaccination status easier!



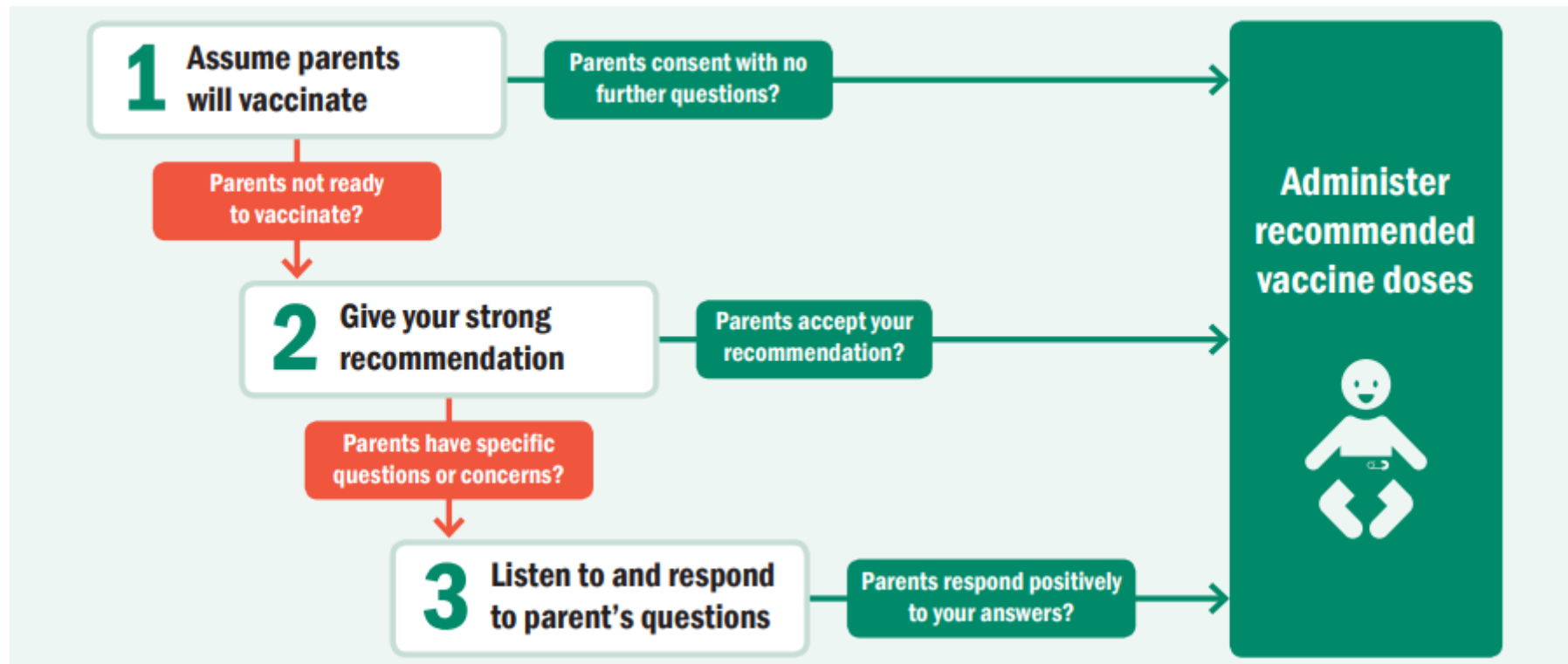
## The MMR vaccine is safe and has been protecting Nebraskans for generations!

**DO NOT WAIT.** Contact your doctor to schedule a measles vaccine today!

If you do not have a doctor, contact your local health department to find a vaccine clinic near you.

# Preparing for Questions Parents May Ask about Vaccines

## Talking with Parents about Vaccines for Infants



## MMR Vaccination & Management of Obstetric-Gynecologic Patients During a Measles Outbreak (ACOG)

- **Isolation:** Obstetrician–gynecologists should advise nonpregnant and pregnant patients with suspected or confirmed measles to immediately isolate. Postpartum patients with suspected or confirmed measles should immediately isolate; however, allow for shared medical decision making with the family for location of the infant after birth if the postpartum patient is infectious. Depending on the location of the infant, breastfeeding or feeding expressed breastmilk is beneficial. There is no contraindication to breastfeeding if a mother has measles **6** .
- **Treatment of Exposed Cases:** For nonpregnant patients exposed to measles who cannot readily show that they have previously received two doses of the MMR vaccine, obstetrician–gynecologists should offer postexposure prophylaxis via the MMR vaccine within 72 hours of exposure. For pregnant patients exposed to measles who cannot readily show that they have evidence of immunity against measles, offer postexposure prophylaxis with IV immunoglobulin (IVIG). For postpartum patients exposed to measles who cannot readily show evidence of immunity against measles, offer postexposure prophylaxis via the MMR vaccine within 72 hours of exposure.
- **Vitamin A:** Vitamin A does not prevent measles and is not a substitute for vaccination, nor does vitamin A treat measles alone. Pregnant patients and patients who may become pregnant should not consume more than 10,000 IU of preformed vitamin A per day. Taking excess preformed vitamin A before and during early pregnancy triples the risk of birth defects **7** .

# Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings



Health Care Providers

AUG. 19, 2025

## WHAT TO KNOW

These recommendations provide guidance on preventing and controlling measles in healthcare settings.

- <https://www.cdc.gov/infection-control/hcp/measles/index.html>
- [Appendix A: Considerations when Evaluating a Person for Exposure to Measles in a Healthcare Setting](#)
- [Appendix B: Additional Information about Respirators](#)

# Recommendations for Measles in Healthcare Settings

---

## 1. Ensure that all HCP Have Presumptive Evidence of Immunity to Measles

- Presumptive evidence of immunity to measles for HCP includes:
  - Written documentation of vaccination with 2 doses of measles virus-containing vaccine (the first dose administered at age  $\geq 12$  months; the second dose no earlier than 28 days after the first dose); OR
  - Laboratory evidence of immunity (measles immunoglobulin G [IgG] in serum; equivocal results are considered negative); OR
  - Laboratory confirmation of disease; OR
  - Birth before 1957. Consider vaccinating HCP born before 1957 who do not have other evidence of immunity to measles.
- During a [measles outbreak](#), 2 doses of measles virus-containing vaccine separated by at least 4 weeks (28 days) are recommended for unvaccinated HCP, regardless of year of birth, who lack laboratory evidence of measles immunity or laboratory confirmation of disease.
- [Recommendations on immunization of HCP for measles are maintained by CDC and Advisory Committee on Immunization Practices \(ACIP\).](#)

NE does not currently have a measles outbreak

# Guidance for personnel after an exposure

## Recommendations

1. For asymptomatic healthcare personnel **with** presumptive evidence of immunity to measles (<https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6204a1.htm#Tab3>) <sup>[1]</sup> who have an exposure to measles:
  - Postexposure prophylaxis is not necessary.
  - Work restrictions are not necessary.
  - Implement daily monitoring for signs and symptoms of measles from the 5th day after their first exposure through the 21st day after their last exposure.

# Guidance for personnel after an exposure

2. For asymptomatic healthcare personnel **without** presumptive evidence of immunity to measles who have an exposure to measles:
  - Administer postexposure prophylaxis in accordance with CDC and ACIP recommendations (<https://www.cdc.gov/vaccines/hcp/acip-recs/vacc-specific/mmr.html>).<sup>2</sup>
  - Exclude from work from the 5th day after their first exposure through the 21st day after their last exposure, regardless of receipt of postexposure prophylaxis.
  - Work restrictions are not necessary for healthcare personnel who received the first dose of MMR vaccine prior to exposure:
    - They should receive their second dose of MMR vaccine as soon as possible (at least 28 days after their first dose).
    - Implement daily monitoring for signs and symptoms of measles from the 5th day after their first exposure through the 21st day after their last exposure.

# Guidance for personnel after an exposure

3. For healthcare personnel with known or suspected measles, exclude from work for 4 days after the rash appears.

---

4. For immunocompromised healthcare personnel with known or suspected measles, exclude from work for the duration of their illness.

---

5. During a measles outbreak, administer measles vaccine to healthcare personnel in accordance with CDC and ACIP recommendations (<https://www.cdc.gov/acip-recs/hcp/vaccine-specific/mmr.html>). [2]



## Preventing Spread of Infections in K-12 Schools

[Print](#)

### Table of Contents

#### ▸ Preventing Spread of Infections in K-12 Schools

Everyday Actions for Schools to Prevent and Control the  
Spread of Transmissible Infections

When Students or Staff are Sick

Planning for Outbreaks, Epidemics, and Pandemics

Additional Strategies that May Be Used to Minimize  
Infectious Disease Transmission in Schools during Times  
of Elevated Illness Activity

Maintaining School Operational Status

Considerations for Prioritizing Additional Strategies

Appendix A: How Infections Spread

Science Brief: Prevention and Control of Respiratory and  
Gastrointestinal Infections in Kindergarten through Grade  
12 (K-12) Schools

Fact Sheet: Help Your Child's School Prevent the Spread  
of Infections

# Global Measles

Level 4 - Avoid All Travel

Level 3 - Reconsider Nonessential Travel

Level 2 - Practice Enhanced Precautions

Level 1 - Practice Usual Precautions

## Key Points

- [Measles](#) cases are rising in many countries around the world.
- Measles is a highly contagious respiratory illness that [spreads to others](#) through coughing and sneezing.
- **All** international travelers should be fully vaccinated against measles with the [measles-mumps-rubella \(MMR\) vaccine](#), according to [CDC's measles vaccination recommendations for international travel](#), including:
  - **an early dose for infants 6–11 months old**
  - **a total of two doses at least 28 days apart for anyone 12 months old or older without adequate evidence of immunity\***
- International travelers are at risk of measles if they have not either:
  - been fully vaccinated at least two weeks prior to departure, OR
  - had measles in the past.
- Most people who bring measles into the United States are unvaccinated U.S. residents who get infected during international travel.
- Travelers should seek medical care if they develop a [rash, high fever, cough, runny nose, or red, watery eyes](#) during travel or within 3 weeks after travel. People who think they might have measles should **let the healthcare facility know before they go**. Calling ahead lets the healthcare facility staff take steps to make sure that measles doesn't spread in the facility.