Measles and Wyoming

Beth Robitaille MD
University of Wyoming

Disclaimer: Beth Robitaille and all other in control of this CME activity, reported no relevant financial relationships that would create a conflict of interest for CME purposes.


Headlines

‘Perfect storm:’ Measles outbreak hits Broomfield and spreads fast after unvaccinated, infected teens attended two schools and roamed throughout Denver’s suburbs

Why is measles so dangerous? Does it spread more easily than the viruses that cause flu, COVID-19, Ebola and polio? And who should get vaccinated to prevent measles?

By: Katie Kerwin McCrimmon | March 19, 2026

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HEALTHY LIVING

Utah's Measles Outbreak Has Spread to 22 of 29 Counties, a Level No Other U.S. State Has Reported

Published Jul 09, 2026 9:01 AM EDT By Joseph James



Five Teton County Measles Cases Confirmed by Wyoming Department of Health

July 14, 2026



The Wyoming Department of Health (WDH) has confirmed two additional cases of measles in Teton County, bringing the statewide total to six. One case is an adult with no identified links to the previous three Teton County cases. The other case is an adult who had direct exposure to a previously identified case. This underscores the highly contagious nature of the measles virus.

The public may have been exposed to measles at the following locations and times:

Target Jackson Hole, 510 S Highway 89, Jackson, Wyoming 83001

> July 5, 2026, 7:00 AM through 7:00 PM
> July 6, 2026, 7:00 AM through 7:00 PM
> July 7, 2026, 7:00 AM through 7:00 PM

Smith's Food and Drug, 1425 South Highway 89, Jackson, Wyoming 83001

> July 8, 2026, 9:00 AM through noon

Measles Is Roaring Back. We Are Not Ready.

March 20, 2026



New York Times
Guest Essay
By
Jennifer Reich
University of Colorado
sociologist studying vaccine hesitancy

In my research on parents who reject vaccines, I regularly hear them describe their willingness to seek out medical care and hospitalization when their children get sick, or give them treatments like antibiotics, even if they view vaccines as unnecessary. But the assumption that hospitals can easily absorb an increase in vaccine-preventable diseases is flawed and dangerous.

Pediatric emergency medicine and intensive care are struggling. Children's hospitals are facing work force shortages and a critical lack of funding. Unlike in the era Dr. Milhoan refers to, many doctors today have never seen a measles or polio case in their practice.

What is Measles?

- https://youtube.com/shorts/VK9GgrPwp2s?si=d6Y-tgG5V4-dnCdy

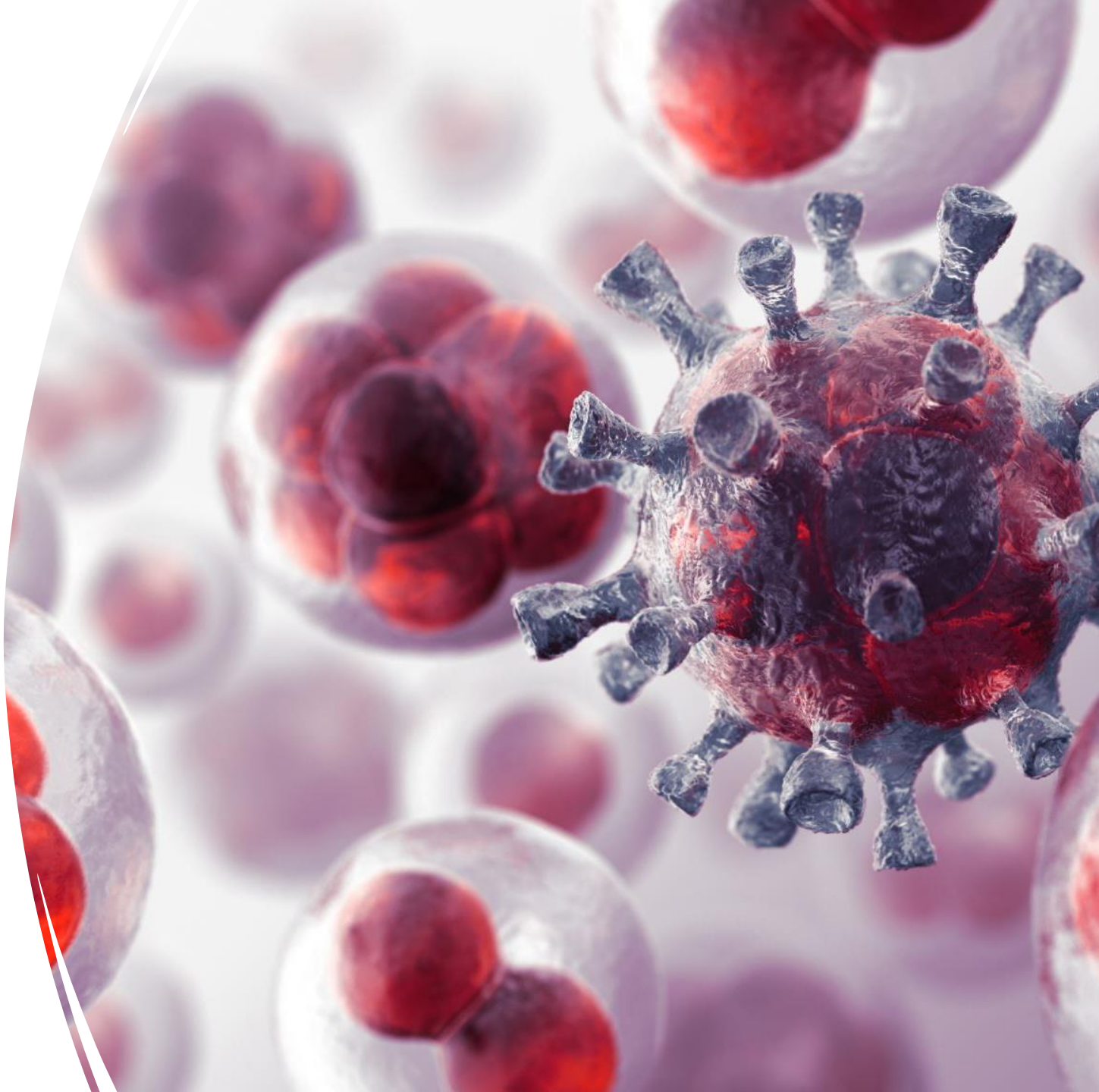
What Is Measles?

Highly contagious viral disease caused by the **measles virus (Morbillivirus)**

Spread through **respiratory droplets** and can linger in the air for **up to 2 hours**

Infects **90%** of susceptible people exposed

Preventable through **vaccination**



Why Measles Still Matters

Declared eliminated in the U.S. in 2000

Resurgence due to:

- Declining vaccination rates
- Misinformation
- Global travel

Outbreaks strain public health systems and disrupt communities

CDC data[1] March 20, 2026

U.S. Cases

	2026 To date	2025 Full year
Total Cases	**1,487**	**2,285**
Age		
Under 5 years	314 (21%)	584 (26%)
5-19 years	781 (53%)	1,015 (44%)
20+ years	385 (26%)	673 (29%)
Age unknown	7 (0%)	13 (1%)
Vaccination Status		
Unvaccinated or Unknown	92%	93%
One MMR dose	4%	3%
Two MMR doses	4%	4%

U.S. Hospitalizations

	2026	2025
Total Hospitalized	**5%** (74 of 1,487 cases)	**11%** (242 of 2,285 cases)
Percent of Age Group Hospitalized		
Under 5 years	7% (23 of 314)	18% (106 of 584)
5-19 years	3% (23 of 781)	6% (57 of 1,015)
20+ years	7% (27 of 385)	12% (79 of 673)
Age unknown	14% (1 of 7)	0% (0 of 13)

U.S. Deaths

	2026	2025
Total Deaths	**0**	**3**

U.S. Cases

	2026 To date	2025 Full year
Total Cases	**3,471**	**2,289**
Age		
Under 5 years	629 (18%)	584 (26%)
5-19 years	1,519 (44%)	1,018 (44%)
20+ years	1,305 (38%)	674 (29%)
Age unknown	18 (1%)	13 (1%)
Vaccination Status		
Unvaccinated or Unknown	95%	93%
One MMR dose	3%	3%
Two MMR doses	3%	4%

U.S. Hospitalizations

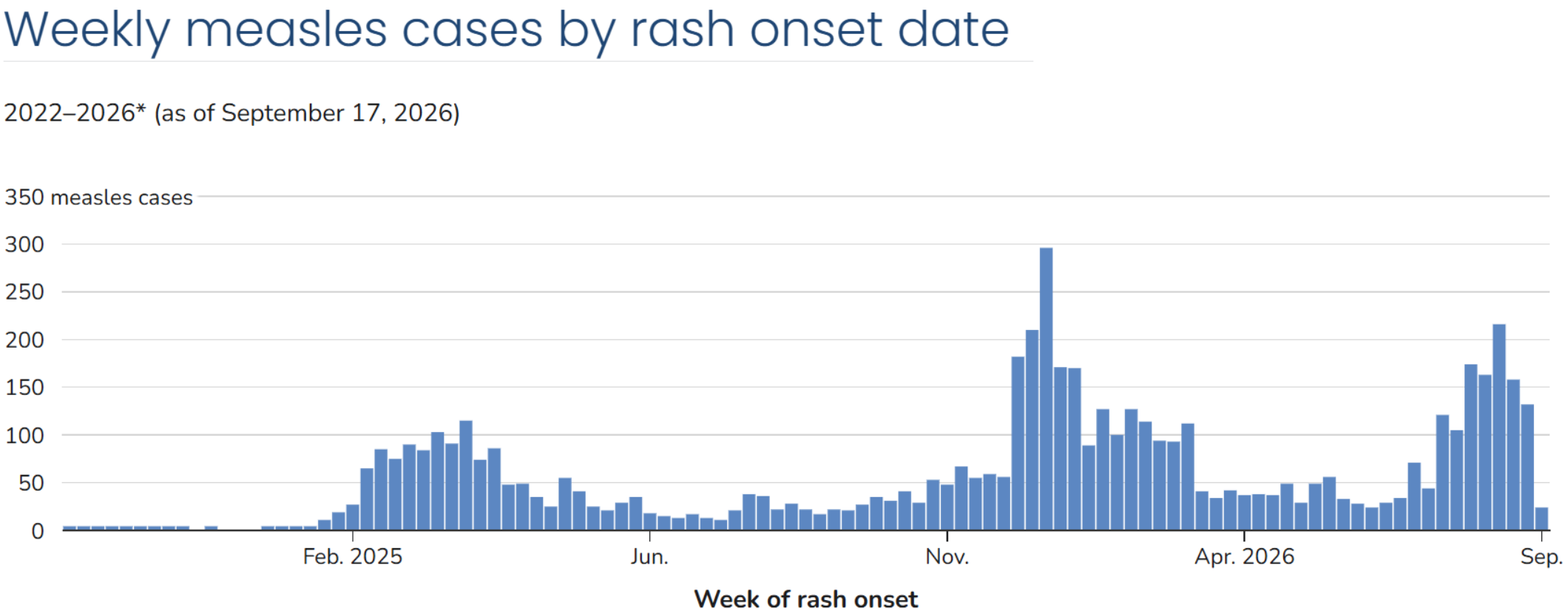
	2026	2025
Total Hospitalized	**9%** (301 of 3,471 cases)	**11%** (244 of 2,289 cases)
Percent of Age Group Hospitalized		
Under 5 years	13% (83 of 629)	18% (106 of 584)
5-19 years	4% (62 of 1,519)	6% (58 of 1,018)
20+ years	12% (156 of 1,305)	12% (80 of 674)
Age unknown	0% (0 of 18)	0% (0 of 13)

U.S. Deaths

	2026	2025
Total Deaths	*	**3**

CDC Data[1] September 18, 2026

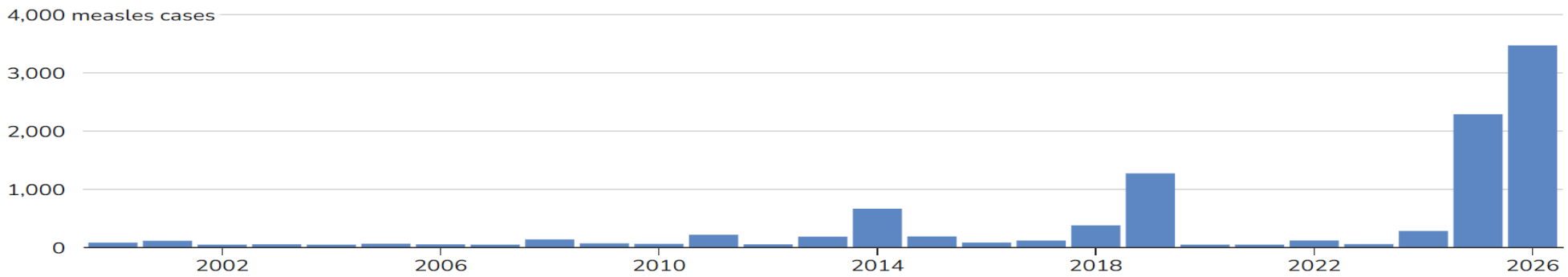
Measles resurgence timeline[1]



Yearly measles cases

as of September 17, 2026

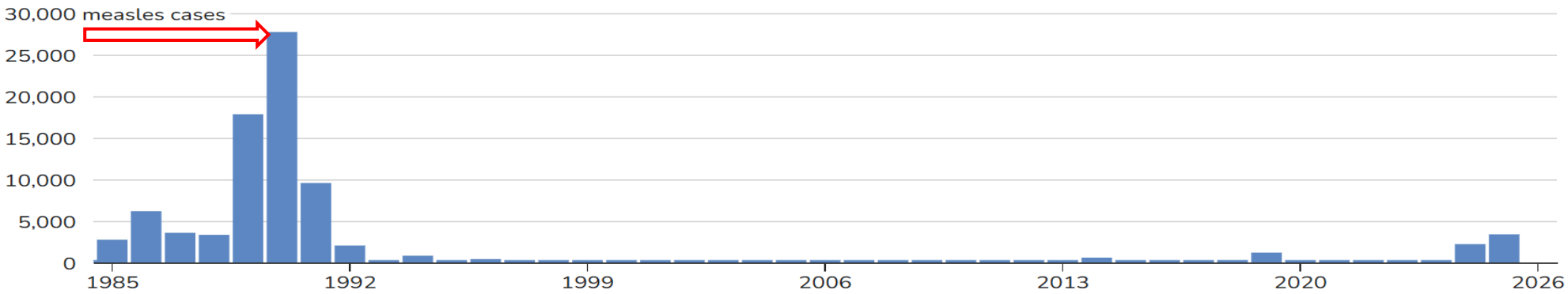
2000–Present* 1985–Present*



Yearly measles cases

as of September 17, 2026

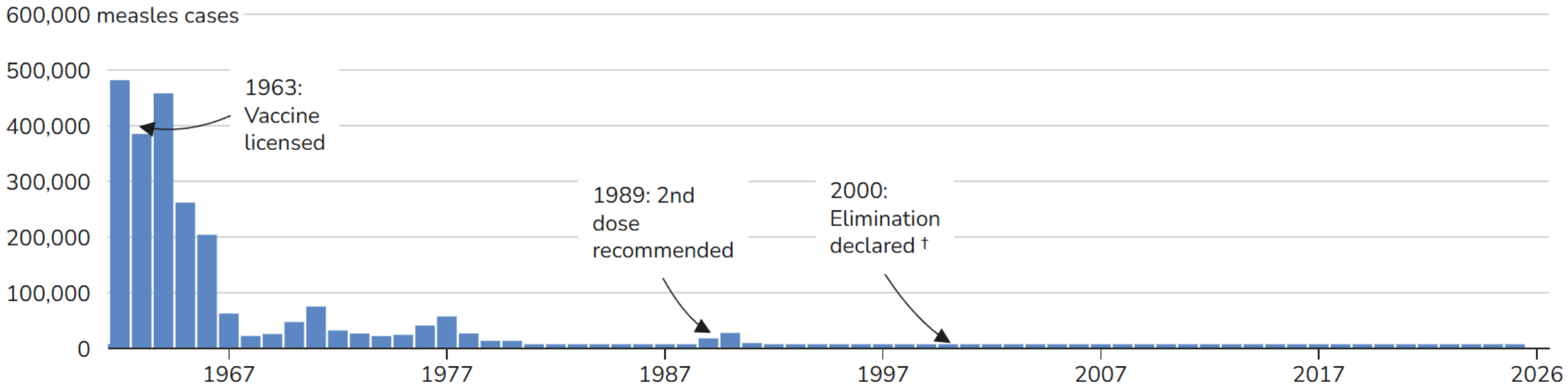
2000–Present* **1985–Present***



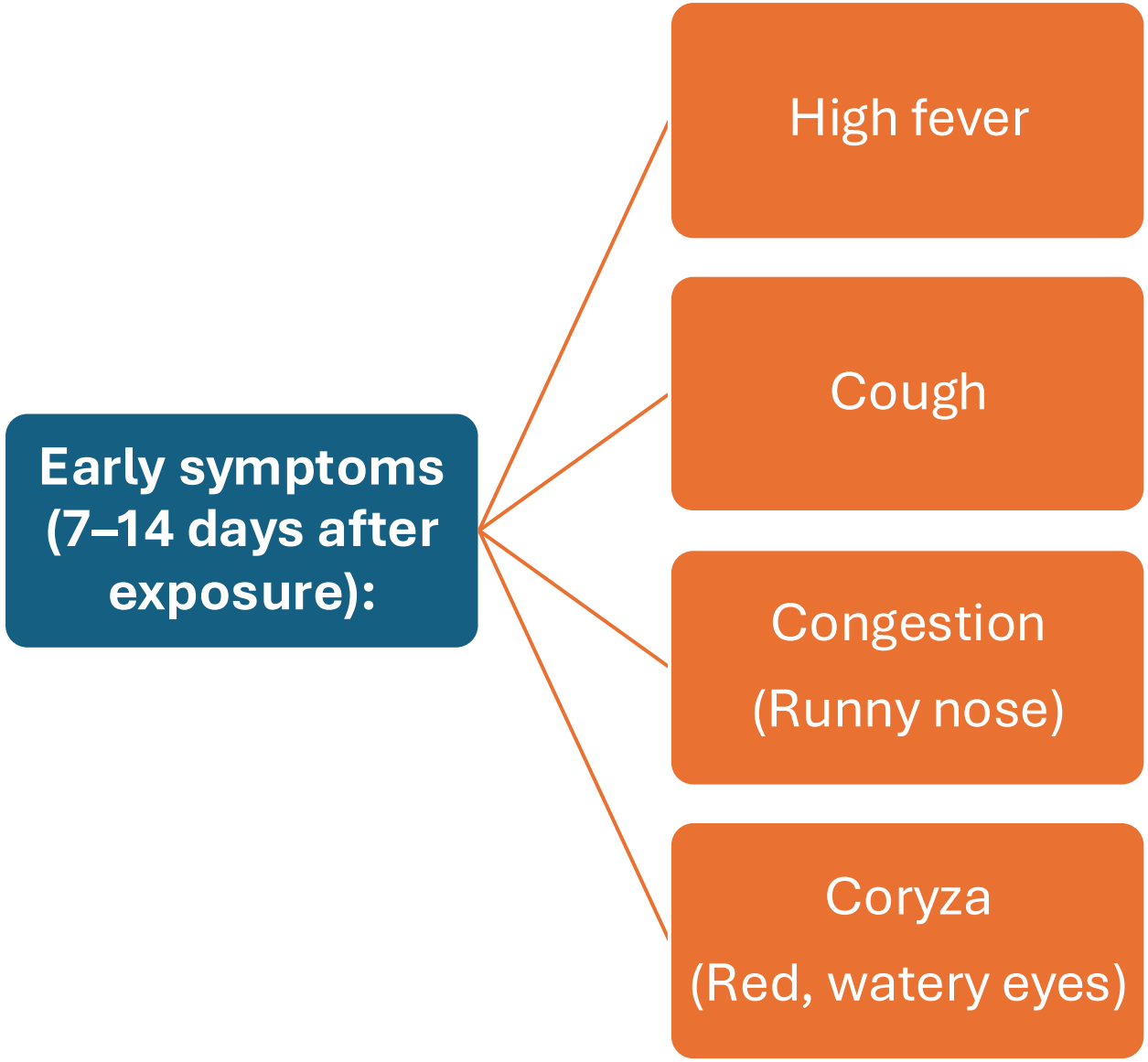
History of measles cases

Measles was officially eliminated from the United States in 2000, meaning there is no measles spreading within the country and new cases are only found when someone contracts measles abroad and returns to the country. Achieving measles elimination status in the United States was a historic public health achievement. The below figure illustrates how common measles was before vaccines and how vaccine policy enabled elimination.

Reported Measles Cases in the United States from 1962-2026*



Clinical Presentation

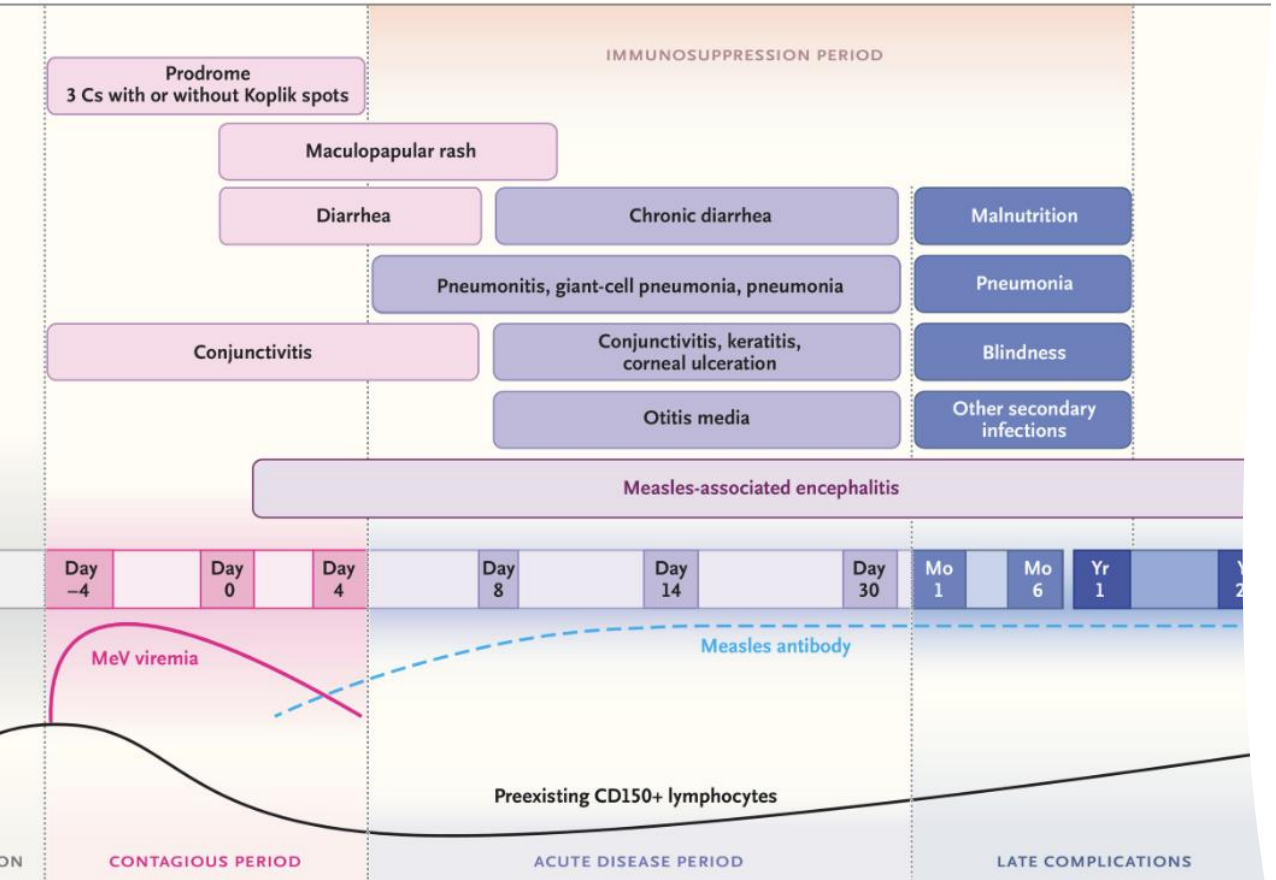


Clinical Presentation

Rash (2-4 days after onset of fever):

- Erythematous maculopapular exanthem
- Starts on the face & proceeds to head, trunk, arms, & legs



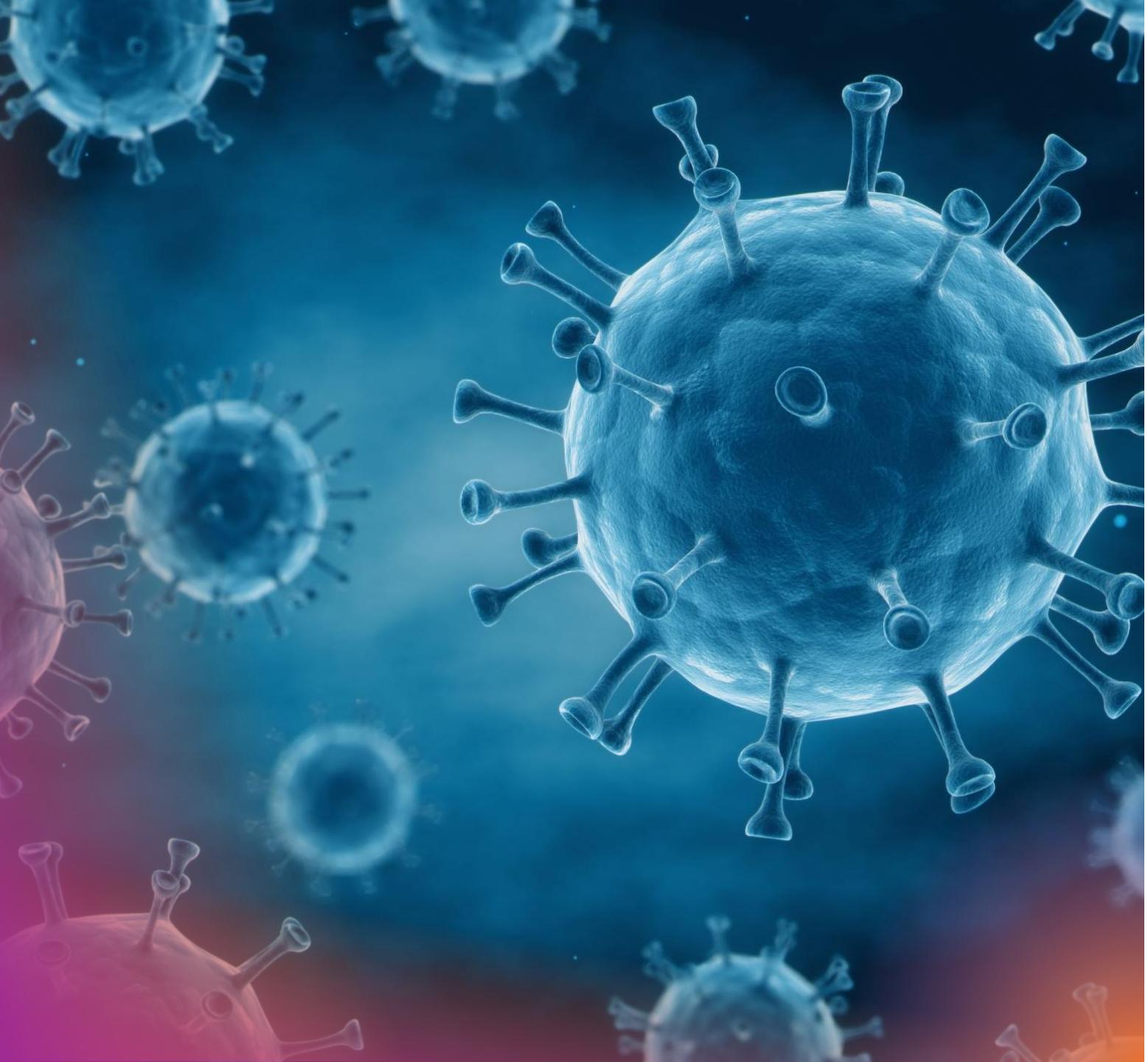


Clinical Features and Pathogenesis

Contagious 4 days before and 4 days after eruption

Complications

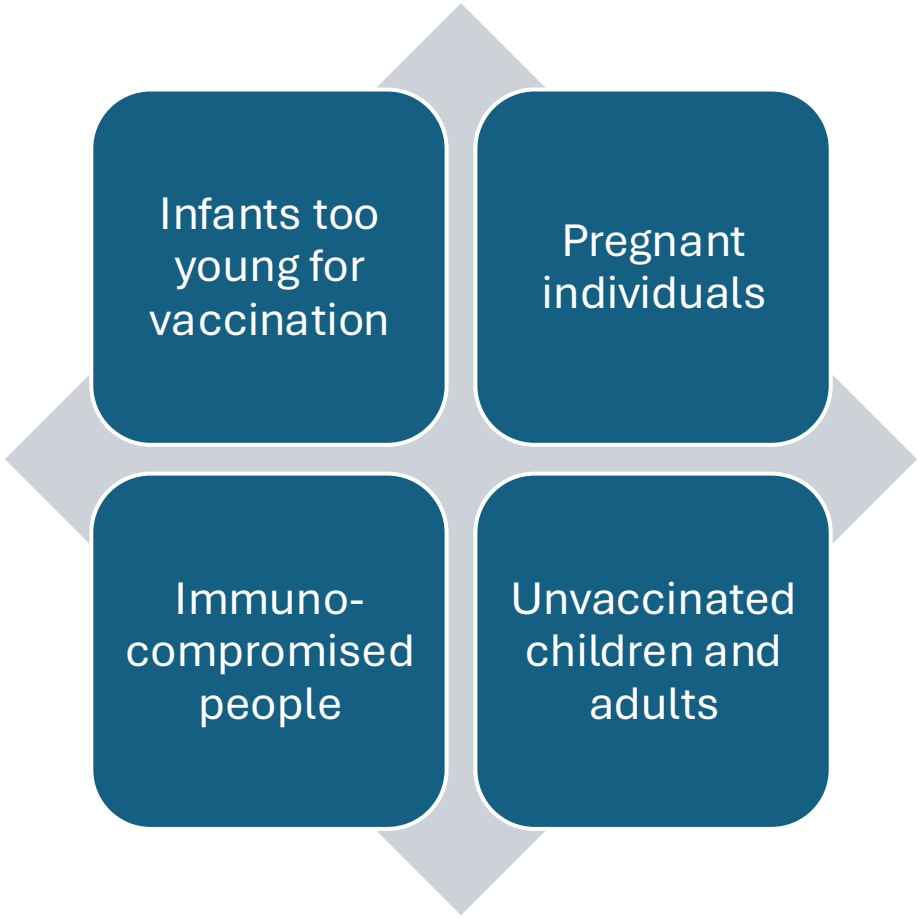
- Ear infections
- Severe diarrhea
- Pneumonia
- Encephalitis
- Death (1–3 per 1,000 cases in high-income countries; higher elsewhere)



Immune Amnesia

- Measles infection can **erase immune memory**
- Makes individuals more susceptible to other infections for **months to years**
- Vaccination prevents this effect

Who Is Most at Risk?



How to distinguish measles from other illnesses

- https://www.youtube.com/watch?v=-16RnFwe0jc&list=PPSV

Diagnosis

		Measles Tests	When to Collect?
Acute Disease	PCR	Nasopharyngeal (NP) or Throat (OP) Swab 	As soon as possible upon suspicion of measles: ideally **0-3 days** after rash onset, up to **10 days** after rash onset.
Acute Disease	PCR	Urine 	**Within 10 days** of rash onset **Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window.*
Acute Disease	IgM	Serum 	Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM **can be detected for 6–8 weeks** after acute measles.
Immunity	IgG	Serum 	When assessing evidence of immunity, can be detected ~**2 weeks** after MMR vaccination

Treatment

- No antiviral medication available
- Supportive care
- Early detection and treatment of complications
- Prevent transmission
- Vitamin A deficiency has been linked with increased severity and mortality in children in low-middle income countries
    - WHO recommendation for Vitamin A for all persons who have acute measles
    - In the US, Vitamin A is recommended for children with acute measles



U.S. Recommendations for Vitamin A Supplementation in Patients with Measles[1]

Age Group	Dose	Frequency
Children		
<6 mo	50,000 IU (15,000 µg RAE)	Daily for 2 days
6–11 mo	100,000 IU (30,000 µg RAE)	Daily for 2 days
>12 mo	200,000 IU (60,000 µg RAE)	Daily for 2 days
Previous vitamin A deficiency or eye complications caused by measles	Third dose	2–4 wk after the second dose
Adults†	No recommendation	No recommendation

* Adapted from Stinchfield PA and Orenstein WA.[41] IU denotes international unit, and RAE retinol activity equivalents.

† The U.S. recommendation aligns with the World Health Organization (WHO) recommendation.[42] However, the WHO recommends a dose of 5000 to 10,000 IU daily for 4 weeks in adult measles patients. Women of reproductive age should receive only lower, but more frequent, doses of vitamin A (e.g., a daily oral dose of 5000 to 10,000 IU of vitamin A for at least 4 weeks) owing to possible teratogenic effects.

Post Exposure Prophylaxis and Transmission Prevention[3]



If unvaccinated, MMR vaccine within 72 hours of an exposure to someone with measles, may prevent full case of measles (76-100%)



Immunoglobulin may be given within 6 days of exposure (83-100%)



Isolation at home

The MMR Vaccine

- Protects against **Measles, Mumps, Rubella**
- Live, attenuated vaccine
- Two-dose schedule:
  - 1st dose: 12–15 months
  - 2nd dose: 4–6 years
- 10-15% don’t seroconvert after 1 dose
- **97% effective** after two doses
- Safe, widely studied, and essential for community protection
- May be given to infants 6-12months of age in outbreak situations

MMR & Autism: The flawed Wakefield Studies

- 1st study: 1998 *The Lancet*
- Theory: intestinal inflammation causes autism
- Described12 children with developmental delay: 8 with autism, all had GI symptoms & autism within 1 month of MMR

- Flaws
  - MMR given at the same age as when autism diagnosed
  - 90% immunization rates, thus some children diagnosed with autism would also have had recent MMR
  - Did not study rate of autism in vaccinated vs unvaccinated children
  - All 8 had GI symptoms *after* the onset of autism symptoms

MMR & Autism: The flawed Wakefield Studies

- 2nd study 2002
- Intestinal biopsy for measles virus
- Results
  - 75 of 91 children with autism: + biopsy
  - 5 of 70 without autism: + biopsy

- Flaws
  - Live-attenuated vaccine-virus replicates 15-20x in the body, so expect it to be in cells
  - Did not identify if that finding was specific to children with autism
  - Did not report MMR vaccine status
  - Did not report length of time between MMR and biopsy
  - Highly sensitive test, risk of false positive

Studies show MMR does not cause autism[2]

- **B Taylor et al** (1999) 498 children with autism studied
  - The percentage of children vaccinated was the same in children with autism as in other children
  - No difference in the age of diagnosis of autism was found in vaccinated and unvaccinated children
  - The onset of symptoms of autism did not occur within two, four, or six months of receiving the MMR vaccine
- **Madsen et al** (1991-1998) *NEJM*
  - 537,303 children
  - 2,129,864 person-years
  - 82% of children had received the MMR
  - Risk of autism in the group of vaccinated children was the same as that in unvaccinated children
  - No association between the age at the time of vaccination, the time since vaccination, or the date of vaccination and the development of autism

Herd Immunity

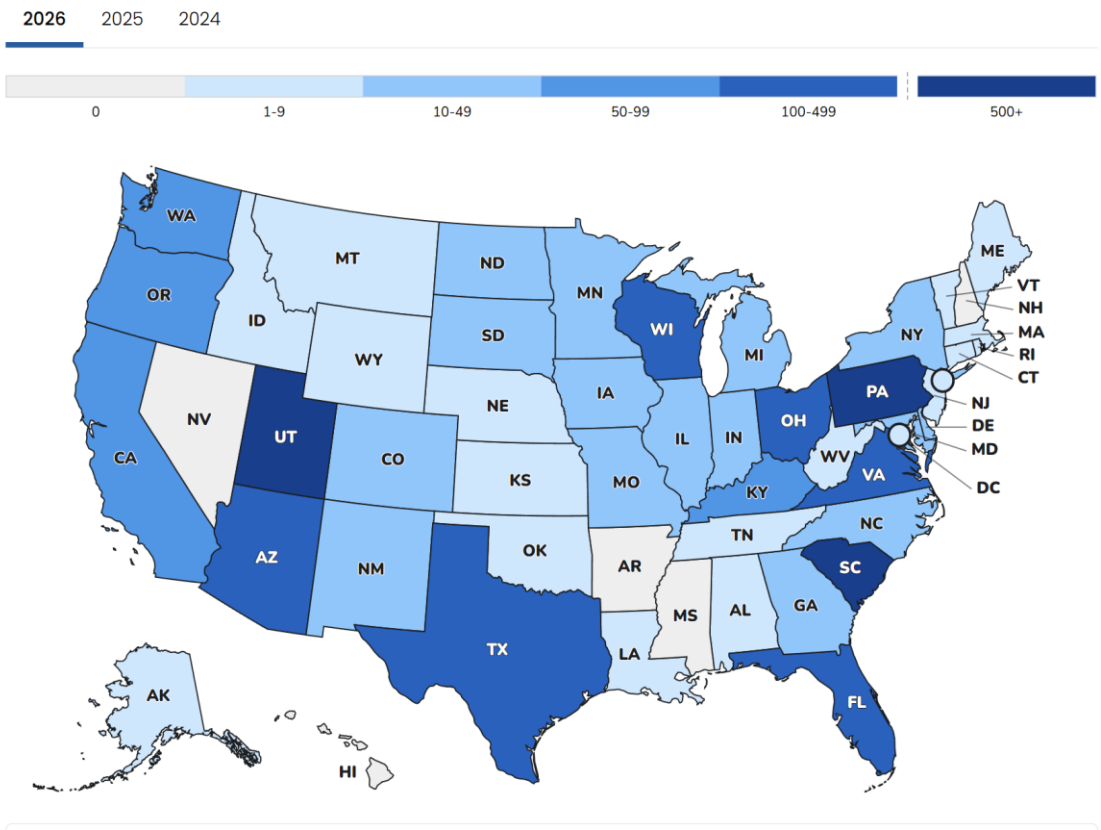
Measles requires **95% vaccination coverage** to prevent outbreaks

Protects vulnerable individuals who cannot be vaccinated

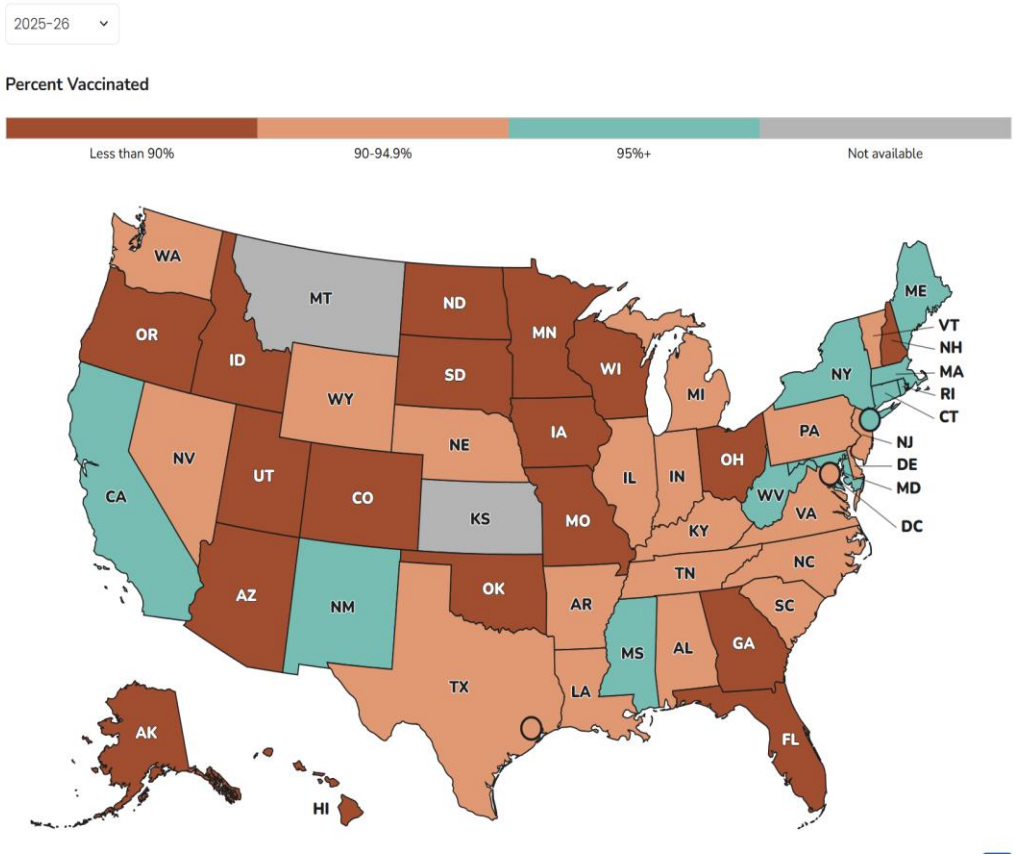
Even small declines in coverage can trigger outbreaks

Geographic distribution of cases & vaccination rates[1]

Cases



MMR Kindergarten Vaccination Rates



Community Impact

Health impacts:	Social impacts:	Healthcare impacts:
Hospitalizations Long-term complications Increased mortality	School closures Quarantines Economic strain on families	Overwhelmed clinics Diverted resources from other care

Why Vaccination Rates Decline

Misinformation and distrust

Access barriers

Complacency due to low disease visibility

Cultural or religious concerns

Public Health Strategies



COMMUNITY EDUCATION



SCHOOL VACCINATION REQUIREMENTS



OUTBREAK RESPONSE TEAMS



IMPROVING ACCESS TO VACCINES



PARTNERING WITH COMMUNITY LEADERS

Role of Healthcare Providers

- Early recognition
- Immediate reporting
- Isolation precautions
- Counseling hesitant families

Addressing Vaccine Hesitancy

Listen	Listen without judgment
Provide	Provide clear, evidence-based information
Share	Share personal stories or experiences
Emphasize	Emphasize community protection

Global Burden



Measles remains a leading cause of vaccine-preventable death in children worldwide



Outbreaks often occur in areas with:

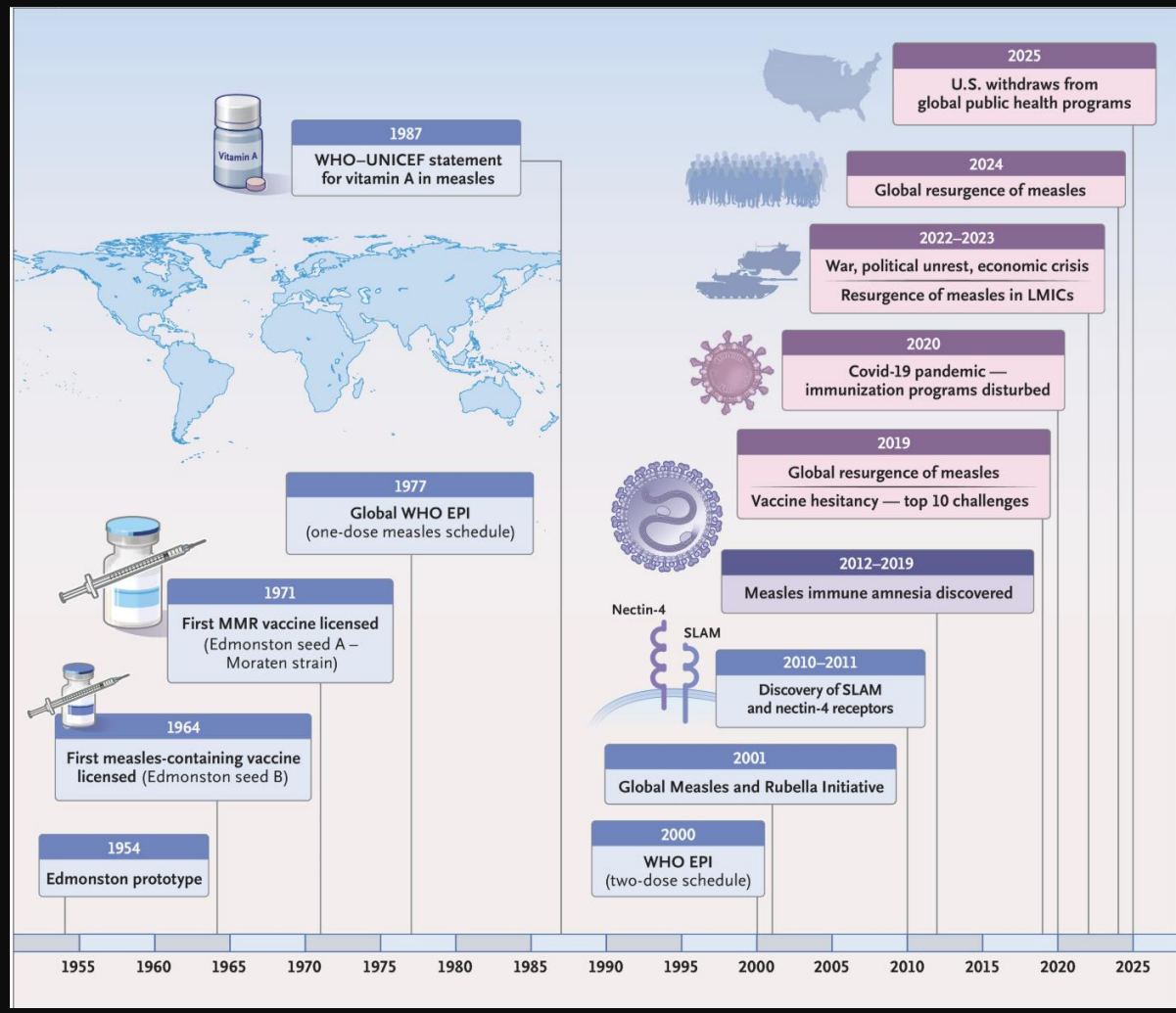
- Conflict
- Weak health systems
- Limited vaccine access



Global travel spreads cases across borders

Public Health & Global Measles

- *"The withdrawal of the United States from global public health initiatives and from support of global immunization programs is having a profound effect on measles control worldwide. Specifically, removal of support for the WHO, for which the United States contributes 19% of the budget, and Gavi, the Vaccine Alliance, for which it contributes 13% of the budget, will probably affect measles control and contribute to a large number of deaths from measles and other vaccine-preventable diseases in the poorest countries. As a result, the outlook for measles control in the coming years is bleak. This situation puts U.S. domestic health security at high risk, because infectious diseases do not respect geographic borders."*



Key Takeaways



MEASLES IS **HIGHLY CONTAGIOUS** BUT **PREVENTABLE**



VACCINATION PROTECTS INDIVIDUALS AND COMMUNITIES



OUTBREAKS HAVE **FAR-REACHING IMPACTS**



PUBLIC HEALTH EFFORTS RELY ON **COMMUNITY TRUST AND PARTICIPATION**

References and Resources

1. Measles Cases and Outbreaks | Measles (Rubeola) | CDC

2. Children's Hospital of Philadelphia Vaccine-Education Center

3. Do LAH, Mulholland K. Measles 2025. *N Engl J Med*. 2025;393(24):2447-2458. doi:10.1056/NEJMra2504516