

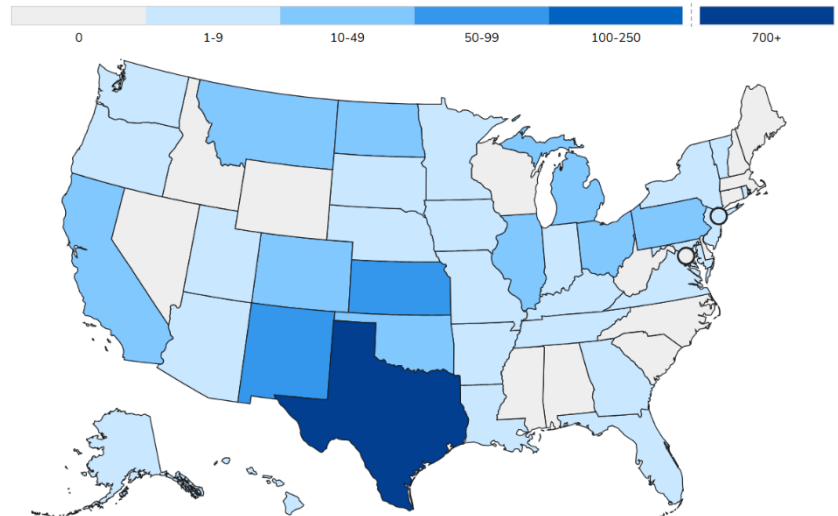
## Measles Outbreaks and Impacts on Under Vaccinated Communities

Measles infections have been on a sharp incline in the United States in 2025, with 23 outbreaks being reported in 2025 and 1,227 confirmed cases reported to the CDC. This makes 2025 only behind 2019 (1,274 confirmed cases) as the worst year for measles since 1992. This year's current measles situation highlights the need to increase vaccination against measles to protect our county from potential measles outbreaks.

### Did you Know?

- 66% of the total amount of measles cases were in people under the age of 20.
- 95% of the total amount of measles cases were in people who were unvaccinated or had an unknown vaccination status.
- 12% of measles cases had to be hospitalized, with the majority of the hospitalizations being in children under 5 years old.

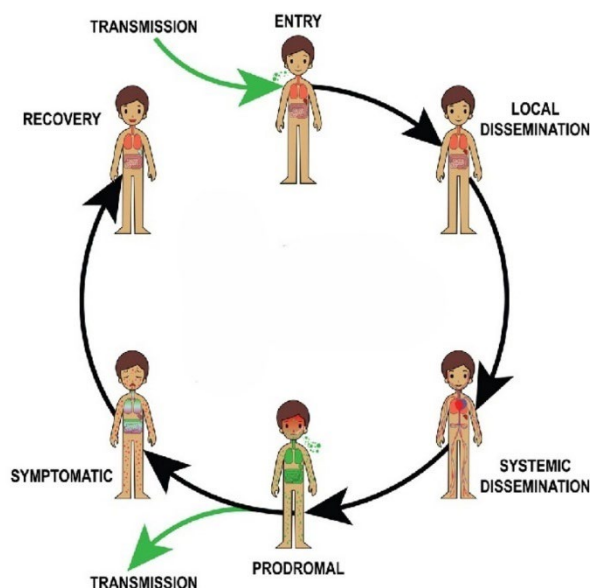
**Source:** [Measles Cases and Outbreaks | Measles \(Rubeola\) | CDC](#)



\*Amount of confirmed measles cases per state as of June 24<sup>th</sup>

## Why are Measles Cases Surging

The predominant reasons why measles cases are surging are how easily measles spreads person to person and the decreasing rate of vaccination against the measles virus. To understand how measles spread so easily, we need to first look at the transmission cycle for measles.



### Measles Virus Transmission Cycle

Measles is spread from person to person by inhaling in the virus. The virus can remain infectious in the air for up to two hours.

- Upon **entry**, the measles virus attaches to specific resident immune cells in the lungs.
- Infected immune cells then undergo dissemination, where they migrate to infect other immune cells in nearby lymph nodes (**Local**) and throughout the body (**Systemic**).
- Once the virus has spread throughout the body it infects cells in the lining of the lungs. Infection of these cells causes the virus to shed while coughing during the start of symptoms called the **prodromal** phase.
- Next, rash onset marks the start of the **symptomatic** phase, with the virus still being shed four days after rash onset.

**Sources:** [Measles pathogenesis, immune suppression and animal models - ScienceDirect](#)

[What's going on with measles? - PMC](#)

### Measles Suppresses Immune Responses by Infecting Immune Cells and Leads to “Immune Amnesia”

Infection of immune cells in the beginning of the transmission cycle limits the body’s ability stop measles from spreading by attacking the very cells the body uses to fight infection. Additionally, measles infection affects the body’s ability to protect itself from other pathogens.

One of the types of immune cells the virus infects during systemic dissemination are memory immune cells. These are responsible for creating the antibodies and responses that prevent reinfection of pathogens people have already been infected with. When these cells are destroyed the result is decreased amount and diversity of antibodies, leading to an “immune amnesia” where you are more susceptible to infectious diseases long-term.



### MEASLES IMMUNE SUPPRESSION to

**Sources:** [Measles immunity and immunosuppression - PMC](#)

[Measles virus infection diminishes preexisting antibodies that offer protection from other pathogens -](#)

### Falling Vaccination Rate’s (Low Vaccination Pockets)

The MMR vaccine is extremely effective at preventing measles with one dose being 93% effective and two doses being 97% effective. However, the vaccination rates for children have been dropping nationally since the COVID-19 pandemic.

Percent Vaccinated For MMR by age Group, April 2025		
Age	MMR Vaccination % Michigan	MMR Vaccination % Grand Traverse
19-35 Months (One Dose)	80.0%	78.3%
13-17 Years (Two Doses)	87.0%	83.4%

- Since January 2020 the MMR vaccination coverage in the state of Michigan has decreased by 5.3% for those age 19-35 months, while the rate for those 13-17 years old has roughly stayed the same
- The MMR vaccine coverage needed for herd immunity is 95%
- With vaccination rates being lower than what’s required for heard immunity, Michigan and Grand Traverse County are vulnerable to measles outbreaks

**Sources:** [Measles Cases and Outbreaks | Measles \(Rubeola\) | CDC](#)

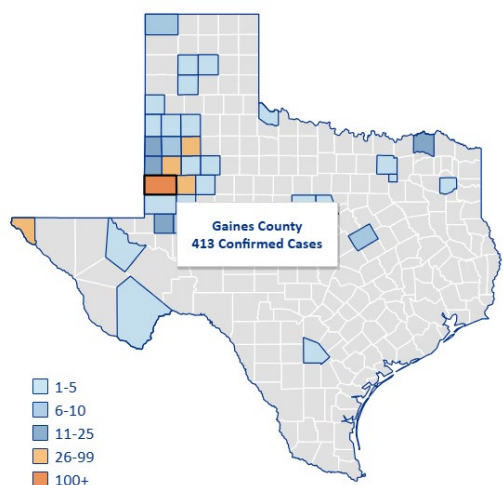
[County Data – mcir.org](#)

[Measles Information for the Public](#)

“At local levels, vaccine coverage rates may vary considerably, and pockets of unvaccinated people can exist in states with high vaccination coverage. When measles gets into communities of unvaccinated people in the United States, outbreaks can occur.”

-CDC

### Case Study: Gaines County Texas



200 mi

#### Background

Gaines County Texas is a small close-knit community of an estimated 22,892 residents. The vaccination rate for the county is below the 95% threshold for herd immunity and is considered low.

#### Timeline

- January 30<sup>th</sup> – First two measles cases appeared in Gaines County Texas
- February 25<sup>th</sup> - Texas reports 124 confirmed measles cases in the South Plains region, expanding into counties neighboring Gaines County and into New Mexico
- February 26<sup>th</sup> - First reported death in a school-aged child
- April 6<sup>th</sup> - Second reported death in a school-aged child, 481 confirmed measles cases and expanded into Oklahoma
- Currently- 750 confirmed measles outbreak cases, three total deaths linked to the outbreak

### Conclusions

While the overall coverage for the state of Texas was estimated to be relatively high (94.3%), Gaines County represented a small close-knit under-vaccinated pocket that measles could spread through rapidly. According to the CDC, during 2001–2023 approximately 90% of U.S. measles outbreaks with 50 or more cases occurred in close-knit communities with low vaccination coverage.

**Sources:** [Measles Update — United States, January 1–April 17, 2025 | MMWR](#)

[Measles Outbreak – June 6, 2025 | Texas DSHS](#)

[U.S. Census Bureau QuickFacts: Gaines County, Texas](#)

### Measles Outlook in Grand Traverse County



As of June 23<sup>rd</sup> 2025 Grand Traverse County Health Department confirmed its third measles case, making it an official outbreak defined as three or more related cases. While Grand Traverse County is considered an outbreak area, there is no suspicion of widespread community transmission.

With each case of measles, the Grand Traverse County Health Department's communicable disease team performs interviews to determine when that person would have been contagious, and where they were during the contagious period. This process identifies close contacts and possible exposure locations that the Health Department

releases to the public, so those exposed can quickly be identified. This process is called contact tracing and is one of the ways the health department actively works to prevent community transmission.

- There are two public exposure locations as of June 23<sup>rd</sup> 2025
  - **Chelsea Park West Apartment Complex** - Located off Hartman Rd in Traverse City, MI, Wednesday, June 4<sup>th</sup> through Friday, June 13<sup>th</sup>
  - **Walmart Super Center** - 2640 Crossing Cir., Traverse City, MI 49684, Saturday, June 14<sup>th</sup> from 12:30 p.m. to 3:30 p.m.
- If you feel you may have been exposed, or if symptoms develop, call the GTCHD (231)-995-6800 or your health care provider before seeking treatment so steps can be taken to prevent exposure to other individuals.

### FAQ

#### Q: Does Vitamin A prevent measles infection?

**A: Vitamin A does not prevent measles and is not a substitute for vaccination.** Vitamin A has been found to reduce overall measles mortality and pneumonia-specific measles in children living in areas with high rates of vitamin A deficiency. The U.S. has a very low prevalence of Vitamin A deficiency, and overuse of vitamin A can lead to toxicity with damage to the liver, bones, central nervous system, and skin. Vitamin A should be used under healthcare provider supervision.

[Measles Treatment Overview](#)

#### Q: Do I need an updated MMR vaccine?

**A: The MMR vaccine provides lifelong immunity to measles, and there are no recommendations for a third dose.**

However, there are special circumstances when some people would be eligible to receive another dose. If you received the killed (inactivated) measles vaccine which was available from 1963-1967, you would be eligible to receive an additional MMR vaccine. There are also additional recommendations for accelerated vaccination schedules for international travelers and additional recommendations for specific groups that can be found on the link below.

[Measles Vaccination for Specific Groups | Measles \(Rubeola\) | CDC](#)

#### Q: Is there a benefit to developing immunity to measles by wild measles virus infection versus vaccination?

**A: There is no benefit to developing immunity from wild measles infection. Both wild infection and MMR vaccination provide lifelong immunity to measles.** Additionally, wild measles infection can lead to hospitalization, pneumonia, swelling of the brain, death, and complications during pregnancy. The MMR vaccine is a safe well-researched vaccine that provides lifelong immunity, making it the best option.

[Measles Symptoms and Complications | Measles \(Rubeola\) | CDC](#)

[Measles, Mumps, Rubella \(MMR\) Vaccine Safety | Vaccine Safety | CDC](#)