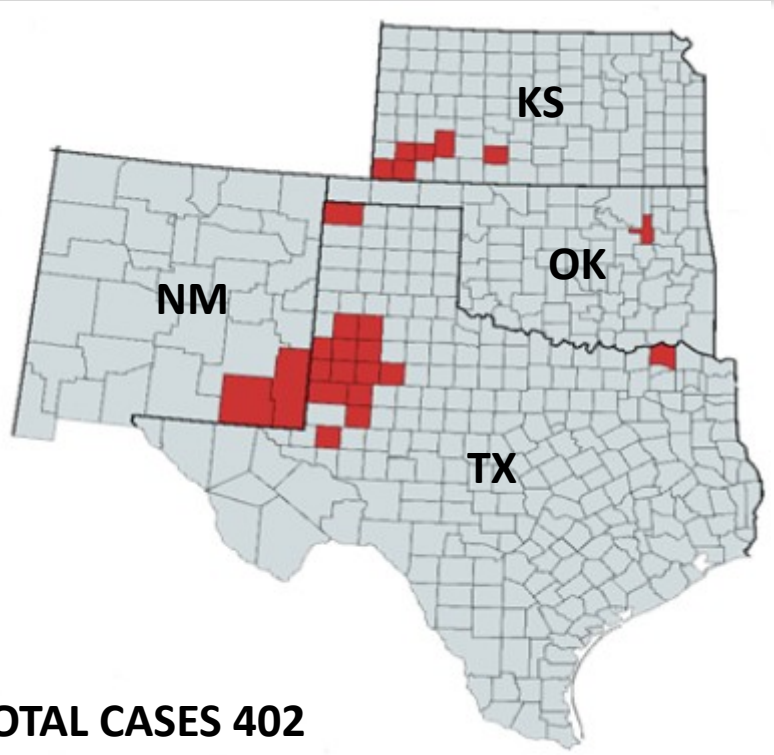
YALE SCHOOL OF PUBLIC HEALTH - ESF-8 VIRTUAL MEDICAL OPERATION CENTER SPECIAL REPORT

MEASLES OUTBREAK - SOUTHWEST U.S. - 2025



TOTAL CASES 402

MORBIDITY AND MORTALITY

STATE	CASES	HOSPITALIZATIONS	DEATHS
TX	327	40	1
NM	43	2	1
OK	9	0	0
KS	23	0	0
TOTAL	402	42	2

*The situation is still developing. Numbers are expected to increase

AS OF: 2300 HRS EST
3/26/2025

LINKS

TEXAS LINKS
- TEXAS DEPARTMENT OF STATE HEALTH SERVICES

FACEBOOK | X
- HEALTH ALERTS
- THE SOUTH PLAINS PUBLIC HEALTH DISTRICT

NEW MEXICO LINKS
- NEW MEXICO DEPARTMENT OF HEALTH
- NMDOH NEWS RELEASE
- NMDOH GUIDANCE

OKLAHOMA LINKS
OKLAHOMA STATE DEPARTMENT OF HEALTH

KANSAS
KANSAS DEPARTMENT OF HEALTH AN ENVIRONMENT

RESOURCES FOR HEALTHCARE PROVIDERS
- CDC – MEASLES FOR THE HEALTHCARE PROFESSIONALS
- CDC VIDEO: MEASLES CLINICAL FEATURES AND DIAGNOSIS
- CDC CLINICAL IMAGES OF MEASLES
- CDC LABORATORY TESTING FOR MEASLES
- CDC ROUTINE VACCINATION RECOMMENDATIONS
- CDC ISOLATION RECOMMENDATIONS
- CDC: MEASLES CONTROL IN HEALTHCARE SETTINGS
- CDC ALERT SIGN INFOGRAPHIC
- CDC POSTER FOR OFFICE DISPLAY
- NY HEALTH; RECOGNIZING MEASLES FACT SHEET
- NY HEALTH: DEALING WITH VACCINE HESITANCY
- MEASLES POST-EXPOSURE PROPHYLAXIS
- MEASLES REVIEW FOR PROVIDERS

MEASLES TESTING LABORATORIES
- CDC MEASLES VIRUS LABORATORY

RESOURCES FOR THE PUBLIC
- CDC – MEASLES
- MEASLES CASES AND OUTBREAKS
- NYSDOH: YOU CAN PREVENT MEASLES
- CDC VIDEO: GET VACCINATED AND PREVENT MEASLES
- CDC VACCINE SHOT FOR MEASLES
- DIRECTORY FOR LOCAL HEALTH DEPARTMENTS

RESOURCES FOR EMS PROVIDERS
- GUIDANCE FOR SUSPECTED MEASLES PATIENT
- NYSDOH POLICY STATEMENT

PORTALS, BLOGS, AND RESOURCES
- CIDRAP
- CORI
- FORCE OF INFECTION
- KAISER HEALTH NEWS
- MEDPAGE TODAY
- NY STATE GLOBAL HEALTH UPDATE
- THE PANDEMIC CENTER TRACKING REPORT
- YOUR LOCAL EPIDEMIOLOGIST

Yale SCHOOL OF PUBLIC HEALTH

BACKGROUND

TYPE OF PUBLIC HEALTH EMERGENCY: LARGE REGIONAL MEASLES OUTBREAK

OVERVIEW: A measles outbreak in West Texas (TX) has been linked to cases in New Mexico (NM), with additional cases reported in Oklahoma (OK) and Kansas (KS). A substantial number of measles patients have required hospitalization, and there have been two fatalities. These deaths represent the first measles-related fatalities in the U.S. since 2015 and the first death of a child from measles since 2003.

THE VIRUS: Measles is a highly contagious viral disease that spreads primarily through respiratory droplets from coughing or sneezing. Symptoms include high fever, cough, runny nose, conjunctivitis, and a distinctive red, blotchy rash. The virus can remain infectious in the air or on surfaces for up to two hours, significantly increasing its transmissibility. Although preventable by vaccination (MMR), measles outbreaks continue in areas with low vaccination rates, creating a risk for serious health complications.

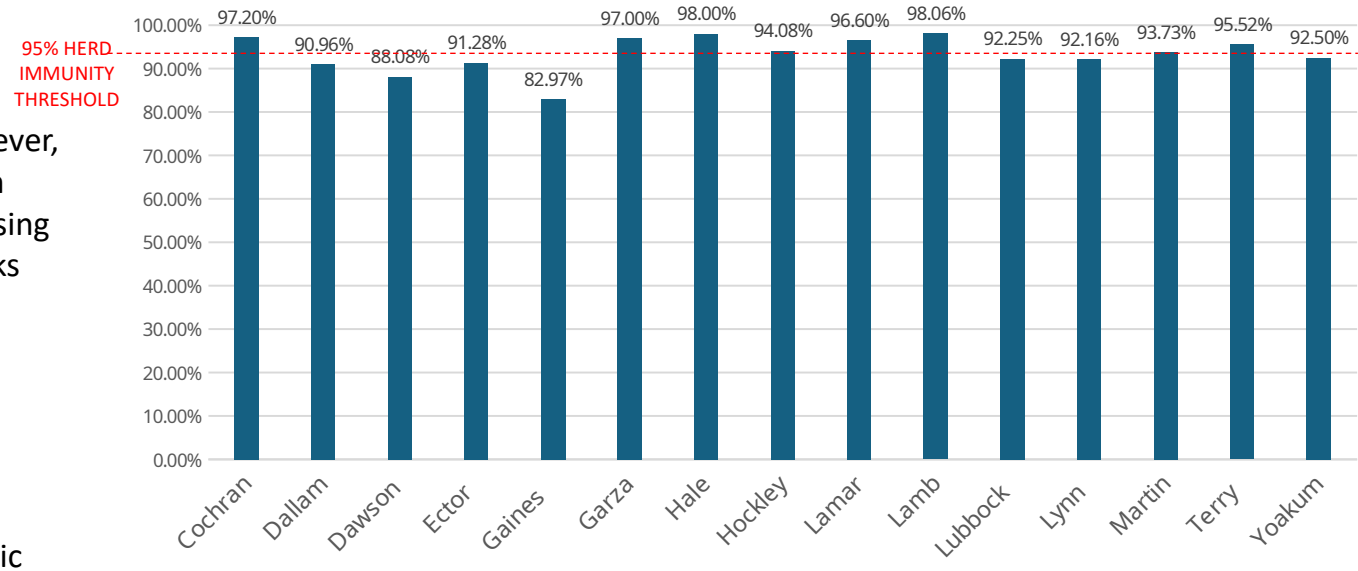
FACTORS DRIVING THIS OUTBREAK:

- Low vaccination rates
- High levels of vaccine hesitancy and misinformation
- Community mistrust in public health authorities, heightened by post-pandemic attitudes

PUBLIC HEALTH RESPONSE:

- Increased vaccination campaigns and community outreach
- Efforts to build trust and combat misinformation
- Coordination with schools, healthcare providers, and community organizations

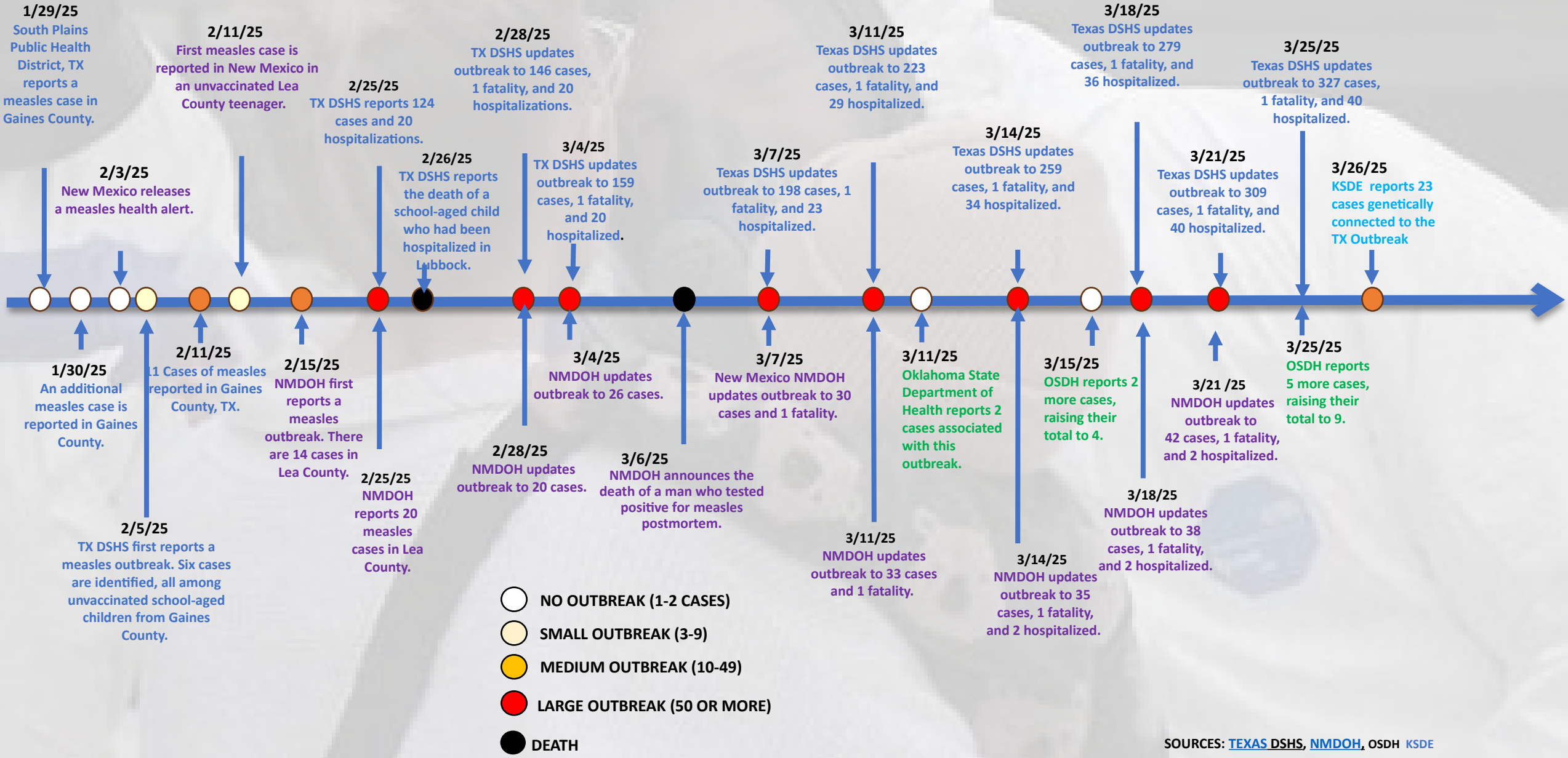
MMR VACCINE RATES AMONG KINDERGARTENERS 2023-2024



Among the affected counties in TX, 9 out of 15 are below a 95% vaccination rate, the recommended rate for herd immunity (SOURCE: Annual Report on Immunization Status and CORI)

SOURCES: TX CONFIRMED CASE OF MEASLES - JANUARY 2025, MEASLES OUTBREAK IN GAINES COUNTY, TEXAS, MEASLES OUTBREAK DECLARED IN LEA COUNTY, NM 2005 MEASLES OUTBREAK GUIDANCE TEXAS DEPARTMENT OF STATE HEALTH SERVICES REPORTED DEATH, NEW MEXICO DEPARTMENT OF HEALTH REPORTED DEATH , OKLAHOMA STATE DEPARTMENT OF HEALTH, CENTER FOR OUTBREAK RESPONSE (CORI), CDC

TIMELINE (TX – NM – OK)



SOURCES: TEXAS DSHS, NMDOH, OSDH KSDE

CURRENT SITUATION

The outbreak in the US now stands at **402 confirmed cases** across **Texas, New Mexico, Oklahoma**, and **Kansas**, though experts warn this is **likely a severe undercount**. The situation remains fluid, with case numbers expected to rise. Experts project the outbreak could last **up to a year**.

KANSAS: The virus has mainly infected unvaccinated children in the southwest corner of the state. **Genetic sequencing has suggested a link to the Texas and New Mexico outbreaks, state health officials told The New York Times** on Wednesday, 3/26/2025. .

CURRENT CASE COUNT: 402 (As of 3/26/2025)

- **Texas:** 327 (+18 since the last report. Lamb is the latest county to be added)
- **New Mexico:** 43 (+1)
- **Oklahoma:** 9 (+5)
- **Kansas**: 23 (New)

HOSPITALIZATIONS: 42 (No change since last report)

- **Texas:** 40 have been hospitalized. This is 12% of all confirmed cases in TX.
- **New Mexico:** 2 have been hospitalized. This is 5% of all confirmed cases in NM.

DEATHS: 2 (No change since last report)

CONTACT TRACING: Texas, New Mexico, and Oklahoma are conducting contact tracing to help identify and track positive cases and inform people who may have been exposed.

AGES OF CASES:

WEST TEXAS OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
105(32%)	140(43%)	63(19%)	19 (6%)	327
NEW MEXICO OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
8(19%)	11 (26%)	23(53%)	1 (2%)	43
KANSAS				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
6	15	2	0	0
OKLAHMOMA OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
7 Cases Confirmed – no ages provided			**2**	**9**

LABORATORY TESTING:

- In TX: Texas Tech University Bioterrorism Response Laboratory, part of a national network of CDC-funded labs, began measles testing on 3/3/2025. Prior to that, only the state lab in Austin was performing the test, which resulted in delays due to the distance involved.

- In NM: If measles is suspected, providers are to immediately notify NMDOH by **calling 1-833-SWNURSE, option 4 (1-833-796-8773)** for further guidance and testing approval. They are to obtain a throat swab or nasopharyngeal swab in viral transport medium for PCR testing at the State Public Health Laboratory.

SOURCES: TX MEASLES OUTBREAK , NM MEASLES OUTBREAK , OSDH, MEDICAL XPRESS

CURRENT SITUATION

VACCINATION RATES:

- TX: Vaccination rates are low in the most affected areas. In Gaines County, TX, vaccination rates are significantly below the threshold required for herd immunity, contributing to the virus's rapid spread. In the county, one in five students is not vaccinated with the measles-mumps-rubella (MMR) vaccine.
- NM: Reports that 94% of individuals aged 18 and under in Lea County have received at least one dose of the MMR vaccine. This is slightly below the state's overall rate of 95% for the same age group.
- Because measles is so highly contagious, 95% of the population must be vaccinated to achieve herd immunity and prevent ongoing transmission of the virus.

STATE	VACCINATED WITH 2 DOSES	UNVACCINATED/ UNKNOWN	TOTAL CASES
TX	2	325*	327

NOTES: The TX unvaccinated/unknown category includes people with no documented doses of measles vaccine more than 14 days before symptom onset.

STATE	VACCINATED WITH AT LEAST ONE DOSE	NOT VACCINATED	UNKNOWN	TOTAL CASES
NM	4	31	8	43

STATE	VACCINATED WITH AT LEAST ONE DOSE	UNVACCINATED / UNKNOWN	TOTAL CASES
OK	0	9	9

STATE	VACCINATED	NOT VACCINATED	UNKNOWN	TOTAL CASES
KS	1	21	1	23

IMPACTS ON AREA HOSPITALS - As of **3/25/2025**, most hospitalized cases involve **unvaccinated children** experiencing severe symptoms, including respiratory complications that necessitate **supplemental oxygen and intensive care**. While all area hospitals remain operational, they are facing **challenges** in managing the outbreak.

INFECTION CONTROL MEASURES: To prevent further spread within healthcare facilities, hospitals have implemented **strict infection control protocols**:

- **Mask Mandates:** UMC Children's Hospital in Lubbock has implemented a mask-wearing mandate in its first- and second-floor common areas to protect vulnerable patients, including newborns and individuals with immunocompromised conditions.
- **Screening and Isolation: Midland Memorial Hospital** is conducting **symptom screenings** at entry points and isolating **suspected measles cases** to prevent transmission within the facility.

INCREASED PATIENT LOAD: The outbreak has led to a **surge in hospitalizations**, with patients experiencing severe complications such as **pneumonia**. This influx is straining **hospital capacity, staff, and resources** across the region.

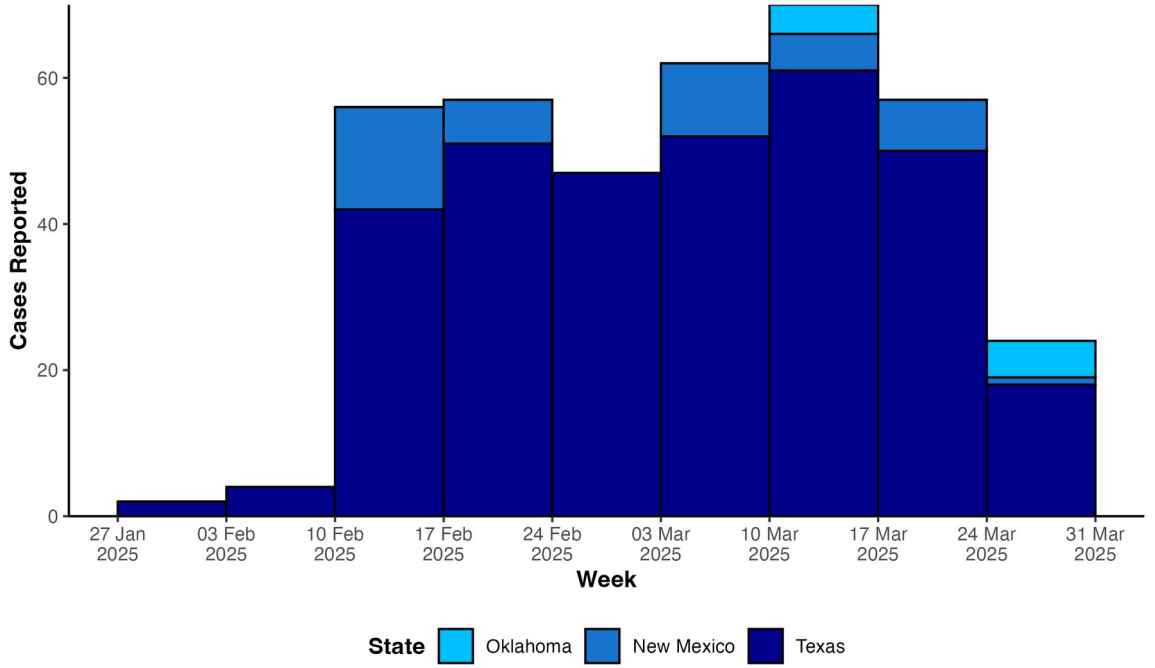
NEW COMPICATION: Doctors in West Texas are observing measles cases exacerbated by alternative therapies promoted by vaccine skeptics. **Parents increasingly turning to unproven supplements and treatments to shield their unvaccinated children from measles have unknowingly caused additional harm.** One supplement is cod liver oil, rich in vitamin A. Physicians at Covenant Children's Hospital in Lubbock, Texas, report treating several unvaccinated children who exhibited symptoms of **liver damage** due to **excessive vitamin A intake**. These children had **received unsafe doses of cod liver oil and other vitamin A supplements for several weeks**, mistakenly believing this would prevent measles infection.

SOURCES: TX MEASLES OUTBREAK , NM MEASLES OUTBREAK , OSDH , AP -3/21/2025 , NYT

EPI CURVE AND CASES OVER TIME

NOTE: WILL UPDATE WITH KS DATA WITH NEXT BRIEF

SOUTHWEST MEASLES OUTBREAK – EPI CURVE

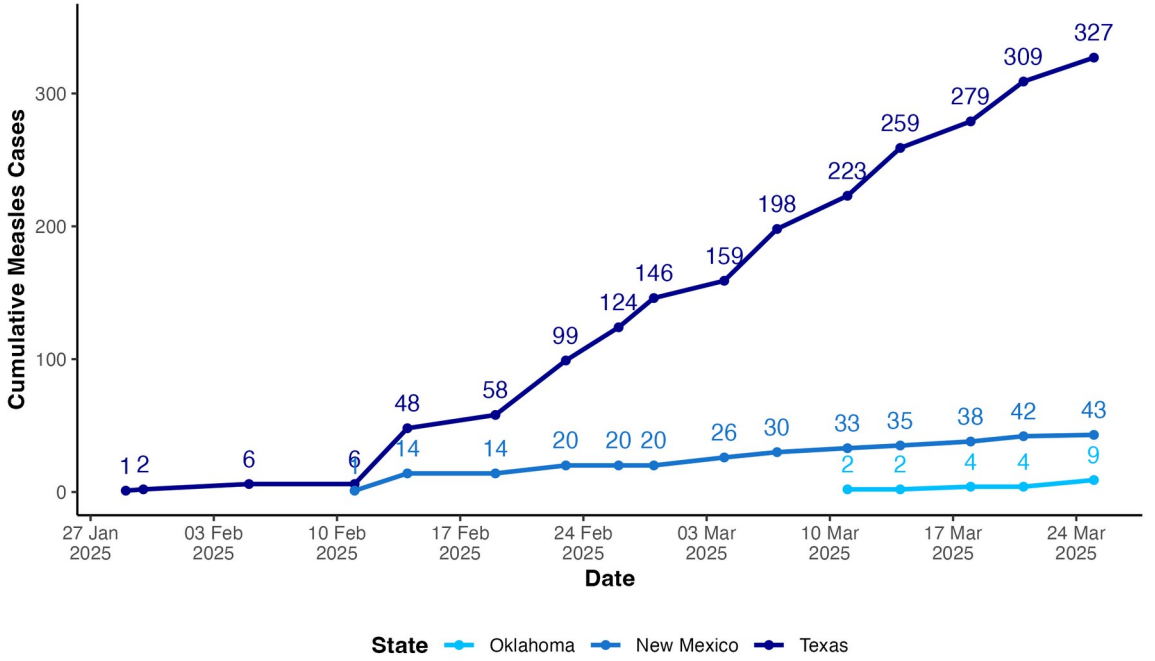


TX: Reported first case the week of 1/27/25. There have been an average of 51 new cases per week since 2/10/25. Most cases in the current outbreak are in Gaines County, TX.

NM: Reported first case the week of 2/10/25. The greatest increase in new cases was during the week of 2/10/25.

OK: Reported 4 cases the week of 3/10/25. 5 new cases identified 3/25/2025.

SOUTHWEST MEASLES OUTBREAK – CUMULATIVE CASES OVER TIME



TX: The number of cases has increased consistently over time, to a total of 327 cases across 15 counties. During the week of 3/25/25, one county reported a case for the first time during the current outbreak (Lamb).

NM: A total of 43 cases have been reported in 2 counties (Lea and Eddy).

OK: A total of 9 cases have been reported by the OSDH.

SOURCES: TEXAS DEPARTMENT OF STATE HEALTH SERVICES, NEW MEXICO DEPARTMENT OF HEALTH, OKLAHOMA STATE DEPARTMENT OF HEALTH, CENTER FOR OUTBREAK RESPONSE (CORI), OSDH

EPI SUMMARY

COUNTY	MEASLES CASES (Number of new cases)	% KINDERGARTENERS VACCINATED (2023-2024)	NUMBER OF SCHOOL DISTRICTS IN EACH COUNTY WITH MMR VACCINATION RATES BELOW HERD IMMUNITY LEVELS (95%)
TEXAS			
Cochran	7	97.2%	1
Dallam	6	90.96%	2
Dawson	13	88.08%	4
Ector	2	91.28%	5
Gaines	226 (+15)	82.97%	3
Garza	1	97%	0
Hale	1	98%	0
Hockley	1	94.08%	2
Lamar	5	96.6%	5
Lamb	1 (New)	98.06	1
Lubbock	10 (+2)	92.25%	5
Lynn	1	92.16%	2
Martin	3	93.73%	1
Terry	37 -	95.52%	2
Yoakum	13 (+1)	92.50%	1

EPI SUMMARY (CONTINUED)

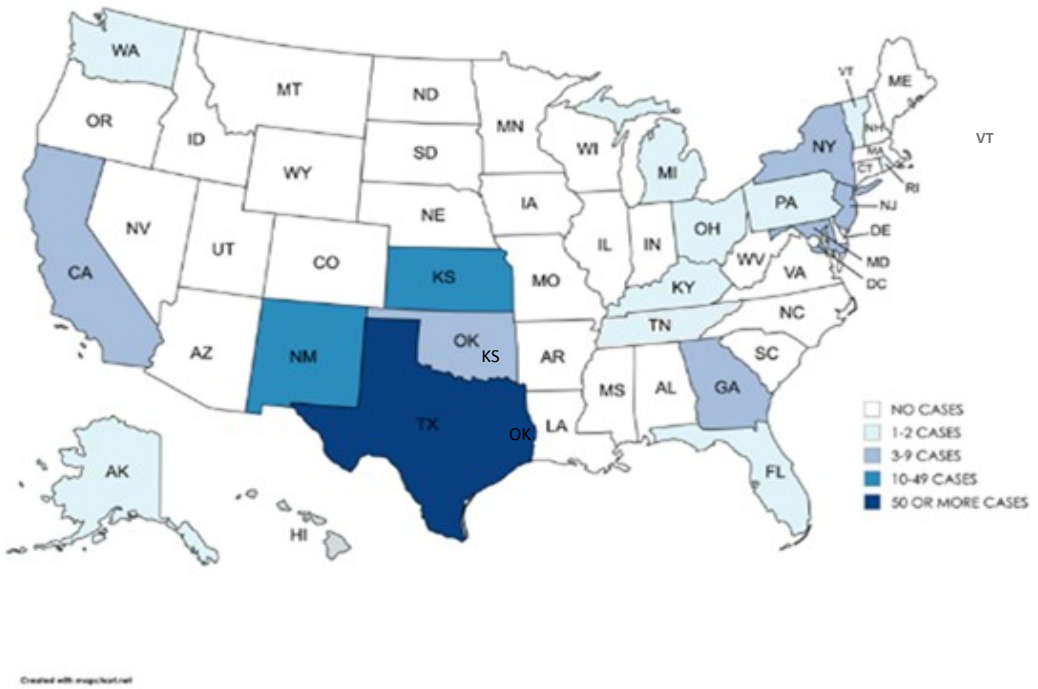
COUNTY	MEASLES CASES (Number of new cases)	% KINDERGARTENERS VACCINATED (2023-2024)	NUMBER OF SCHOOL DISTRICTS IN EACH COUNTY WITH MMR VACCINATION RATES BELOW HERD IMMUNITY LEVELS (95%)
KANSAS			
Grant	3	99%	
Gray	1	66%	
Haskel	4	58%	
Kiowa	6	92%	
Morton	3	82%	
Stevens	6	58%	
NEW MEXICO			
Eddy	2	• 18 years or younger: 95% vaccination rate • In adults: 63% have received one shot of MMR, and only 55% have received both shots, according to local health officials, though they noted that there may be vaccinated adults whose records have not been added to the system. Adults make up more than half of reported cases in New Mexico.	
Lea	41 (+1)		
OKLAHOMA			
Not specified	4 (+5)		

NOTE: WILL UPDATE WITH MORE DETAILS ON KS NEXT BRIEF

US OUTLOOK

** NOTE: The information on this page has been gathered by reviewing data from state health departments, news media sources, and CORI*

447*



- The increase in measles cases can be attributed to falling vaccination rates and to increased importation of travel-related cases, which occur when unvaccinated people acquire measles abroad and bring it back to the U.S.
- There have been four confirmed outbreaks of measles in the U.S. so far in 2025 (TX-NM-OK, NJ, GA, KS), with 91% of cases linked to these domestic outbreak.

STATE	CASES
ALASKA	2
CALIFORNIA	8
FLORIDA	1
D.C.	1
GEORGIA	3
KANSAS	23
KENTUCKY	1
MARYLAND	3
MICHIGAN	1
MINNESOTA	1
NEW MEXICO	43
NEW YORK CITY	3
NEW YORK	1
NEW JERSEY	3
PENNSYLVANIA	4
OHIO	10
OKLAHOMA	9
RHODE ISLAND	1
TEXAS	335**
TENNESSEE	1
VERMONT	1
WASHINGTON	2
TOTAL	447

*As of 3/26/2025, 1700 hrs. EDT, there are approximately **447** measles cases across **20 States, NYC, and DC.***

*Currently, there are **four measles outbreaks**:*

1. *West Texas, involving 15 counties in Texas, 2 counties in New Mexico, and 2 unspecified counties in Oklahoma*
2. *6 counties in Kansas connected West TX*
3. *Bergen County, New Jersey*
4. *metro Atlanta, Georgia*

SMALL OUTBREAK (3-9)

MEDIUM OUTBREAK (10 - 49)

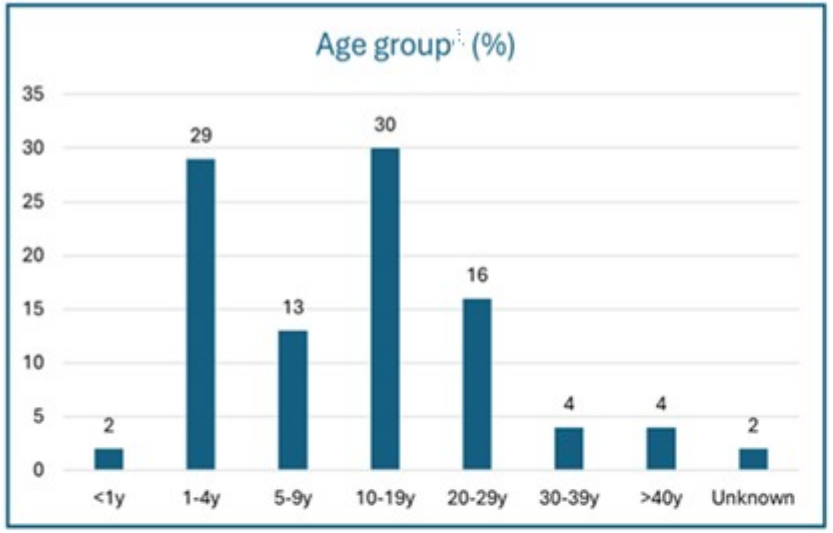
LARGE OUTBREAK (50 OR MORE)

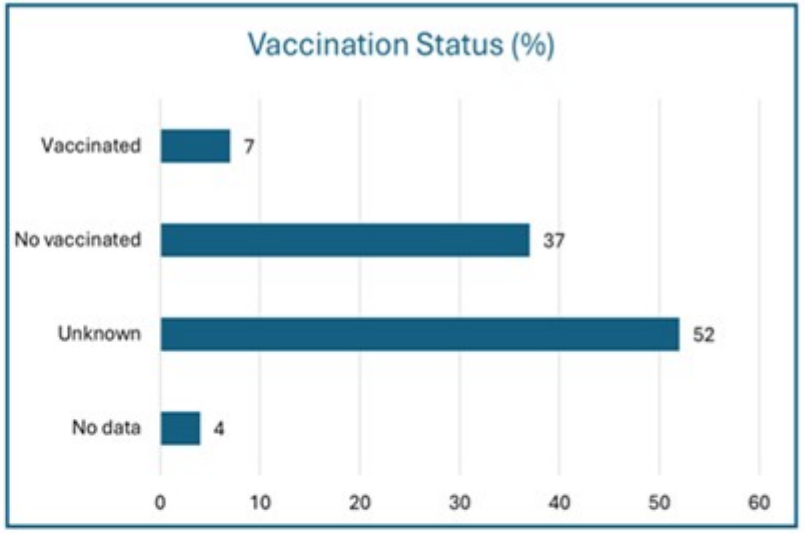
** **TEXAS CASES NOT ASSOCIATED WITH OUTBREAK: 8**
- 2 cases - Adults, Harris County (travel-related)
- 1 case – Infant, Harris County – required hospitalizations (travel-related)
- 1 case - Infant, Travis County (travel-related)
- 1 case - Adult, Rockwell County (travel-related)
- 1 case – Adult, Midland County (Travel Related)
- 2 cases - Lamar County

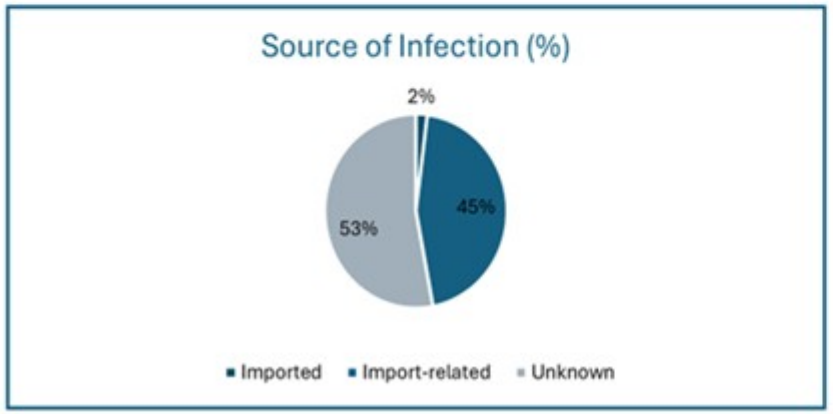
TEXAS CASES ASSOCIATED WITH THE OUTBREAK: 327

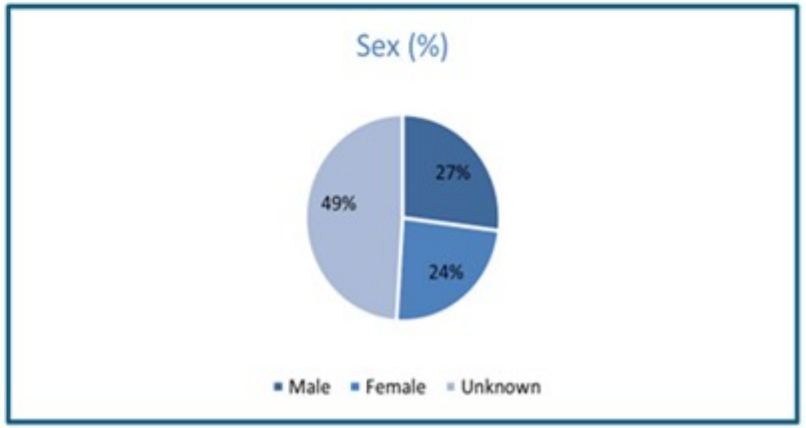
GLOBAL OUTLOOK: THE AMERICAS

Characteristics of measles outbreaks in the Americas, 2025 (n=611)









Sources: PAHO MR BULLETIN-3/14/ 2025, GLOBAL HEALTH UPDATE 3.20.25 - FINAL.PDF, MEDICAL XPRESS 3/18/2025

CANADA:

- Canada's measles outbreak began in October 2024, following a travel-related case in New Brunswick, which subsequently sparked outbreaks in both New Brunswick and Ontario.
- As of 3/19/2025, Public Health Ontario (PHO) has reported a total of 470 outbreak-associated cases in Ontario, including 361 confirmed and 109 probable cases. Cases have been relatively evenly distributed across age groups, with the majority (74.7%) occurring in individuals under 20 years of age.
- The most affected health units are Southwestern Public Health (223 cases) and Grand Erie Public Health (111 cases). Nearly all cases involved individuals who were either unvaccinated (85.1%) or had unknown vaccination status (10.6%). Additionally, 34 individuals (7.2%) have been hospitalized. Overall, 90% of cases reported being unvaccinated.

MEXICO:

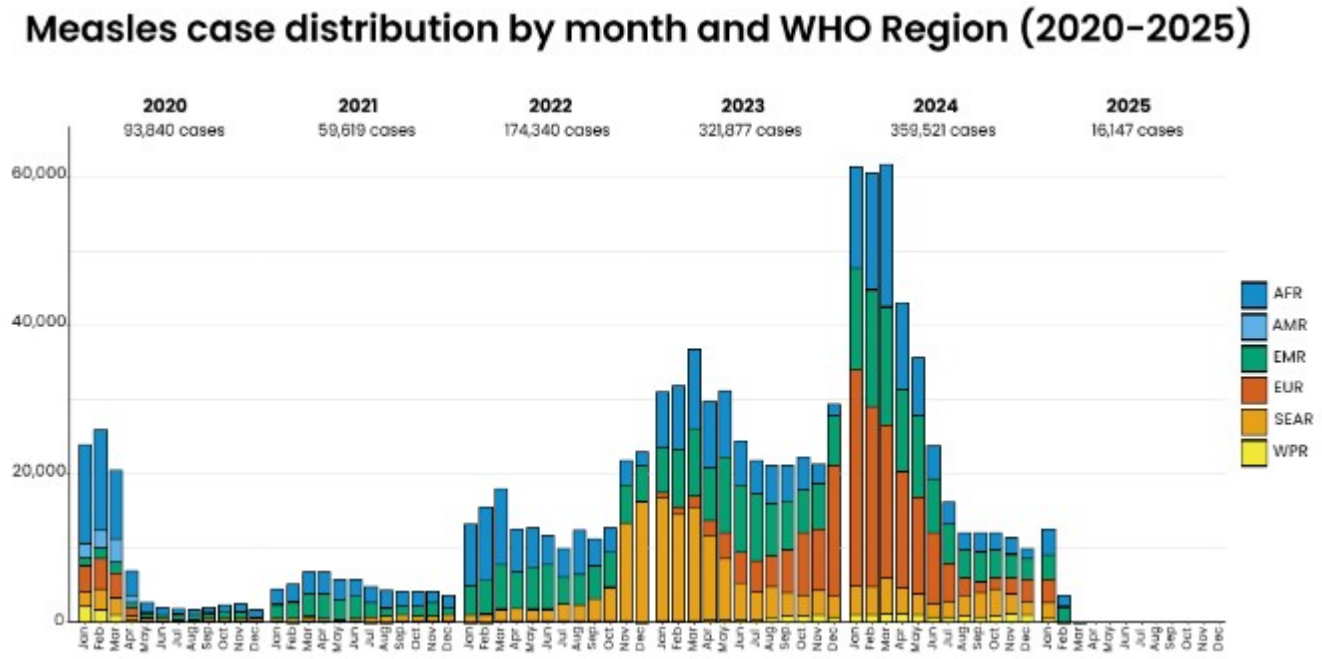
- On 3/18/2025, Mexico confirmed 43 measles cases, 39 of which were recorded in the northern state of Chihuahua and are likely linked to the TX outbreak.
- More than 50% of the cases are in children under nine years old.

GLOBAL EPIDEMIOLOGY

MEASLES MORBIDITY AND MORTALITY – 359,521 CASES OF MEASLES WORLDWIDE IN 2024
(FOCUS ON EUROPEAN REGION AND THE AMERICAS FOR THIS REPORT)

EUROPEAN REGION: One third of all reported measles cases in 2024 occurred in the WHO European Region, with 127,350 cases reported across 53 countries in Europe and Central Asia. This figure is double the number reported in 2023 and represents the highest number of cases since 1997. Children under five accounted for 43%— over 54,000 cases. More than half of all individuals infected, nearly 74,000 people, required hospitalization.

AMERICAS REGION: Although the Americas region was reverified as measles-free in 2024, the disease remains a threat due to its ongoing circulation in other parts of the world, which increases the risk of importation through travelers. Additionally, pockets of unimmunized populations continue to be vulnerable. In 2024, the region reported 17,887 suspected cases of measles, of which 464 were confirmed—many occurring among adolescents and young adults. Notably, 63% of confirmed cases had not been vaccinated, underscoring persistent gaps in immunization coverage.



SOURCES: WHO MARCH 2025 UPDATE, CDC, UNICEF - EUROPEAN REGION, PAHO

Highest incidence rates (2/2024 – 1/2025)

Country	Cases	Cases per 1 million persons
Kyrgyzstan	12940	1,800.72
Romania	27314	1,436.44
Kazakhstan	18805	913.19
Azerbaijan	8586	830.64
Iraq	25264	548.72
Yemen	21457	528.72
Bosnia and Herzegovina	1578	498.70
Liberia	2040	363.45
Burkina Faso	6790	288.34
Eq. Guinea	474	250.46

Highest total cases (8/2024 – 1/2025)

Country	Cases
Yemen	7,584
Pakistan	6,661
India	6,532
Thailand	6,224
Ethiopia	4,596
Romania	4,478
Afghanistan	4,358
Indonesia	3,346
Kyrgyzstan	2,966
Viet Nam	1,835

IMMUNE AMNESIA - THE LONG-TERM IMMUNE DAMAGE INFLICTED BY MEASLES

What is “immune amnesia”?

“Immune amnesia” is a condition where the immune system forgets previously acquired immunity following a measles infection. It results in a significant reduction in the body’s ability to protect itself from previously encountered infections, increasing a person’s vulnerability to other viral and bacterial infections.

How does “immune amnesia” happen?

The measles virus destroys the memory cells in the immune system, leading to loss of previously acquired immunity (11-73% reduction in one’s antibodies). Destroying immune cells decreases the body’s ability to fight against viruses and bacteria and increases the risk of severe infection and death.

How long does it last?

It takes 2-3 years after measles infection for protective immune memory to be restored.

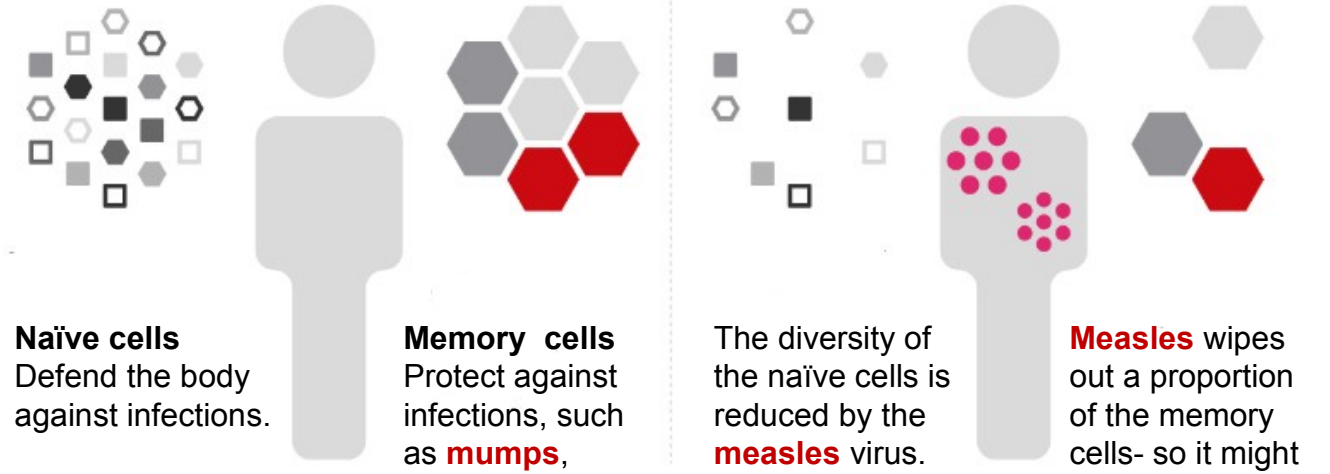
How to prevent “immune amnesia”?

By maintaining high measles vaccination coverage, herd immunity prevents the spread of measles infection, thus preventing the long-term immunosuppressive effects associated with measles infection.

How Measles Leaves the Body Vulnerable to Infection

Measles affects two **key lines of immune response** within the body.

After measles strikes, the body is left vulnerable long after the initial illness has passed.



Naïve cells
Defend the body against infections.

Memory cells
Protect against infections, such as **mumps**, which the body has had before.

The diversity of the naïve cells is reduced by the **measles** virus.

Measles wipes out a proportion of the memory cells- so it might be less effective against mumps

Guardian graphic. Source: Science Immunology

SOURCES: THE LANCET,, NIH, AMERICAN SOCIETY FOR MICROBIOLOGY, IMMUNOLOGY GRAPHIC

MYTHS VERSUS FACTS

MYTH #1 Everyone should get the measles vaccine.

☑ **FACT**: Babies younger than 6 months, patients whose immune systems are not normal or who are on medications that suppress it should NOT get live virus vaccines like the MMR. Instead, these patients depend upon others to be vaccinated to keep measles out of their communities. The potential problem with early immunization is that many babies still have enough antibodies in their bodies from their mothers that the vaccine would not work effectively.

MYTH #2 - Measles is only a problem for children

☑ **FACT**: While children have a higher risk of complications, adults can also get measles and experience serious illness.

MYTH #3 - Am I (or my children) at high risk of contracting measles visiting theme parks and playgrounds?

☑ **FACT: The biggest risk of contracting** measles is living in a community with a **high rate of unvaccinated people** or traveling to an area where measles rates are high due to low vaccination rates. People who have had 2 doses of the MMR are at very low risk to contract the measles virus.

MYTH BUSTER

Stay informed. Stay protected.

MYTH #4 - MYTH: Proper handwashing alone can prevent measles.

☑ **FACT**: Good hand washing is very important for preventing illness. However, **measles is so contagious** that even tiny particles with live measles virus stay in the air for **2 hours** and can remain on surfaces for several hours after a contagious person has left a room. In medical settings, that room is closed for at least several hours and surfaces sanitized to prevent spread.

Myth #5: My child is only a year old—too young to be vaccinated.

☑ **FACT:** Most children receive their first measles vaccine between 12 and 15 months. During a local outbreak, vaccination can begin as early as 6 months. However, because young babies might still have maternal antibodies, vaccines given before 12 months may be less effective. Therefore, children vaccinated early due to an outbreak should be re-vaccinated at 12 months and again at age 4 to ensure lasting protection.

Myth #6: You can get the measles multiple times, even if you've already had it.

☑ **FACT:** Not true. Unlike the chicken pox, measles do not come back once your system is cleared of the virus.

SOURCES: THE LANCET, INFECTIOUS DISEASES SOCIETY OF AMERICA, VACCINES & AUTISM Q&A, 10 COMMON MYTHS ABOUT MEASLES—AND THE REAL FACTS

CONTRIBUTORS

The Virtual Medical Operations Center Briefs (VMOC) were created as a service-learning project by faculty and graduate students at the Yale School of Public Health in response to the 2010 Haiti Earthquake. Each year, the VMOC Briefs are produced by students enrolled in Environmental Health Science Course 581 - Public Health Emergencies: Disaster Planning and Response. These briefs compile diverse information sources – including status reports, maps, news articles, and web content– into a single, easily digestible document that can be widely shared and used interactively.

Key features of this report include:

- **Comprehensive Overview:** Provides situation updates, maps, relevant news, and web resources.
- **Accessibility:** Designed for easy reading, wide distribution, and interactive use.
- **Collaboration:** The “unlocked" format enables seamless sharing, copying, and adaptation by other responders.

The students learn by doing, quickly discovering how and where to find critical information and presenting it in an easily understood manner.

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