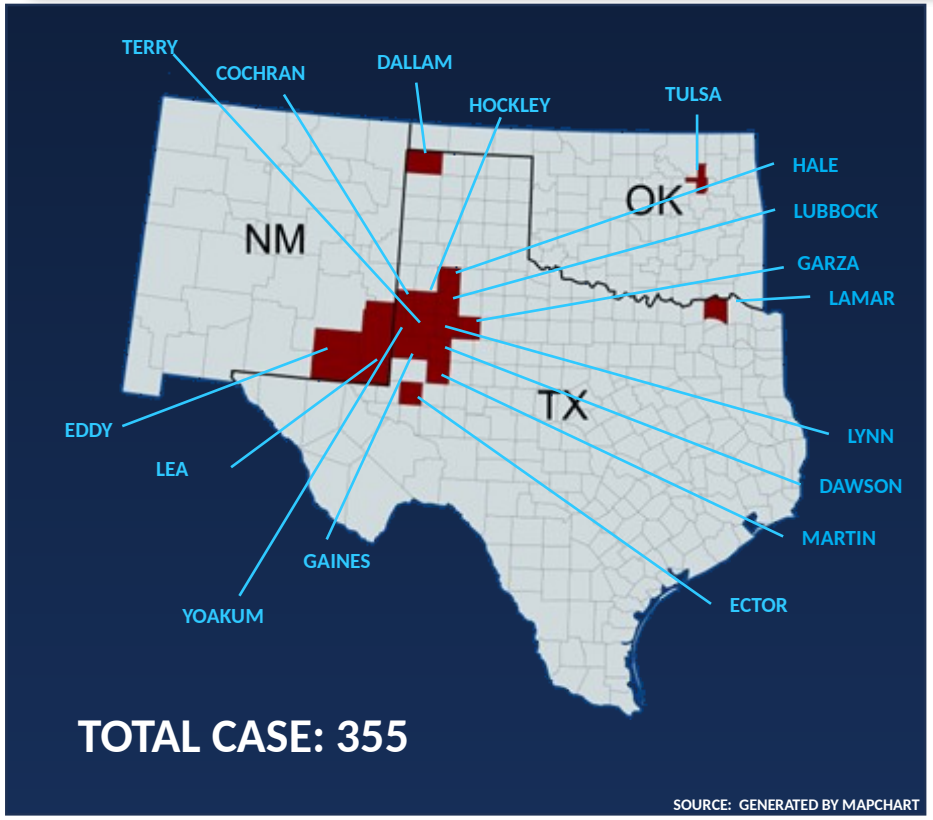
YALE ESF-8 VIRTUAL MEDICAL OPERATION CENTER (VMOC) SPECIAL REPORT

MEASLES OUTBREAK - SOUTHWEST U.S. - 2025



MORBIDITY AND MORTALITY

STATE	CASES	HOSPITALIZATIONS	DEATHS
TX	309	40	1
NM	42	2	1
OK	4	0	0
TOTAL	355	42	2

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

AS OF: 1700 HRS EST 3/22/2025

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

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

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

NEWS SOURCES
- AP
- CBS NEWS
- CNN
- DALLAS MORNING NEWS
- FOX NEWS
- KCBD NEWS
- KERA NEWS
- NEW YORK TIMES
- NEWSWEEK
- NBC NEWS
- NPR
- OUTBREAK NEWS TODAY
- PBS NEWS
- REUTERS
- TX PUBLIC RADIO
- USA TODAY
- WASHINGTON POST

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

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). 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.

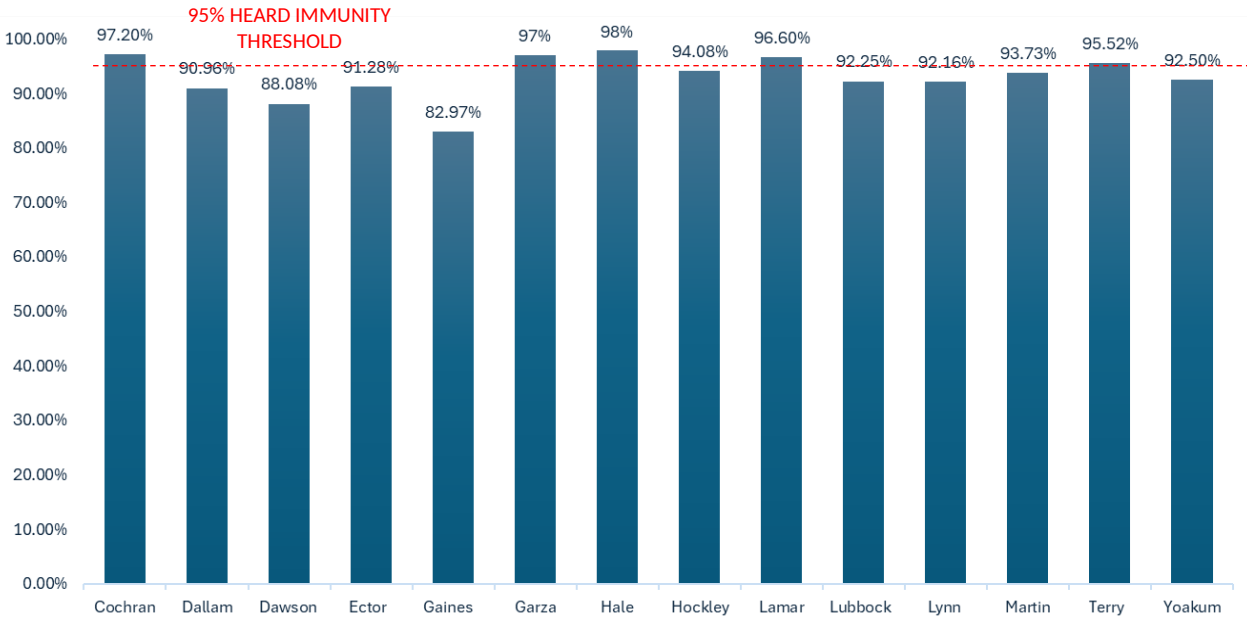
FACTORS DRIVING THIS OUTBREAK:

- 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

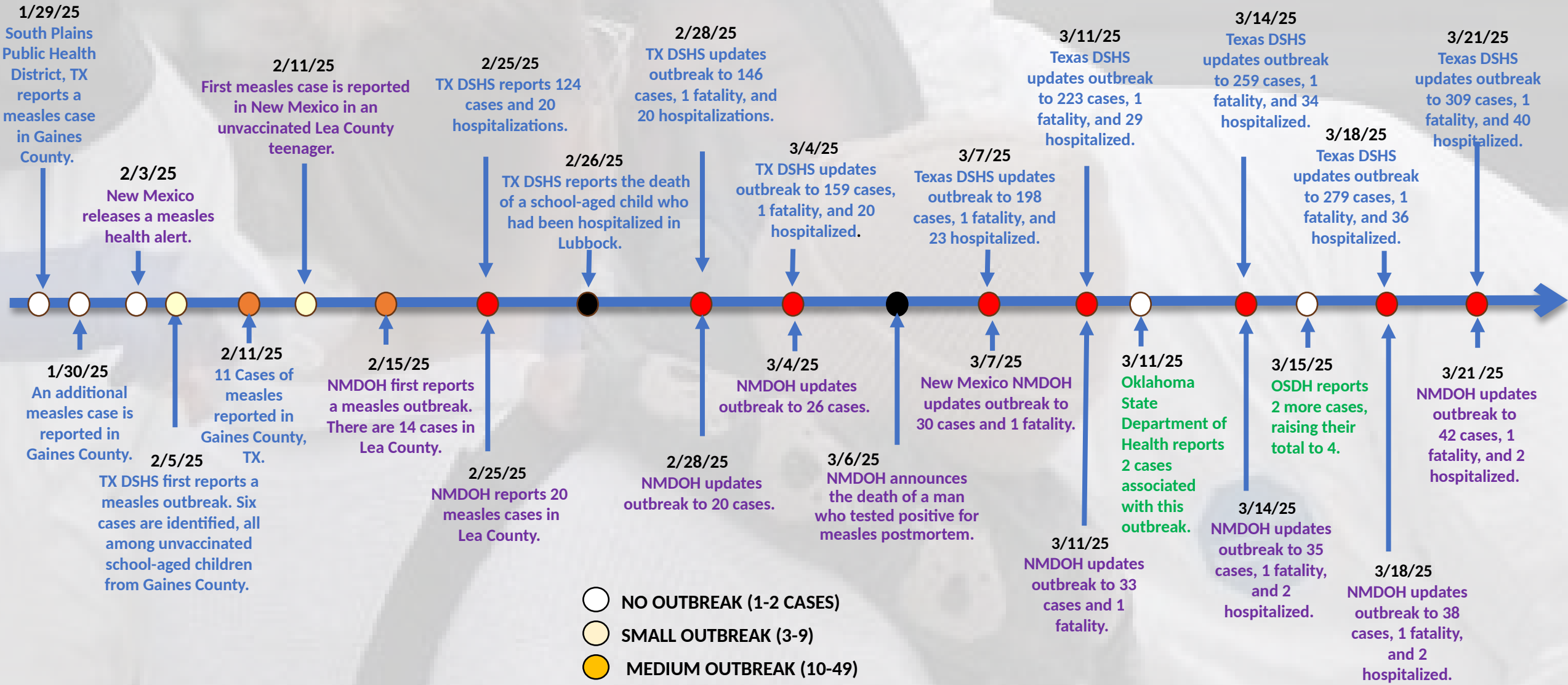
MMR VACCINE RATES AMONG KINDERGARTENERS 2023-2024



Among the affected counties in TX, 9 out of 14 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

CURRENT SITUATION

The outbreak in the US now stands at **355 confirmed cases** across **Texas, New Mexico, and Oklahoma**, 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**.

CURRENT CASE COUNT (As of 3/21/2025)

- **Texas:** 309 (+30 since last report)
- **New Mexico:** 42 (+4 since last report)
- **Oklahoma:** 4 (No change)

MEXICO IMPACT:

As of 3/18/2025, Mexican health authorities have confirmed **39 measles cases** in the northern state of **Chihuahua** linked to the Texas outbreak. The cases are concentrated in a **Mennonite community near Cuauhtémoc**, where cross-border travel for family visits and business is common.

- Over **50% of cases** are in **children under 9 years old**.
- **None** of the infected individuals in Chihuahua were vaccinated.
- The **vaccination rate** in Chihuahua stands at **75%**.

.

AGES OF CASES:

WEST TEXAS OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
102(33%)	130(42%)	58(19%)	19 (6%)	309
NEW MEXICO OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
8(19%)	10 (24%)	23(55%)	1 (2%)	42

NOTE: Oklahoma State Health Department has reported 4 cases but no details on the ages.

HOSPITALIZATIONS: 42

- TX: 40 have been hospitalized. This is 13% of all confirmed cases.
- NM: 2 have been hospitalized. This is 5% of all confirmed cases.

DEATHS: 2

No new deaths reported during this period.

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.

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	307*	309

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	30	8	42

STATE	VACCINATED WITH AT LEAST ONE DOSE	UNVACCINATED/ UNKNOWN	TOTAL CASES
OK	0	4	4

IMPACTS ON AREA HOSPITALS - As of **3/21/2025**, 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 mandated **mask-wearing** in its **first and second-floor common areas** to protect vulnerable patients, including newborns and immunocompromised individuals.
- **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.

RESOURCE CONSTRAINTS

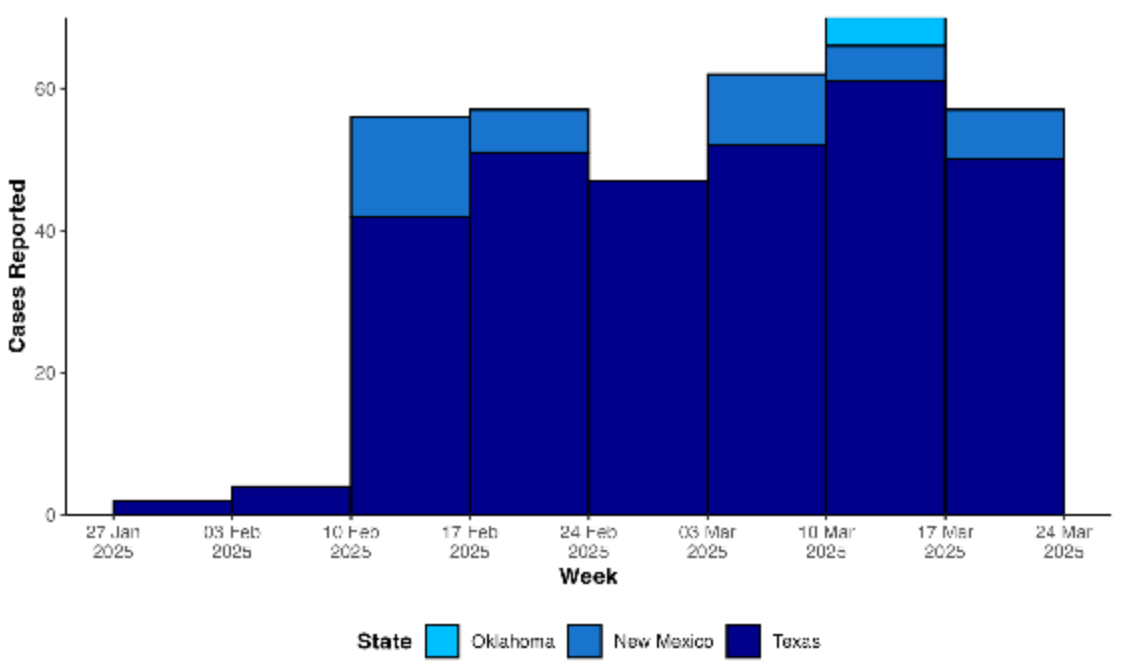
- Facilities like the **Lynn County Hospital District** lack specialized **isolation rooms** for infectious diseases and are relying on **makeshift solutions** to manage patient care.
- Medical supplies, including **PPE, IV fluids, and respiratory support equipment**, are being rapidly consumed, increasing the urgency for restocking and logistical support.

Hospitals continue to coordinate with **public health authorities** to contain the outbreak, emphasizing **vaccination efforts and community awareness** to mitigate further spread.

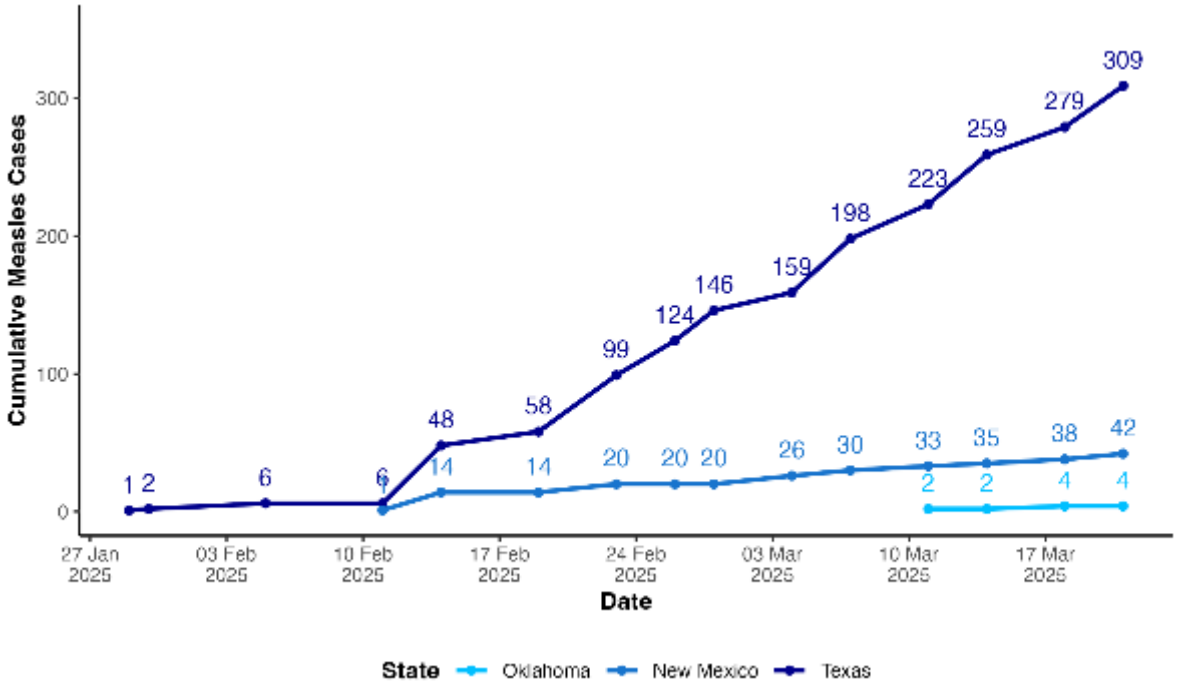
SOURCES: TX MEASLES OUTBREAK , NM MEASLES OUTBREAK , **OSDH**, AP -3/21/2025

EPI CURVE AND CASES OVER TIME

WEST TEXAS MEASLES OUTBREAK – EPI CURVE



WEST TEXAS MEASLES OUTBREAK – CUMULATIVE CASES OVER TIME



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. The majority of cases in the current outbreak are in 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. No new cases since then.

TX: The number of cases has increased consistently over time, to a total of 309 cases across 14 counties. During the week of 3/21/25, three counties reported cases for the first time during the current outbreak (Garza, Hale, and Hockley).

NM: A total of 42 cases have been reported in 2 counties (Lea and Eddy).

OK: A total of 4 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

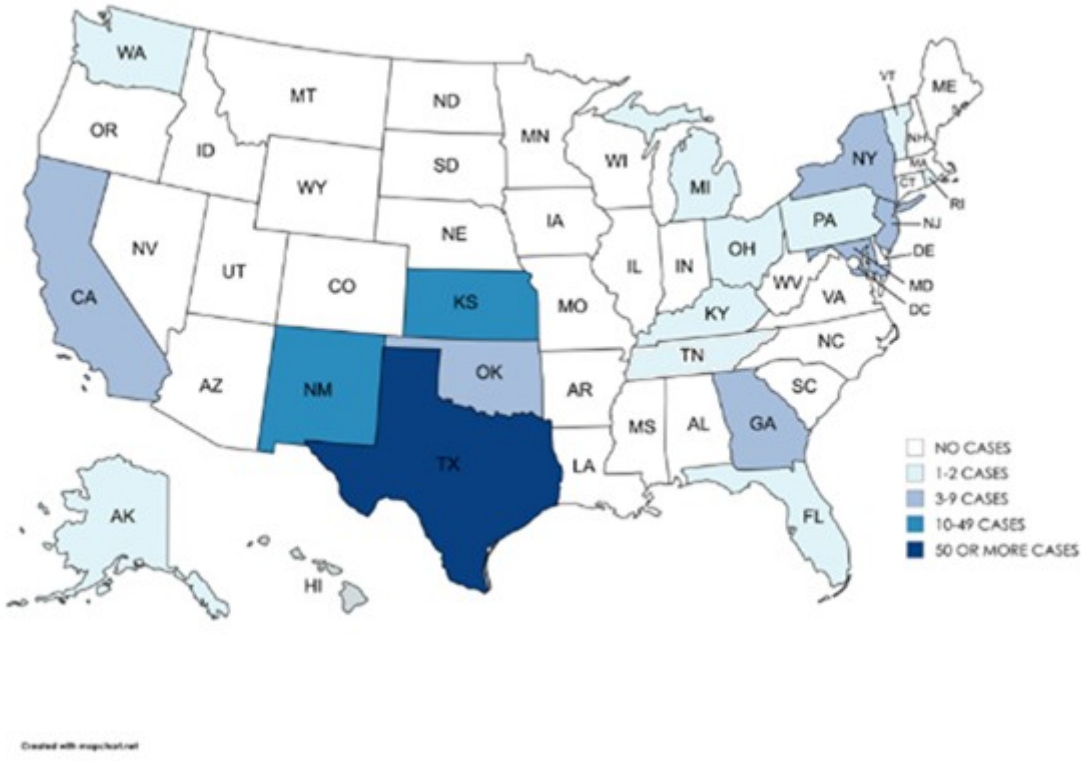
EPI SUMMARY

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 (+2)	88.08%	4
Ector	2	91.28%	5
Gaines	211 (+37)	82.97%	3
Garza	1 (NEW)	97%	0
Hale	1 (NEW)	98%	0
Hockley	1 (NEW)	94.08%	2
Lamar	5	96.6%	5
Lubbock	8 (+3)	92.25%	5
Lynn	2	92.16%	2
Martin	3	93.73%	1
Terry	37 (+1)	95.52%	2
Yoakum	12 (+1)	92.50%	1
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	40 (+4)		
OKLAHOMA			
Not specified	4		

US OUTLOOK

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

407*



STATE	CASES
ALASKA	2
CALIFORNIA	8
FLORIDA	1
GEORGIA	3
KANSAS	10
KENTUCKY	1
MARYLAND	3
MICHIGAN	1
NEW MEXICO	42
NEW YORK CITY	3
NEW YORK	1
NEW JERSEY	3
PENNSYLVANIA	2
OHIO	1
OKLAHOMA	4
RHODE ISLAND	1
TEXAS	317**
TENNESSEE	1
VERMONT	1
WASHINGTON	2
TOTAL	407

*As of 3/22/2025, 1700 hrs. EDT, there are approximately **407** measles cases across **19 States and NYC.***

*CDC has reported **three measles outbreaks**:*

1. *West Texas, involving 14 counties in Texas, 2 counties in New Mexico, and 2 unspecified counties in Oklahoma*
2. *Bergen County, New Jersey*
3. *metro Atlanta, Georgia*

SMALL OUTBREAK (3-9)

MEDIUM OUTBREAK (10 - 49)

LARGE OUTBREAK (50 OR MORE)

** **TEXAS CASES NOT ASSOCIATED WITH OUTBREAK: 8**

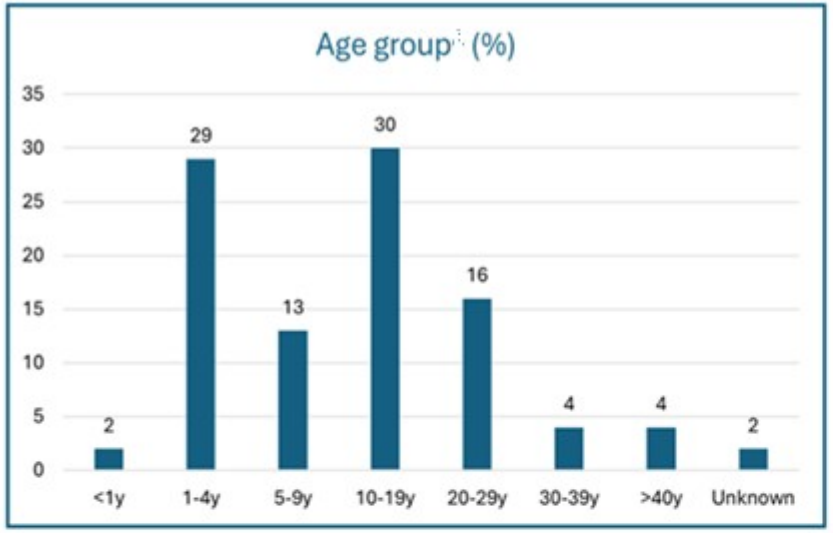
- 2 cases - Adults, Harris County (travel-related)
- 1 case – Infant, Harris County – required hospitalizations (travel-related)
- 1 case - Infant, Travis County (travel-related)
- 1 case - Adult, Rockwell County (travel-related)
- 1 case – Adult, Midland County (Travel Related)
- 2 cases - Lamar County

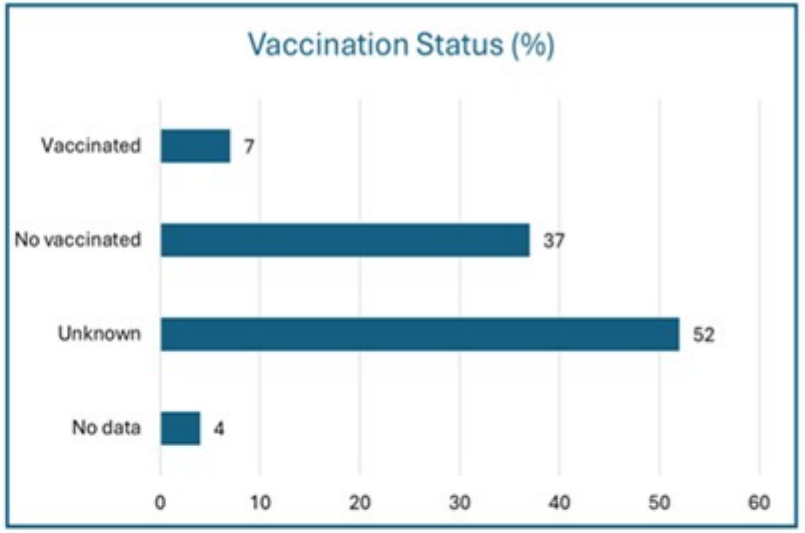
TEXAS CASES ASSOCIATED WITH THE OUTBREAK: 309

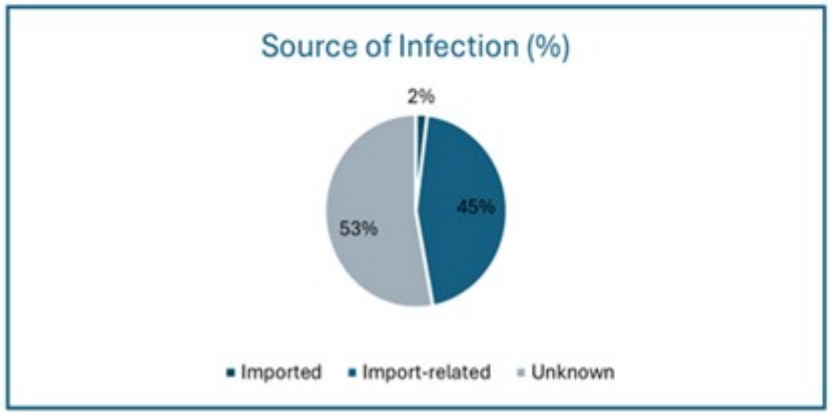
- The increase in measles cases can be attributed to falling vaccination rates and to increased importation of travel-related cases, which occur when unvaccinated people acquire measles abroad and bring it back to the U.S.
- There have been three confirmed outbreaks of measles in the U.S. so far in 2025 (TX-NM-OK, NJ, and GA), with 77% of cases linked to these domestic outbreak.

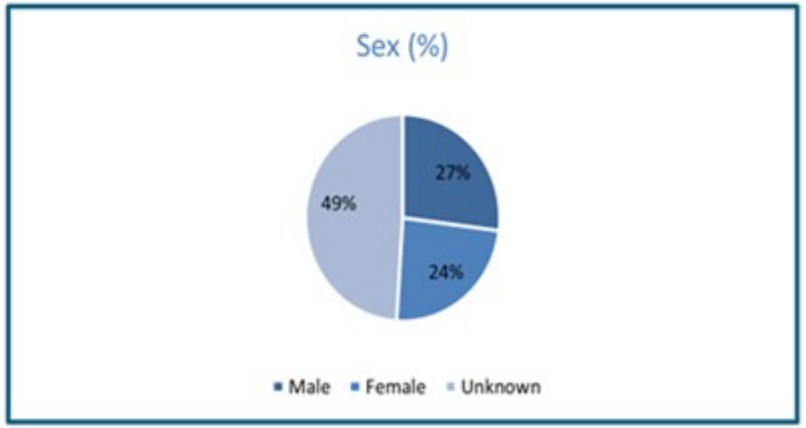
GLOBAL OUTLOOK: THE AMERICAS

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:

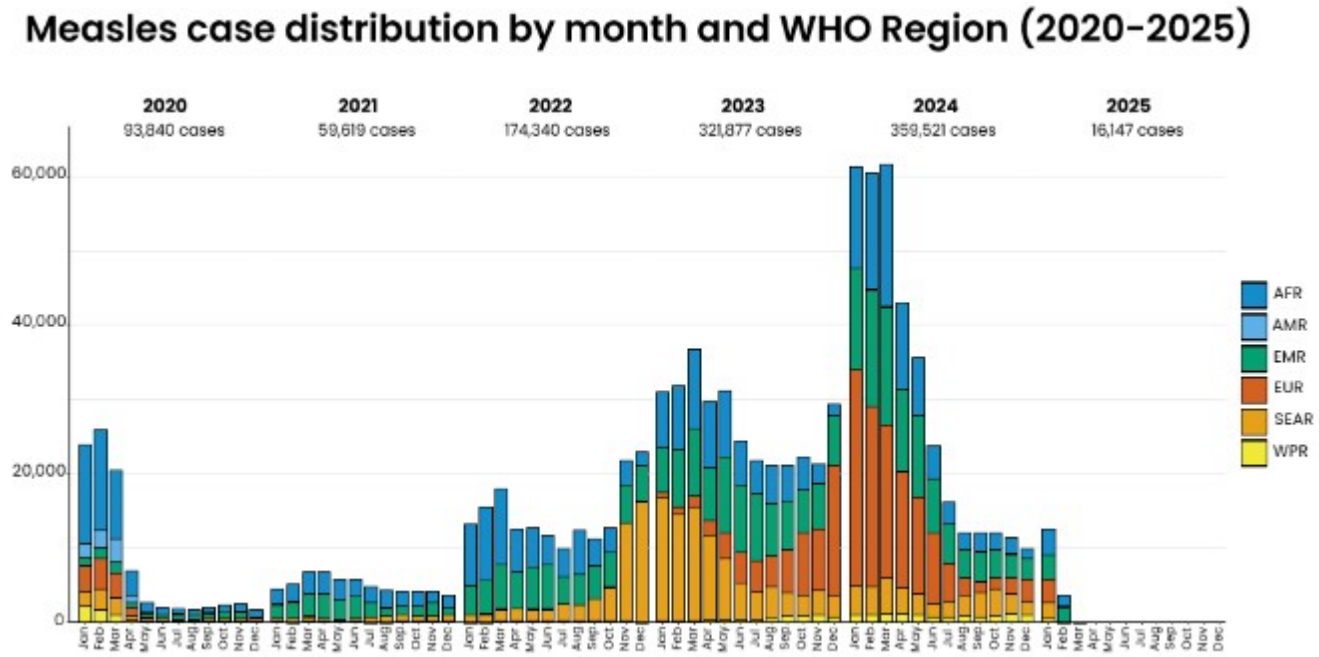
- On 3/18/2025, Mexico confirmed 43 measles cases, 39 of which were recorded in the northern state of Chihuahua and are likely linked to the TX outbreak.
- More than 50% of the cases are in children under nine years old.

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.

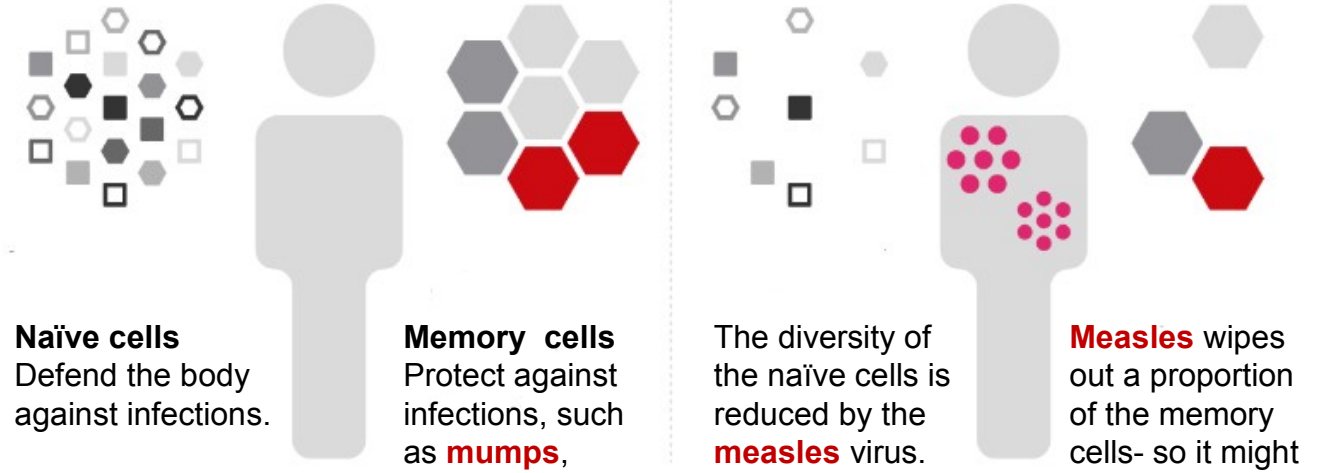
How to prevent “immune amnesia”?

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 - Measles is a mild illness and is not dangerous.

☑ **FACT**: Measles is a **highly contagious** viral disease that spreads through coughing and sneezing, and it **can cause serious complications (pneumonia, encephalitis or brain inflammation, and even death**), especially in children.

MYTH #2 - Measles is rare and not a cause for concern.

☑ **FACT**: While measles is rare in places with high vaccination rates, it **remains a significant global health threat,** especially with declining vaccination coverage.

MYTH #3 - MMR vaccines causes autism.

☑ **FACT: Numerous large studies failed to show any connection between MMR and autism.** This idea may have emerged from the fact that the first MMR dose is routinely given around the first birthday of a child, which is about the same time that the signs of autism become much more obvious, and autism is diagnosed.

MYTH #4 - You cannot get measles if you have been vaccinated.

☑ **FACT**: **Two doses of the MMR vaccine are highly effective**, but breakthrough cases can occur, and it is important to maintain high vaccination coverage in communities to prevent outbreaks.

MYTH BUSTER

Stay informed. Stay protected.

MYTH #5 - There are natural ways to prevent measles. I do not need the vaccine.

☑ **FACT**: **NO natural remedy** can prevent or cure measles. Vaccination is the single most effective intervention. Read about vaccines on accurate reliable sites (such as the CDC) and talk to credible sources (such as your healthcare provider).

MYTH #6 - Measles is a natural way to build immunity, better than a vaccination.

☑ **FACT:** While natural immunity can be long-lasting, the risks associated with measles infections and-serious complications far outweigh the risks of vaccination.

MYTH #7 - You only need 1 dose of MMR vaccine.

☑ **FACT:** No vaccine is perfect. After 1 dose of MMR, 7% of children are not immune; after 2 doses, about 3% of children still are not immune. The second MMR dose protects most patients who did not produce antibodies against measles the first time. This is another reason why we depend upon one another to vaccinate all our children (and ourselves) so that measles will not spread in the community.

MYTH #8 - Vitamin A can prevent measles.

☑ **FACT**: While vitamin A can help reduce the severity of measles in malnourished children, it is **NOT a substitute for vaccination.** Taking large doses of vitamin A can be harmful.

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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