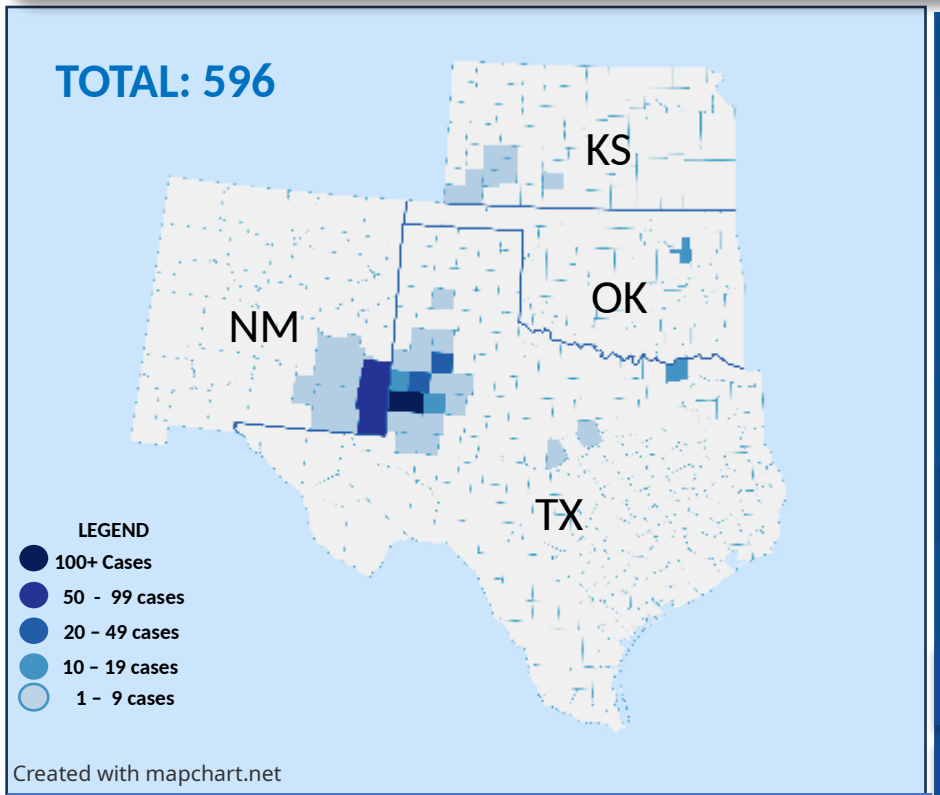
YALE SCHOOL OF PUBLIC HEALTH - ESF-8 VIRTUAL MEDICAL OPERATION CENTER SPECIAL REPORT

MEASLES OUTBREAK - SOUTHWEST U.S. - 2025



MORBIDITY AND MORTALITY

STATE	CASES	HOSPITALIZATIONS	DEATHS
TX	505	57	2
NM	56	2	1
OK	10	0	0
KS	25	0	0
TOTAL	596	59	3

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

AS OF: 2300 HRS EDT
4/8/2025

RISK ASSESSMENT IN OUTBREAK AREAS

Risk for Localized Spread	Risk to unvaccinated populations in and around the outbreak areas	Risk to Children	Potential for sustained transmission
HIGH	HIGH	HGH	HIGH

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

OKLAHOMA LINKS
OKLAHOMA STATE DEPARTMENT OF HEALTH

KANSAS
KANSAS DEPARTMENT OF HEALTH AND 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

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BACKGROUND

TYPE OF PUBLIC HEALTH EMERGENCY: LARGE REGIONAL MEASLES OUTBREAK

OVERVIEW: A measles outbreak originating in West Texas has been linked to confirmed cases in New Mexico, with additional cases reported in Oklahoma and Kansas. **59** individuals have required hospitalization, and there have been **3 deaths– 2 children in Texas and 1 adult in New Mexico.** These fatalities mark the first measles-related deaths in the United States since 2015 and the first pediatric measles deaths since 2003.

THE VIRUS: Measles is a highly contagious viral disease transmitted primarily through respiratory droplets expelled by coughing or sneezing. Common symptoms include high fever, cough, runny nose, conjunctivitis, and a distinctive red, blotchy rash. The virus can remain airborne or infectious on surfaces for up to two hours, contributing to its high transmissibility. Despite being preventable through the MMR (measles, mumps, and rubella) vaccine, outbreaks persist in communities with low vaccination coverage, increasing the risk of severe complications (CDC).

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 local schools, healthcare providers, hospitals, and community organizations

PHASES OF MEASLES INFECTION

Exposure

- Day 0
- The measles virus spreads when an infectious person coughs or sneezes. It can survive **in the air or on surfaces for up to 2 hours.**
- **~90% of susceptible people exposed will develop measles.**

Incubation

- The incubation period, or time between being exposed and developing symptoms, is 6-21 days, with a median of 13 days.
- Infected persons are unlikely to be contagious until the just before next phase (prodrome), approximately 5 days *before* rash appears.

Prodrome

- Fever, malaise, loss of appetite ☾ cough, runny nose, conjunctivitis
- Lasts 2-4 days

CONTAGIOUS

- **White spots on *inside* of cheeks** (Koplik spots) may appear – **very specific finding of measles.**

Rash

- Typical onset 2-4 days after fever
- Consists of both flat and raised red spots
- Begins at head and progresses downward

STILL CONTAGIOUS UNTIL 4 DAYS *AFTER* RASH BEGINS

Recovery

- Rash should resolve from head downward in 5-6 days
- Fever should not last past 3rd-4th day of rash. If it does, this may indicate complications
- Cough may last 1-2 weeks longer

Total time from exposure to recovery:
Approx. 22-24 days

Total time contagious:
Approx. 9 days

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 (JANUARY – APRIL 2025)

SOURCES: TEXAS DSHS, NMDOH, OSDH, KDHE

1/29/25 South Plains Public Health District, TX reports a measles case in Gaines County.

1/30/25 An additional measles case is reported in Gaines County.

2/3/25 New Mexico Department of Health (NMDOH) releases a measles health alert.

2/5/25 TX Department of State Health Services (DSHS) first reports a measles outbreak. Six cases are identified, all among unvaccinated school-aged children from Gaines County.

2/11/25 First measles case is reported in New Mexico in an unvaccinated Lea County teenager.

2/11/25 11 Cases of measles reported in Gaines County, TX.

2/15/25 NMDOH first reports a measles outbreak. There are 14 cases in Lea County.

2/25/25 TX DSHS reports 124 cases and 20 hospitalized.

2/25/25 NMDOH reports 20 measles cases in Lea County.

2/26/25 TX DSHS reports the death of a school-aged child who had been hospitalized in Lubbock.

2/28/25 TX DSHS updates outbreak to 146 cases, 1 fatality, and 20 hospitalized.

2/28/25 NMDOH updates outbreak to 20 cases.

3/4/25 TX DSHS updates outbreak to 159 cases, 1 fatality, and 20 hospitalized.

3/4/25 NMDOH updates outbreak to 26 cases.

3/6/25 NMDOH announces the death of a man who tested positive for measles postmortem.

3/7/25 Texas DSHS updates outbreak to 198 cases, 1 fatality, and 23 hospitalized.

3/7/25 NMDOH updates outbreak to 30 cases and 1 fatality.

3/11/25 Texas DSHS updates outbreak to 223 cases, 1 fatality, and 29 hospitalized.

3/11/25 NMDOH updates outbreak to 33 cases and 1 fatality.

3/11/25 First case of measles in Kansas linked to TX outbreak.

3/11/25 Oklahoma State Department of Health (OSDH) reports 2 cases associated with this outbreak.

3/14/25 Texas DSHS updates outbreak to 259 cases, 1 fatality, and 34 hospitalized.

3/14/25 NMDOH updates outbreak to 35 cases, 1 fatality, and 2 hospitalized.

3/15/25 OSDH reports 2 more cases, raising their total to 4.

3/18/25 Texas DSHS updates outbreak to 279 cases, 1 fatality, and 36 hospitalized.

3/18/25 NMDOH updates outbreak to 38 cases, 1 fatality, and 2 hospitalized.

3/21/25 Texas DSHS updates outbreak to 309 cases, 1 fatality, and 40 hospitalized.

3/21 /25 NMDOH updates outbreak to 42 cases, 1 fatality, and 2 hospitalized.

3/25/25 OSDH reports 5 more cases, raising their total to 9.

3/26/25 Kansas Department of Health and Environment (KDHE) reports 23 cases genetically connected to the TX Outbreak.

3/29/25 Texas DSHS updates outbreak to 400 cases, 1 fatality, and 41 hospitalized.

3/29 /25 NMDOH updates outbreak to 44 cases, 1 fatality, and 2 hospitalized.

- NO OUTBREAK (1-2 CASES)
- SMALL OUTBREAK (3-9)
- MEDIUM OUTBREAK (10-49)
- LARGE OUTBREAK (50 OR MORE)
- DEATH

4/1/25 Texas DSHS updates outbreak to 422, 1 fatality, and 42 hospitalized.

4/1/25 NMDOH updates outbreak to 48 cases, 1 fatality, and 2 hospitalized.

4/1/25 OSDH updates outbreak to 10 cases.

4/3/25 Kansas Department of Health and Environment (KDHE) reports 24 cases genetically connected to the TX Outbreak.

4/4/25 NMDOH updates outbreak to 54 cases, 1 fatality, and 2 hospitalized.

4/4/25 OSDH updates outbreak to 10 cases.

4/4/25 Texas DSHS updates outbreak to 481 cases, 1 fatality, and 56 hospitalized.

4/5/25 TX DSHS reports the death of a child who had been hospitalized in Lubbock.

4/8/25 NMDOH updates outbreak to 56 cases, 1 fatality, and 2 hospitalized.

4/8/25 Texas DSHS updates outbreak to 505 cases, 2 fatalities, and 57 hospitalized.

CURRENT SITUATION

As of 4/8/25, the Southwestern outbreak has **596 cases,** including confirmed and pending cases across **Texas, New Mexico, Oklahoma**, and **Kansas**. 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**.

Texas:

- On Thursday, 4/3/2025, an 8-year-old girl died of "measles pulmonary failure." The death is under investigation. UMC Health System in TX reported the girl was unvaccinated and had no underlying health conditions.

- CDC has redeployed a 3-person team to TX to meet with county and state officials to assess the immediate needs to respond to this outbreak at the governor's request. Once the assessment is complete, more CDC staff will be sent to Texas. (CBS)

CURRENT CASE COUNT: 596 (As of 04/08/2025)

- **Texas:** 505 (+24)
- **New Mexico:** 56 (+2)
- **Oklahoma:** 10
- **Kansas**: 25 (+1)

HOSPITALIZATIONS: 59 (+1)

- **Texas:** 57 (+1) have been hospitalized, 11.3%.
- **New Mexico:** 2 (No change from the last report.) This is 3.5% of NM cases.

DEATHS: 3 – An 8-year-old girl in Texas is the latest fatality.

AGES OF CASES:

WEST TEXAS OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
160 (31.7%)	191 (37.8%)	130 (25.7%)	24 (4.8%)	505
NEW MEXICO OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
13 (23.2%)	16 (28.6%)	27 (48.2%)	0	56
KANSAS OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
7 (28%)	15 (60%)	3 (12%)	0	25
OKLAHOMA OUTBREAK				
0-4 Years	**5-17 Years**	**18+ Years**	**Pending**	**Total**
8 Cases Confirmed, 2 Probable – no ages provided			2	10

INTERNATIONAL SPREAD: 95 cases**.** An ongoing measles outbreak in Chihuahua, Mexico, began in February. The first confirmed case was reported on 2/20/2025. The genotype D8 is the same that is found in TX.

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

DNA SEQUENCING: Texas submitted 92 identical DNA sequences of genotype D8. Ten sequences from New Mexico and one from Kansas matched those from Texas. Additionally, Texas reported three genotype D8 sequences with single nucleotide substitutions. In total, 19 genotype D8 sequences have been reported from the affected states. (WHO)

SOURCES: TX MEASLES OUTBREAK, NM MEASLES OUTBREAK , OSDH, WHO

CURRENT SITUATION - HOSPITALS

INCREASED PATIENT LOAD: The ongoing measles outbreak has led to a significant rise in hospitalizations, particularly among unvaccinated children. Many of these cases involve severe respiratory complications requiring intensive care.

ENHANCED INFECTION CONTROL:

- Healthcare facilities have strengthened infection control protocols, including strict patient isolation procedures and mandatory use of personal protective equipment (PPE). At University Medical Center Children's Hospital in Lubbock, Texas, a temporary masking mandate was recently enacted following a potential exposure linked to a mother who tested positive for measles.
- A recent measles exposure at a children's hospital in the Oklahoma City metro area has prompted neighboring health systems to adopt proactive precautions. Physicians are urging individuals who suspect they may have measles to **call ahead** rather than visiting hospitals unannounced, to minimize the risk of exposing other vulnerable patients. Due to the highly contagious nature of measles, arriving without prior notice poses a serious public health risk.

PUBLIC HEALTH COMMUNICATION: Hospitals are actively collaborating with local health departments to disseminate accurate information on measles prevention, treatment, and the importance of vaccination. These efforts aim to counter misinformation and increase public awareness.

VACCINATION CAMPAIGNS: To curb the spread of the outbreak, hospitals and public health agencies are intensifying efforts to promote the MMR (measles, mumps, rubella) vaccine. Campaigns are targeting communities with low vaccination coverage in an effort to boost herd immunity and contain further transmission. With recent funding cuts to public health, vaccine clinics are being cancelled. Locations of vaccination clinics can be found on state health departments' websites.

A NEW COMPLICATION – VITAMIN A TOXICITY:

PHYSICIANS AT COVENANT CHILDREN'S HOSPITAL IN LUBBOCK, TEXAS, HAVE REPORTED TREATING SEVERAL UNVACCINATED CHILDREN WHO EXHIBITED SYMPTOMS OF LIVER DAMAGE DUE TO EXCESSIVE VITAMIN A INTAKE.

- In an effort to prevent measles infection, children were given doses of cod liver oil and other over-the-counter vitamin A supplements for several weeks. Doctors in West Texas have reported patients presenting with yellowed skin and elevated liver enzyme levels—both indicators of liver damage.
- Local physicians and health officials are increasingly alarmed by the rising popularity of unproven remedies like cod liver oil for preventing and treating measles. They warn that such practices may lead to delays in seeking essential medical care and contribute to vaccine hesitancy, despite vaccination being the only proven method to prevent measles.
- Vitamin A has not been shown to prevent measles. Repeated doses pose significant health risks to children. Unlike water-soluble vitamins, which are excreted in urine, excess vitamin A is stored in fat tissue, allowing it to accumulate to toxic levels over time.

POISON CONTROL CENTERS HAVE RECEIVED MORE REPORTS OF VITAMIN A EXPOSURES THAN USUAL– A TREND THAT LINES UP WITH THE GROWING MEASLES OUTBREAKS IN TEXAS AND OTHER STATES

From Jan. 1 through March 31, "there were 86 pediatric (<20 years) vitamin A exposures reported to U.S. Poison Centers, representing a 38.7% increase in cases over the same period in 2024," America's Poison Centers told *MedPage Today*. "Despite this increase in case counts, there was no increase in the severity of medical outcomes, with no major effects reported in 2025."

SOURCES: TX MEASLES OUTBREAK, NM MEASLES OUTBREAK, OSDH, KLBK- LUBBOCK, TX PUBLIC RADIO, NYT

CURRENT SITUATION – VACCINATION STATUS

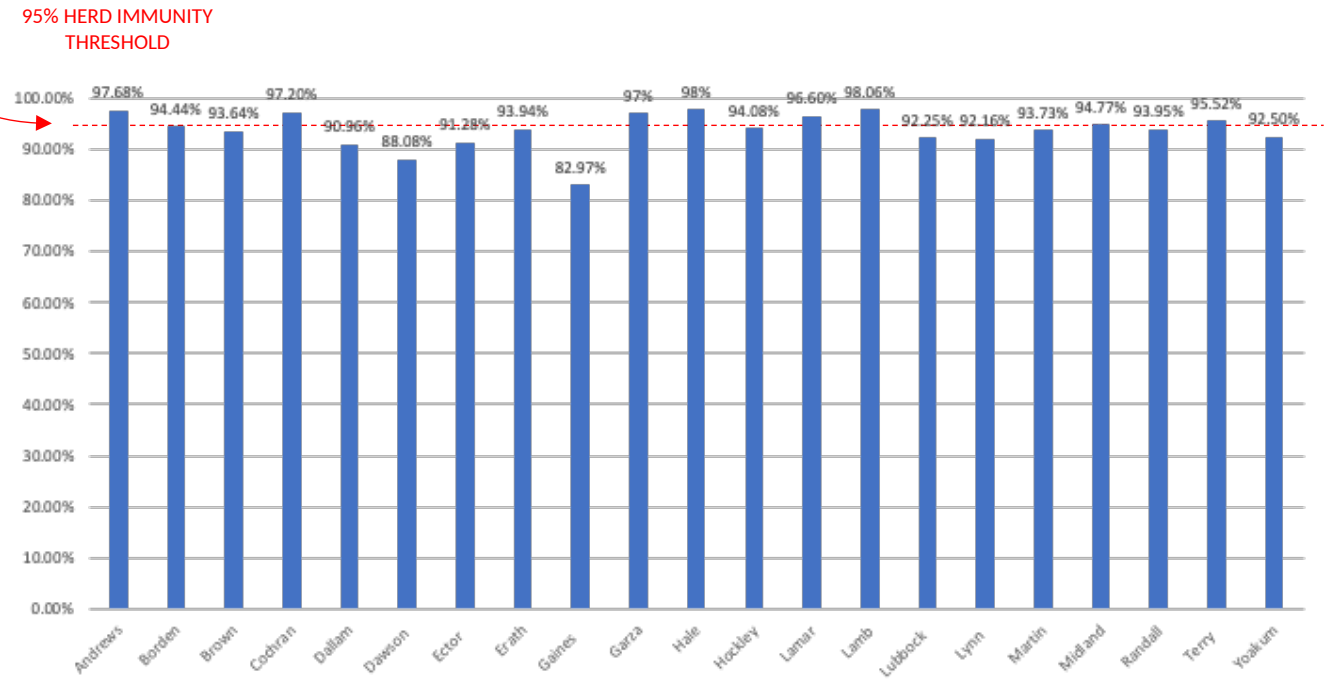
STATE	VACCINATED WITH 1 DOSE	VACCINATED WITH 2 DOSES	UNVACCINATED/ UNKNOWN	TOTAL CASES
TX	3	7	495*	505

NOTE: 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	6	39	11	56

STATE	VACCINATED WITH AT LEAST ONE DOSE	UNVACCINATED / UNKNOWN	TOTAL CASES
OK	0	10	10

STATE	AGE APPROPRIATELY VACCINATED	NOT AGE APPROPRIATELY VACCINED	NOT VACCINATED	UNKNOWN	TOTAL CASES
KS	1	1	21	2	25



Among the affected counties in TX, 14 out of 21 are below a 95% vaccination rate, the recommended rate for herd immunity (SOURCE: Annual Report on Immunization Status and CORI)

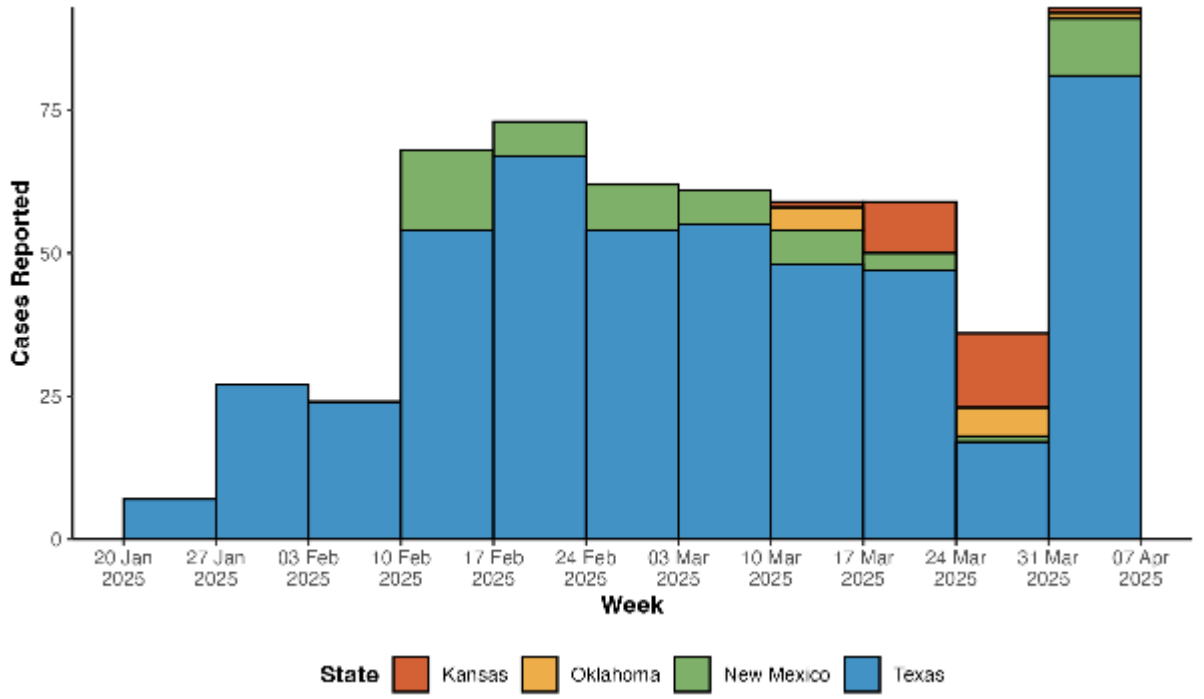
BECAUSE MEASLES IS HIGHLY CONTAGIOUS, 95% OF THE POPULATION MUST BE VACCINATED TO ACHIEVE HERD IMMUNITY AND PREVENT ONGOING TRANSMISSION OF THE VIRUS.

- **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.
- **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.
- **OK:** For the 2023–24 school year, CDC reported Oklahoma kindergartners' vaccine exemption rate rose to 5.7%. The vaccine rate for Oklahoma kindergarteners is 88.3%.
- **KS:** Vaccination rates are low in the most affected counties in KS. Overall, the state's vaccination rate is 90%. In the counties that have been impacted, vaccination rates are far below herd immunity, with Grant County being the exception (99%),.

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

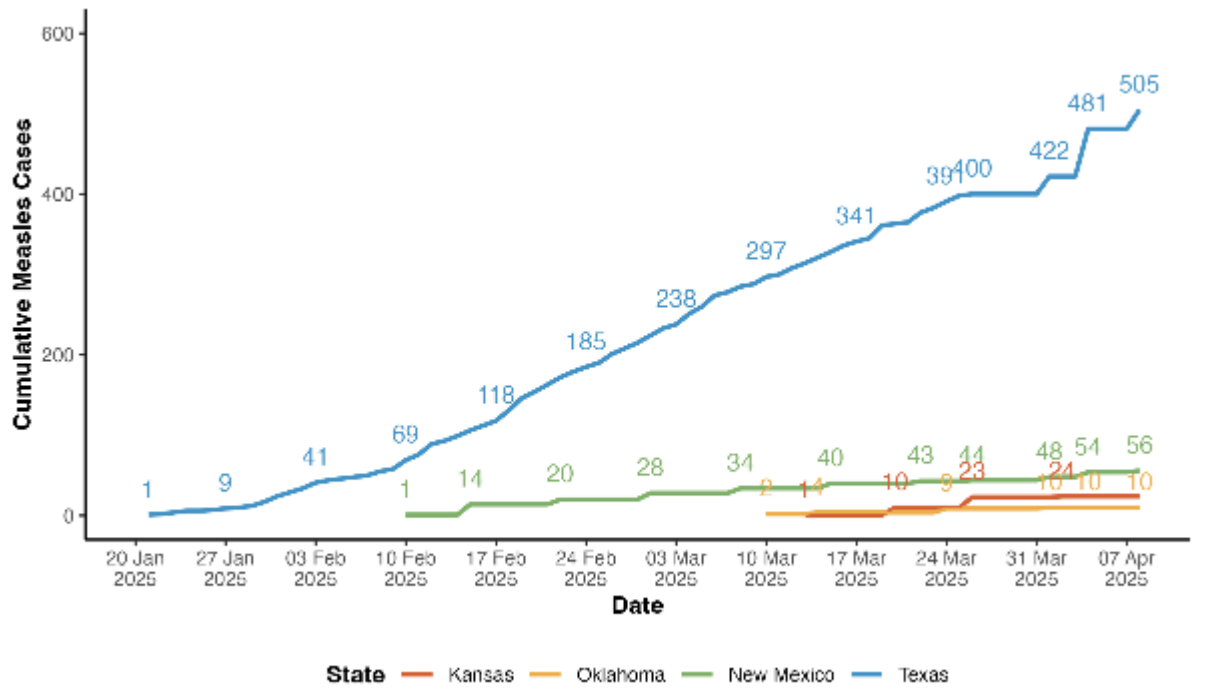
EPI CURVE AND CASES OVER TIME

SOUTHWEST MEASLES OUTBREAK – EPI CURVE (UPDATED AT THE END OF EACH WEEK)



- **TX:** Reported first case the week of 1/25/25. Most cases in the current outbreak are in Gaines County, TX.
- **NM:** Reported first case the week of 2/10/25. First cases in Chaves County reported 4/8/25.
- **OK:** Reported 1 new case the week of 3/31/25.
- **KS:** Reported first cases on 3/13/25. The greatest increase in new cases was during the week of 3/24/25.

SOUTHWEST MEASLES OUTBREAK – CUMULATIVE CASES OVER TIME



- **TX:** The number of cases has increased consistently over time, to a total of 505 cases across 21 counties.
- **NM:** A total of 56 cases have been reported in 3 counties (Lea, Eddy, and Chaves).
- **OK:** A total of 10 cases have been reported by the OSDH.
- **KS**: A total of 25 cases across 7 counties have been reported by the KDHE.

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

EPI SUMMARY (TX)

COUNTY	MEASLES CASES (Number of new cases)	% of TOTAL CASES	% KINDERGARTENERS VACCINATED (2023-2024)	NUMBER OF SCHOOL DISTRICTS IN EACH COUNTY WITH MMR VACCINATION RATES BELOW HERD IMMUNITY LEVELS (95%)
TEXAS (n=505)				
Andrews	1	0.2%	97.70%	1
Borden	1 (NEW)	0.2%	94.44%	-
Brown	1	0.2%	93.64%	6
Cochran	10 (+1)	2.0%	95.20%	1
Dallam	7	1.4%	95.30%	2
Dawson	20	4.0%	88.10%	4
Ector	8	1.6%	91.30%	5
Erath	1	0.2%	93.94%	5
Gaines	328 (+13)	65.0%	82.00%	3
Garza	2	0.4%	97.10%	0
Hale	5 (+2)	1.0%	98.30%	0
Hockley	3	0.6%	94.40%	2
Lamar	11	2.2%	96.80%	5
Lamb	1	0.2%	97.40%	1
Lubbock	36 (+3)	7.1%	92.30%	5
Lynn	2	0.4%	92.20%	2
Martin	3	0.6%	96.60%	1
Midland	1	0.2%	94.80%	3
Randall	1 (NEW)	0.2%	93.95%	1
Terry	46 (+3)	9.1%	95.50%	2
Yoakum	17	3.4%	92.50%	1

EPI SUMMARY (KS, NM, OK)

COUNTY	MEASLES CASES (NUMBER OF NEW CASES)	% of TOTAL CASES	% KINDERGARTENERS VACCINATED (2023-2024)
KANSAS			
Finney	1	4%	98%
Grant	Between 1- 5		99%
Gray	Between 1- 5		66%
Haskel	Between 1- 5		58%
Kiowa	6	25%	92%
Morton	Between 1- 5		82%
Stevens	6	25%	83%
NEW MEXICO			
Chaves	1 (+1)	1.8%	
Eddy	2	3.6%	93%
Lea	53 (+1)	94.6%	94%
Note: Those 18 years or younger have a 95% vaccination rate. 63% of adults 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.			
OKLAHOMA			
Tulsa and Cherokee Nation	10	Insufficient Information	89.5%

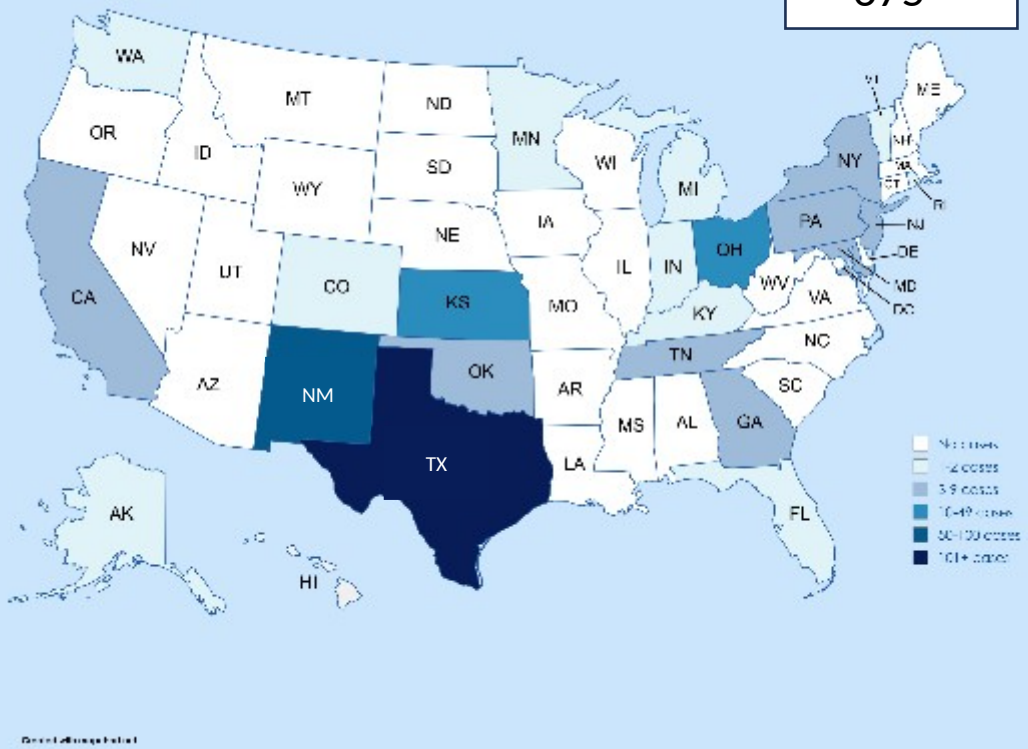
Measles is a highly contagious acute viral disease that affects individuals of all ages and remains one of the leading causes of death among young children globally. The mode of transmission is airborne or via droplets from the nose, mouth, or throat of infected persons. Initial symptoms– which usually appear 10-14 days after infection– include high fever, runny nose, bloodshot eyes, cough, and tiny white spots inside the mouth. The characteristic measles rash usually appears 10-14 days after exposure and spreads from the head to the trunk to the lower extremities. A person is infectious from four days before up to four days after the appearance of the rash. There is no specific antiviral treatment for measles, and most people recover within 2-3 weeks. Measles is usually a mild or moderately severe disease. However, measles can lead to complications such as pneumonia, diarrhea, secondary ear infection, inflammation of the brain (encephalitis), blindness, immune amnesia, and death. Postinfectious encephalitis can occur in about one in every 1,000 reported cases. About 2-3 deaths may occur for every 1,000 reported cases. Measles can lead to serious complications years after infection, including subacute sclerosing panencephalitis (SSPE). Immunization against measles prevents infection and associated complications.

SOURCES: NM MEASLES OUTBREAK, OKLAHOMA HEALTH ALERT NETWORK (OK-HAN) NOTIFICATION, OSDH, WHO, NYT

US OUTLOOK

** NOTE: The information on this page has been gathered by reviewing data from state and local health departments, news media sources, and the Center for Outbreak Response Innovation (CORI)*

675*



- The number of measles is now twice last year's total.
- 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.

STATE	CASES
TEXAS **	511
NEW MEXICO	56
KANSAS	25
OHIO	25
OKLAHOMA	10
CALIFORNIA	9
PENNSYLVANIA	6
NEW YORK	4
TENNESSEE	4
GEORGIA	3
MARYLAND	3
MICHIGAN	3
NEW JERSEY	3
WASHINGTON	3
ALASKA	2
COLORADO	2
FLORIDA	1
INDIANA	1
KENTUCKY	1
MINNESOTA	1
RHODE ISLAND	1
VERMONT	1
TOTAL	675

OUTBREAKS

- **SMALL OUTBREAK (3-9)**
- **MEDIUM OUTBREAK (10 - 49)**
- **LARGE OUTBREAK (50 OR MORE)**

An outbreak is defined as 3 or 4 more cases.

*As of 8/4/2025, 1700 hrs. EDT, there are approximately **675** measles cases (including confirmed and suspected cases) across 22 states.*

*Currently, these are the areas of **measles outbreaks**:*

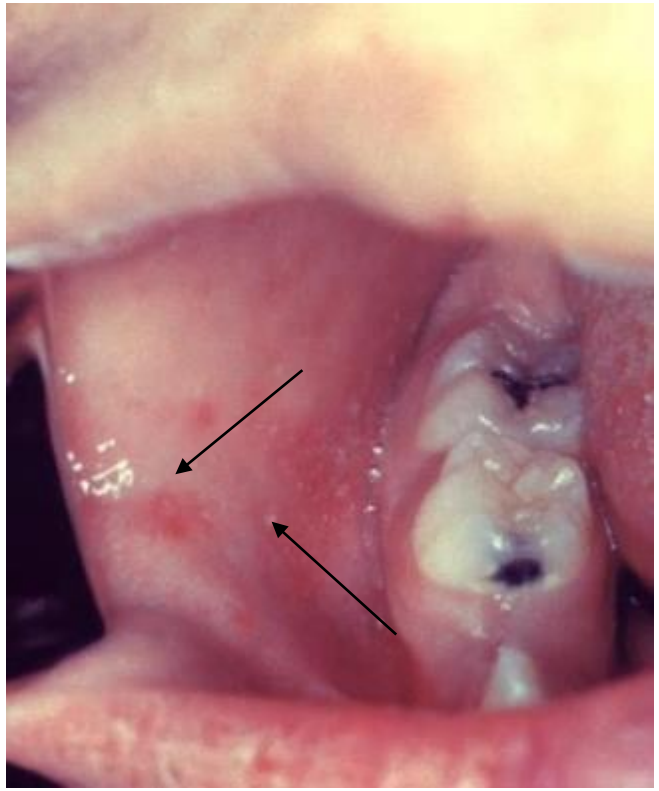
1. *West Texas, involving 21 counties in Texas, 3 counties in New Mexico, 1 county and Cherokee Nation in Oklahoma*
2. *7 counties in Kansas connected West TX*
3. *Ashtabula and Knox Counties, **Ohio***
4. *Bergen County, **New Jersey***
5. *metro Atlanta, **Georgia***

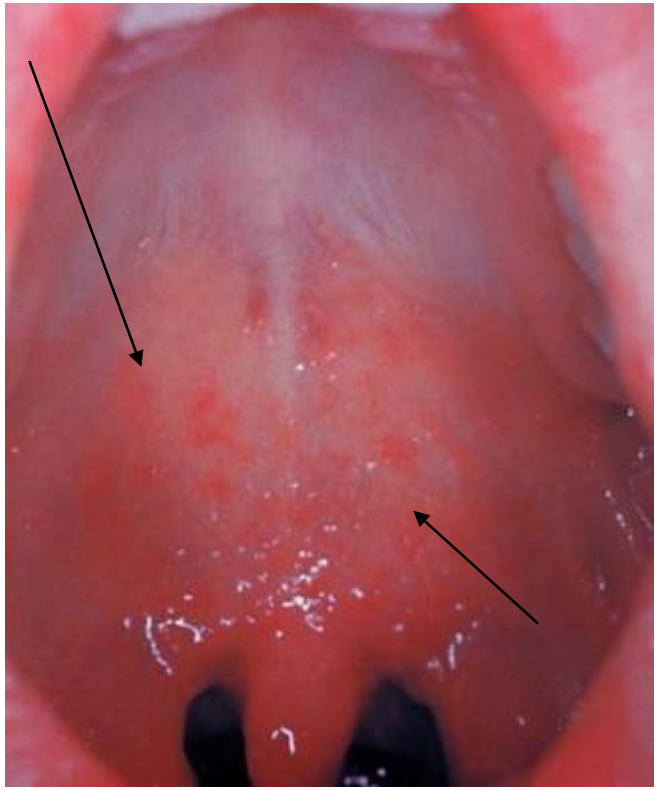
** **TEXAS CASES NOT ASSOCIATED WITH OUTBREAK: 6**

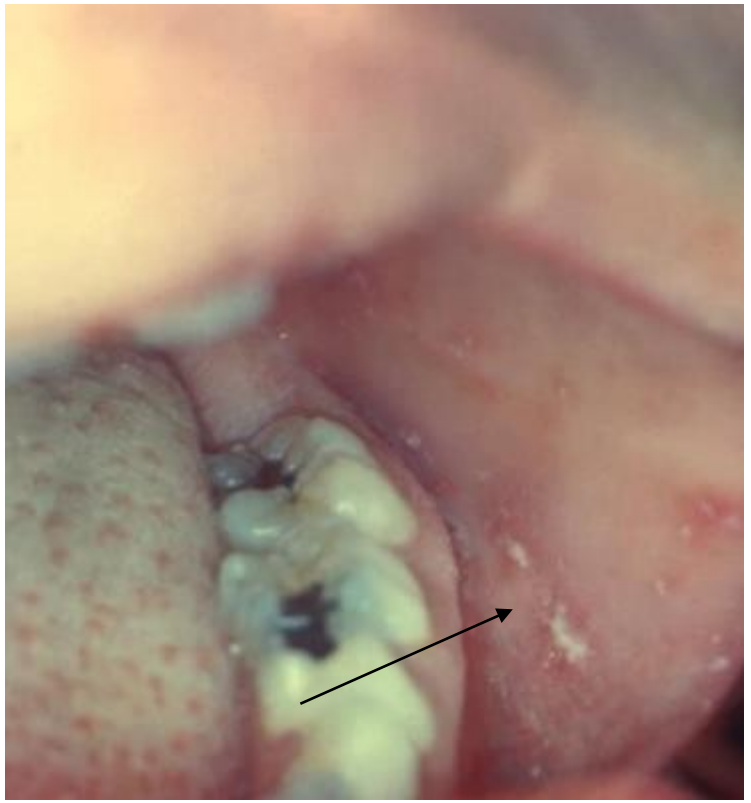
- 2 cases – Adults, Harris County (travel-related)
- 1 case – Infant, Harris County – required hospitalization (travel-related)
- 1 case – Infant, Travis County (travel-related)
- 1 case – Adult, Rockwell County (travel-related)
- 1 case – Adult, Fort Bend (travel-related)

TEXAS CASES ASSOCIATED WITH THE OUTBREAK: 505

KOPLIK SPOTS – DEFINITIVELY MEASLES!







Patient presented on the third pre-eruptive day with "Koplik spots" indicative of the beginning onset of measles (CDC)

White spots occurring on the **inside surfaces of the cheeks and/or lips** that appear *after* the onset of fever, runny nose, and conjunctivitis *up to 2 days prior to rash* are considered a **near-perfect predictor of measles** infection.
(Differentiate *spots* from oral yeast infections, which would be larger, cover more surfaces, and likely associated with taste changes.)

Koplik's spots are a good clinical tool to enable prompt measles indication, management, and control, particularly in the absence of laboratory confirmation. Clinicians (preferably measles-immune!) should use appropriate PPE and practice isolation protocols to mitigate spread.

April is *not* considered cold or flu season. Hence, concern for measles at *first* symptoms (fever, etc.) is increasingly reasonable.

SOURCE:PREDICTIVE POWER OF KOPLIK'S SPOTS FOR THE DIAGNOSIS OF MEASLES

VITAMIN A TOXICITY

WHAT IS THE ROLE OF VITAMIN A IN MEASLES?

- Vitamin A is **NOT** a cure for measles, nor does it prevent measles infection.
- Vitamin A **strengthens the immune system** and reduces the risk of severe illness, complications, and death from measles, but **harmful in excess**.

WHEN AND HOW IS VITAMIN A GIVEN?

- In the US where Vitamin A deficiency is less common, u
  nder the supervision of a healthcare provider, vitamin A may be administered to infants and children with measles as part of supportive management.
- Under a physician's supervision, children with severe measles, such as those who are hospitalized, s
  hould be managed with vitamin A.

WHAT IS ACUTE VITAMIN A TOXICITY?

Seek medical care immediately if recently took Vitamin A and has:

- Nausea and vomiting
- Abdominal pain
- Peeling skin or rash
- Irritability (especially in children)
- Dizziness or drowsiness
- Severe headache
- Bulging fontanelle (soft spot on infant's head becomes swollen)
- Blurred vision

WHAT IS THE LIKELY OUTCOME (PROGNOSIS) OF ACUTE VITAMIN A TOXICITY?

- In most patients who discontinue source of excess Vitamin A, toxicity symptoms gradually reverse with complete recovery expected.
- Dry skin, headache, and nausea typically improve within weeks or months with no long-term complications.
- However, **severe cases** can have **serious consequences**, such as in prolonged and excessive Vitamin A intake, resulting in significant **organ damage** including the liver, bones, central nervous system (brain), and skin
- **Health outcome** depends on the extent of organ damage and promptness of medical intervention

DOES SEVERE ACUTE VITAMIN A TOXICITY HAVE A LONG-TERM HEALTH COMPLICATION?

- Scarring of the liver (fibrosis) leading to irreversible liver damage and failure (cirrhosis)
- Bone abnormalities such as reduced density leading to broken bones (fractures)
- Increased pressure in the head and around the brain (pseudotumor cerebri) can lead to permanent visual impairment (retinopathy) and blindness

HOW TO AVOID VITAMIN A TOXICITY?

- Vitamin A treatment (high-dose Vitamin A) for measles should be **administered by a healthcare professional**, and **NOT** self-administered.
- **Other sources** of Vitamin A such as in the diet **should be taken into consideration** to avoid adverse health effects from Vitamin A toxicity:
  - - **Animal sources**: liver (especially beef and chicken liver), eggs, dairy products (milk, cheese, butter), fish (cod liver oil, salmon)
  - - **Plant sources**: fortified foods (milk, cereal), dark leafy green vegetables (spinach, kale), orange and yellow vegetables (carrots, sweet potatoes, butternut squash), fruits (mangoes, apricots)
- **Keep supplements out of reach of children**.

IMPORTANT CONSIDERATIONS:

- There is **no** specific antiviral treatment for measles.
- **Vitamin A supplementation** is a **supportive** measure, **not** a cure for measles, and should **not** replace vaccination.
- It is crucial to administer Vitamin A **under the supervision** of a **healthcare professional** to ensure appropriate dosing and prevent potential side effects from overdosage.

SOURCES: NIH.GOV, YOUR LOCAL EPIDEMIOLOGIST,, VITAMIN A TOXICITY, CDC

WASTEWATER MONITORING

- **Monitoring wastewater for measles can help detect an outbreak before widespread symptoms occur and aid in understanding the spread within a community.**
  - This can help identify areas where increased support may be needed in the near future.
  - It can also help identify when the spread is decreasing in a community.

- The **Houston Health Department** has been testing 36 wastewater treatment plants, 48 manholes, and 45 Houston Independent School District Campuses around Houston for the presence of measles.
  - Additionally, the city monitors "neighboring school districts and daycare centers that have low vaccination rates" and "nine shelters, eight nursing homes, and two local jails."
  - This system successfully picked up two unrelated measles cases in January 2025.

NOTE: The Texas Epidemic Public Health Institute tracks wastewater statewide for various pathogens, however, it does not have the role of disease reporting. Wastewater monitoring provides utility and insight into the spread of other diseases.

- Wastewater surveillance uses lab tests to detect genetic traces of pathogens like DNA or RNA in sewage. Though measles is a respiratory virus, it can enter wastewater through urine, saliva, or discarded tissues.

- Research on wastewater detection of measles is limited but promising.

- A Dutch study during a 2013 outbreak found measles RNA in wastewater, matching reported case locations and confirming one sample as genetically identical to the outbreak strain.

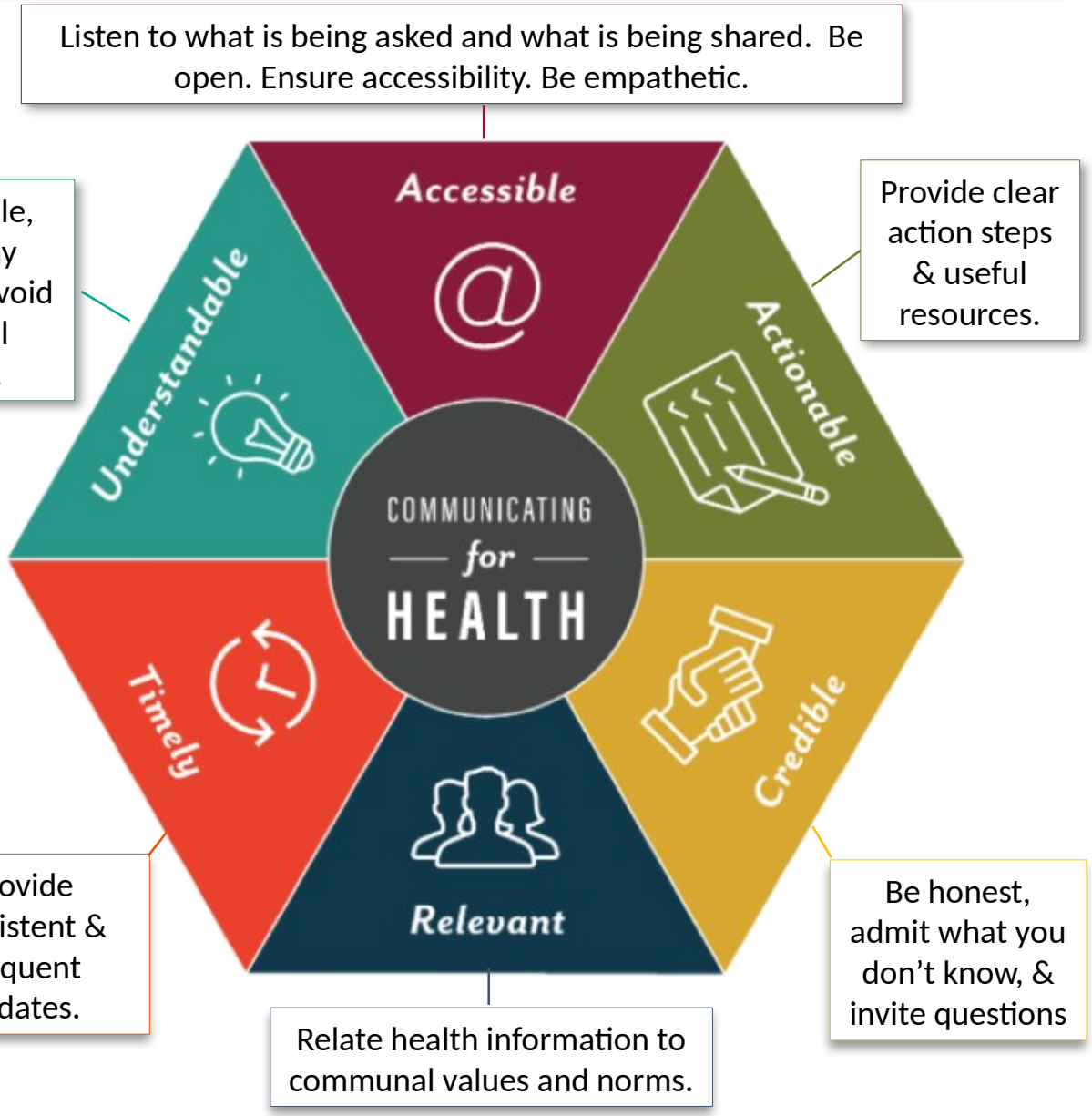
- In a 2023 Nova Scotia study, researchers developed a tool to detect RSV, influenza, COVID-19, and measles. While no measles cases were found in real samples—consistent with local reports—they successfully detected a measles surrogate at both high and low concentrations.

SOURCES: HOUSTON PUBLIC MEDIA, TEPHI, MIT, EARLY DETECTION OF MEASLES IN WASTEWATER HIGHLIGHTS SILENT TRANSMISSION RISKS

EFFECTIVE COMMUNICATION: LISTEN, RELATE, INFORM, & EMPOWER

Clear, credible, and timely communication about the current measles outbreaks is essential to ensure the public can make informed decisions and take appropriate actions to protect their health. By presenting information in an accessible, relevant, and understandable way, we can build trust and empower individuals to respond effectively to the outbreak.

1. **CREDIBLE & TRUSTED**
   - Who is perceived by the community as a trusted source? Reach out to them and equip them with the information. Ask them what they are hearing in the community and how public health can help.
   - What do we know and what questions still need to be answered?
   - Are we pointing people to the right information?
2. **ACCESSIBLE**
   - How do audiences receive health information?
   - With whom do individuals discuss health advice and guidance?
   - Are we actively listening to the question, the concerns, the fears?
3. **ACTIONABLE**
   - Are audiences ready to act independently?
   - Does our messaging describe supportive and available resources to assist community members in acting?
4. **RELEVANT**
   - Are we listening with radical empathy?
   - What personal or community values are relevant to this crisis?
   - How can we better influence social norms and promote benefits of action?
5. **TIMELY**
   - Is there a way to deliver messages to the target population over time that would increase the effectiveness of information and advice?
6. **UNDERSTANDABLE**
   - Are we using language that is familiar to the target audience?
   - Can we use photos or illustrations to provide visual reinforcement of the primary message?



SOURCES: WORLD HEALTH ORGANIZATION, HEALTH LITERACY SOLUTIONS

CONTRIBUTORS

The Virtual Medical Operations Center Briefs (VMOC) were created as a service-learning project by the Yale School of Public Health faculty and graduate students in response to the 2010 Haiti Earthquake. Each year, students enrolled in Environmental Health Science Course 581—Public Health Emergencies: Disaster Planning and Response, produce the VMOC Briefs. These briefs compile diverse information sources—including status reports, maps, curated 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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