

# Utilizing IIS Data during a Measles Outbreak: Kansas's Experience

Andrea May, MPH | Senior Epidemiologist | April 29, 2026

# Learning Objectives

**After this presentation, the audience will be able to:**

- Discuss questions Immunization Information System (IIS) data can answer in an outbreak.
- Implement IIS data usage in response to an outbreak.
- Recognize vaccine information that is necessary to communicate during an outbreak.

# Overview

Measles 101

Kansas 2025 Measles Outbreak

- Response
- IIS Data Use
- End of Outbreak Summary

Conclusions

# Measles: Disease and Vaccine Overview



## Disease

- **Highly** contagious virus via infectious droplets
- Infectious period **four days before to four days after** rash onset
- Most people recover within a couple of weeks, but serious complications may occur

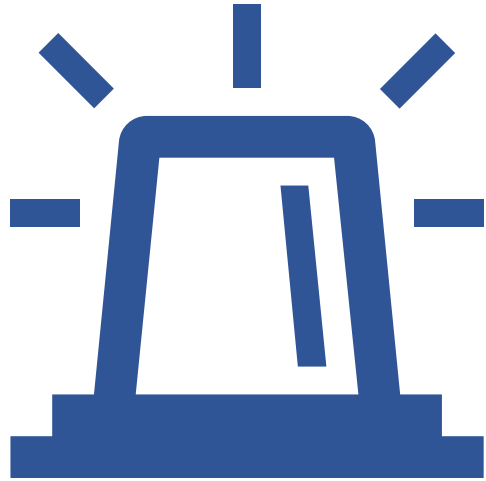


## Vaccine

- Measles, Mumps, and Rubella (MMR) vaccine
- MMR + Varicella (MMRV) vaccine
- **95% vaccine coverage** required for herd immunity

# Measles in Early 2025

By late February 2025, a large measles outbreak was identified with ongoing local transmission in Texas that had spread to New Mexico.



March 3, 2025: Kansas Department of Health and Environment (KDHE) released a Kansas Health Alert Network (KS-HAN) alert advising healthcare providers to be on alert for symptoms consistent with measles.

KDHE began producing materials to communicate with the public and providers.

# March 3<sup>rd</sup> KS-HAN MMR Recommendations

## Children

Continue to follow CDC recommendations.

Two doses of MMR:

- Dose one: 12 to 15 months

**AND**

- Dose two: 4 to 6 years of age

When traveling internationally, infants 6 to 11 months old should get one dose of the MMR vaccine before travel. Then they should get two more doses after their first birthday.

## Adults

**One dose appropriate for most.**

Two doses of MMR are recommended for adults:

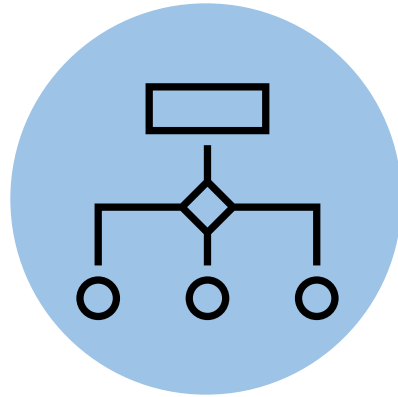
- Traveling internationally
- Working in healthcare
- Attending post-secondary educational institutions

One dose of live vaccine if vaccinated prior to 1968 with either inactivated measles vaccine or unknown type.

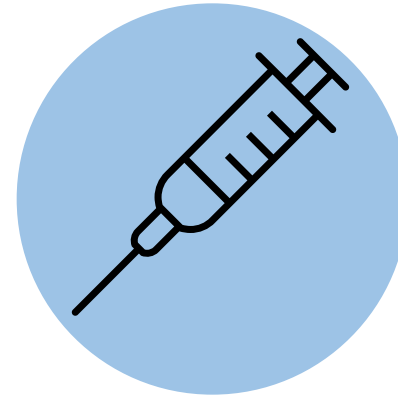
# 2025 Kansas Measles Outbreak



March 2025:  
Measles Outbreak  
Identified in  
Southwest Kansas



KDHE Activated  
Incident  
Command System  
(ICS)



Updated MMR  
Recommendation for  
Outbreak Area and  
Surrounding Counties



ICS Requested  
Kansas MMR  
Vaccine Administration  
Data

# Communication via KS-HAN

## Increase of Measles Cases in Kansas and Updated MMR Vaccination Recommendation

Kansas Health Alert Network (KS-HAN) Posted on March 24, 2025

As of March 21, 2025, the Kansas Department of Health and Environment (KDHE) is reporting ten (10) cases of measles within Grant, Morton and Stevens counties. All these cases are in children aged from 0-17. Nine (9) of the individuals were not vaccinated, and one (1) is under-vaccinated having only received 1 out of the 2 doses of the recommended MMR vaccine. There have been no hospitalizations or deaths among the cases. Due to the highly contagious nature of measles, additional cases are likely to occur in the outbreak area in Kansas and in surrounding counties, especially among those that are unvaccinated.

Cases of measles also continue to increase in other states. As of March 21, 2025, the Centers for Disease Control and Prevention (CDC) is reporting a total of [378 measles cases](#) in 15 jurisdictions: Alaska, California, Florida, Georgia, Kansas, Kentucky, Maryland, Michigan, New Jersey, New Mexico, New York City, New York State, Ohio, Pennsylvania, Rhode Island, Texas, Vermont and Washington. Most of these cases are occurring in children (76%) and almost all are either unvaccinated or have an unknown vaccination status (95%). Fifty (50) persons have been hospitalized and two (2) have died.

## Kansas Measles Outbreak Resource Hub and Investigation Updates

Kansas Health Alert Network (KS-HAN) Posted on March 28, 2025

### Measles Outbreak Investigation Update

As of Wednesday, March 26, the Kansas Department of Health and Environment (KDHE) is reporting 23 positive cases of measles in six southwestern Kansas counties: Stevens, Morton, Grant, Haskell, Gray, and Kiowa. The confirmed cases in Kansas have a possible link to the outbreaks in Texas and New Mexico. While genetic sequencing of the first Kansas case reported is consistent with a link to the [Texas](#) and [New Mexico](#) outbreaks, the source of exposure is still unknown. KDHE, along with local health departments in the affected counties, are notifying individuals who may have been exposed. **Due to the highly contagious nature of measles, additional cases are likely to occur in the outbreak area in Kansas and in surrounding counties, especially among those that are unvaccinated.**

# KDHE Updated Measles Vaccine Guidance

KDHE issued the following recommendations for **counties that were impacted by this outbreak of measles and adjacent counties:**

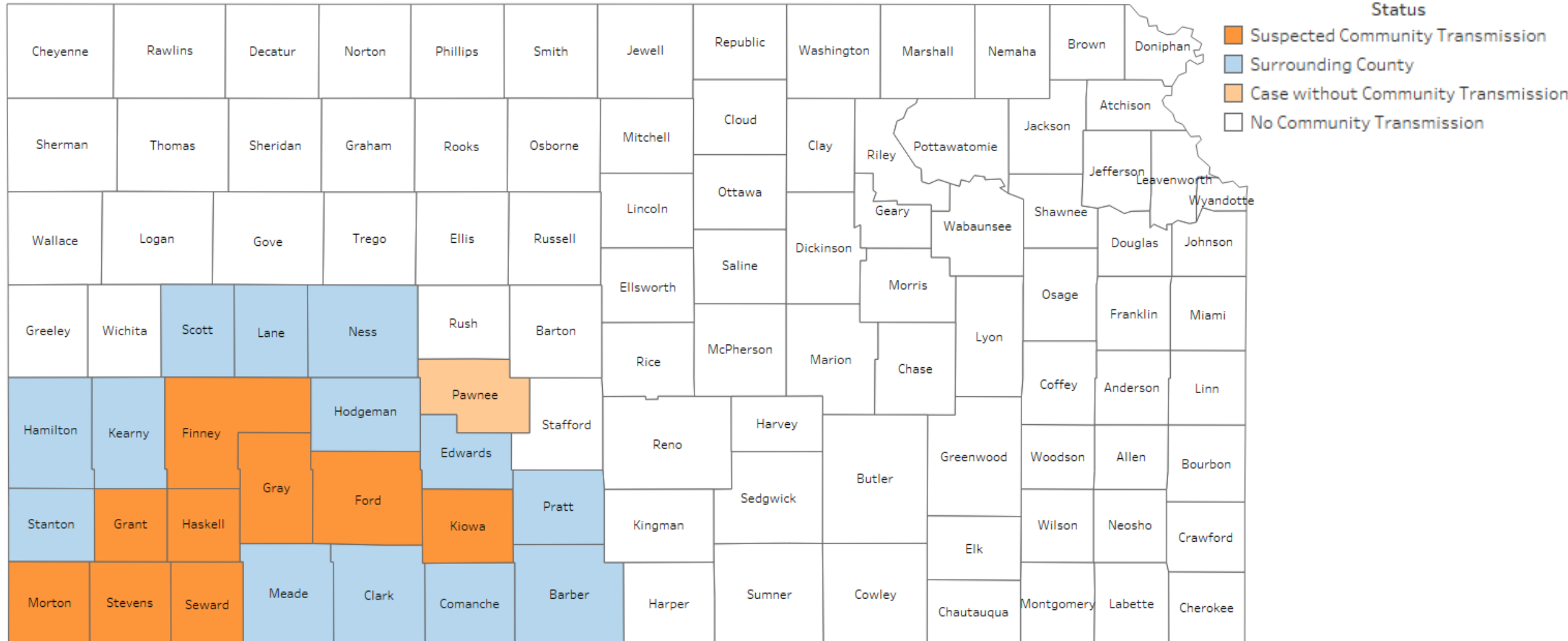
- **Infants 6 through 11 months** receive an early dose of MMR vaccine (i.e., infant dose). Subsequent doses should follow CDC's recommended childhood schedule:
  - Another dose at 12 through 15 months of age and
  - A final dose at 4 through 6 years of age
- **Children older than 12 months who have not been vaccinated** should receive one dose immediately and follow with a second dose at least 28 days after the first. No third dose is needed.

# KDHE Updated Measles Vaccine Guidance

KDHE issued the following recommendations for **counties that were impacted by this outbreak of measles and adjacent counties:**

- **Children older than 12 months with one prior dose** should receive an early second dose of MMR vaccine separated by at least 28 days.
- **Teenagers and adults previously vaccinated with one dose** of MMR vaccine should receive a second dose. Those with no evidence of immunity should receive one dose of MMR vaccine immediately and follow with a second dose at least 28 days later.

# Kansas Measles Outbreak Counties with Evidence of Community Transmission and Border Counties



# KDHE Leadership Questions

- How many doses were administered in outbreak area versus all other counties?
- How do MMR administrations compare to the same time in 2024?
- How many publicly funded doses were given?
- How many privately funded doses were given?
- How have administrations changed on monthly basis?

# KSWebIZ

Kansas utilizes the Envision platform to support KSWebIZ. Microsoft Power BI is utilized for a direct connection to KSWebIZ data. During the Southwest Kansas Measles outbreak, this connection was used to:



Answer questions posed by ICS and standardize twice weekly reporting.

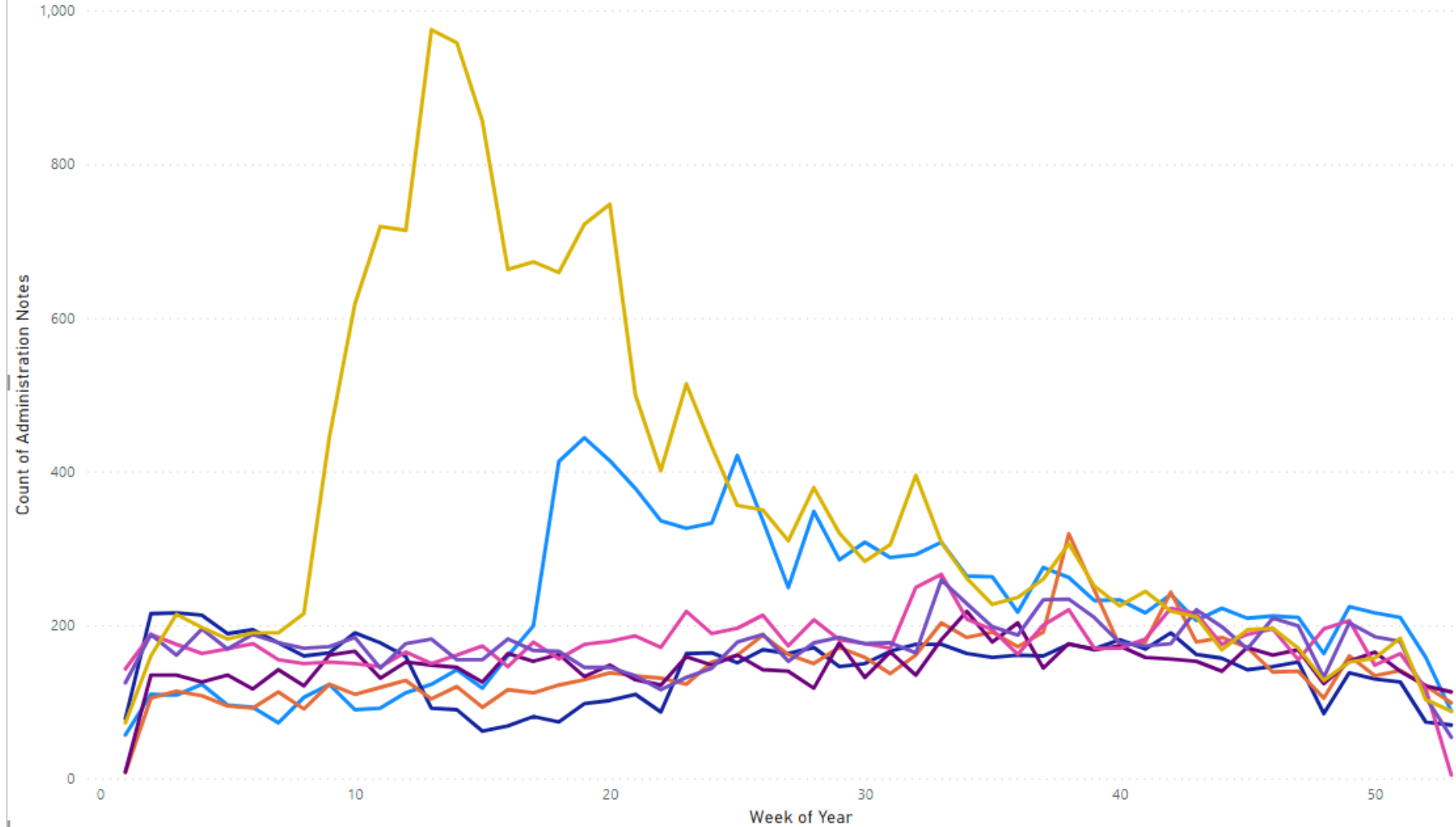


Organize and visualize data flexibly to investigate many questions and areas of concern.

# Power BI Dashboard

Count of Administration Notes by Week of Year and Year

Year ● 2019 ● 2020 ● 2021 ● 2022 ● 2023 ● 2024 ● 2025



**Filters**

Search

Filters on this visual

- Age At Vaccinatio... is greater than or equ...
- Count of Administratio... is (All)
- Eligibility is not 317
- Week of Year is (All)
- Year is (All)

Add data fields here

Filters on this page

- Address State is KS
- Vaccine Type CVX is 3 or 94
- Week of Year is (All)
- Year is 2020, 2021, 2022, 2...

Add data fields here

**Visualizations**

Axis

- Week of Year

Legend

- Year

Values

- Count of Administration

Secondary values

- Add data fields here

Small multiples

- Add data fields here

Tooltips

- Add data fields here

Drill through

- Cross-report
- Off

# Administration Monitoring

One clinic called the KDHE Epidemiology Hotline saying that they may have administered an MMRV vaccine to a child under 12 months.

The Power BI dashboard identified a total of **six clinics** that may have administered MMRV to children under 12 months of age.



Clinics were promptly contacted and education provided.



All KDHE materials on early MMR dosing were updated to emphasize appropriate MMR and MMRV use.



Information was shared through multiple channels.

# Updated Information with MMRV Callout

## Counties with Evidence of Community Transmission\* and Bordering Counties

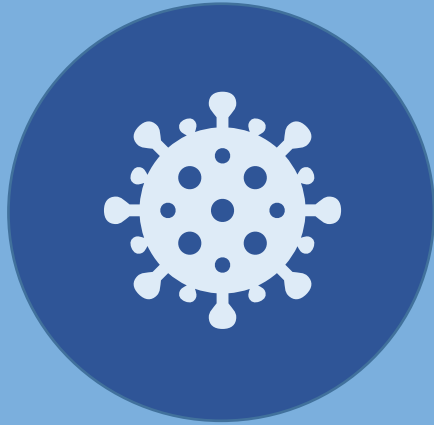
Infants (6 to 11 Months)	Children (1 to 12 Years)	Teenagers and Adults
<p>Infants may receive an early dose of MMR vaccine only.</p> <ul style="list-style-type: none"><li>• MMRV, which includes varicella vaccine, has NOT been approved for infants and should NOT be used for the early infant dose.</li></ul> <p>Additional doses of MMR should follow CDC's recommended childhood schedule:</p> <ul style="list-style-type: none"><li>• Another dose at 12 to 15 months of age AND</li><li>• A final dose at 4 to 6 years of age.</li></ul>	<p>Children who have not been vaccinated should receive one dose of MMR immediately.</p> <p>A second dose should follow at least 28 days after the first dose.</p> <p>No third dose is needed.</p> <p>Children with one prior dose should receive an early second dose of MMR vaccine separated by at least 28 days from the first dose.</p>	<p>Teenagers and adults previously vaccinated with one dose of MMR vaccine should receive a second dose.</p> <p>Those with no evidence of immunity should receive one dose of MMR vaccine immediately.</p> <p>Follow with a second dose separated by at least 28 days from the first dose.</p>

# ICS Reporting

Outbreak Area						Non-Outbreak Area					
Vaccine Type	MMR Administered 2024	MMR Administered MMWR Week 23, 2024	MMR Administered 2025	MMR Administered MMWR Week 23, 2025	2025 Percent Change from Previous MMWR Week	Vaccine Type	MMR Administered 2024	MMR Administered MMWR Week 23, 2024	MMR Administered 2025	MMR Administered MMWR Week 23, 2025	2025 Percent Change from Previous MMWR Week
317	14	-	138	5	4%	317	23	-	62	15	32%
VFC	590	58	1,356	111	9%	VFC	5,070	429	6,356	561	10%
All Other	613	45	1,785	115	7%	All Other	7,659	716	15,648	1,209	8%

- Counts are total number of measles containing vaccine administrations reported to KSWebIZ from MMWR Week 13 through the most recently completed MMWR Week for each respective year.
- Data were reported twice weekly to ICS. MMR and MMRV doses were reported together.

# Outbreak Declared Over August 21, 2025



There were **87**  
cases associated with  
the outbreak in 10  
counties.

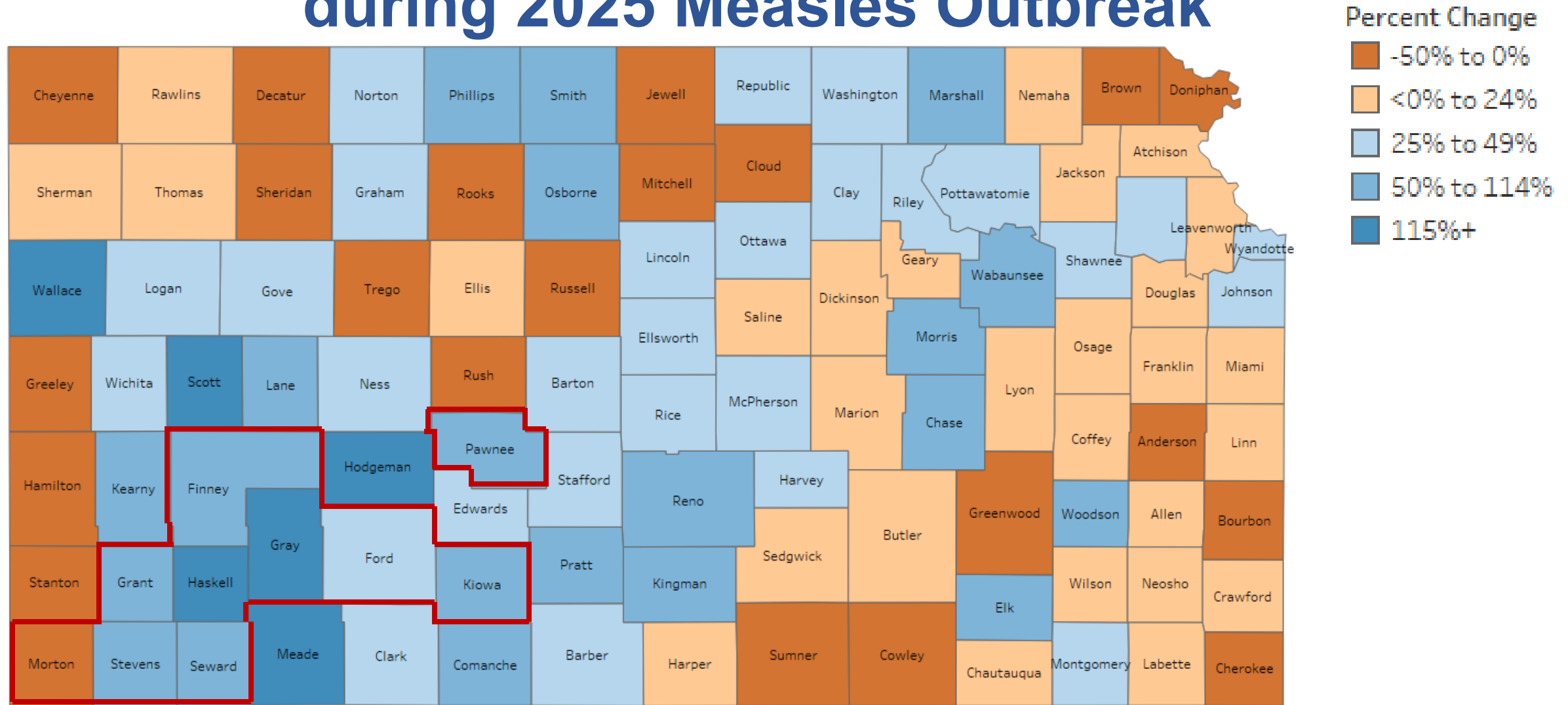


**7 (8.0%)**  
cases associated with  
the outbreak required  
hospitalization.

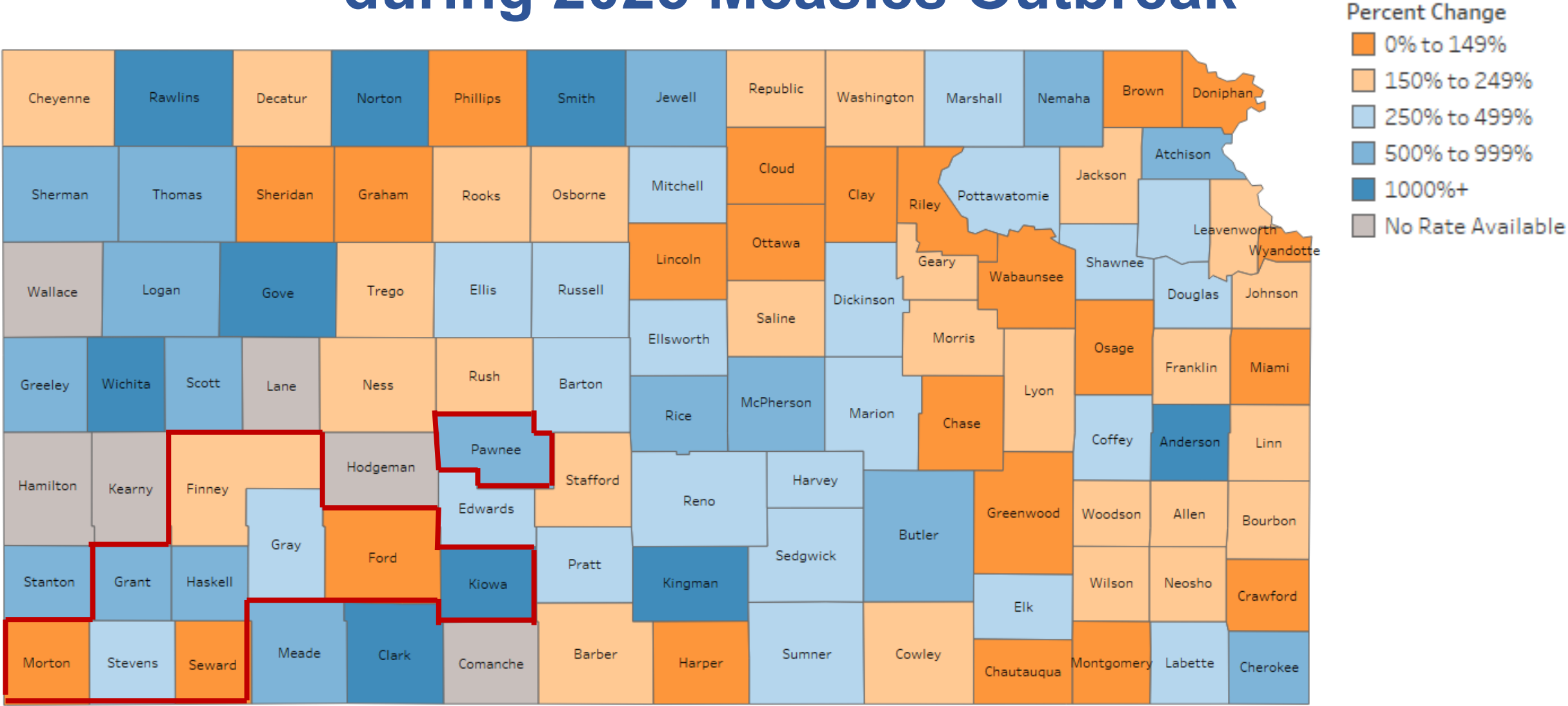


**79 of 87 (90.8%)**  
cases associated with  
the outbreak  
were not vaccinated.

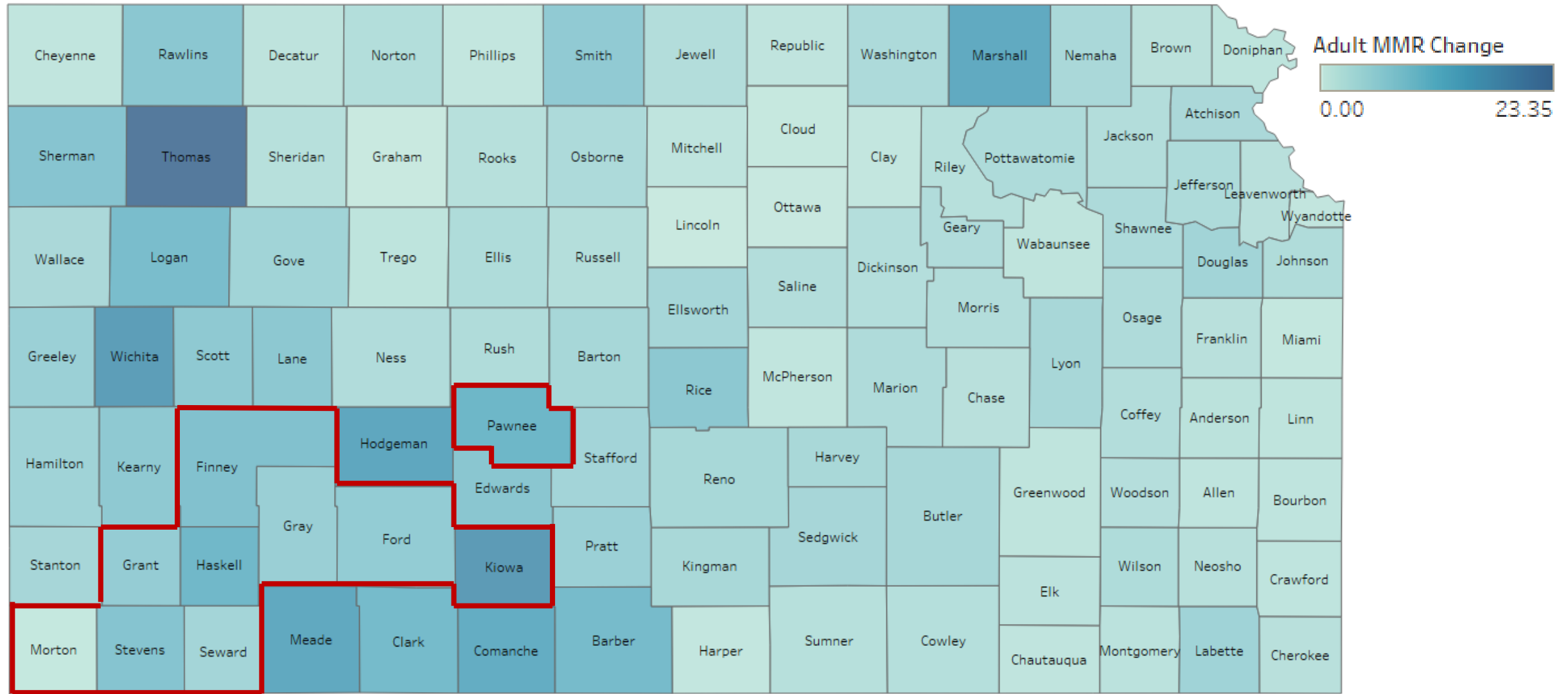
# Percent Change in Pediatric MMR Administrations during 2025 Measles Outbreak



# Percent Change in Adult MMR Administrations during 2025 Measles Outbreak



# Change in Adult MMR Administration Rate per 1,000 Population during 2025 Measles Outbreak



# Conclusions

On August 21, 2025, the Southwest Kansas Measles outbreak was declared over. During outbreak response, IIS data was reported to ICS 36 times. Microsoft Power BI utilization to organize IIS data allowed:



Prompt analysis to allow confirmation, follow-up, and education following identification of a potential administration error.



ICS reporting to be standardized and quickly developed. Flexibility of Power BI connection allowed for adjustments in data requested.



## **Andrea May**

Senior Epidemiologist

Kansas Department of Health and Environment

785-207-1962

[Andrea.May@ks.gov](mailto:Andrea.May@ks.gov)