

# Measles 2024: A Public Health Perspective

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West Virginia Immunization Network Measles Webinar



## Objectives

1. Review the current measles situation globally and in the United States (US).
1. Discuss the reporting requirement for suspected and confirmed measles cases.
1. Review the key steps in a measles response.

## Measles outbreaks and cases globally

- Highly contagious 
- COVID-19 pandemic disrupted immunization activities globally
- Measles outbreaks are occurring in every region of the world
- Notably there are outbreaks in regions that are popular travel destinations
  - United Kingdom
  - Europe
  - Eastern Mediterranean
  - Southeast Asia
- Measles is just one flight away

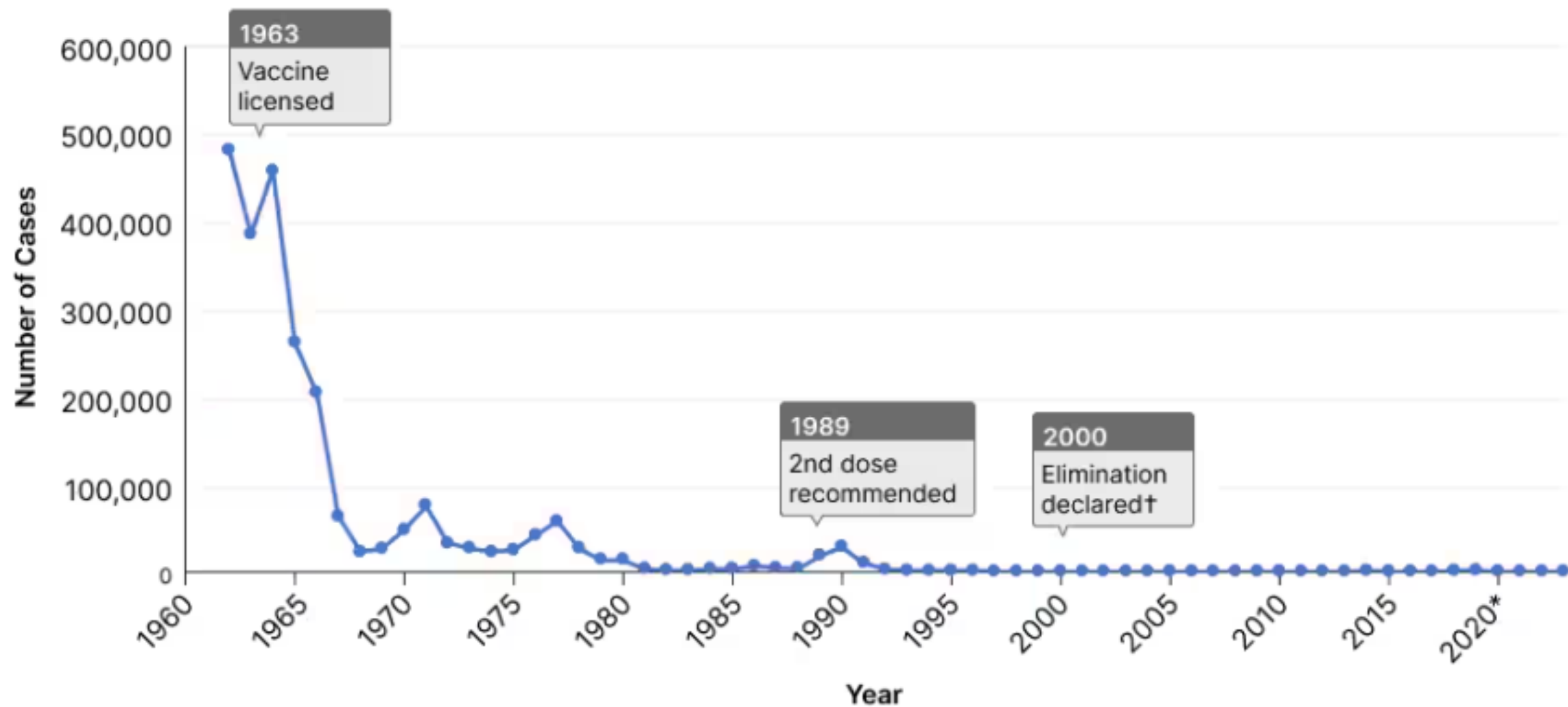


Did you know that measles can be found around the world?

[Global Measles Outbreaks](#)

# History of Measles Cases in the United States

## Reported Measles Cases in the United States from 1962 – 2023\*



<https://www.cdc.gov/measles/cases-outbreaks.html>

\*2023 data are preliminary

# Measles Cases in the United States

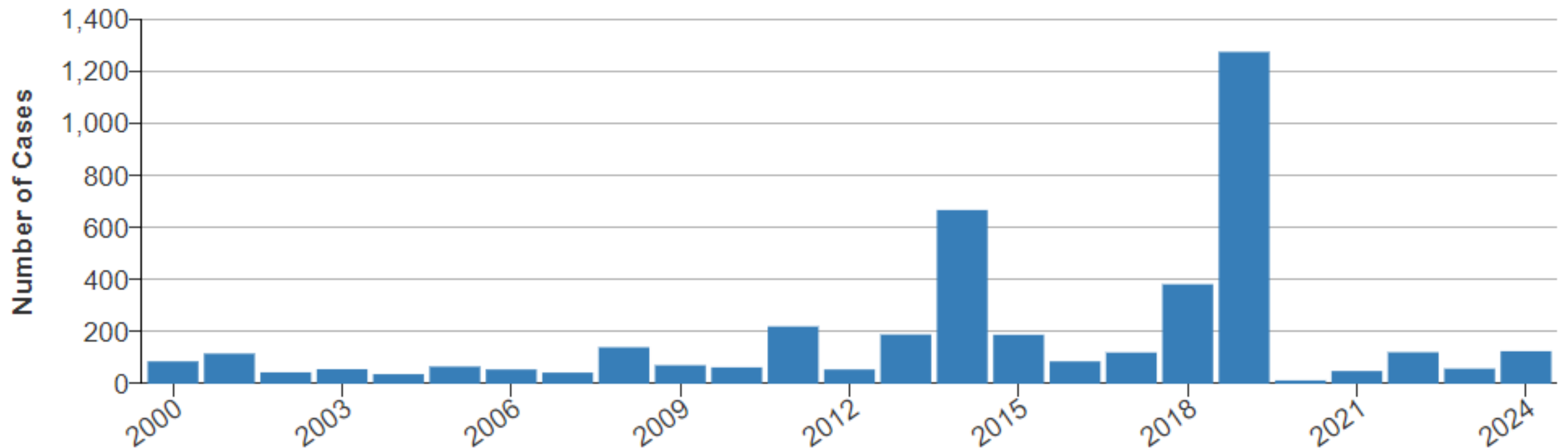
## Yearly Measles Cases

as of April 18, 2024

Make a selection from the filters to change the visualization information.

2000-2024\*

1985-2024\*



## Measles

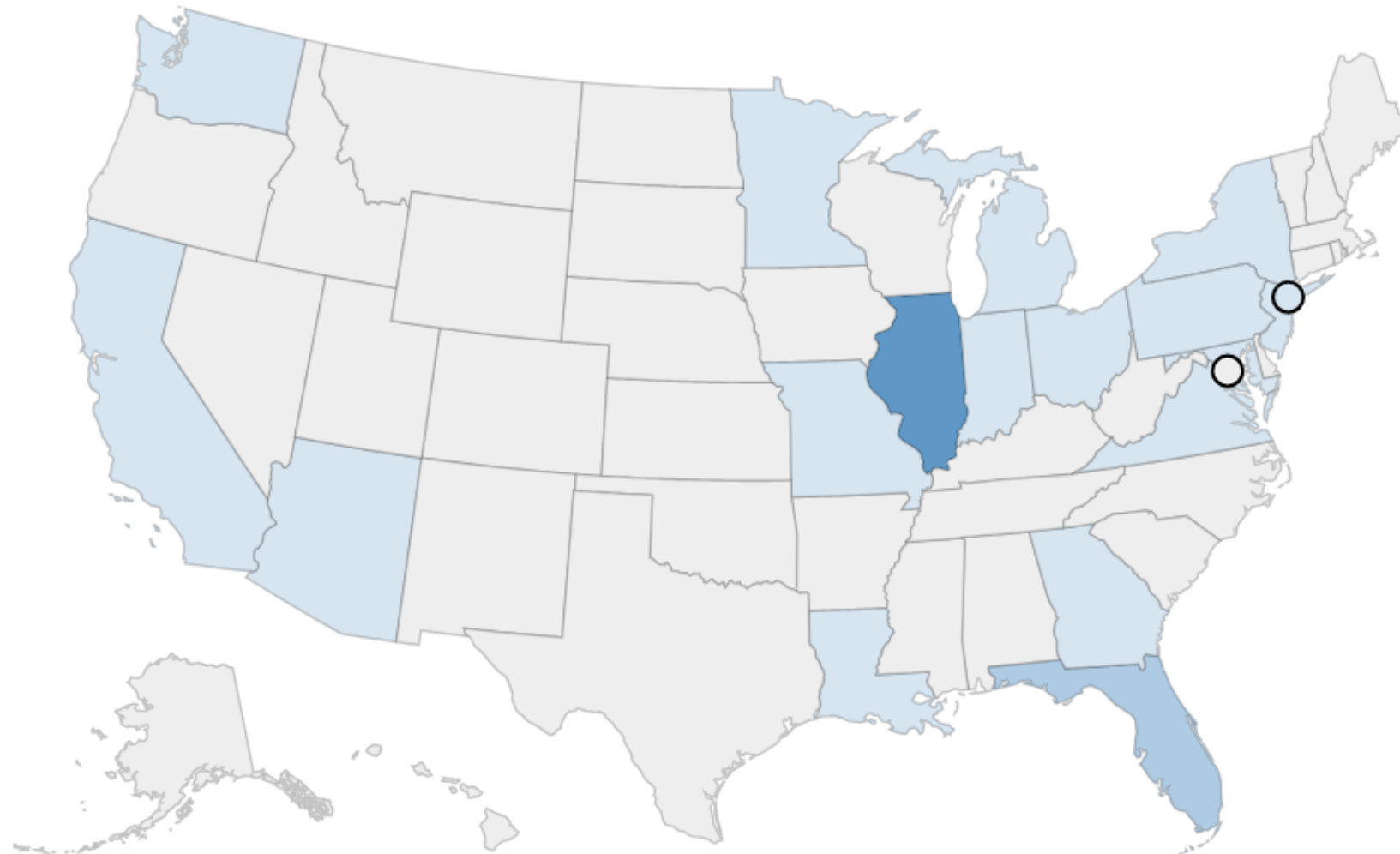
- Endemic measles declared eliminated in the US in 2000
  - Last case in West Virginia (WV) in ~~2009~~ 2024
  - Does not imply zero incidence
- Measles outbreaks in the US
  - Increase in travelers acquiring measles abroad and bringing it to the US and/or
  - Further spread in communities with pockets of unvaccinated people
- 2024 measles cases in the US – as of April 18, 2024
  - Total cases = 125
  - 18 jurisdictions
  - 83% unvaccinated or had unknown vaccination status
    - One MMR dose: 13%
    - Two MMR doses: 5%
  - 54% of cases hospitalized

# Measles Cases by State

## Measles Cases in 2024

as of April 18, 2024

Total cases  
125



### Legend

- 0
- 1-9
- 10-19
- 20-49
- 50-99
- 100+

# West Virginia Reportable Disease Rule

## Measles is a Category I communicable disease

- Suspect and confirmed cases are immediately reportable to the local health department
- Early identification is key to preventing additional cases

**One confirmed case of measles in WV is considered an outbreak**

**Prior to case confirmed this week – last case of measles in WV was reported in 2009**

<b>Category I Report suspect or confirmed cases immediately to the Local Health Department</b>
<ul style="list-style-type: none"><li>• Anthrax</li><li>• Bioterrorist event</li><li>• Botulism</li><li>• Foodborne outbreak</li><li>• Intentional exposure to an infectious agent or biological toxin</li><li>• Middle East respiratory syndrome (MERS)</li><li>• Novel influenza infection, animal or human</li><li>• Orthopox infection, including smallpox and monkeypox</li><li>• Outbreak or cluster of any illness or condition<sup>1</sup></li><li>• Plague</li><li>• Rubella</li><li>• Rubella, congenital syndrome</li><li>• <b>Rubeola (Measles)</b></li><li>• SARS coronavirus infection</li><li>• Smallpox</li><li>• Tularemia</li><li>• Viral hemorrhagic fevers <sup>2</sup></li><li>• Waterborne outbreak</li></ul>



# Basic Recommendations and Response Steps


**You do not need to know everything about measles, just the basic steps and where to find more information.**

1. Isolate: Isolate the case patient
1. Notify: Inform the appropriate agencies
1. Test: Confirm the diagnosis with the appropriate lab testing
1. Manage: Conduct contact tracing, assess immunity, and provide postexposure prophylaxis
1. Vaccinate: Make sure patients are up-to-date on measles vaccine

# Case Investigation Resources

## Resources

- West Virginia Division of Infectious Disease Epidemiology (DIDE) Epi on-call
- DIDE website
- Centers for Disease Control and Prevention (CDC) website
- Disease protocols
- Red Book
- Pink Book
- Purple Book

 Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives. Protecting People™

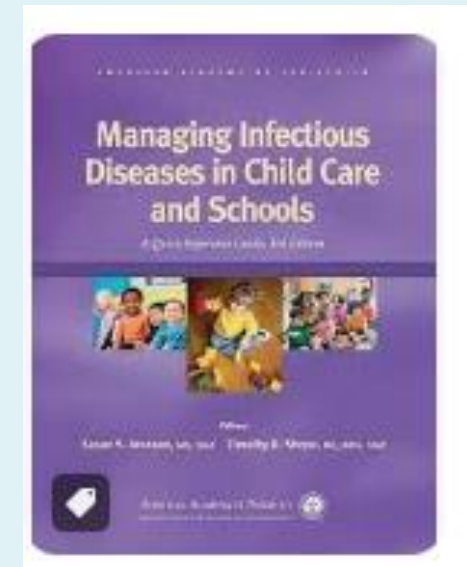
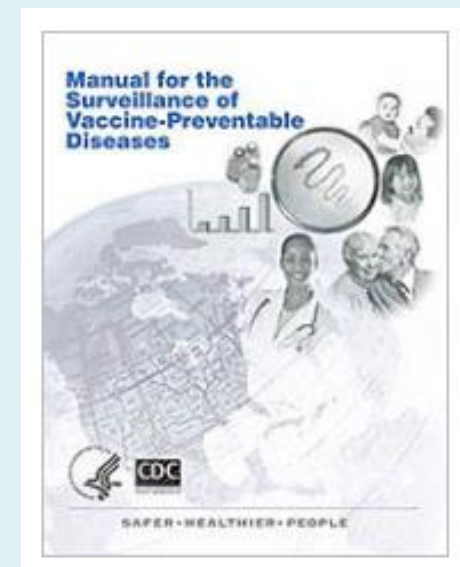
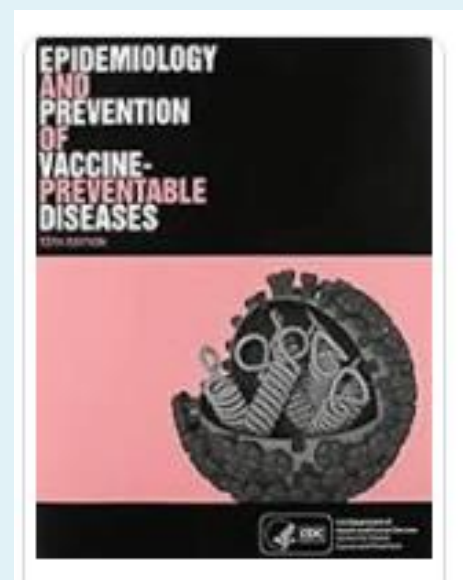
**Measles (Rubeola)**

[Print](#)



**Prevent Measles**  
Make sure you and your loved ones are up to date with the measles vaccine.

[Measles Vaccines](#)



# Step 1

# Measles Response: Step 1

## Step 1: Isolate patients with suspected measles

- Avoid waiting rooms or common areas of healthcare facilities
- Patient should wear a mask if able
- Immediately isolate in airborne infection isolation room if available
  - If not, private room with door closed
- Adhere to standard and airborne precautions
- Healthcare personnel evaluating the patient should have documented evidence of immunity

Written  
documentation of  
two doses of MMR  
vaccine

Laboratory  
confirmation of past  
measles infection

Laboratory evidence  
of immunity –  
positive IgG

- Patients with confirmed measles need to isolate until four days after rash onset

# Step 2

# Measles Response: Step 2

## Step 2: Notify

- Immediately notify local and state health department of a suspected measles cases
- This ensures rapid testing and investigation
- Can always call the DIDE Epi On-Call (304) 558-5358, ext. 2



# Step 3

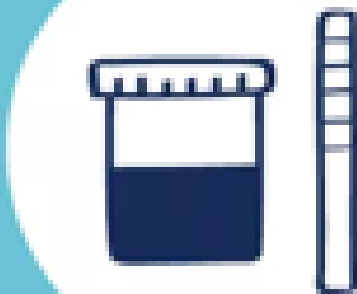
# Measles Response: Step 3

## Step 3: Test

- Can use a private lab or
- Coordinate testing through the local health department and WV Office of Laboratory Services (OLS)
  - PCR and genotyping - through OLS at no charge
  - Serology - collect at the same time and send to reference lab



**throat and/or  
nose swab**



**urine sample**



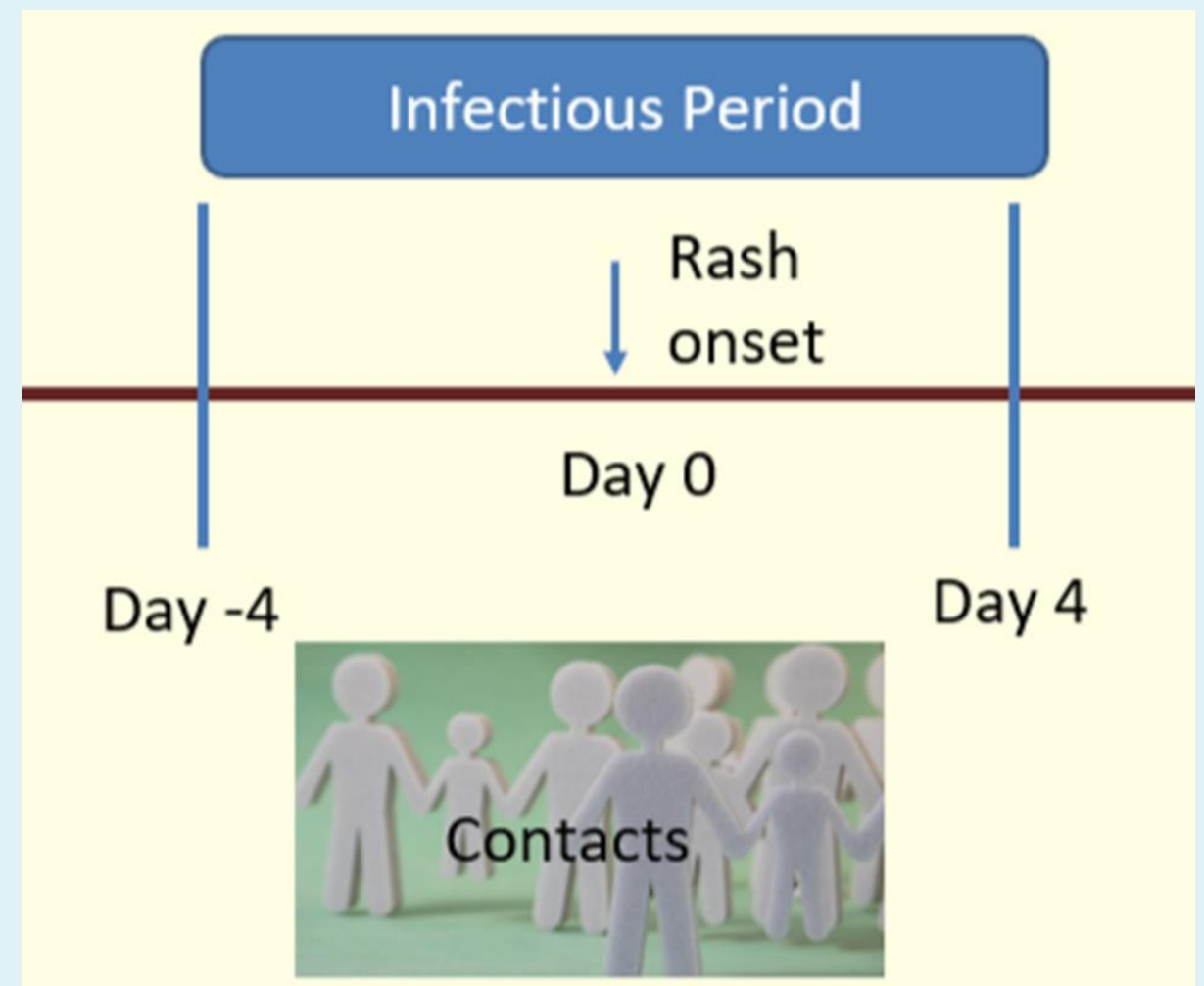
**blood tests**



# Measles Response: Step 4

## Step 4: Manage

- Identify people exposed during the case's infectious period
- Establish their immunity
- Provide the appropriate measles post-exposure prophylaxis (PEP) to those without evidence of immunity
- PEP decision is based on:
  - Medical contraindications
  - Time from exposure
- If immune status is unknown
  - Check IgG titers
- Quarantine may be required

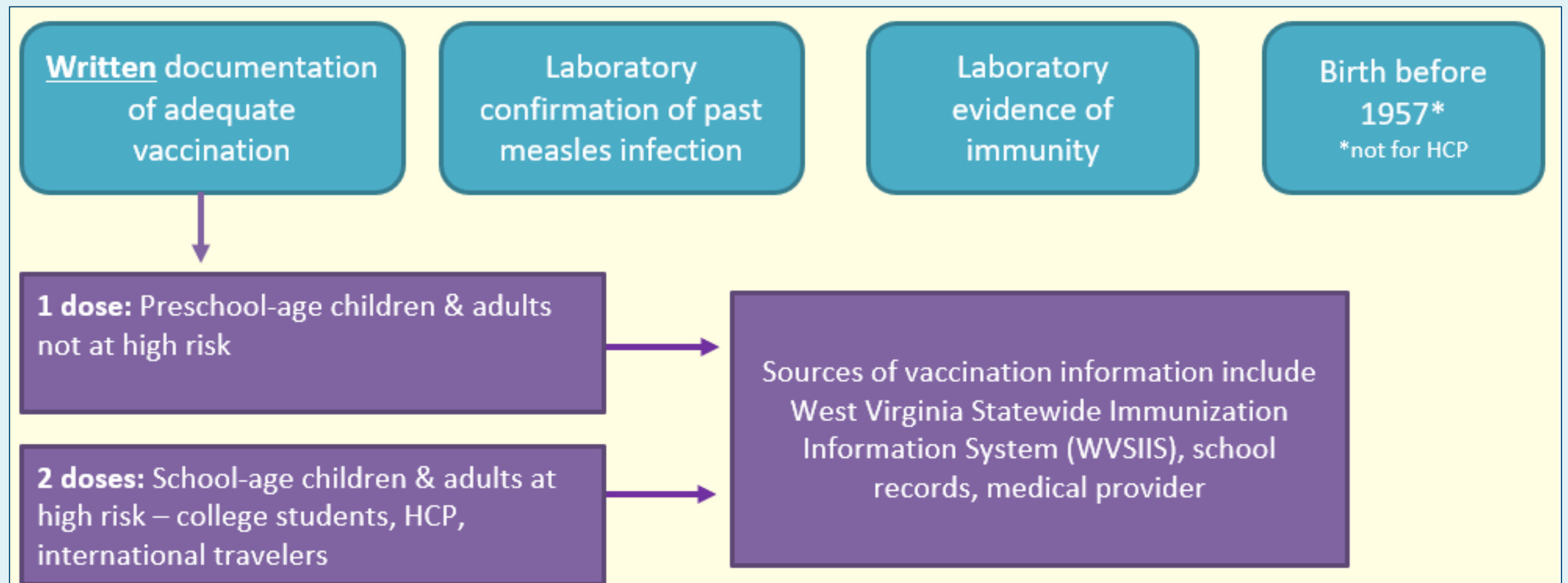


**Susceptible healthcare personnel must be excluded from work regardless of PEP**

# Measles Response: Step 4 (cont'd)

## Step 4: Manage

- Establish immunity or vaccine status of contacts
- Acceptable presumptive evidence of immunity against measles includes at least **one** of the following:



# Measles Response: Step 4 (cont'd)

## High-level view of contact tracing steps and required information:

- Obtain case-patient's date of fever onset
- Establish infectious period dates
- Identify contacts exposed during case-patient's infectious period
- Document evidence of immunity for contacts (including HCP)
- Establish date of first exposure to case-patient
- Establish last date of exposure to case-patient
- PEP and quarantine as appropriate
  - MMR vaccine within 72 hours of initial exposure
  - If unable to receive MMR, administer immune globulin within six days
  - Susceptible HCP must be excluded from work regardless of PEP

# Step 5

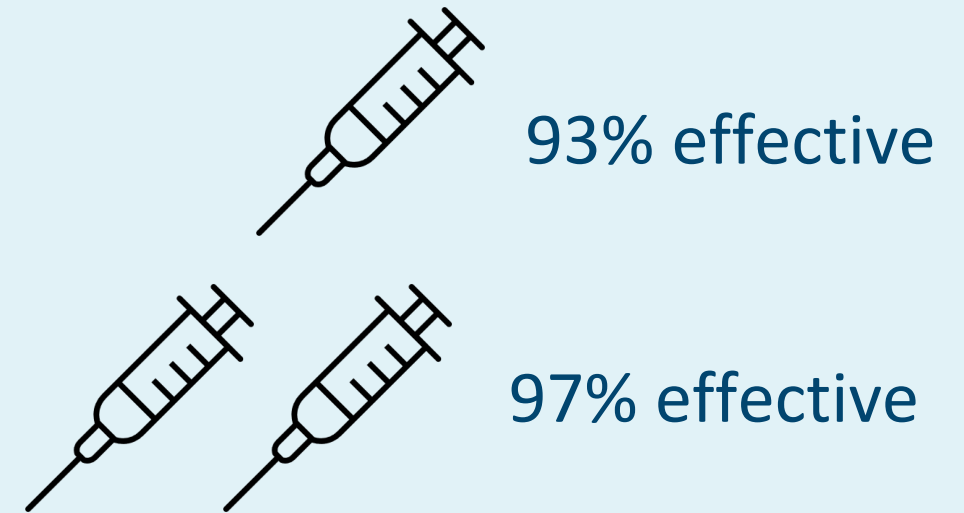
# Measles Response: Step 5

## Step 5: Vaccinate

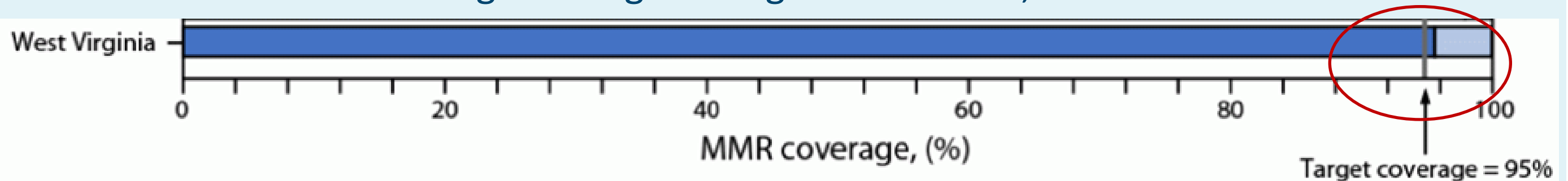
- Make sure patients are up to date on MMR
  - Especially before international travel
- MMR vaccine is highly effective



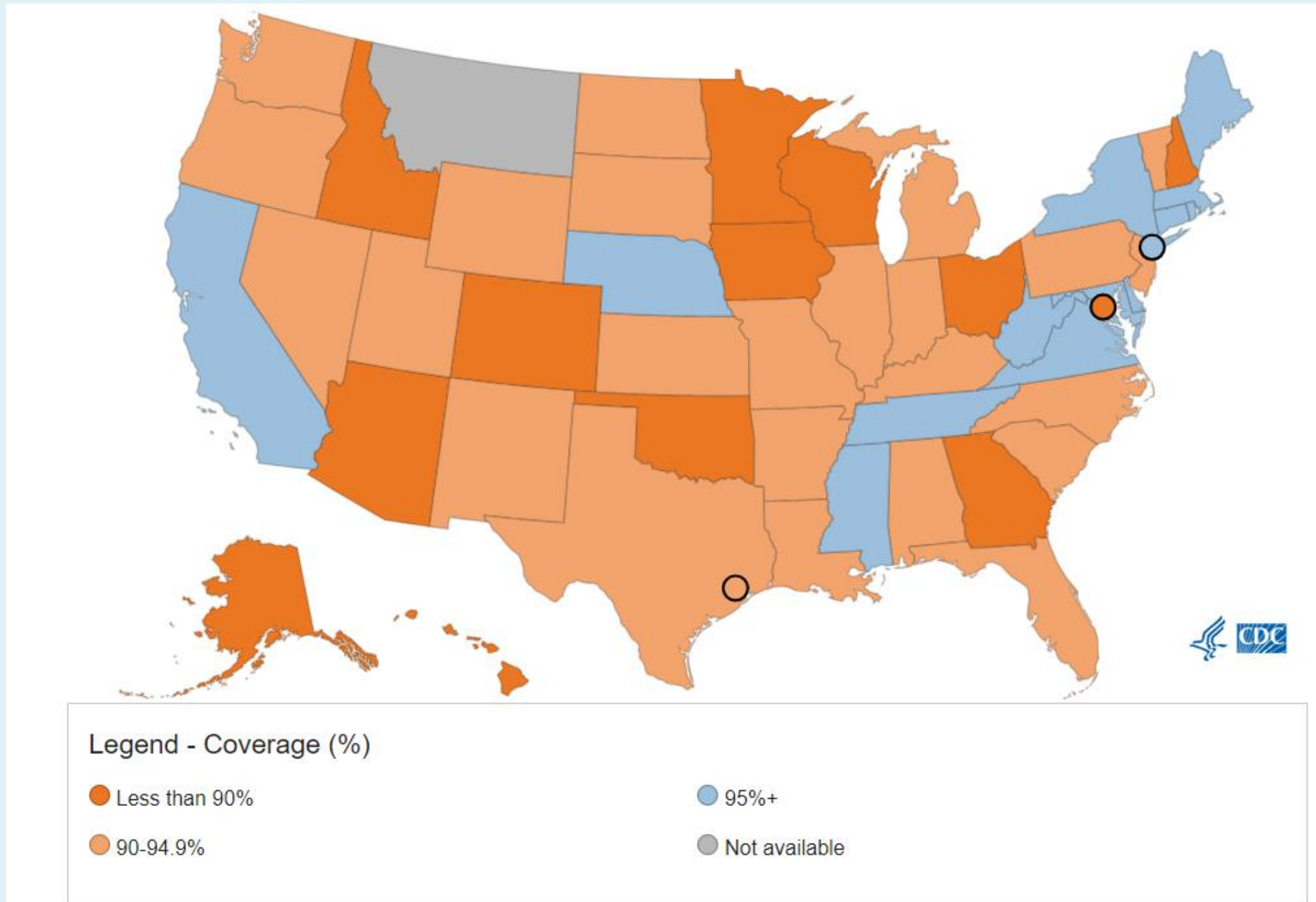
Herd immunity requires 95% coverage



## MMR Vaccine Coverage among Kindergarteners– WV, 2022-23 School Year



# MMR Vaccine Coverage for Kindergarteners 2022-2023 School Year



# Outbreak Response

## Measles Outbreak

- One case in WV is an outbreak
- Response will depend on the size and scope of the outbreak
- Focus is on rapid identification of cases and contacts
- Includes the steps we just reviewed
  - Isolation
  - Testing
  - Management of contacts
- Enhanced surveillance
- Communication with healthcare providers and community partners
- Additional vaccine clinics
- Monitor until no new cases for two incubation periods ( $21 \times 2 = 42$  days)



# In Closing

In closing, the following steps should be taken when there is a suspected or confirmed case of measles:

1. Isolate: Isolate the case patient
1. Notify: Inform the appropriate agencies
1. Test: Confirm the diagnosis with the appropriate lab testing
1. Manage: Conduct contact tracing, assess immunity, and provide postexposure prophylaxis
1. Vaccinate: Make sure patients are up-to-date on measles vaccine



## Think Measles

Consider measles in any patient presenting with a febrile rash illness, especially if **unvaccinated for measles** or **traveled internationally** in the last 21 days.

### 1 Measles Symptoms

- High Fever
- Cough
- Coryza (runny nose)
- Conjunctivitis (red, watery eyes)
- Maculopapular Rash
  - Typically appears 2-4 days after symptoms begin.
  - Begins at hairline, spreads downward, to face, neck, and trunk.
  - Rash appears red on light complexions, but may be harder to see or appear as purple or darker than surrounding skin on dark complexions.

### 2 Pre-Visit Telephone Triage

- For those reporting measles symptoms, assess the risk of exposure:
  - Are measles cases present in your community?
  - Did the patient spend time out of the country in the 21 days before symptom onset?
  - Has the patient ever received the MMR vaccine?
- Triage should only be completed by a clinically trained person.
- If patient will be seen in the office, provide instructions on face masks for patient (2 years of age and older) and family.
- Instruct to arrive to a side or back entrance instead of the main entrance.

### 3 Patients Presenting with Suspected Measles

- Provide face masks to patients (2 years of age and older) and family before they enter the facility. Patients unable to wear a mask should be "tented" with a blanket or towel when entering the facility.
- Immediately move patient and family to an isolated location, ideally an airborne infection isolation room (AIIR) if available. If unavailable, use a private room with the door closed.
- No other children should accompany a child with suspected measles.
- Patients (2 years of age and older) and family should leave face masks on if feasible.

### 4 Infection Prevention Precautions

- Only health care providers with immunity to measles should provide care to the patient and family. Standard and airborne precautions should be followed, including:
- Use of a fit tested NIOSH-approved N95 or higher-level respirator.
  - Use of additional PPE if needed for task (e.g., gloves for blood draws).
  - Cleaning hands before and after seeing the patient.
  - Limiting transport or movement of patients outside of room unless medically necessary.

### 5 Public Health Notification

- To ensure rapid investigation and testing with contact tracing, notification should occur immediately upon suspicion of measles. Public health departments will be able to help confirm vaccination history for U.S. residents, provide guidance on specimen collection and submission, and manage contacts of confirmed cases.
- Acute care facilities should immediately notify the hospital epidemiologist or infection prevention department.
- Outpatient settings should immediately notify local or state health departments.
- Visit CSTE for reporting contact information: <https://www.cste.org/page/EpiOnCall>

### 6 Clinical Care

- People with confirmed measles should isolate for four days after they develop a rash.
- If an AIIR was not used, the room should remain vacant for the appropriate time (up to 2 hours) after the patient leaves the room.

# Measles Resources



Project Firstline one-pager: <https://downloads.aap.org/AAP/PDF/ThinkMeasles-final.pdf>

COCA Now - Stay Alert of Measles Cases (Brief overview of recommendations for healthcare providers.)

<https://emergency.cdc.gov/newsletters/coca/2024/012524.html>

WV DIDE Measles Protocol:

[https://oeps.wv.gov/measles/documents/lhd/Measles\\_Protocol.pdf](https://oeps.wv.gov/measles/documents/lhd/Measles_Protocol.pdf)

Recent measles HAN from CDC. March 18 - HAN 504

<https://emergency.cdc.gov/han/2024/han00504.asp>

Project Firstline - Be on Alert for Travel-Related Measles March 28, 2024. Watch recording [here](#).

COCA call from 8/17/23. We Must Maintain Measles Elimination in the United States: Clinical Presentation, Diagnosis, and Prevention.

[https://emergency.cdc.gov/coca/calls/2023/callinfo\\_081723.asp](https://emergency.cdc.gov/coca/calls/2023/callinfo_081723.asp)

# Contact Information



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