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Recognizing and Managing Measles in Your Patients

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Division of Infectious Diseases
Children's National Hospital

March 10, 2025

Learning Objectives

- Describe the current epidemiology of measles
- Recognize the clinical presentation of measles
- Appreciate the importance of vaccination and infection control measures in limiting the spread of measles
- Describe strategies that can be implemented to prepare for potential measles cases

TEXAS Health and Human Services | Texas Department of State Health Services

The Texas Department of State Health Services is reporting an outbreak of measles in the South Plains region of Texas. At this time, 198 cases have been identified since late January. Twenty-three of the patients have been hospitalized.

There has been one fatality in a school-aged child who lived in the outbreak area. The child was not vaccinated and had no known underlying conditions.

Age Ranges of Measles Cases

0-4 years	5-17 years	18+ years	Pending
64	89	34	11

Vaccination Status of Confirmed Cases

Not Vaccinated	Unknown Status	Vaccinated with at least one dose
80	113	5

https://www.dshs.texas.gov/news-alerts/measles-outbreak-2025

Total Cases	Vaccinated with at least one dose	Not Vaccinated	Unknown
30*	0	26	4

New Mexico Case Count by County (as of 03/07/2025):

County	Cases	Hospitalizations	Deaths
Lea County	30	0	1

Age Ranges of Measles Cases:

0-4 Years	5-17 Years	18+ Years	Pending	Total
3	8	15	4	30

https://www.nmhealth.org/about/erd/ideb/mog/

Maryland
DEPARTMENT OF HEALTH

March 9, 2025

One Case of Measles Confirmed in Maryland Resident with Recent International Travel

Baltimore, MD - The Maryland Department of Health and Howard County health officials announced today a positive case of measles in a Howard County resident who recently traveled internationally. This case is not associated with the measles outbreak in Texas and New Mexico. Out of an abundance of caution, health officials are coordinating an effort to identify people who might have been exposed, including contacting potentially exposed passengers on specific flights.

Anyone who visited the following locations during any of the following hours may have been exposed:

- Washington Dulles International Airport: **Terminal A, on transportation to the main terminal and in the baggage claim area**
  - March 5th, 4:00 pm - 9:00 pm
- Johns Hopkins Howard County Medical Center Pediatric Emergency Department
  - March 7th, 3:30 pm - 7:30 pm

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https://health.maryland.gov/newsroom/Pages/One-Case-of-Measles-Confirmed-in-Maryland.aspx

Pre-vaccine epidemiology

- Before live measles vaccine licensed in 1963:
  - EVERY YEAR in the US:
    - **Estimated 3 to 4 million people infected**
  - **Among reported cases**
    - **48,000 hospitalized**
    - **1,000 encephalitis**
    - **400-500 deaths**
  - EVERY YEAR WORLDWIDE:
    - **2.6 million DEATHS**

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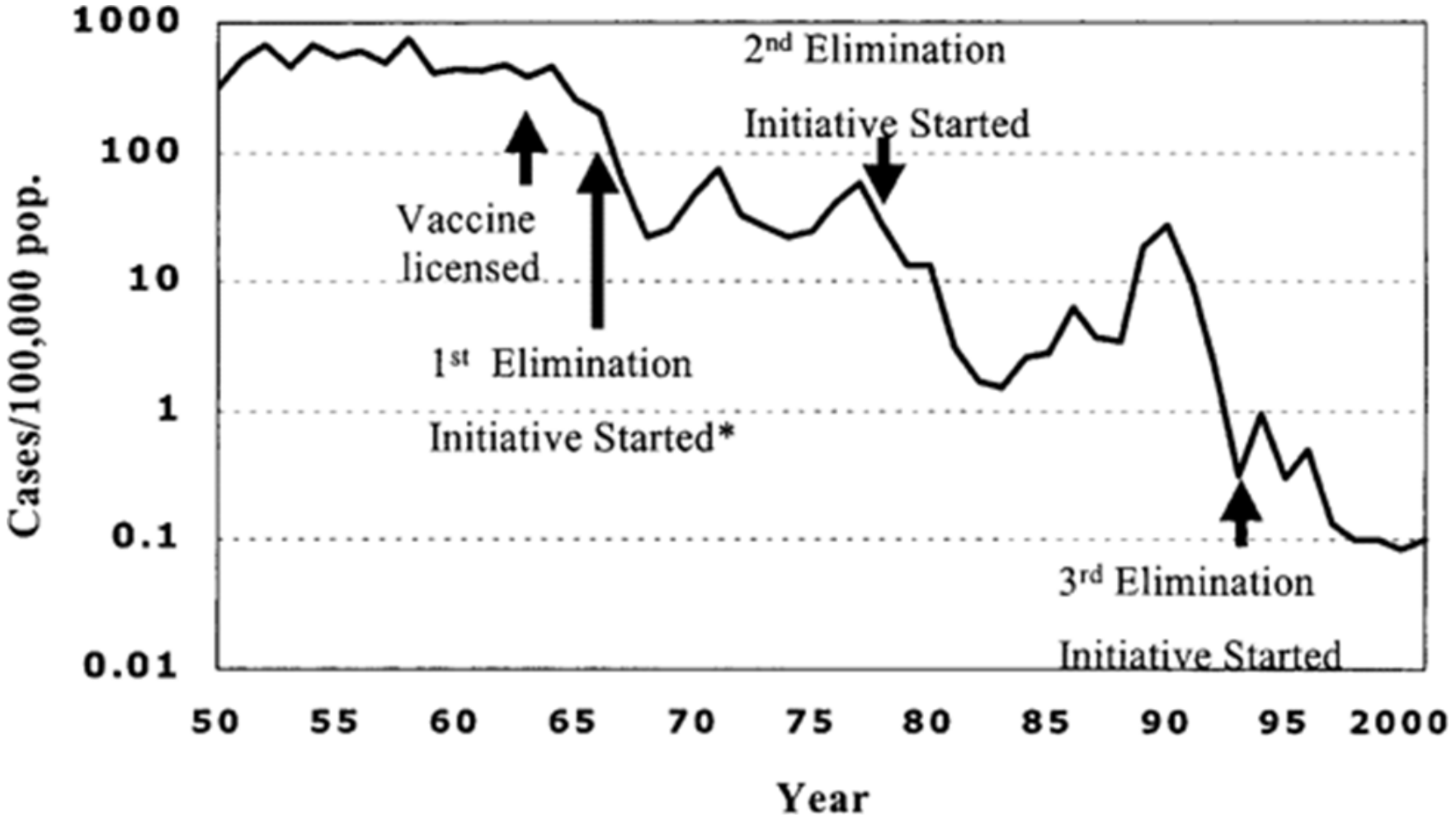
Pre-vaccine epidemiology

Reported US measles incidence, 1950–2001



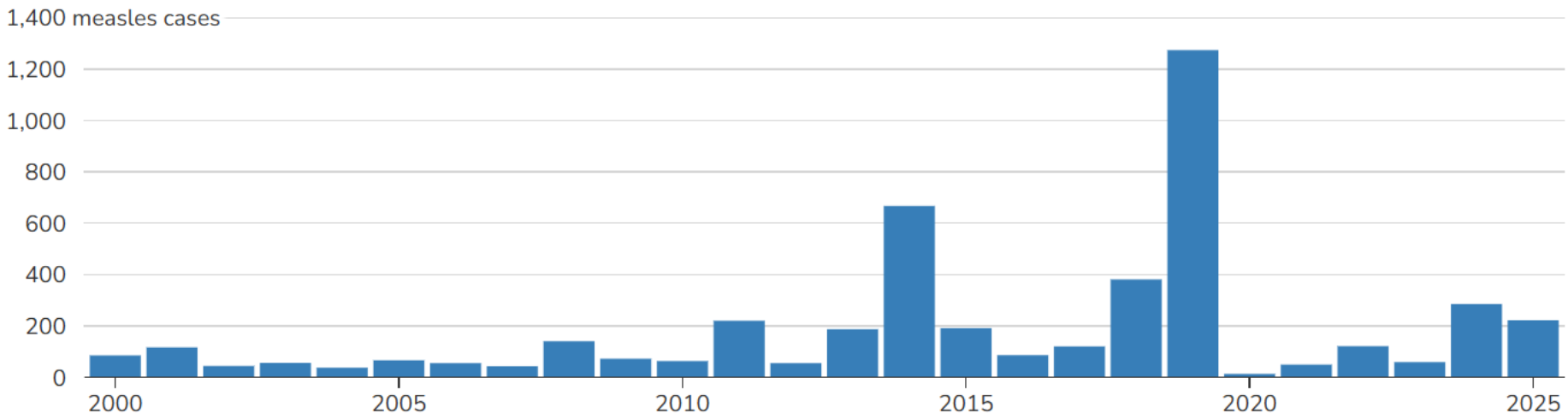
The Journal of Infectious Diseases, Volume 189, Issue Supplement_1, May 2004, Pages S1–S3,

Recent epidemiology

Yearly measles cases

as of March 6, 2025

2000–Present* 1985–Present*



https://www.cdc.gov/measles/data-research/index.html

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U.S. Cases in 2024

Total cases

285

Age
Under 5 years: **120 (42%)**
5-19 years: **88 (31%)**
20+ years: **77 (27%)**

Vaccination Status
Unvaccinated or Unknown: **89%**
One MMR dose: **7%**
Two MMR doses: **4%**

U.S. Cases in 2025

U.S. Hospitalizations in 2025

17%

17% of cases hospitalized (38 of 222).

Percent of Age Group Hospitalized
Under 5 years: **28% (21 of 76)**
5-19 years: **11% (11 of 99)**
20+ years: **13% (5 of 40)**
Age unknown: **14% (1 of 7)**

https://www.cdc.gov/measles/data-research/index.html

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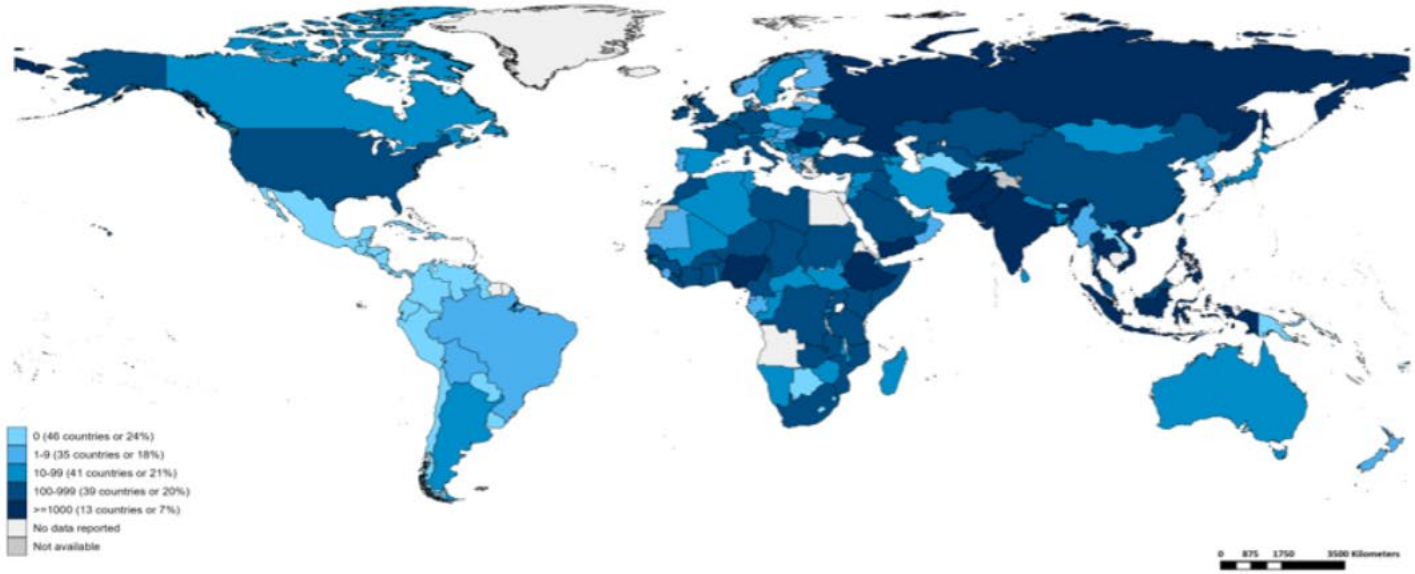
Number of Reported Measles Cases (Last 6 months)



Country	Cases*
Pakistan	7,148
Thailand	6,852
India**	6,203
Yemen	5,000
Ethiopia	4,724
Afghanistan	3,999
Indonesia	2,873
Russian Federation	2,090
Kyrgyzstan	1,890
Viet Nam	1,837

World Health Organization

Data source: IVB Database

Disclaimer: The boundaries and names shown and the designations used on this map do notimply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Notes: Based on data received 2025-02 - Surveillance data from 2024-07 to 2024-12 - * Countries with highest number of cases for the period - **WHO classifies all suspected measles cases reported from India as measles clinically compatible if a specimen was not collected as per the algorithm for classification of suspected measles in the WHO VPD Surveillance Standards. Thus numbers might be different between what WHO reports and what India reports.

https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fimmunizationdata.who.int%2Fdocs%2Flibrariesprovider21%2Fmeasles-and-rubella%2Fglobal-mr-update.pptx%3Fsfvrsn%3D3547ebab_9&wdOrigin=BROWSELINK

Measles Resurgence – WHY?

- Declining immunization rates (pockets)

- Measles still common worldwide
  - 2024: 334,717 confirmed cases (WHO)
  - Increased travel
  - Remains endemic in some countries

- Measles can enter our country easily
  - From visitors or when we travel abroad

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Measles Vaccine Efficacy

- One dose of MMR vaccine is ~ **93% effective** at preventing measles

- Two doses of MMR (second dose given at least 28 days after the first dose) ~ **97% effective**

  - 1-3% will still remain susceptible to measles despite 2 vaccines – milder disease, less likely to spread

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Herd Immunity

- Vaccinated people = barrier to disease for their communities, reducing the risk of infection for people who are susceptible
- To disrupt broad transmission, herd immunity must be maintained >**95**%
- 2023-2024: Overall national coverage for MMR among US kindergartners= **92.7%**
  - BUT: Highly variable by state
  - At county levels, vaccine rates may vary considerably.
    - Pockets of unvaccinated people in states with high vaccination coverage

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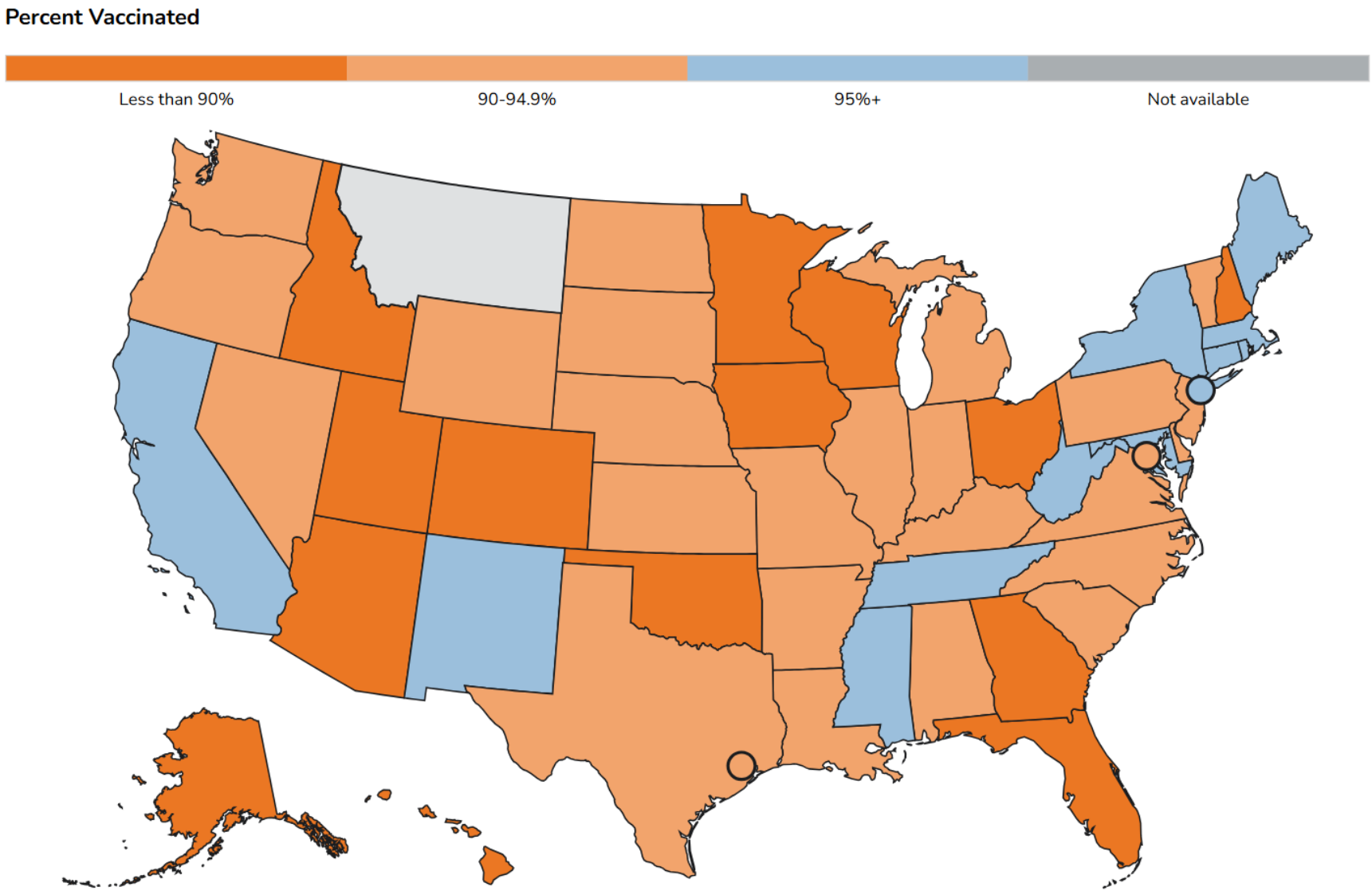
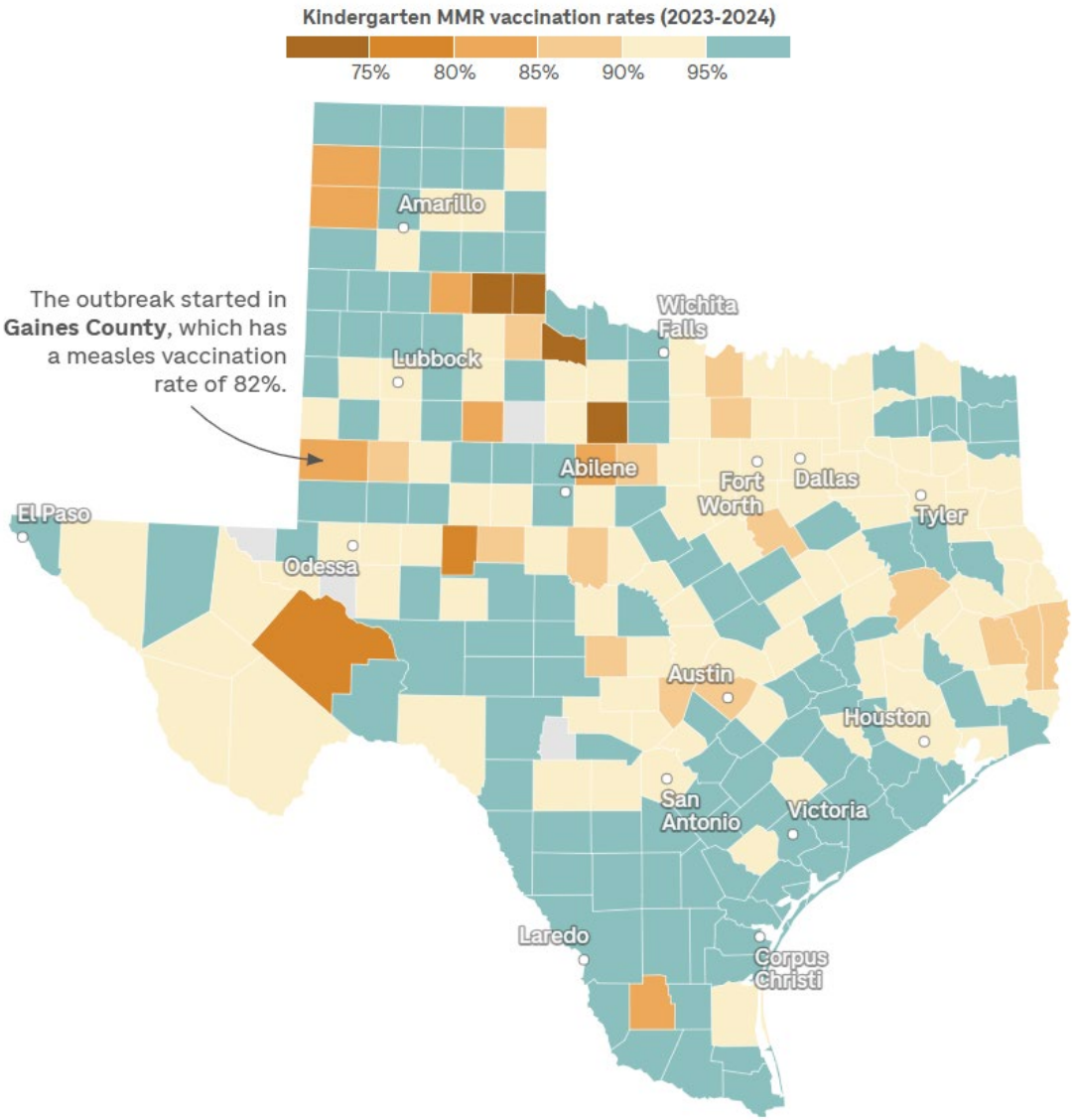
MMR vaccine coverage for kindergarteners: 2023–2024



https://www.cdc.gov/measles/data-research/index.html#cdc_data_surveillance_section_1-measles-cases-in-2024



Half of Texas counties have lower-than-recommended measles vaccination rates among kindergarteners

Data not available for four counties: Crane, Loving, Real and Stonewall. Data includes public and private schools but not home schools.

Source: Texas Department of State Health Services

Credit: Alyson Hurt/NPR

Measles vaccination – Local data

- DC MMR vaccination rate for kindergartners 2023-2024= 92%
- VA MMR vaccination rate for kindergartners 2023-2024= 94.2%
- MD MMR vaccination rate for kindergartners 2023-2024= 96.6%

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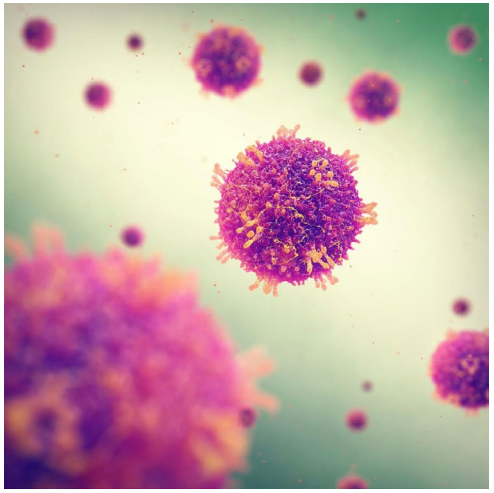
Measles



- Single-stranded, enveloped RNA virus
  - 1 serotype
  - genus *Morbillivirus*; *Paramyxoviridae* family

- Humans are the only natural hosts of measles virus

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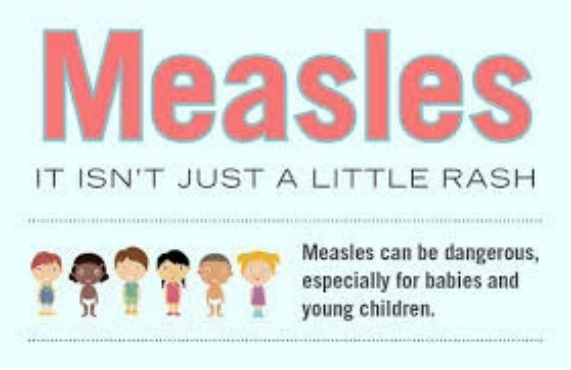
Measles can be serious

- About 1 in 5 unvaccinated people in the US who get measles will be hospitalized
- 1 out of every 20 kids with measles will develop pneumonia
-
- ~1 out of every 1,000 children will develop encephalitis
    - ~ 25 % have neurodevelopmental sequelae
- Subacute sclerosing panencephalitis — fatal, progressive degenerative CNS disease that usually occurs 7 to 10 years after measles virus infection
- 1 to 3 out of every 1,000 children with measles will die



Long-term measles-induced immunomodulation increases overall childhood infectious disease mortality

Michael J. Mina[1,2,*], C. Jessica E. Metcalf[1,3], Rik L. de Swart[4], A. D. M. E. Osterhaus[4], and Bryan T. Grenfell[1,3]

Abstract

Immunosuppression after measles is known to predispose people to opportunistic infections for a period of several weeks to months. Using population-level data, we show that measles has a more prolonged effect on host resistance, extending over 2 to 3 years. We find that nonmeasles infectious disease mortality in high-income countries is tightly coupled to measles incidence at this lag, in both the pre- and post-vaccine eras. We conclude that long-term immunologic sequelae of measles drive interannual fluctuations in nonmeasles deaths. This is consistent with recent experimental work that attributes the immunosuppressive effects of measles to depletion of B and T lymphocytes. Our data provide an explanation for the long-term benefits of measles vaccination in preventing all-cause infectious disease. By preventing measles-associated immune memory loss, vaccination protects polymicrobial herd immunity.

Mina MJ, et. al. Science. 2015 May 8;348(6235):694-9. PMID: 25954009

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Measles – Clinical Features

- Acute viral respiratory illness with a 2-4 day prodrome of fever, malaise, cough, coryza, and conjunctivitis
  - Pathognomonic Enanthem - Koplik spots
    - 2-3 days after symptoms begin
    - Appear ~48 hours prior to exanthem; last 12 -72 hours
- Exanthem 2-5 days after symptoms begin
  - erythematous, maculopapular, blanching rash, classically begins on the face and spreads cephalocaudally and centrifugally

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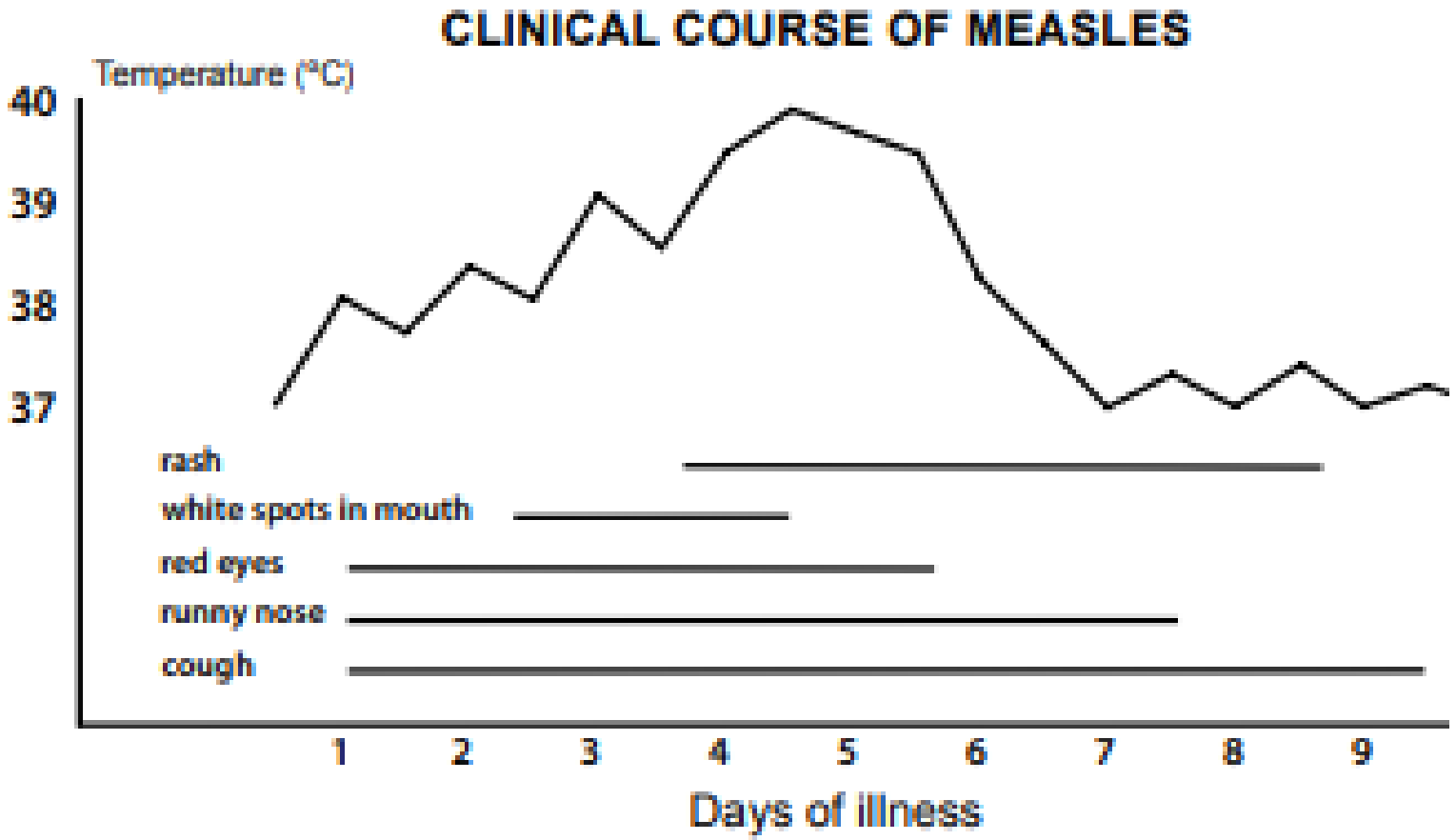

Treating measles in children

World Health Organization
Geneva
2004 updated

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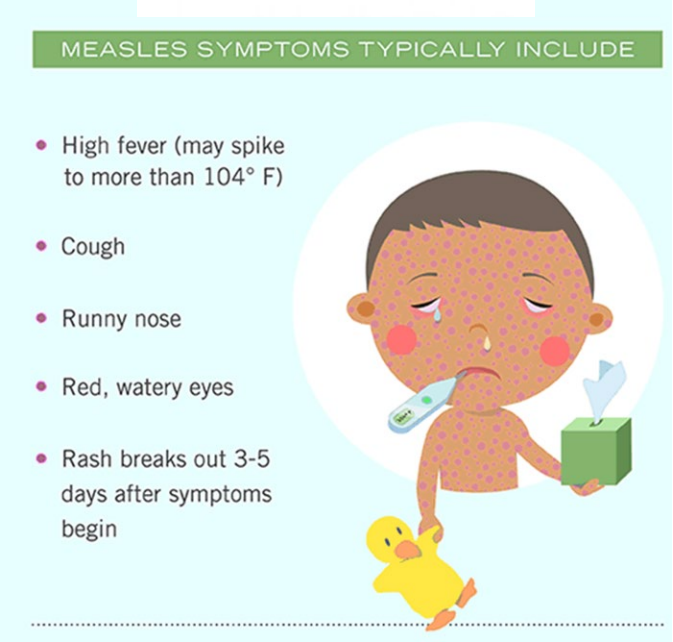
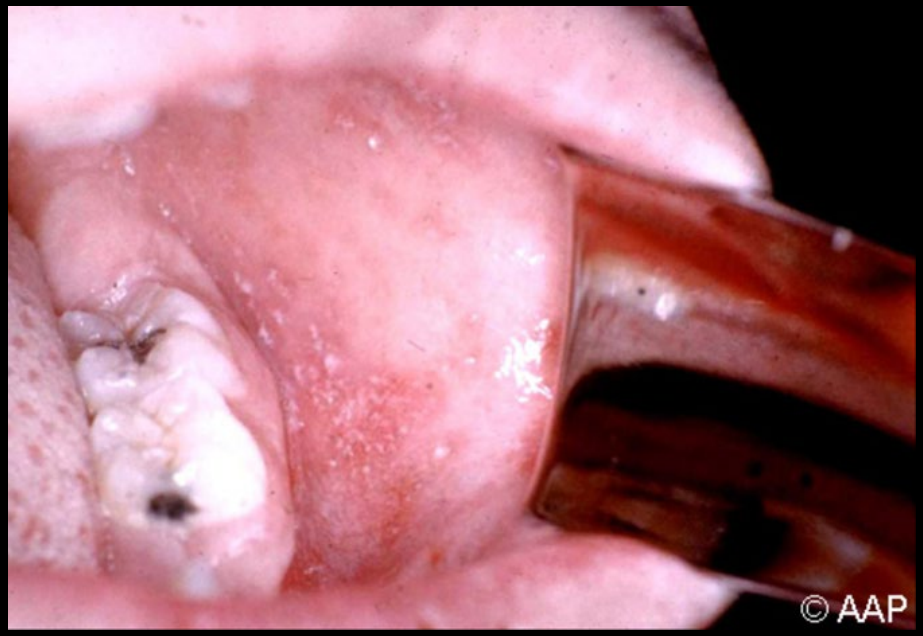
Measles – Clinical Features

- Patients are contagious from 4 days before to 4 days after the appearance of the rash

- Incubation period 7-21 days after exposure
  - Fever typically begins 7-10 days after exposure
  - Rash usually appears 10-14 days after exposure



Measles – Clinical Features



Koplik spots. Note characteristic white lesion with erythematous margin.

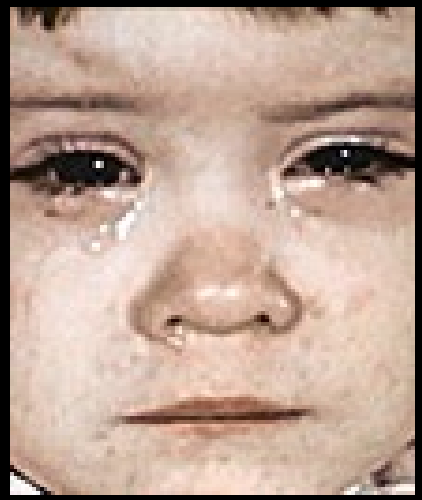
Koplik spots of measles in a 7-year-old white male. Courtesy of Larry Frenkel, MD

Measles – Clinical Features

A 6-year-old white female with the early facial rash and conjunctivitis of measles. Courtesy of Larry Frenkel, MD

This child with measles is displaying the characteristic red blotchy pattern on his face and body during the third day of the rash. Courtesy of Centers for Disease Control and Prevention

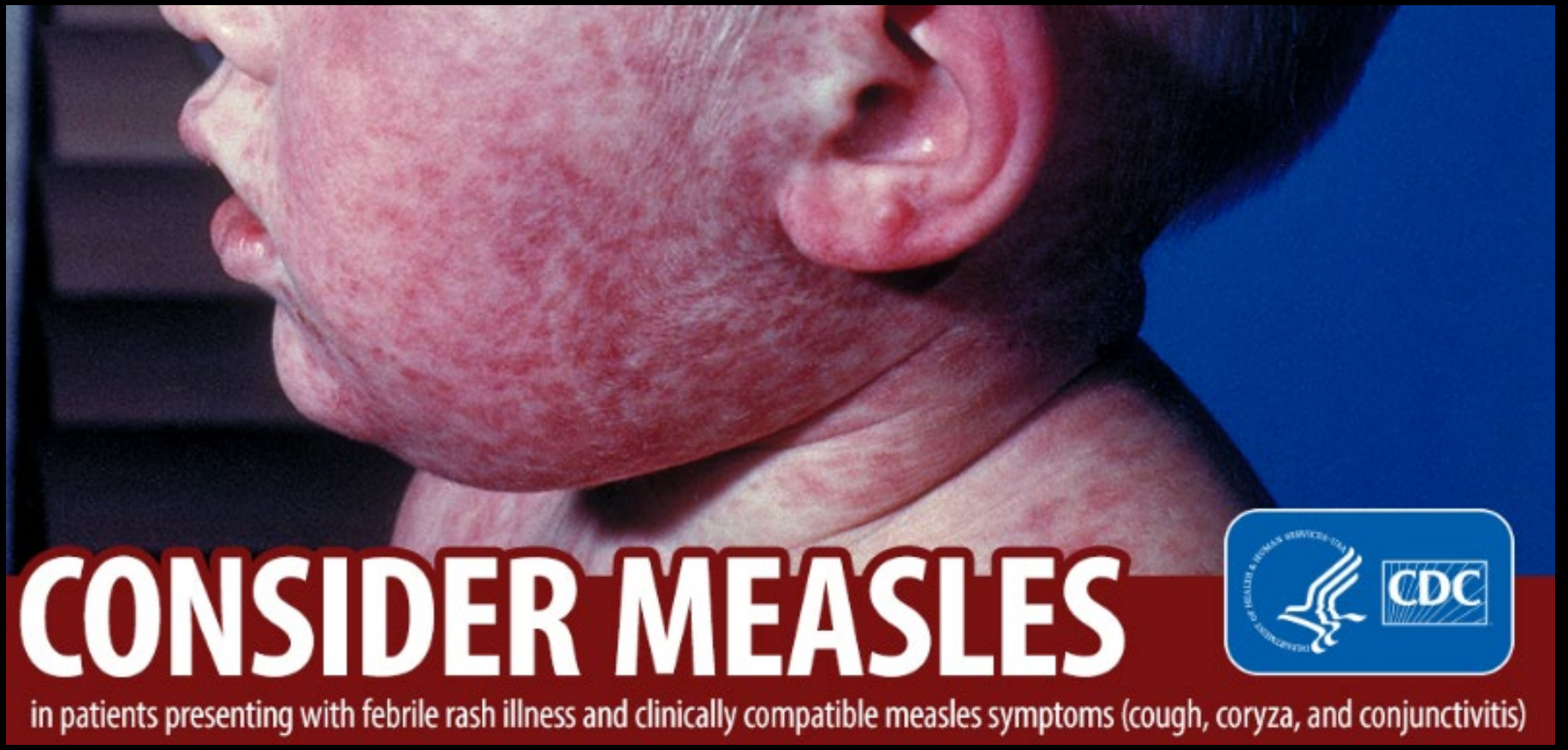
Initial Facial Rash, Conjunctivitis, Coryza in Measles



Morbilliform Rash of Measles

Morbilliform Rash of Measles

Blutinger E,et. al. Measles: Contemporary considerations for the emergency physician. J Am Coll Emerg Physicians Open. 2023 PMID: 37692196

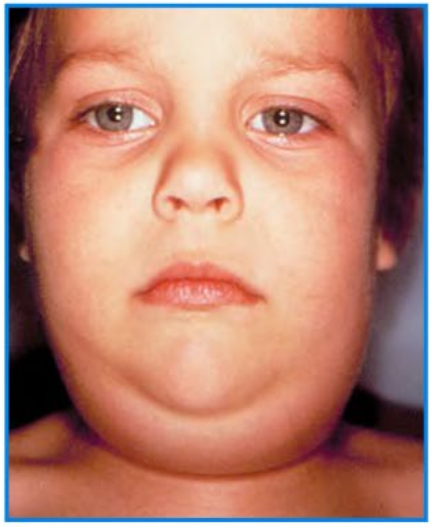

CONSIDER MEASLES
in patients presenting with febrile rash illness and clinically compatible measles symptoms (cough, coryza, and conjunctivitis)
CDC

Differential diagnosis

MEASLES
(RUBEOLA)

- Maculopapular eruption that usually begins on the face and spreads to the trunk and extremities. Rash lasts five to six days.
- Prodrome of fever, followed by cough, coryza and conjunctivitis for two to four days. Fever can exceed 104°F.

Image Source: Centers for Disease Control and Prevention (CDC)/Barbara Rice



MUMPS

- Characterized by unilateral or bilateral parotitis. Typically no rash.
- Parotitis usually appears within the first two days of illness, and symptoms decrease after about one week.
- Low-grade fever, malaise, headache and loss of appetite may appear before onset of swelling.

Image Source: CDC

RUBELLA
(GERMAN MEASLES)

- Rash generally starts on the face and spreads down the body. Rash is maculopapular and lasts three to five days. May resemble measles, but rash is milder and not confluent.
- Symptoms in younger children are mild; older children may have a one- to five-day prodrome with low-grade fever.

Image Source: CDC

VARICELLA
(CHICKENPOX)

- Initial rash consists of macules that progress quickly to papules, vesicles, pustules and scabs. First appears on the head and is more pronounced on the trunk than extremities.
- Appears in successive crops with lesions in different stages over a period of two to four days and may be pruritic.
- Mild prodrome of fever and malaise may occur one to two days before rash onset.

Image Source: CDC

https://www1.nyc.gov/assets/doh/downloads/pdf/imm/rash-poster.pdf

Differential diagnosis

ROSEOLA INFANTUM
(EXANTHEM SUBITUM)

- Sudden onset of high fever, 102°F to 105°F, lasting three to five days.
- As fever subsides, a rash begins on neck and trunk and spreads to extremities and lasts one to two days. Rash is erythematous macular or maculopapular. Lesions are discreet and two mm to five mm in diameter and blanch on pressure.
- May be accompanied by mild cough, coryza, headache, abdominal pain and mild inflammation of the pharynx and tonsils.

Image Source: Stan L. Block, MD, FAAP

SCARLET FEVER
(SCARLATINA)

- Rash is often first noticed on the trunk and rapidly spreads to cover entire body. Rash appears as red and finely punctate, fades on pressure and almost always leads to desquamation.
- The face may appear flushed. Deep red lines may appear in the skin folds of the joints. The tongue may be coated yellowish white, then become red and swollen, leading to "strawberry tongue" appearance.

Image Source: "Scarlet Fever 2" by Alicia Williams (Estreya) is licensed under CC BY 2.5

KAWASAKI SYNDROME
(MUCOCUTANEOUS LYMPH NODE SYNDROME)

- Illness usually begins with a fever, which may be high and spiking and lasts one to two weeks, followed by a raised, deep-red, plaque-like rash, typically over the trunk but often widespread and including the extremities.
- Rash is maculopapular with multiforme-like lesions and may resemble scarlet fever. Rash is often accompanied by painful edema of the hands and feet.
- Patients may also develop conjunctivitis; dry, cracked lips; a red "strawberry tongue"; erythema of the oropharynx; and cervical lymphadenopathy.

Image Source: "Kawasaki_symptoms" by Dong Soo Kim is licensed under CC BY 2.0

FIFTH DISEASE
(ERYTHEMA INFECTIOSUM)

- Begins with a nonspecific illness which often goes unrecognized. Some patients may develop fever, coryza, headache, nausea and diarrhea.
- Two to five days later, rash begins as solid, bright red area of eruption on the cheeks ("slapped cheek" appearance).
- May include a second-stage rash on the trunk and limbs within a few days. As the rash fades, it may have a typical lacy appearance, and may recur.

Image Source: Andrew Kerr/Wikimedia Commons/ Public Domain

https://www1.nyc.gov/assets/doh/downloads/pdf/imm/rash-poster.pdf

	Causative agent	Rash characteristics and distribution	Associated symptoms and signs
Adenoviruses	Adenovirus	• Maculopapular "rubelliform" or petechial rash in a small minority of patients	• Acute respiratory disease: fever, conjunctivitis, coryza, pharyngitis, bronchitis, tracheitis, or pneumonia • Epidemic keratoconjunctivitis • Gastroenteritis • Uncommonly: hemorrhagic cystitis, meningo-encephalitis, or myocarditis
Drug rash	Allergic and non-allergic reactions to drugs, including: urticaria, angioedema, hypersensitivity vasculitis, exfoliative dermatitis, DRESS (drug reaction with eosinophilia and systemic symptoms), Stevens Johnson syndrome and toxic epidermal necrolysis	• Red macular, papular, vesiculobullous, petechial, palpable purpura, or desquamative rash • Vary in severity from mild to peeling of the entire skin • Rashes may appear suddenly or may be delayed	• Fever, oral mucosal lesions, conjunctivitis, or vomiting
Enteroviruses	Coxsackieviruses, echoviruses, and other enteroviruses	• Maculopapular or petechial or vesicular rash more prominent on the extremities	• Fever, oral vesicles/ulcers, conjunctivitis • Meningitis or encephalitis
Erythema infectiosum (Fifth disease)	Human parvovirus B19	• Red macular rash on cheeks ("slapped cheeks") lacy, reticular macular rash most prominent on extensor surfaces of extremities	• Fever and systemic symptoms are absent or low grade in children • Very painful symmetrical arthralgias and arthritis may occur in adults
Rubeola (Measles)	A paramyxovirus	• Blanching erythematous maculopapular rash starts on head and neck → trunk → extremities	• Fever, cough, coryza, and conjunctivitis • Koplik spots on buccal mucosa

Western Journal of Emergency Medicine Vol XVI,N0.2:March 2015

Measles – Pearls

- Check immunization status
- Ask about travel and exposure history
- Essential history: rash should begin on face and neck and spread distally, with delayed onset of rash after illness began
- Check for Koplik spots on patients presenting with severe viral respiratory syndromes
- Advise patients discharged with viral syndromes to monitor for later development of rash

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Measles is very contagious

- ~9 out of 10 susceptible persons with close contact to a measles patient will develop measles
- Transmitted by direct contact with infectious droplets or by airborne spread when an infected person breathes, coughs, or sneezes
- Measles virus can remain suspended in the air for up to two hours
- Patients are contagious from 4 days before the rash to 4 days after appearance of the rash

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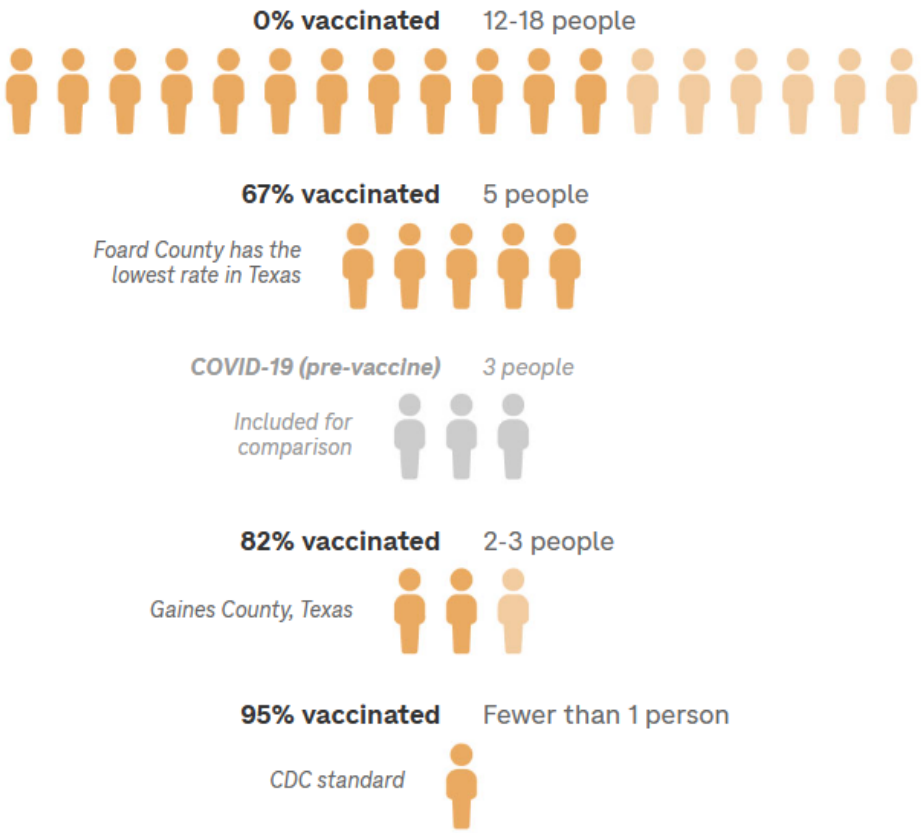
Depending on the vaccination rate, one person with measles can infect...



Notes

The R_0 for measles — the number of people one person might infect if there is zero immunity in a population — is 12-18 people. NPR used the middle of that range, 15 people, to estimate an effective reproduction number for other vaccination rates. Vaccination rates shown are kindergarten MMR vaccination rates for the 2023-2024 school year.

Source: Matthew Ferrari, Center for Infectious Disease Dynamics at Pennsylvania State University; Texas Department of State Health Services

Credit: Maria Godoy, Alyson Hurt and Carmel Wroth/NPR. Icon created by Alice Design from The Noun Project

Measles- limiting spread

- Avoid unnecessary exposure of high-risk children/adults to measles
    - Do NOT accept a patient to clinic/for transfer simply to confirm suspicion of measles in a fever/rash patient or for testing
    - If there is concern for complication such as seizures, encephalitis, pneumonia, etc. transfer is indicated- ALWAYS call ahead to notify IC, ID before transfer

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Infection Control

For any possible cases:

- **Immediately place standard isolation mask on patient** (or cover infant with blanket) and **place in private patient room with closed door.** Negative pressure room preferred if available

- **N95 Mask (or PAPR)** should be worn by immune healthcare provider when interacting with patient

- Immediately notify your local Department of Health
  - Infection Control; Infectious Diseases

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Use Airborne Precaution before you examine a patient with possible measles

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Infection Control

- Only healthcare personnel with evidence of immunity can enter room:
  - Documented 2 doses of MMR vaccine OR
  - Serologic evidence of immunity OR
  - Laboratory confirmed infection OR
  - Birth before 1957*

- Ensure all HCP at your facility have presumptive evidence of immunity to measles documented and readily available

* Consider vaccinating HCP born before 1957 who do not have other evidence of immunity to measles; During a measles outbreak, 2 doses of measles virus-containing vaccine are recommended for all HCP, regardless of year of birth

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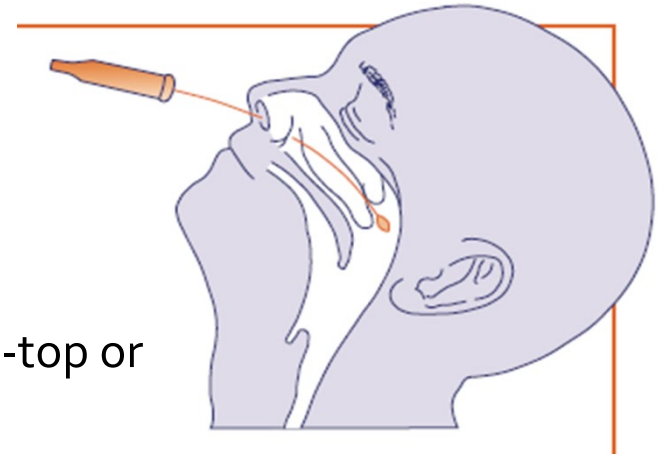
Measles – Diagnosis

- If you encounter a patient with suspected measles, immediately contact your local health department for testing recommendations



- Obtain:
  - Serum blood sample for serology
    - 5 mL of whole blood or 4 mL of serum in red-top or gold-top vacutainer

  AND

  - Either a nasopharyngeal (NP) or throat swab for PCR
    - Swabs must be placed in unexpired Viral Transport Media (also called Universal Transport Media). Swabs in other types of media cannot be tested for measles

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Measles – Recommendations for Testing for Clinicians

Measles is a mandatory, immediately notifiable disease. Please report confirmed and probable cases of measles to your local health department.

	Preference	Test	Specimen	Indication	Timing	Notes
ACUTE DISEASE	Preferred Test	RT-PCR	**Nasopharyngeal (NP) or throat (OP) swab** *(preferred)* Urine can be collected in addition to an NP/OP swab	Acute Disease	• A specimen for detection of virus should be collected as soon as possible upon suspicion of measles. • Specimen should be ideally collected within 3 days after rash onset but can be collected up to 10 days. • If >10 days since rash onset, PCR testing is generally not recommended.	• NP/OP swab collected <3 days after rash onset is the preferred specimen. Ideally, RT-PCR should be performed for all suspect measles cases identified within 10 days of rash onset. • Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the RT-PCR detection window. • Contact your health department regarding where to send specimens for testing and genotyping, if appropriate.
	Preferred Test	IgM (with IgG)	Serum	Acute Disease	• Ideally, serology will be obtained for suspect measles cases, in addition to RT-PCR. • IgM is most sensitive 3+ days after rash onset and may be negative days 0–3 after rash onset. IgM can be detected for 6–8 weeks after acute measles.	• Detection of measles IgM can aid in the diagnosis of measles and can increase the detection window for acute cases. • Testing IgG for acute cases can provide evidence of pre-existing immunity, which can be helpful to differentiate rare instances of vaccine failure. • People with a history of measles vaccination may not have detectable IgM during an acute measles illness.

* Viral culture is a valid way to confirm cases of acute measles disease; however, is not generally recommended as it takes longer to receive results than RT-PCR, which is widely available. Specimen collection and timing is similar to that for RT-PCR.
** Acute and convalescent phase serum specimen collection (separated by at least 2 weeks) to demonstrate a 4-fold increase in IgG titer can confirm measles infection but is generally not required to confirm measles infection.

https://www.cdc.gov/mumps/media/pdfs/2025/02/MMRV-Testing-for-Clinicians_Jan2025.pdf

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	Measles Tests	When to Collect?
Acute Disease — PCR	**Nasopharyngeal (NP) or Throat (OP) Swab** 	As soon as possible upon suspicion of measles: ideally **0-3 days** after rash onset, up to **10 days** after rash onset.
Acute Disease — PCR	**Urine** 	**Within 10 days** of rash onset **Collecting a urine specimen along with an NP/OP swab may improve test sensitivity, especially if at the end of the PCR detection window.*
Acute Disease — IgM	**Serum** 	Collect with specimen for PCR. Can be negative up to 3 days after rash onset. IgM **can be detected for 6–8 weeks** after acute measles.

https://www.cdc.gov/mumps/media/pdfs/2025/02/MMRV-Testing-for-Clinicians_Jan2025.pdf

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Measles – Diagnosis

- Serum measles IgM antibody; DOH or send out to Quest (34256)
- Measles RT-PCR (throat or NP specimens) DOH or send out to Quest (39306)
  - Sample must be sent in viral transport media
- Significant increase in measles IgG antibody concentration in paired acute and convalescent serum specimens (collected at least 10 days apart); DOH or send out to Quest (964)
- Throat or NP or urine sample for viral culture or urine for PCR (DOH)
- Laboratory Testing for Measles | Measles (Rubeola) | CDC

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Measles – Diagnosis

- MDH: measles testing is performed at the MDH Laboratories Administration which requires prior approval through your local health department. https://health.maryland.gov/pages/departments.aspx

- DC DOH: Measles testing can be performed through the state public health laboratory if testing is not supported by your institution's primary laboratory. Notify DC Health via email doh.epi@dc.gov or by phone at 202-442-5893 (8:15 am - 4:45 pm) or 844-493-2652 (after-hours calls) to coordinate testing

- VDH: contact your local health department or call 804-864-8055

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MMR vaccine recommendations

- Children should receive 2 doses of MMR
  - first dose at 12–15 months of age
  - second dose at 4–6 years of age (before school entry)

- Adults and teens should be up to date with either one or two doses unless they have presumptive evidence of immunity
  - Adults at high risk should receive 2 doses:
    - students at post-high school education institutions, healthcare personnel, international travelers, close contacts of immunocompromised people, people with HIV infection

Children's National

MMR vaccine recommendations

Before any international travel

- 6 -11 months of age: 1 dose of MMR vaccine
  - These children will need two additional doses at least 28 days apart on or after their first birthday
- 12 months of age and older: 2 doses of MMR vaccine, separated by at least 28 days
- Teenagers and adults who do not have evidence of immunity against measles should get two doses of MMR vaccine separated by at least 28 days

Children's National

MMR vaccine recommendations

- Patients who reside in areas with an ongoing measles outbreak follow state and local guidance
- Do not screen patients for measles immunity in non-outbreak areas in the US
  - After vaccination, it is not necessary to test patients to confirm immunity
- No recommendation to receive a third dose of MMR vaccine during measles outbreaks
- Consider modification to routine MMR vaccination for patients who are planning to travel to areas in the US with measles outbreak

Texas Department of State Health Services (DSHS) vaccine recommendations

Children's National

Measles - treatment

There is no specific antiviral therapy for measles. Medical care is supportive and to help relieve symptoms and address complications such as bacterial infections.

Updated vitamin A recommendation

Under the supervision of a healthcare provider, vitamin A may be administered to infants and children in the United States with measles as part of supportive management. Under a physician's supervision, children with severe measles, such as those who are hospitalized, should be managed with vitamin A.

Also under physician supervision, if vitamin A is recommended, it should be administered immediately on diagnosis and repeated the next day for a total of 2 doses. Inappropriate dosing may lead to hypervitaminosis A. The recommended age-specific daily doses are:

- 50,000 IU for infants younger than 6 months of age
- 100,000 IU for infants 6–11 months of age
- 200,000 IU for children 12 months of age and older

Children's National

Measles - treatment

NBC NEWS

A health food store in Seminole has become a gathering place for families with visibly sick children seeking medical advice. They're often given cod liver oil, a supplement rich in vitamin A that's been touted by Robert F. Kennedy Jr., head of the Department of Health and Human Services.

While studies have shown that people with a vitamin A deficiency have worse outcomes from measles and its complications, "vitamin A in and of itself does not treat measles," said Dr. Alexandra Yonts, an infectious disease specialist at Children's National Hospital in Washington, D.C.

Children's National

Measles post exposure prophylaxis

Table 3.32. Postexposure Prophylaxis (PEP) for People Exposed to Measles Who Are NOT Pregnant or Immunocompromised

Age Range	Measles Immune Status[a]	PEP Type Depending on Time After Initial Exposure		
		≤3 days (≤72 hours)	4–6 days	>6 days
All ages (≥6 mo)	Immune	• PEP not indicated. Exposed person has documented immunity.		
<6 mo	Nonimmune (because of age[b])	• Administer immune globulin intramuscular (IGIM)[c] • Home quarantine[d]		• PEP not indicated (too late). • Home quarantine[d]
6–11 mo	Nonimmune	• Administer MMR vaccine (MMR vaccine preferred over immune globulin [IG]) • No quarantine needed.[e]	• Administer IGIM[c] • Home quarantine[d]	• PEP not indicated (too late). • Home quarantine[d]
≥12 mo	Nonimmune	• Administer MMR vaccine • No quarantine needed[e]	• IG PEP usually not administered[f] • Home quarantine,[d] then administer MMR vaccine to protect from future exposures	
≥12 mo	1 dose of MMR vaccine	• Administer 2nd MMR vaccine dose if ≥28 days from the first dose • No quarantine needed (person had 1 dose when exposed)		

Adapted from a table developed by New York City Department of Health: **www1.nyc.gov/assets/doh/downloads/pdf/imm/pep-measles-providers.pdf.** Additional source: Centers for Disease Control and Prevention. Prevention of measles, rubella, congenital rubella syndrome, and mumps, 2013. *MMWR Recomm Rep*. 2013;62(RR-4):1-34; and Gastanaduy P, Redd S, Clemmons N, et al. Chapter 7: Measles. In: Roush SW, Baldy LM, Kirkconnell Hall MA, eds. *Manual for the Surveillance of Vaccine-Preventable Diseases*. Centers for Disease Control and Prevention. Page last reviewed May 13, 2019. Available at: **www.cdc.gov/vaccines/pubs/s0urv-manual/chpt07-measles.html**

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What can we do?

- Be a vaccine advocate: Ensure all patients are up to date on MMR vaccine
- Consider measles in anyone with a febrile rash illness and clinically compatible symptoms (cough, coryza, and/or conjunctivitis)
  - Especially if recent travel abroad or to US outbreak sites, unimmunized, or contact with someone else with known measles or a febrile rash illness
  - Prescreen patients if indicated by case numbers
- Immediately place a mask on a suspected measles patient and isolate them
- Immediately contact local health department to obtain assistance

Children's National

What can we do?

Intervention
1. Proactive outreach
2. Alerts in charts
3. Script for triage nurses
4. Immunization – early 2nd dose
5. Signs at front desk
6. Diagnosis: viral transport medium – PCR nasal swab
7. Plan for managing calls from unimmunized patients if a local outbreak occurs

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What can we do?

If you have:

- Fever
- Rash
- Cough
- Red eyes
- Runny nose
- Exposure to a measles case
- Travel to or residence in an area with measles
- Exposure to a visitor from an area with measles

Please immediately tell a staff member and put on a mask.

health.maryland.gov/measles

MARYLAND Department of Health

Children's National

What can we do?

1.	Identify those presenting with a febrile rash illness, or those self-identified with concern for measles infection or exposure
2.	When identified, place a surgical mask on the individual immediately if in a shared space (i.e. waiting room, hallway) or a regular exam room. (Note may drape blanket over crib or car seat to cover infant)
3.	Isolate patient immediately using an Airborne Infection Isolation (AII) room with negative airflow, if available ○ If AII room is unavailable, use a private exam room with the door closed when not in use. ○ Patient must wear a surgical mask inside the exam room, in transit, and until s/he moves into an AII room or exits from the CNHS ○ Patient can only remove the mask *inside* of an AII room
4.	Apply "Clinical Assessment Tool for Suspected Measles Cases" to gather additional information.

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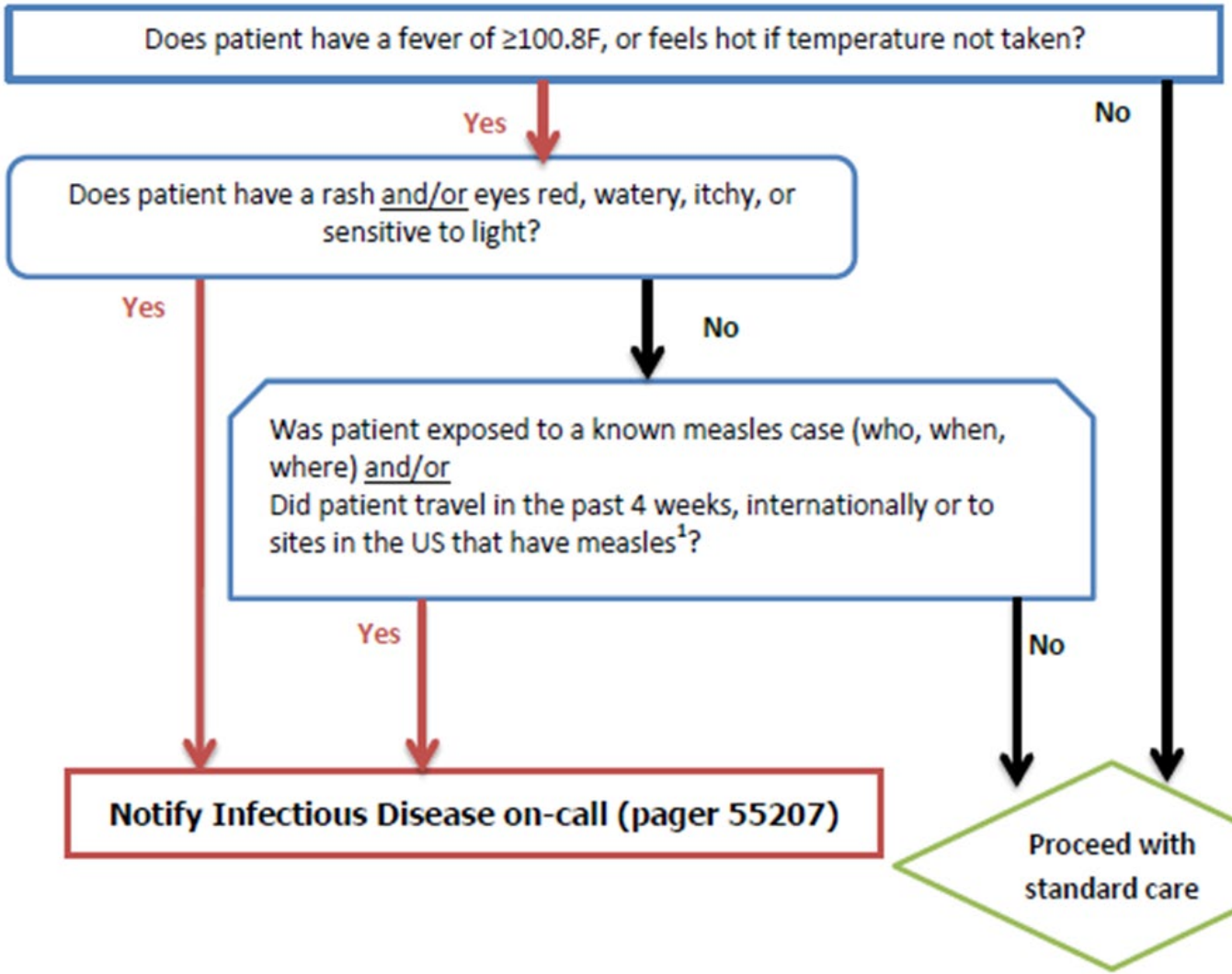
What Can We Do?

Clinical Assessment Tool for Suspected Measles Cases



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What Can We Do?

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Resources

CDC Measles Resource Pages:

- Measles (Rubeola) | Measles (Rubeola) | CDC
- Measles Cases and Outbreaks | Measles (Rubeola) | CDC
- Measles Resources | Measles (Rubeola) | CDC
- https://youtu.be/o6kEvlad-8E

DC DOH, MD DOH, VA DOH:

https://dchealth.dc.gov/page/measles-information-healthcare-providers

https://phpa.health.maryland.gov/OIDEOR/IMMUN/Pages/Measles.aspx

http://www.vdh.virginia.gov/immunization/category/measles/

CNMC Intranet:

Measles

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Thank You!